PROPOSED CONSTRUCTION OF A PEDESTRIAN BRIDGE AT KWA-TSHATSHU NEAR BREIDBACH, EASTERN CAPE

DEDEAT Reference: EC/11/A/LN1/M/14-36

Prepared for:

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<table>
<thead>
<tr>
<th><strong>Document Title</strong></th>
<th>Proposed Kwa-Tshatshu Pedestrian Bridge, near Breidbach</th>
</tr>
</thead>
</table>
| **Client Name & Address** | Element Consulting Engineers  
52 Stewart Drive  
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| ECPHRA | | |
| SAHRA | | |
| ADM | | |
| BCMM | | |

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Kindly note that:

1. This basic assessment report is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.

2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

3. Where applicable tick the boxes that are applicable or black out the boxes that are not applicable in the report.

4. An incomplete report may 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 may result in the rejection of the application as provided for in the regulations.

6. This report must be handed in at offices of the relevant competent authority as determined by each authority.

7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.

9. 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.

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

Describe the activity, which is being applied for, in detail

1.1. Project location and description

The pedestrian bridge is proposed over a section of the Yellowwoods River. This bridge will connect the settlements of Breidbach and Qualasha which are located north of the Yellowwoods River, to the settlements of Zwelitsha and Kwa-Tshatshu located south of the river.

There is currently no formal crossing that links Breidbach and Qualasha to Kwa-Tshatshu and Zwelitsha. In times of heavy rain, the residents north of the river are cut off from access to schools, clinics and employment.
opportunities south of the river in Zwelitsha and Kwa-Tshatshu.

Currently, rock outcrops in the river bed are being used as a crossing point. In times of rain, the crossing is submerged and unsafe to use. There are no designated pedestrian crossing points in the immediate vicinity of the respective settlements. The only alternative route is to make use of the N2 road bridge, some 4km upstream. The detour over the N2 road bridge significantly increases a typical walking trip from Qualasha to Kwa-Tshatshu by approximately 8km.

A preliminary design for the proposed bridge is provided in Appendix C.

2. Biophysical Environment

2.1. Climate

The study area (Kwa-Tshatshu) is close to King Williams Town in the Eastern Cape Province of South Africa. The climatic conditions of the study area are therefore drawn from King Williams Town.

The study area receives approximately 502mm of rain per year, with the majority occurring during summer. The lowest (8mm) rainfall falls in July and the highest (74mm) in March. The average midday temperatures range from 19.7°C in July to 26.7°C in February. The region is the coldest during July when the temperatures drop to 6.5°C on average during the night. (Figure 2.1).

2.2. Topography

Generally, the topography of the study area comprises of sloping river embankments and a well-defined river bed. The lowest point (deepest part of the river) is at 343 meters above sea level (m.a.s.l), and the shallow parts at the river bank being 344 m.a.s.l. (Figure 2.2).
2.3. Geology and Soils

The study area comprises of steep slopes of river valleys in highly dissected hills and moderately undulating plains. Mudstones and sandstones derived from the Beaufort Group of the Karoo Supergroup as well as Jurassic Dolerite Suite intrusions. The shallow soils (Glenrosa and Mispah) derived from these rocks are fine-grained, nutrient-poor silts, but the presence of forests can lead to the development of humus-rich, deep soils.

2.4. Vegetation and Floristics

The vegetation of the study area is characterised by SANBI National Vegetation Map (Mucina and Rutheford, 2006) as predominantly thicket, namely the Buffels Thicket (AT12), as shown in Figure 2.3 below.

Buffels Thicket is found on steep slopes of river valleys in highly dissected hills and moderately undulating plains, where short, dense and tangled thicket stands reach up to 10m. The dense thicket grades into more open, shorter thornveld at the edges of the valley slopes. This vegetation is considered “least threatened” by Mucina and Rutherford (2006). A total of 6% of this vegetation unit is protected in seven statutory reserves, especially in the Great Fish River Complex Nature Reserve and 4.5% in addition in at least nine private conservation areas. This vegetation has not been radically altered, only 3% by cultivation and 1% by urbanisation.

Figure 2.3: SANBI Vegetation map (Mucina and Rutherford, 2006) showing the vegetation type of the study area as Buffels Thicket (AT12).

Although the SANBI map indicates that this area is covered by Buffels Thicket, it must be noted that NO BUFFELS THICKET IS PRESENT ON SITE (Figure 2.4 below). The site is characterised by grasses only with isolated Acacia natalititia (Thornwood) trees in the distance.
2.5. Eastern Cape Biodiversity Conservation Plan (ECBCP)

The main outputs of the ECBCP are “critical biodiversity areas” or CBAs. Land use management of these areas is classified according to terrestrial Biodiversity Land Management Classes (BLMCs).

The bridge site is within BLMC 2, however it is also characterised as degraded (mainly attributed to urbanisation and historical cultivation). The study site is generally surrounded by a significant portion of functional and degraded landscapes (categorised as BLMC 3; and towns and settlements (categorised as BLMC 4). (See Figure 2.5 below).

In respect of the identified land management classes, the following land use management objectives are recommended:

- **BLMC 2 (Near natural landscapes):** Maintain biodiversity in near natural state with minimal loss of ecosystem integrity. No transformation of natural habitat should be permitted.
- **BLMC 3 (Functional landscapes):** These areas should be maintained for sustainable development, keeping natural habitat intact in wetlands and riparian zones.
- **BLMC 4 (Towns and settlements):** Manage for sustainable development.
2.6. SANBI Working for Wetlands

No wetlands are located within 500m (buffer required by DWS) of the study site (Figure 2.6).

In general, the following wetland type is significantly found in the surrounding area:

Channelled valley-bottom wetland which is a flat wetland dissected by and typically elevated above a channel, with most of its water inputs coming from the channel either as a surface flow, interflow, or from adjacent valley-side slopes. Water generally moves through the wetland as diffuse surface flow, although occasional, short-lived concentrated flows are possible during flooding events. Small depressional areas within such a wetland can result in temporary containment and storage of water within the wetland. Water generally exits in the form of diffuse surface flow and interflow, with the infiltration and evaporation of water from these wetlands also being potentially significant.
3. Socio-economic profile

The proposed development is located in ward 44 of the Buffalo City Metropolitan Municipality (BCMM), within the Amathole District Municipality (ADM), in the Eastern Cape Province of South Africa.

3.1. Population

BCMM has a total population of 755,200 people and 223,568 households (Stats SA, 2011). The average household size is approximately 3.2 persons per household. A highly significant proportion of the population is Black African by 85.1%, the remainder is 7.7% white; 6% coloured, and 0.8% Indian/Asian. The population comprises of 52.5% and 47.5%.

3.2. Income and poverty levels

The relative affluence of the majority of BCMM residents remains low, with only some 36% of the households in the area earning more than R1,500 per month. This indicates that disposable income is at premium in Buffalo City, and the general levels of affordability of residents is low, which has an impact on the diversification of the economy and implications for the spatial developments that are best suited to facilitating an improvement in the majority of residents’ socio-economic circumstances (IDP 2011-2016).
3.3. Employment and economic activity

There are 185,215 employed persons in the municipality; the unemployment rate is estimated at 35.1%, which does not include the 31,557 discouraged work-seekers. The youth unemployment rate is estimated at 45.1%. A total of 193,921 persons are not economically active (Stats SA, 2011).
2. **FEASIBLE AND REASONABLE ALTERNATIVES**

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—
(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application. 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.

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

**ALTERNATIVES**

No site alternatives are considered for the proposed pedestrian bridge. The preferred bridge location is considered to be in close proximity of the existing crossing for the following reasons:
- The location of the existing informal crossing is obviously the most desirable site for pedestrian traffic.
- The geotechnical conditions are visibly favourable with exposed rock in the river bed; and
- The river embankments slope towards a well-defined river profile, which is favourable to reducing the length of required bridge.

Bridge design alternatives are assessed, and 3 bridge alignment alternatives are considered and evaluated, as detailed below:

**Alignment A**
This bridge alignment has a very steep river bank on the western side. This steep slope is not well suited for an approach pathway. Furthermore, the bridge soffit is to have a freeboard above the 1:50 year flood. The relatively flat river bank on the eastern side will require a significantly longer bridge to achieve the required freeboard.

**Alignment B**
This bridge alignment is favourable for a proposed bridge. However, the alignment is at the location of the existing crossing. Therefore, pedestrians will not be able to make use of the existing crossing during the construction period. This will be a significant inconvenience to the communities.

**Alignment C (preferred alignment)**
This bridge alignment is similar to alignment B above, and is located 10m downstream of the existing
crossing. Constructing the bridge on alignment C will allow for the existing crossing to be used during the construction phase. Alignment C is therefore identified as the preferred alignment.

Three alignment alternatives assessed and evaluated at feasibility stage.

The No-Go alternative is also assessed.
3. **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 and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

### Alternative:

<table>
<thead>
<tr>
<th>Alternative S1 (preferred or only site alternative)</th>
<th>Latitude (S):</th>
<th>Longitude (E):</th>
</tr>
</thead>
<tbody>
<tr>
<td>32° 54.669' 27° 27.331'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### In the case of linear activities:

#### Alternative (Bridge Alignment)

<table>
<thead>
<tr>
<th>Alternative alignment S1 (preferred alignment)</th>
<th>Latitude (S):</th>
<th>Longitude (E):</th>
</tr>
</thead>
<tbody>
<tr>
<td>32° 54.677' 27° 27.309'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.669' 27° 27.331'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.663' 27° 27.350'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Alternative alignment S2 (if any)

<table>
<thead>
<tr>
<th>Starting point of the activity</th>
<th>Latitude (S):</th>
<th>Longitude (E):</th>
</tr>
</thead>
<tbody>
<tr>
<td>32° 54.658' 27° 27.312'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.675' 27° 27.333'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.667' 27° 27.353'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Alternative alignment S3 (if any)

<table>
<thead>
<tr>
<th>Starting point of the activity</th>
<th>Latitude (S):</th>
<th>Longitude (E):</th>
</tr>
</thead>
<tbody>
<tr>
<td>32° 54.670' 27° 27.306'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.662' 27° 27.327'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32° 54.656' 27° 27.347'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4. **PHYSICAL SIZE OF THE ACTIVITY**

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

### Alternative:

<table>
<thead>
<tr>
<th>Alternative A1 (preferred activity alternative)</th>
<th>Size of the activity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 m²</td>
<td></td>
</tr>
<tr>
<td>80 m²</td>
<td></td>
</tr>
<tr>
<td>80 m²</td>
<td></td>
</tr>
</tbody>
</table>

or, for linear activities:

### Alternative:

<table>
<thead>
<tr>
<th>Length of the activity:</th>
</tr>
</thead>
</table>
Alternative A1 (preferred activity alternative) 40 m
Alternative A2 (if any) 40 m
Alternative A3 (if any) 40 m

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

<table>
<thead>
<tr>
<th>Alternative:</th>
<th>Size of the site/servitude:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative A1 (preferred activity alternative)</td>
<td>m²</td>
</tr>
<tr>
<td>Alternative A2 (if any)</td>
<td>m²</td>
</tr>
<tr>
<td>Alternative A3 (if any)</td>
<td>m²</td>
</tr>
</tbody>
</table>

5. SITE ACCESS

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

The site can be accessed via a secondary road that branches off west of the N2 route, then a gravel road that leads directly to the edge of Yellowwoods River, at Qualasha Settlement.

The site can also be accessed north-east of the R346, via a secondary gravel road that goes through Kwa-Tshatshu settlement. This access road ends at the study site.

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.

6. 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 document.

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;
6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
6.4 the exact position of each element of the application as well as any other structures on the site;
6.5 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;
6.6 all trees and shrubs taller than 1.8 metres;
6.7 walls and fencing including details of the height and construction material;
6.8 servitudes indicating the purpose of the servitude;
6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
   - rivers;
   - the 1:100 year flood line (where available or where it is required by DWA);
   - ridges;
   - cultural and historical features;
• areas with indigenous vegetation (even if it is degraded or invested with alien species);
6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
6.10 the positions from where photographs of the site were taken.

7. 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 form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

9. ACTIVITY MOTIVATION

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

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<th>Unknown</th>
</tr>
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<tbody>
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<td>0</td>
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<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

9(b) Need and desirability of the activity

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

There is currently no formal crossing that links Breidbach and Qualasha to Kwa-Tshatshu and Zwelitsha. The respective communities are separated by the Yellowwoods River. In times of heavy rain, the residents to the north are cut off from access to schools, clinics and employment opportunities south of the river in Zwelitsha and Kwa-Tshatshu.

Currently, rock outcrops in the river bed are used as a crossing point. In times of rain this crossing is submerged and unsafe to use. There are no designated pedestrian crossing points in the immediate vicinity of the respective settlements. The only other way for pedestrians to cross the Yellowwoods River is to make use of the N2 road bridge, some 4km upstream. This
detour over the N2 road bridge increases a typical walking trip from Qualasha to Kwa-Tshatshu significantly from 0.8km to approximately 8km.

Indicate any benefits that the activity will have for society in general:
Job creation during the construction phase for skilled and semi-skilled workers as well as skills development. The river crossing will result in a safer and better quality crossing for its users.

Indicate any benefits that the activity will have for the local communities where the activity will be located:
Improved river crossing, improved access to the community, improved pedestrian safety and access.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

<table>
<thead>
<tr>
<th>Title of legislation, policy or guideline:</th>
<th>Administering authority:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Environmental Management: Biodiversity Act (Act No 10 of 2004)</td>
<td>Department of Environmental Affair (DEA)</td>
<td>2004</td>
</tr>
<tr>
<td>National Heritage Resources Act (No.25 of 1999)</td>
<td>South African Heritage Resources Agency (SAHRA)</td>
<td>1999</td>
</tr>
</tbody>
</table>

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management
Will the activity produce solid construction waste during the construction/initiation phase? YES NO
If yes, what estimated quantity will be produced per month? 5 m³
How will the construction solid waste be disposed of (describe)? All solid waste will be collected at a central location and will be stored temporarily until it is removed to a permitted landfill site closest to the construction site.
Where will the construction solid waste be disposed of (describe)? Round Hill Landfill Site

Will the activity produce solid waste during its operational phase? YES NO
If yes, what estimated quantity will be produced per month? m³
How will the solid waste be disposed of (describe)? N/A

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

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

If yes, inform the competent authority and request a change to an application for scoping and EIA.

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

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

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

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

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

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

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

If yes, provide the particulars of the facility:

Facility name: N/A
Contact person:
Postal address:
Postal code:
Telephone:
E-mail:
Fax:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

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

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

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

Nuisance dust as a result of construction activities

11(d) Generation of noise

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

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

If no, describe the noise in terms of type and level:

Noise generated will be typical construction noise as a result of the movement of hauling trucks. The noise nuisance will be managed in terms of the Environmental Management Programme (EMPp) and relevant construction regulations.

Construction activities will only take place during the day, to prevent noise disturbance in the area during the evenings.

12. WATER USE

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

| municipal water board | groundwater | river, stream, dam or lake | other | the activity will not use water |

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use permit from the Department of Water Affairs?

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. ENERGY EFFICIENCY

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

N/A

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

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. 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):

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

3. Has a specialist been consulted to assist with the completion of this section?  
YES  NO
If YES, please complete form XX for each specialist thus appointed:  
All specialist reports must be contained in Appendix D.

1. **GRADED STATE OF THE SITE**

Indicate the general gradient of the site.

**Alternative S1:**

<table>
<thead>
<tr>
<th>Flat</th>
<th>1:50</th>
<th>1:20</th>
<th>1:15</th>
<th>1:10</th>
<th>1:7.5</th>
<th>Steeper than 1:5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:20</td>
<td>1:20</td>
<td>1:15</td>
<td>1:10</td>
<td>1:7.5</td>
<td>1:7.5</td>
<td>1:5</td>
</tr>
</tbody>
</table>

**Alternative S2 (if any):**

<table>
<thead>
<tr>
<th>Flat</th>
<th>1:50</th>
<th>1:20</th>
<th>1:15</th>
<th>1:10</th>
<th>1:7.5</th>
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<tr>
<td>1:20</td>
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<td>1:15</td>
<td>1:10</td>
<td>1:7.5</td>
<td>1:7.5</td>
<td>1:5</td>
</tr>
</tbody>
</table>

**Alternative S3 (if any):**

<table>
<thead>
<tr>
<th>Flat</th>
<th>1:50</th>
<th>1:20</th>
<th>1:15</th>
<th>1:10</th>
<th>1:7.5</th>
<th>Steeper than 1:5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:20</td>
<td>1:20</td>
<td>1:15</td>
<td>1:10</td>
<td>1:7.5</td>
<td>1:7.5</td>
<td>1:5</td>
</tr>
</tbody>
</table>

2. **LOCATION IN LANDSCAPE**

Indicate the landform(s) that best describes the site:

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafont

3. **GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

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

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).

4. **GROUNDCOVER**

Indicate the types of groundcover present on the site:

4.1 Natural veld — good condition
4.2 Natural veld — scattered aliens
4.3 Natural veld with heavy alien infestation
4.4 Veld dominated by alien species
4.5 Gardens
4.6 Sport field
4.7 Cultivated land
4.8 Paved surface
4.9 Building or other structure
4.10 Bare soil

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

<table>
<thead>
<tr>
<th>Natural veld — good condition</th>
<th>Natural veld — scattered aliens</th>
<th>Natural veld with heavy alien infestation</th>
<th>Veld dominated by alien species</th>
<th>Gardens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport field</td>
<td>Cultivated land</td>
<td>Paved surface</td>
<td>Building or other structure</td>
<td>Bare soil</td>
</tr>
</tbody>
</table>

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

5. **LAND USE CHARACTER OF SURROUNDING AREA**

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

5.1 Natural area
5.2 Low density residential
5.3 Medium density residential
5.4 High density residential
5.5 Informal residential
5.6 Retail commercial & warehousing
5.7 Light industrial
5.8 Medium industrial
5.9 Heavy industrial
5.10 Power station
5.11 Office/consulting room
5.12 Military or police base/station/compound
5.13 Spoil heap or slimes dam
5.14 Quarry, sand or borrow-pit
5.15 Dam or reservoir
5.16 Hospital/medical-centre
5.17 School
5.18 Tertiary education facility
5.19 Church
5.20 Old age home
5.21 Sewage treatment plant
5.22 Train station or shunting yard
5.23 Railway line
5.24 Major road (4 lanes or more)
5.25 Airport
5.26 Harbour
5.27 Sport facilities
5.28 Golf course
5.29 Polo fields
5.30 Filling station
5.31 Landfill or waste treatment site
5.32 Plantation
5.33 Agriculture
5.34 River, stream or wetland
5.35 Nature conservation area
5.36 Mountain, koppie or ridge
5.37 Museum
5.38 Historical building
5.39 Protected Area
5.40 Graveyard
5.41 Archaeological site
5.42 Other land uses (describe)

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

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

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.
If YES, specify and explain:
If YES, specify:
6. **CULTURAL/HISTORICAL FEATURES**

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

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Uncertain</th>
</tr>
</thead>
</table>

If **YES**, explain:  

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.  

Briefly explain the findings of the specialist:  

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

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.
SECTION C: 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 municipality which has jurisdiction in the area;
   (vi) any organ of state having jurisdiction in respect of any aspect of the activity; 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 local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in subregulation 54(c)(ii); and
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
   (i) illiteracy;
   (ii) disability; or
   (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and
(b) state—
   (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
(ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
(iii) the nature and location of the activity to which the application relates;
(iv) where further information on the application or activity can be obtained; and
(iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

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

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

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

6. AUTHORITY PARTICIPATION

Authorities are 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 the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:
List of authorities from whom comments have been received:

No comments have been received as BAR still has to undergo public review.
7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

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 at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?  
YES  NO

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

No comments have been received as BAR still has to undergo public review
SECTION D: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No issues have been received as BAR still has to undergo public review

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 to this report):

N/A

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

<table>
<thead>
<tr>
<th>PLANNING AND DESIGN PHASE FOR ALL ALIGNMENT OPTIONS</th>
<th>Impacts</th>
<th>Significance pre-mitigation</th>
<th>Mitigation measure</th>
<th>Significance post-mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of a formal water crossing structure:</td>
<td>HIGHLY BENEFICIAL</td>
<td>No mitigation</td>
<td></td>
<td>HIGHERY BENEFICIAL</td>
</tr>
<tr>
<td>• The local community will be provided with a formalised pedestrian bridge.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible cultural artefacts in some of the affected sedimentary layers:</td>
<td>LOW NEGATIVE</td>
<td>A desktop Heritage Impact Assessment must be conducted to identify cultural heritage resources.</td>
<td></td>
<td>LOW NEGATIVE</td>
</tr>
<tr>
<td>• Bridge construction may affect possible cultural artefacts found in some of the surrounding</td>
<td></td>
<td>An Environmental Control Officer must be appointed to monitor the potential presence of any artefacts that may be uncovered during construction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue</td>
<td>Severity</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Sedimentary layers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental damage and other impacts on the river:</td>
<td></td>
<td>- Inappropriate design and alignment of the pedestrian bridge may result in water flow problems such as impeding/diverting flow which may result in bank erosion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIGH NEGATIVE</td>
<td>- Ensure that the bridge design does not impede the flow of water or cause erosion of the river banks by ensuring that all bridge structures are placed outside of the 1:100 year floodline.</td>
<td>MODERATE NEGATIVE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Ensure there is proper drainage of stormwater away from the bridge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- A Water Use License/Permit must be obtained from the Department of Water and Sanitation (DWS) prior commencement of any activity within the watercourse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste storage:</td>
<td></td>
<td>- Failure to plan for waste management storage during construction can lead to poor waste management practises resulting in unsanitary conditions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIGH NEGATIVE</td>
<td>- Ensure that proper waste management activities are included in the Construction Environmental Management Programme (EMPr) and is implemented.</td>
<td>LOW NEGATIVE</td>
<td></td>
</tr>
<tr>
<td>Inadequate planning for and routing of stormwater:</td>
<td></td>
<td>- Inappropriate routing of stormwater will lead to stream sedimentation and erosion of the surrounding river banks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODERATE NEGATIVE</td>
<td>- A stormwater management plan must be drawn up by a qualified engineer and approved by DWS.</td>
<td>LOW NEGATIVE</td>
<td></td>
</tr>
<tr>
<td><strong>CONSTRUCTION PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction vehicles on site:</td>
<td></td>
<td>- During construction there will be an increase in traffic.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODERATE NEGATIVE</td>
<td>- Construction activities must be limited to the hours 08:00 – 17:00.</td>
<td>LOW NEGATIVE</td>
<td></td>
</tr>
</tbody>
</table>
in heavy vehicle traffic and associated increase in the ambient noise level on-site and on surrounding properties.

<table>
<thead>
<tr>
<th>Blasting: • Blasting of river bed rock may result in noise and safety impacts.</th>
<th>MODERATE NEGATIVE</th>
<th>• Sufficient warning must be provided to the surrounding residents on the times of activity. • The use of a siren for at least 15 minutes after blasting should be used to notify all surrounding residents. • Safety warning signs must be provided around the construction and activity sites.</th>
<th>LOW NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction vehicles on site: • During construction, dust (air) pollution caused by increased heavy vehicle traffic and grading and levelling of exposed soil can be a nuisance to neighbouring residential areas.</td>
<td>MODERATE NEGATIVE</td>
<td>• Stored and exposed soil should be covered or kept wet to reduce dusty conditions during construction. • Roads used by construction vehicles must be regularly dampened to reduce dust.</td>
<td>LOW NEGATIVE</td>
</tr>
<tr>
<td>Soil erosion: • During construction, soil stripping and clearing can result in soil erosion and resultant sedimentation of the river.</td>
<td>LOW NEGATIVE</td>
<td>• After construction, all slopes must be stabilised to reduce the risk of erosion. • Where possible, stockpiled topsoil must be used for rehabilitation.</td>
<td>LOW NEGATIVE</td>
</tr>
<tr>
<td>Construction rubble and refuse disposal: • During construction, the inappropriate</td>
<td>MODERATE NEGATIVE</td>
<td>• Ensure that all rubble and refuse is collected and disposed of at a licenced landfill site (e.g. Round Hill landfill site). A post-construction audit conducted by an independent ECO must ensure compliance with</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>
| **disposal of waste** can result in the pollution of sensitive environments (e.g. ground and water). | **this mitigation.**  
- An EMP incorporating waste management issues during the construction phase of the project has been developed and must be implemented. |  |
|---|---|---|
| **Heritage resources:**  
- Damage to artefacts of historical importance unearthed during construction. | **MODERATE NEGATIVE**  
- If any culturally or historically significant artefacts are observed during construction, SAHRA and ECPHRA must be notified immediately. | **LOW NEGATIVE** |
| **Temporary job opportunities:**  
- During the construction phase, there will be an increase in temporary job opportunities. | **LOW BENEFICIAL**  
- As far as possible, people in the surrounding communities should be the preferred choice for filling contract construction vacancies. | **LOW BENEFICIAL** |
| **River impacted by construction of bridge:**  
- Potential negative impacts on the Yellowwoods River. E.g. disturbance to river bed and banks due to construction materials and vehicles. | **HIGH NEGATIVE**  
- Ensure that no construction rubble is left in the river after completion of work.  
- The river must be returned to its natural state after construction  
- Monitoring and assessment of the state of the river must be undertaken by an appointed Environmental Control Officer (ECO). The ECO must report on the rehabilitation success in the final ECO report. | **LOW NEGATIVE** |
| **River Pollution:**  
- Oil spills from machines and vehicles; and cement mixing can result in the pollution of the river. | **HIGH NEGATIVE**  
- Concrete and cement must not be mixed directly on the ground, or during rainfall events when the potential for transport to the river is the greatest.  
- Concrete must only be mixed in a demarcated area, on impermeable substratum.  
- Construction machinery must be stored in bunded areas or over oil | **LOW NEGATIVE** |
trays, to avoid soil contamination as a result of an oil spillage.

<table>
<thead>
<tr>
<th>OPERATION PHASE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion:</td>
<td>MODERATE NEGATIVE</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>
| • Severe erosion may result from poor slope stabilisation and poor rehabilitation/re-vegetation | • Recommendations of the Stormwater management plan must be implemented.  
• Vegetation should be retained where possible to avoid soil erosion  
• Re-vegetation of disturbed surfaces must occur immediately after the construction activities are completed to encourage soil binding. |

3. ENVIRONMENTAL IMPACT STATEMENT

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

A. SUMMARY OF THE PROPOSED DEVELOPMENT

The subject of this Basic Assessment Report (BAR) is the proposed construction of a pedestrian bridge over the Yellowwoods River at Kwa-Tshatshu township, near Breidbach, in the Eastern Cape Province of South Africa. The proposed bridge will connect the settlements of Breidbach and Qualasha (north of Yellowwoods River) to the settlements of Zwelitsha and Kwa-Tshatshu (south of Yellowwoods River).

ALTERNATIVES

No site alternatives are considered for the proposed pedestrian bridge. The preferred bridge location is considered to be in close proximity of the existing crossing for the following reasons:

• The location of the existing informal crossing is obviously the most desirable site for pedestrian traffic;
• The geotechnical conditions are visibly favourable with exposed rock in the river bed; and
• The river embankments slope towards a well-defined river profile, which is favourable to reducing the length of required bridge.

Bridge design alternatives are assessed, and 3 bridge alignment alternatives are considered and evaluated, as detailed below:

Alignment A

This bridge alignment has a very steep river bank on the western side. This steep slope is not well suited for an approach pathway. Furthermore, the bridge soffit is to have a freeboard above the 1:50 year flood. The relatively flat river bank on the eastern side will require a significantly longer bridge to achieve the required freeboard.
Alignment B
This bridge alignment is favourable for a proposed bridge. However, the alignment is at the location of the existing crossing. Therefore, pedestrians will not be able to make use of the existing crossing during the construction period. This will be a significant inconvenience to the communities.

Alignment C (preferred alignment)
This bridge alignment is similar to alignment B above, and is located 10m downstream of the existing crossing. Constructing the bridge on alignment C will allow for the existing crossing to be used during the construction phase. Alignment C is therefore identified as the preferred alignment.

The No-Go option will also be assessed.

BIOLOGICAL ENVIRONMENT

Vegetation
The vegetation of the area is described by SANBI as predominantly Thicket, namely Buffels Thicket (AT12). However, no Thicket vegetation was observed on site (see 360 degree photos in Appendix B below). Only grassland cover has been identified.

Buffels Thicket is considered “least threatened”. Majority of this land is transformed through urbanisation and cultivation, erosion varies from high to low scale.

CONSERVATION STATUS

Eastern Cape Biodiversity Conservation Plan (ECBCP)
The study site is within BLMC 2, however it is also characterised as degraded (mainly attributed to urbanisation). The study site is generally surrounded by a significant portion of functional and degraded landscapes (categorised as BLMC 3; and towns and settlements (categorised as BLMC 4).

In respect of the identified land classes, the following land use management objectives are recommended:
- BLMC 2 (Near natural landscapes): Maintain biodiversity in near natural state with minimal loss of ecosystem integrity. No transformation of natural habitat should be permitted.
- BLMC 3 (Functional landscapes): These areas should be maintained for sustainable development, keeping natural habitat intact in wetlands and riparian zones.
- BLMC 4 (Towns and settlements): Manage for sustainable development.

The proposed bridge does not contradict the land use recommendation of ECBCP.

B. SUMMARY OF SIGNIFICANT IMPACTS

The following table provides a summary of the pre-mitigation impact that were are ranked as HIGH for the preferred alternative.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Significance pre-mitigation</th>
<th>Significance post-mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANNING AND DESIGN PHASE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental damage and other impacts on the river</td>
<td>HIGH NEGATIVE</td>
<td>MODERATE NEGATIVE</td>
</tr>
</tbody>
</table>
In appropriate design and alignment of the pedestrian bridge may result in water flow problems such as hampering flow or bank erosion.

Provision of a formal water crossing structure

- The local community will be provided with a formalised pedestrian bridge.

<table>
<thead>
<tr>
<th>Waste storage</th>
<th>HIGH NEGATIVE</th>
<th>LOW NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to plan for waste management storage can lead to poor waste management practises resulting in unsanitary conditions.</td>
<td>HIGH NEGATIVE</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>

**CONSTRUCTION PHASE**

<table>
<thead>
<tr>
<th>River impacted by proposed development</th>
<th>HIGH NEGATIVE</th>
<th>LOW NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential negative impacts on the Yellowwoods River. E.g. disturbance to river bed and banks due to construction materials and vehicles.</td>
<td>HIGH NEGATIVE</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>River Pollution</th>
<th>HIGH NEGATIVE</th>
<th>LOW NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil spills from machines and vehicles; and cement mixing can result in the pollution of the river.</td>
<td>HIGH NEGATIVE</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>

**C. ENVIRONMENTAL IMPACT ASSESSMENT**

In terms of the environmental assessment, no significant impacts were identified that could not be adequately mitigated.

The No-Go option would mean abandoning the proposed pedestrian bridge construction with the following implications:

- Continued soil erosion of the areas surrounding the river in question, with consequent sedimentation of the river, due to continued informal pedestrian use.
- More pedestrian accidents and potentially fatalities, as the current river crossings are unsafe, especially during rainfall periods.

**D. OPINION OF THE EAP**

EOH Coastal & Environmental Services (the EAP) hereby provides the following opinion concerning the proposed pedestrian bridge construction at Yellowwoods River, Kwa-Tshatshu settlement.

It is the opinion of EOH Coastal & Environmental Services that NO FATAL FLAWS are associated with the proposed bridge construction and that all impacts can be adequately mitigated to reduce the risk or significance of impacts to an acceptable level.

Lastly, it is also the opinion of CES that this Basic Assessment Report contains sufficient information to allow DEDEAT to make an informed decision. CES therefore, recommends that the application for Authorisation should be approved on condition **that the recommended mitigation measures stated**
herein and in the EMPr are effectively implemented.
SECTION E. RECOMMENDATIONS OF PRACTITIONER

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

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

Is an EMPr attached?

The EMPr must be attached as Appendix F.

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

| N/A |

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

PLANNING AND DESIGN PHASE

Social

Heritage
- A desktop Heritage Impact Assessment must be conducted to identify cultural heritage resources.
- An Environmental Control Officer must be appointed to monitor the potential presence of any artefacts that may be uncovered during construction.

Bridge Design
- Ensure that the bridge design does not impede the flow of water or cause erosion of the river banks by ensuring that all bridge structures are placed outside of the 1:100 year floodline.
- Ensure there is proper drainage of stormwater away from the bridge.
- A Water Use License/Permit must be obtained from the Department of Water and Sanitation (DWS) prior commencement of any activity within the watercourse.

Waste Management
- Ensure that proper waste management activities are included in the Construction Environmental Management Programme (EMPr) and is implemented.

Stormwater Management
- A stormwater management plan must be drawn up by a qualified engineer and approved by DWS.

CONSTRUCTION PHASE

Noise pollution

Construction vehicles
- Construction activities must be limited to the hours 08:00 – 17:00.

Blasting
- Sufficient warning must be provided to the surrounding residents on the times of activity.
- The use of a siren for at least 15 minutes after blasting should be used to notify all surrounding residents.
- Safety warning signs must be provided around the construction and activity sites.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air pollution</strong></td>
<td>- Stored and exposed soil should be covered or kept wet to reduce dusty conditions during construction.</td>
</tr>
<tr>
<td></td>
<td>- Roads used by construction vehicles must be regularly dampened to reduce dust.</td>
</tr>
<tr>
<td><strong>Soil erosion</strong></td>
<td>- After construction, all slopes must be stabilised to reduce the risk of erosion.</td>
</tr>
<tr>
<td></td>
<td>- Where possible, stockpiled topsoil must be used for rehabilitation.</td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td>- Ensure that all rubble and refuse is collected and disposed of at a licenced landfill site (e.g. Round Hill landfill site). A post-construction audit conducted by an independent ECO must ensure compliance with this mitigation.</td>
</tr>
<tr>
<td></td>
<td>- An EMPr incorporating waste management issues during the construction phase of the project has been developed and must be implemented.</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td>- If any culturally or historically significant artefacts are observed during construction, SAHRA and ECPHRA must be notified immediately.</td>
</tr>
<tr>
<td>Heritage Resources</td>
<td></td>
</tr>
<tr>
<td><strong>Socio-economic</strong></td>
<td>- As far as possible, people in the surrounding communities should be the preferred choice for filling contract construction vacancies.</td>
</tr>
<tr>
<td>Temporary job opportunities</td>
<td></td>
</tr>
<tr>
<td><strong>River Health</strong></td>
<td>- Ensure that no construction rubble is left in the river after completion of work.</td>
</tr>
<tr>
<td></td>
<td>- The river must be returned to its natural state after construction.</td>
</tr>
<tr>
<td></td>
<td>- Monitoring and assessment of the state of the river must be undertaken by an appointed Environmental Control Officer (ECO). The ECO must report on the rehabilitation success in the final ECO report.</td>
</tr>
<tr>
<td></td>
<td>- Concrete and cement must not be mixed directly on the ground, or during rainfall events when the potential for transport to the river is the greatest.</td>
</tr>
<tr>
<td></td>
<td>- Concrete must only be mixed in a demarcated area, on impermeable substratum.</td>
</tr>
<tr>
<td></td>
<td>- Construction machinery must be stored in bunded areas or over oil trays, to avoid soil contamination as a result of an oil spillage.</td>
</tr>
<tr>
<td><strong>OPERATION PHASE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Erosion</strong></td>
<td>- Recommendations of the Stormwater management plan must be implemented.</td>
</tr>
<tr>
<td></td>
<td>- Vegetation should be retained where possible to avoid soil erosion</td>
</tr>
<tr>
<td></td>
<td>- Re-vegetation of disturbed surfaces must occur immediately after the construction activities are completed to encourage soil binding.</td>
</tr>
</tbody>
</table>
SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)
Appendix B: Photographs
Appendix C: Facility illustration(s)
Appendix D: Specialist reports
Appendix E: Comments and responses report
Appendix F: Environmental Management Programme (EMPr)
Appendix G: Other information
Appendix B: Photographs

GPS point:
Kwa-Tshatshu Pedestrian Crossing
32°54.669’ S 27°27.331’E
Appendix C: Facility illustration(s)

N/A
Appendix D: Specialist reports

- Desktop Heritage Impact Assessment
- Aquatic and Riparian Assessment
- Ecological Assessment
Appendix E: Comments and responses report

No comments have been received as BAR still has to undergo public review.
Appendix F: Environmental Management Programme (EMPr)
Appendix G: Other information

1. PUBLIC PARTICIPATION DOCUMENTATION

Letter of notifications to all stakeholders

EOH Coastal & Environmental Services

13 November 2014

Dear Stakeholders

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF A PEDESTRIAN BRIDGE OVER THE YELLOWWOODS RIVER, APPROXIMATELY 2.5 KM SOUTH OF BREIDBACH, EASTERN CAPE

Notice is hereby given in terms of Section 54 (2) (b) and Section 57 of the regulations published in Government Notice No. R. 543 of 18 June 2010 published in terms of Section 24(5) of Chapter 5 read with Section 44 of Chapter 9 of The National Environmental Management Act, (Act no 107 of 1998) as amended in 2010, of the intent to carry out Environmental Impact Assessment (EIA). We hereby invite all interested and affected parties to register on the project database.

Project description: Buffalo City Metropolitan Municipality (BCMM) is proposing the construction of a pedestrian bridge over the Yellow Woods River, near Breidbach, in ward 44 of BCMM, in the Eastern Cape Province of South Africa.

Public Participation: A critical element of the EIA is the Public Participation. The objective is to contact, notify and inform members of the community who may be interested and/or affected by the proposed upgrade of access roads, in order that any such party may fully participate, interact and inform the EIA process.

Listed Activities: The proposed project requires a BASIC ASSESSMENT due to the following activities listed in terms of GN R 544:

<table>
<thead>
<tr>
<th>Government Notice Number</th>
<th>Activity No</th>
<th>Description of listed activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN R. 544</td>
<td>11(iii)</td>
<td>The construction of a bridge within a watercourse.</td>
</tr>
<tr>
<td>GN R. 544</td>
<td>18(i)</td>
<td>The deposition of material in or removal of material from a watercourse.</td>
</tr>
</tbody>
</table>

EOH Coastal & Environmental Services has been commissioned by Element Consulting Engineers to undertake the EIA. You are hereby invited to register as an Interested & Affected Party (I&AP).
Please submit your name, contact information and any comments to the contact person below at your earliest convenience to ensure that your comments are captured.

For more information, registration as an Interested and Affected Party (I&AP), or submission of written comments, please contact by phone, fax, post or email the person below;

EOH Coastal & Environmental Services  
Attn: Ms Nande Suka  
PO Box 8145  
Nahoon  
5210  
Tel: 043 726 7809/8313  
Fax: 043 726 8352  
E-mail: n.suka@cesnet.co.za

We would like to emphasise that should you consider yourself as an I&AP, we request that you register by simply contacting our office at the details given above. This will ensure that all correspondence and progress with regards to the EIA are made available to you in a fast and transparent manner.

We look forward to hearing from you.

Kind regards

Nande Suka  
Environmental Consultant  
EOH Coastal & Environmental Services
Letter of notification to all Landowners and surrounding landowners

13 November 2014

Dear Landowner/s

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF A PEDESTRIAN BRIDGE OVER THE YELLOWWOODS RIVER, APPROXIMATELY 2.5 KM SOUTH OF BREIDBACH, EASTERN CAPE

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Please submit your name, contact information and any comments to the contact person below at your earliest convenience to ensure that your comments are captured.

For more information, registration as an Interested and Affected Party (I&AP), or submission of written comments, please contact by phone, fax, post or email the person below;

EOH Coastal & Environmental Services
Attn: Ms Nande Suka
PO Box 8145
Nahoon
5210
Tel: 043 726 7809/8313
Fax: 043 726 8352
E-mail: nsuka@cesnet.co.za

We would like to emphasise that should you consider yourself as an I&AP, we request that you register by simply contacting our office at the details given above. This will ensure that all correspondence and progress with regards to the EIA are made available to you in a fast and transparent manner.

We look forward to hearing from you.

Kind regards

Nande Suka
Environmental Consultant
EOH Coastal & Environmental Services
ENVIRONMENTAL IMPACT ASSESSMENT

KwaTshatshu Pedestrian Bridge over the Yellow Woods River, near Breidbach, Buffalo City Metropolitan Municipality

BACKGROUND INFORMATION DOCUMENT & INVITATION TO COMMENT

Proposed by: Buffalo City Metropolitan Municipality (BCMM)

Return address for comments:
EOH Coastal & Environmental Services
Ms Nande Suka
16 Tyrell Road
Berea
P.O Box 8145
Naboom, 5210
Tel: (043) 726 7809
Fax: (043) 726 8352
Email: n.suka@cesnet.co.za
AIM OF THIS DOCUMENT

The purpose of this document is to ensure that people interested in or affected by the proposed project are provided with information about the proposal, the process being followed and provided with an opportunity to be involved in the EIA process.

Registering as an Interested and/or Affected Party (I&AP) allows individuals or groups the opportunity to contribute ideas, issues, and concerns regarding the project. I&APs also have an opportunity to review all reports and submit comments on those reports. All comments received are included in the reports submitted to the Competent Authority.

BACKGROUND

Buffalo City Metropolitan Municipality (BCMM) proposes to construct a pedestrian bridge over the Yellow Woods River, near Breidbach, in ward 44 of BCMM, Eastern Cape Province of South Africa (Figure 1 below).

THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Coastal & Environmental Services (CES) was established in 1990 as a specialist environmental consulting company. Recently EOH Group of Companies acquired the shares in CES. EOH is the largest provider of enterprise applications, technology, outsourcing, cloud and managed services. The group is active in South Africa, Africa and the United Kingdom and has a strong Black Economic Empowerment profile. This integration will allow CES to combine EOH’s great reach and
reputation with CES’s recognised excellence in environmental and social advisory services, thus
maximising CES’s strengths and comprehensive offerings in the environmental and social fields.

CES specialises in impact assessments and environmental management, with considerable
specialist experience in terrestrial, marine and freshwater ecology, the Social Impact Assessment
(SIA) process, state of environment reporting (SOER), Integrated Waste Management Plans
(IWMP), Spatial Development Frameworks (SDF), public participation, as well as the management
and co-ordination of all aspects of the Environmental Impact Assessment (EIA) and Strategic
Environmental Assessment (SEA) processes. CES has been active in all of the above fields, and in so
doing have made a positive contribution towards environmental management and sustainable
development in the Eastern Cape, South Africa and many other African countries.

THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

EOH Coastal and Environmental Services have been appointed by Element Consulting Engineers to
undertake the necessary environmental investigations for the proposed pedestrian bridge, and to
apply for approval from the Department of Economic Development, Environmental Affairs &
Tourism (DEDEAT). Details of the relevant laws, and an overview of the environmental impact
assessment process, are provided below.

RELEVANT LEGISLATION

According to Environmental Impact Assessment (EIA) regulations, promulgated under the National
Environmental Management Act (No. 107 of 1998) as amended in 2010, listed activities need to be
assessed. In this case the identified activity requires a Basic Environmental Assessment. The
proposed access roads upgrade will trigger the following listed activities:

<table>
<thead>
<tr>
<th>Listed Activity</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN. 544 No 11 (iii)</td>
<td>The construction of a bridge within a watercourse</td>
</tr>
<tr>
<td>GN. 544 No 18 (i)</td>
<td>The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse.</td>
</tr>
</tbody>
</table>

A Basic Assessment (BA) will be conducted following the procedure outlined in the EIA regulations
(2010) GN 543 Section 21-24. Furthermore, the EIA process will require a water use licence from the
Department of Water and Sanitation (DWS).

APPROACH TO THIS BASIC ASSESSMENT

The process required for the proposed project is a Basic Assessment. This process serves primarily
to inform the public and relevant authorities about the proposed project and to determine and
assess associated impacts.

Basic Assessment Process

Review of previous studies
↓
Advertisement & Registration of I&APs
↓
3

EOH COASTAL & ENVIRONMENTAL SERVICES

BCMM Pedestrian Bridge near Breidbach
BCMM is proposing the construction of a pedestrian bridge over the Yellow Woods River approximately 2.5 km south of Breidbach.

There is currently no formal crossing that links Breidbach and Qualasha to KwaTshatshu and Zwelitsha. The respective communities are separated by the Yellow Woods River. Currently, rocky outcrops in the river bed are being used as crossing points. In times of rain this crossing is submerged and unsafe for use. There are no designated pedestrian crossing points in the immediate vicinity of the respective settlements. When the river is in flow, the only way for pedestrians to cross the river is to make use of the N2 road bridge, some 4 km upstream. This detour over the N2 road bridge increases a typical walking trip from Qualasha to KwaTshatshu significantly from 0.8km to 7.5km.

Potential Benefits of the pedestrian bridge.

The current river crossing is inadequate and unsafe for its users. In times of flood the residents north of the river are cut off from access to schools, clinics and employment opportunities south of the river in Zwelitsha and KwaTshatshu. Therefore, the proposed pedestrian bridge will ensure a safer crossing, and a significantly shorter distance between the settlements.
A Public Participation Process (PPP) is being conducted as part of the EIA. The aim of the PPP is to allow everyone who is interested in, or likely to be affected by, the proposed development to provide input into the process.

The Public Participation Process will include:
- Advertisements in the Daily Dispatch;
- Notice Boards on site;
- Circulation of the BID (this document) to all I&APs and stakeholders
- Community and focus group meetings (as required);
- Review of all reports by registered I&APs and stakeholders.

If you consider yourself an interested and/or affected person/party, it is important that you become and remain involved in the PPP. In order to do so please follow the steps below in order to ensure that you are continually informed of the project developments and will ensure your opportunity to raise issues and concerns pertaining to the project.

**STEP 1:** Please register by responding to our notification and invitation, with your name and contact details (details provided on cover page and below). As a registered I&AP you will be informed of all meetings, report reviews and project developments throughout the EIA process.

**STEP 2:** Attend meetings that will be held throughout the EIA process. As a registered I&AP, you will be invited to these meetings.

CES is required to engage with all private and public parties that may be interested and/or affected by the proposed road upgrades, in order to distribute information for review and comment in a transparent manner.

In the same light, it is important for I&APs to note the following:

1. In order for CES to continue engaging with you, please **ENSURE** that you register on our database by contacting the person below.
2. As the EIA process is regulated by specific review and comment timeframes, it is your responsibility to submit your comments within these timeframes.

**Contact person for enquiries and/comments:**

Ms Nande Suka  
16 Tyrell Road  
Berea  
East London 5241  
P.O Box 8145  
 Nahoon, 5210  
Tel: (043) 726 7809/8313  
Fax: (043) 726 8352  
Email: n.suka@cesnet.co.za
I hereby wish to register as an Interested and Affected Party (I&AP) for the

Proposed construction of a pedestrian bridge over the Yellow Woods River near Breidbach: EIA process

Name:

Organisation:

Postal address:

Email:

Phone #: __________________ Fax #: __________________

My initial comments, issues or concerns are:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Other individuals, stakeholders, organisations or entities that should be registered are:

Name:

Organisation:

Postal address:

Email:

Phone #: __________________ Fax #: __________________

Please return details to: Ms Nande Suka, P.O. Box 8145, Nahoon, 5210
Telephone: (043) 726 7809 Fax: (043) 726 8352 Email: n.suka@oesnet.co.za
Notification of proposed project:

Email to stakeholders

Dear Stakeholders,

Please find attached a letter of initial notification and Background Information Document as per the proposed construction of a Pedestrian Bridge at Kwa-Tshatshu, near Bredboch.

For more information or any queries, please don’t hesitate to contact the undersigned.

Please confirm receipt of this email.

I trust you will find all the above in order.

Thanks and Regards

Nanda

Nanda Suka (Gartl Geo/MU)
Environmental Consultant
EOH Coastal & Environmental Services
tel: +27 (43) 725 7029 | fax: +27 (43) 729 0362 | cell: +27 (02) 079 2897
nanda.suka@eoh.co.za | www.eoh.co.za | www.csnet.co.za

Consulting | Technology | Outsourcing
Confirmation of receipt from stakeholders

Department of Water and Sanitation

BCMM City Manager

Amathole DM Municipal Manager

Dept. of Rural Development and Land Reform

[Email messages and attachments]
Registered mail sent to landowner of Erf 441
Notification sent to landowner of RE/1924

You have been identified as a landowner for farm number RE/1924, at Kwa-Tshatsha near Bredbach.

As part of the Environmental Impact Assessment (EIA) process, we are required to inform all affected and/or surrounding landowners of the proposed development.

Please find attached a copy of the initial notification and background information documents pertaining to the proposed construction of a pedestrian bridge at Kwa-Tshatsha, near Bredbach.

For more information or any queries, please don’t hesitate to contact the undersigned.

Please confirm receipt of this email.

Thank you for your time and consideration.

Sincerely,

Dear Landowner,

Acknowledgement of receipt from landowners

Your message

To: Nkomazane Mabaso
Subject: Proposed Kwa-Tshatsha Pedestrian Bridge, near Bredbach
Sent: 05 December 2014 06:51:33 PM

read on 05 December 2014 06:51:33 PM (UTC) Coordinated Universal Time.
Confirmation of notification to ward councillor

Notification letter sent to stakeholders and I&APs on Public Review

Email sent to all stakeholders/I&APs/landowners and surrounding landowners notifying of public review period.

Proof of WULAs submission
<table>
<thead>
<tr>
<th>Organisation</th>
<th>Name</th>
<th>Email</th>
<th>Tel</th>
<th>Cell</th>
<th>Fax</th>
<th>Postal Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amathole DM Manager</td>
<td>Chris Magwangqana</td>
<td><a href="mailto:chrisma@amathole.gov.za">chrisma@amathole.gov.za</a></td>
<td>043 783 2257</td>
<td></td>
<td>043 742 0337</td>
<td></td>
</tr>
<tr>
<td>Amathole DM Local Gvt Support</td>
<td>Honjiwe Mayaphi</td>
<td><a href="mailto:hmayaphi@environment.gov.za">hmayaphi@environment.gov.za</a></td>
<td>043 722 3282</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCMM City Manager</td>
<td>Andile Fani</td>
<td><a href="mailto:AndileF@buffalocity.gov.za">AndileF@buffalocity.gov.za</a></td>
<td>043 705 1793</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCMM</td>
<td>Nonceba Mbal-Majeng</td>
<td><a href="mailto:Diane1@buffalocity.gov.za">Diane1@buffalocity.gov.za</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCMM Project Manager</td>
<td>Lee Mellin</td>
<td><a href="mailto:LeeM@buffalocity.gov.za">LeeM@buffalocity.gov.za</a></td>
<td>043 705 2346</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCMM Ward Councillor (Ward 44)</td>
<td>Cllr Leon Mentoor</td>
<td><a href="mailto:LeonM@buffalocity.gov.za">LeonM@buffalocity.gov.za</a></td>
<td></td>
<td>083 944 9762</td>
<td></td>
<td>2330 Plateu Breidbach, KWT</td>
</tr>
<tr>
<td>ECPHRA</td>
<td>Sello Mokhanya</td>
<td><a href="mailto:s.mokhanya@ecphra.org.za">s.mokhanya@ecphra.org.za</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECPHRA</td>
<td>Mzikayise L Zote</td>
<td><a href="mailto:mlzote@ecphra.org.za">mlzote@ecphra.org.za</a></td>
<td>043 642 2811</td>
<td></td>
<td>043 642 2812</td>
<td></td>
</tr>
<tr>
<td>ECPHRA</td>
<td>Mzolisi Matutu</td>
<td><a href="mailto:Mzolisi.Matutu@srac.ecprov.gov.za">Mzolisi.Matutu@srac.ecprov.gov.za</a></td>
<td>043 604 4019/4020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAHRA</td>
<td>M Galimberti</td>
<td><a href="mailto:mgalimberti@sahra.org.za">mgalimberti@sahra.org.za</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEDEAT (Amathole)</td>
<td>Briant Noncembu</td>
<td><a href="mailto:Briant.Noncembu@dedea.gov.za">Briant.Noncembu@dedea.gov.za</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DWS</td>
<td>Lizna Fourie</td>
<td><a href="mailto:Fouriel4@dwa.gov.za">Fouriel4@dwa.gov.za</a></td>
<td>043 701 0248</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farm Number</th>
<th>Farm Name/Nr</th>
<th>Name</th>
<th>Email</th>
<th>Tel</th>
<th>Cell</th>
<th>Fax</th>
<th>Postal Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom Amial</td>
<td>Erf 441</td>
<td>Tom Amial</td>
<td><a href="mailto:ngoboziti@ruraldevelopment.gov.za">ngoboziti@ruraldevelopment.gov.za</a></td>
<td></td>
<td>073 890 5517/078 240 4937</td>
<td>Happy Valley Farm, P O Box 1191, KWT, 5601</td>
<td></td>
</tr>
<tr>
<td>Dept of Rural Dev &amp; Land Reform (DRDLR)</td>
<td>RE/1924</td>
<td>Nomatamsanqa Gobozi</td>
<td><a href="mailto:ngoboziti@ruraldevelopment.gov.za">ngoboziti@ruraldevelopment.gov.za</a></td>
<td>043 700 7000</td>
<td></td>
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## 2. Impact Assessment

### Impact Assessment for All Alignment Options

#### Table 1: Issues and Impacts during the Planning and Design Phase of the proposed Kwa-Tshatshu Pedestrian Bridge

<table>
<thead>
<tr>
<th>ISSUE OR ACTIVITY</th>
<th>DIRECT/INDIRECT/ CUMULATIVE</th>
<th>GENERAL AND SPECIALIST STUDY IMPACTS</th>
<th>SPATIAL SCALE</th>
<th>TEMPORAL SCALE/ DURATION</th>
<th>CERTAINTY SCALE/ LIKELIHOOD</th>
<th>SEVERITY/ BENEFICIAL SCALE</th>
<th>SIGNIFICANCE PRE- MITIGATION</th>
<th>MITIGATION MEASURES</th>
<th>SIGNIFICANCE POST- MITIGATION</th>
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<tbody>
<tr>
<td><strong>SOCIO-ECONOMIC</strong></td>
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<tr>
<td>Provision of a formal pedestrian crossing structure over a watercourse</td>
<td>Direct</td>
<td>The local community will be provided with a formalised pedestrian bridge.</td>
<td>Surrounding areas</td>
<td>Long term</td>
<td>Definite</td>
<td>Beneficial</td>
<td>HIGHLY BENEFICIAL</td>
<td>• N/A</td>
<td>HIGHLY BENEFICIAL</td>
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<tr>
<td><strong>HERITAGE</strong></td>
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<tr>
<td>Possible cultural artefacts in some of the affected sedimentary layers.</td>
<td>Direct</td>
<td>Bridge construction may affect possible cultural artefacts found in some of the surrounding sedimentary layers.</td>
<td>Project Level</td>
<td>Permanent</td>
<td>Possible</td>
<td>Severe</td>
<td>LOW NEGATIVE</td>
<td>• A desktop Heritage Impact Assessment must be conducted to identify cultural heritage resources.</td>
<td>LOW NEGATIVE</td>
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<td><strong>BRIDGE DESIGN</strong></td>
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<tr>
<td>Environmental damage and other impacts on the river</td>
<td>Direct</td>
<td>Inappropriate design and alignment of the pedestrian bridge may result in water flow problems such as hampering flow or bank erosion.</td>
<td>Project level</td>
<td>Long term</td>
<td>Possible</td>
<td>Highly Severe</td>
<td>HIGH NEGATIVE</td>
<td>• Ensure that the bridge design does not impede the flow of water or cause erosion of the river banks.</td>
<td>MODERATE NEGATIVE</td>
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<td><strong>WASTE MANAGEMENT</strong></td>
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<tr>
<td>Waste Storage</td>
<td>Direct</td>
<td>Failure to plan for waste management storage can lead to poor waste management practises resulting in unsanitary conditions.</td>
<td>Localised</td>
<td>Long term</td>
<td>Definite</td>
<td>Highly severe</td>
<td>HIGH NEGATIVE</td>
<td>• Ensure that proper waste management activities are included in the Construction Environmental Management Programme (EMPr) and is implemented.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td><strong>STORMWATER MANAGEMENT</strong></td>
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<tr>
<td>Inadequate planning for and routing of stormwater</td>
<td>Direct</td>
<td>Inappropriate routing of stormwater will lead to stream sedimentation and erosion of the surrounding area.</td>
<td>Surrounding areas</td>
<td>Long term</td>
<td>Possible</td>
<td>Severe</td>
<td>MODERATE NEGATIVE</td>
<td>A stormwater management plan must be drawn up by a qualified engineer and approved by DWS.</td>
<td>LOW NEGATIVE</td>
</tr>
</tbody>
</table>

#### Table 2: Issues and Impacts during the Construction Phase of the proposed Kwa-Tshatshu Pedestrian Bridge

<table>
<thead>
<tr>
<th>ISSUE OR ACTIVITY</th>
<th>DIRECT/INDIRECT/ CUMULATIVE</th>
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<th>MITIGATION MEASURES</th>
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<tr>
<td><strong>CONSTRUCTION PHASE</strong></td>
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<td><strong>NOISE POLLUTION</strong></td>
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<tr>
<td>Construction vehicles on-site</td>
<td>Direct</td>
<td>During construction there will be an increase in the ambient noise level on-site and on surrounding properties.</td>
<td>Localised</td>
<td>Short term</td>
<td>Definite</td>
<td>Moderately Severe</td>
<td>MODERATE NEGATIVE</td>
<td>Construction activities must be limited to the hours 08:00 – 17:00.</td>
<td>LOW NEGATIVE</td>
</tr>
<tr>
<td>Blasting</td>
<td>Direct</td>
<td>Blasting of river bed rock may result in noise and safety impacts.</td>
<td>Localised</td>
<td>Short term</td>
<td>Possible</td>
<td>Moderately Severe</td>
<td>MODERATE NEGATIVE</td>
<td>Sufficient warning must be provided to the surrounding residents on the times of activity. The use of a siren for at least 15 minutes after blasting should be used to notify all surrounding residents. Safety warning signs must be provided around the construction and activity sites.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td>AIR POLLUTION (DUST)</td>
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<tr>
<td>Construction vehicles on site and entering site</td>
<td>Direct</td>
<td>During construction, soil stripping and clearing can result in soil erosion and resultant sedimentation of the river.</td>
<td>Localised</td>
<td>Short term</td>
<td>Possible</td>
<td>Severe</td>
<td>LOW NEGATIVE</td>
<td>After construction, all slopes must be stabilised to reduce the risk of erosion. Where possible, stockpiled topsoil must be used for rehabilitation.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td>SOIL EROSION</td>
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<tr>
<td>Soil erosion</td>
<td>Direct</td>
<td>During construction, stripping and clearing can result in soil erosion and resultant sedimentation of the river.</td>
<td>Localised</td>
<td>Short term</td>
<td>Possible</td>
<td>Moderately severe</td>
<td>MODERATE NEGATIVE</td>
<td>After construction, all slopes should be stabilised to reduce the risk of erosion. Where possible, stockpile topsoil must be used in rehabilitation.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td>WASTE MANAGEMENT</td>
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<tr>
<td>Construction rubble and refuse disposal</td>
<td>Direct</td>
<td>During construction, the inappropriate disposal of waste can result in the pollution of sensitive environments (e.g. ground and water).</td>
<td>Localised</td>
<td>Short term</td>
<td>Possible</td>
<td>Moderately severe</td>
<td>MODERATE NEGATIVE</td>
<td>Ensure that all rubble and refuse is collected and disposed of at a licenced landfill site (e.g. Round Hill landfill site). A post-construction audit conducted by an independent ECO must ensure compliance with this mitigation. An EMP incorporating waste management issues during the construction phase of the project has been developed and must be implemented.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td>SOCIAL</td>
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<tr>
<td>Heritage Resources</td>
<td>Direct</td>
<td>Damage to artefacts of historical importance unearthed during construction</td>
<td>Localised</td>
<td>Permanent</td>
<td>Possible</td>
<td>Moderately severe</td>
<td>MODERATE NEGATIVE</td>
<td>If any culturally or historically significant artefacts are observed during construction, SAHRA and ECPHRA must be notified immediately.</td>
<td>LOW NEGATIVE</td>
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<tr>
<td>SOCIO-ECONOMIC</td>
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<td>Temporary job opportunities</td>
<td>Direct</td>
<td>During the construction phase, there will be an increase in temporary job opportunities.</td>
<td>Surrounding areas</td>
<td>Short term</td>
<td>Definite</td>
<td>Beneficial</td>
<td>LOW BENEFICIAL</td>
<td>As far as possible, people in the surrounding communities should be the preferred choice for filling contract construction vacancies.</td>
<td>LOW BENEFICIAL</td>
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<tr>
<td>RIVER HEALTH</td>
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<td>River impacted by construction of bridge</td>
<td>Direct</td>
<td>Potential negative impacts on the Yellowwoods River, E.g. disturbance to river bed and banks due to construction materials and vehicles.</td>
<td>Project level</td>
<td>Short term</td>
<td>Definite</td>
<td>Very severe</td>
<td>HIGH NEGATIVE</td>
<td>Ensure that no construction rubble is left in the river after completion of work. The river must be returned to its natural state after construction. Monitoring and assessment of the state of the river must be undertaken by an appointed Environmental Control Officer.</td>
<td>LOW NEGATIVE</td>
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</tbody>
</table>
ISSUE OR ACTIVITY | DIRECT/INDIRECT/CUMULATIVE | GENERAL AND SPECIALIST STUDY IMPACTS | SPATIAL SCALE | TEMPORAL SCALE/DURATION | CERTAINTY SCALE/LIKELIHOOD | SEVERITY/BENEFICIAL SCALE | SIGNIFICANCE PRE-MITIGATION | MITIGATION MEASURES | SIGNIFICANCE POST-MITIGATION
---|---|---|---|---|---|---|---|---|---
River pollution | Direct | Oil spills from machines and vehicles, and cement mixing can result in the pollution of the river. | Localised | Short term | Probable | Very severe | HIGH NEGATIVE | • Concrete and cement must not be mixed directly on the ground, or during rainfall events when the potential for transport to the river is the greatest. • Concrete must only be mixed in a demarcated area, on impermeable substratum. • Construction machinery must be stored in bunded areas or over oil trays, to avoid soil contamination as a result of an oil spillage. | LOW NEGATIVE

Table 3: Issues and Impacts during the Operation Phase of the proposed Becclesfarm Bridge.

| ISSUE OR ACTIVITY | DIRECT/INDIRECT/CUMULATIVE | GENERAL AND SPECIALIST STUDY IMPACTS | SPATIAL SCALE | TEMPORAL SCALE/DURATION | CERTAINTY SCALE/LIKELIHOOD | SEVERITY/BENEFICIAL SCALE | SIGNIFICANCE PRE-MITIGATION | MITIGATION MEASURES | SIGNIFICANCE POST-MITIGATION
---|---|---|---|---|---|---|---|---|---
Erosion | Direct | Severe erosion may result from poor slope stabilisation and poor rehabilitation/re-vegetation. | Surrounding areas | Long term | Possible | Severe | MODERATE NEGATIVE | • Recommendations of the Stormwater management plan must be implemented. • Vegetation should be retained where possible to avoid soil erosion. • Re-vegetation of disturbed surfaces must occur immediately after the construction activities are completed to encourage soil binding. | LOW NEGATIVE

Table 4: NO-GO alternative

| ISSUE OR ACTIVITY | DIRECT/INDIRECT/CUMULATIVE | GENERAL AND SPECIALIST STUDY IMPACTS | SPATIAL SCALE | TEMPORAL SCALE/DURATION | CERTAINTY SCALE/LIKELIHOOD | SEVERITY/BENEFICIAL SCALE | SIGNIFICANCE PRE-MITIGATION | MITIGATION MEASURES | SIGNIFICANCE POST-MITIGATION
---|---|---|---|---|---|---|---|---|---
Soil erosion and stream sedimentation | Direct | Continued erosion of the areas surrounding the current informal stream crossings. | Surrounding areas | Long term | Probable | Moderate severe | MODERATE NEGATIVE | • The proposed bridge will reduce the risk of erosion through a formal hardened surface that stabilises the areas surrounding the river. | MODERATE NEGATIVE

High pedestrian and vehicle accidents | Direct | There is a high risk of accidents when crossing the river using the informal crossing routes. | Project level | Long term | Probable | Moderate severe | MODERATE NEGATIVE | • The proposed bridge will reduce the risk of river crossing accidents, by providing a formal, safe and stable bridge. | MODERATE NEGATIVE