



## **Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)**

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### Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. 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.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. 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 application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

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### **DEPARTMENTAL DETAILS**

Gauteng Department of Agriculture and Rural Development  
Attention: Administrative Unit of the of the Environmental Affairs Branch  
P.O. Box 8769  
Johannesburg  
2000

Administrative Unit of the of the Environmental Affairs Branch  
Ground floor Diamond Building  
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377  
Department central telephone number: (011) 240 2500

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(For official use only)

|                               |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|
| <b>NEAS Reference Number:</b> |  |  |  |  |  |  |
| <b>File Reference Number:</b> |  |  |  |  |  |  |
| <b>Application Number:</b>    |  |  |  |  |  |  |
| <b>Date Received:</b>         |  |  |  |  |  |  |

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

Is a closure plan applicable for this application and has it been included in this report?

No

if not, state reasons for not including the closure plan.

The application is for the widening of an existing bridge and road and no closure plan is applicable to this application.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

Yes

If no, state reasons for not attaching the list.

Have State Departments including the competent authority commented?

Yes

If no, why?

# SECTION A: ACTIVITY INFORMATION

## 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

Project title (must be the same name as per application form):

**THE PROPOSED WIDENING OF BRIDGE 649 AND A SECTION OF ROAD P249, GAUTENG PROVINCE**

Select the appropriate box

The application is for an upgrade of an existing development  The application is for a new development  Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES  NO

If yes, describe the legislation and the Competent Authority administering such legislation

Application of a Water Use License or General Authorisation from the Department of Water and Sanitation

If yes, have you applied for the authorisation(s)?

YES  NO

If yes, have you received approval(s)? (attach in appropriate appendix)

YES  NO

## 2. 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:

| Title of legislation, policy or guideline:   | Administering authority:   | Promulgation Date:                        |
|--|--|---|
| National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).  | National & Provincial  | 27 November 1998                          |
| <b>National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended.</b><br><br>The National Environmental Management Act, 1998 (Act No. 107 of 1998): [NEMA] was enacted in November 1998. NEMA provides for cooperative governance by establishing principles for decision-making on matters affected the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions, public participation and sustainable development. | National and Provincial environmental authorities<br><br>Gauteng Department of Agriculture and Rural Development (GDARD) | 27 November 1998                          |
| <b>Environmental Impact Assessment Regulations, 2014 as amended</b>  | Gauteng Department of Agriculture and Rural Development (GDARD)  | 4 December 2014<br>(amended 7 April 2017) |
| <b>National Environmental Management Act, 1998 (Act No. 107 of 1998)</b><br><br><b>Publication of need and desirability</b>  | National and Provincial environmental authorities  | 5 October 2012                            |

|   |   |                  |
|---|---|------------------|
| <b>guideline in terms of the Environmental Impact Assessment Regulations Notice 792 of 2012</b>   | Gauteng Department of Agriculture and Rural Development (GDARD) |                  |
| <b>National Water Act, 1998 (Act No. 36 of 1998)</b><br><br>The application for a Water Use License in terms of the National Water Act, 1998.   | Department of Water and Sanitation                              | 20 August 1998   |
| <b>National Heritage Resources Act, 1999 (Act No. 25 of 1999)</b><br><br>If section 38 of the National Heritage Resources Act 25 of 1999 is applicable to the project, a permit is required from SAHRA or provincial heritage authority.  | SAHRA or provincial heritage authority                          | 28 April 1999    |
| <b>National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</b><br><br>Provincial and National legislation was evaluated in order to provide lists of any plant or animal species that have protected status. The most important legislation is the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). | Gauteng Department of Agriculture and Rural Development         | 1 September 2004 |
| <b>Integrated Environmental Management Guideline Series</b> <ul style="list-style-type: none"> <li>Guideline 3: General Guide to the EIA Regulations</li> <li>Guideline 4: Public Participation</li> <li>Guideline 5: Assessment of Alternatives and impacts</li> </ul>   | National Department of Environmental Affairs                    | 20 October 2006  |
| <b>GDARD Minimum Requirements for Biodiversity Assessments (2012)</b>   | Gauteng Department of Agriculture and Rural Development (GDARD) | 2012             |

Description of compliance with the relevant legislation, policy or guideline:

| Legislation, policy or guideline  | Description of compliance   |
|---|---|
| <b>National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended.</b><br><br>EIA Regulations 2014 in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998). | An application for authorization of the widening of bridge and road is applied for at the relevant authority. |
| <b>National Water Act, 1998 (Act No. 36 of 1998)</b><br><br>The application for a Water Use License   | A water use license or GA is applied for at the Department of Water and Sanitation.                           |

|   |  |
|---|--|
| or GA in terms of the National Water Act, 1998.   |  |
| <b>National Heritage Resources Act, 1999 (Act No. 25 of 1999)</b><br><br>Application for permit to alter the bridge.  | A permit needs to be applied for at the Provincial Heritage Resources Agency as the bridge is older than 60 years. |
| <b>National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</b><br><br>Provincial and National legislation was evaluated in order to provide lists of any plant or animal species that have protected status. The most important legislation is the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). | A specialist aquatic and biodiversity study was undertaken in terms of this act.                                   |
| <b>Integrated Environmental Management Guideline Series</b> <ul style="list-style-type: none"> <li>• Guideline 3: General Guide to the EIA Regulations</li> <li>• Guideline 4: Public Participation</li> <li>• Guideline 5: Assessment of Alternatives and impacts</li> </ul>   | The guidelines were consulted during the Basic Assessment process.   |
| <b>GDARD Minimum Requirements for Biodiversity Assessments (2012)</b>   | The guidelines were consulted by the specialist consultant.  |

### 3. ALTERNATIVES

Describe the proposal and 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. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not include the no go option into the alternative table below.**

**Note:** 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.

Please describe the process followed to reach (decide on) the list of alternatives below

The bridge 649 and road R249 are both existing infrastructure and any site alternatives would, therefore not be a viable alternative option.

Design alternatives were, therefore further explored with regard to this project. The consulting engineers to the project, KBK Engineers looked at design alternatives.

Provide a description of the alternatives considered

| No. | Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other") | Description  |
|-----|--|--|
| 1   | Proposal   | The widening of bridge 649 and a Section of Road P249 by adding one lane and a shoulder to both sides of the bridge. |
| 2   | Alternative 1 Design alternative   | The widening of bridge 649 and a section of road by adding two lanes and a shoulder to the                           |

|   |               |                         |
|---|---------------|-------------------------|
|   |               | one side of the bridge. |
| 3 | Alternative 2 | None                    |
|   |               |                         |

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

An alternative is provided and assessed in the BAR.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (**Total environmental (landscaping, parking, etc.) and the building footprint**)

**Size of the activity:**

|  |
|--|
|  |
|--|

**Alternatives:**

Alternative 1 (if any)

|  |
|--|
|  |
|--|

Alternative 2 (if any)

|      |
|------|
| None |
|------|

Ha/ m<sup>2</sup>

or, for linear activities:

Proposed activity

**Length of the activity:**

|   |
|---|
| 0.356 ha<br>(8.9m widen over a<br>400m length of<br>road) |
|---|

**Alternatives:**

Alternative 1 (if any)

|   |
|---|
| 0.356 ha<br>(8.9m widen over a<br>400m length of<br>road) |
|---|

Alternative 2 (if any)

|  |
|--|
|  |
|--|

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

**Size of the site/servitude:**

|                                |
|--------------------------------|
| 1.28 ha<br>32 m road servitude |
|--------------------------------|

**Alternatives:**

Alternative 1 (if any)

|                                |
|--------------------------------|
| 1.28 ha<br>32 m road servitude |
|--------------------------------|

Alternative 2 (if any)

|      |
|------|
| None |
|------|

Ha/m<sup>2</sup>

#### 5. SITE ACCESS

**Proposal**

Does ready access to the site exist, or is access directly from an existing road?

|     |    |
|-----|----|
| YES | NO |
| X   |    |
| m   |    |

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

Describe the type of access road planned:

|  |
|--|
|  |
|--|

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**Alternative 1**

Does ready access to the site exist, or is access directly from an existing road?

|     |    |
|-----|----|
| YES | NO |
| X   |    |
| m   |    |

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

Describe the type of access road planned:

|  |
|--|
|  |
|--|

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

## Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

|     |    |
|-----|----|
| 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:

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

## PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated

|   |
|---|
| 0 |
|---|

Number of times

(only complete when applicable)

### 6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500
  - A1 = 1: 1000
  - A2 = 1: 2000
  - A3 = 1: 4000
  - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

### FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

## 7. SITE PHOTOGRAPHS

Colour photographs from the center 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 the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

## 8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 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 to be attached in the appropriate Appendix.

# SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

**Note:** Complete Section B for the proposal and alternative(s) (if necessary)

### Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route  times

### Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives  times (complete only when appropriate)

### Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route  (complete only when appropriate for above)

Section B – Location/route Alternative No.  (complete only when appropriate for above)

## 1. PROPERTY DESCRIPTION

**Property description:**  
(Including Physical Address and  
Farm name, portion etc.)



## 2. 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 decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

|                      |                       |
|----------------------|-----------------------|
| <b>Latitude (S):</b> | <b>Longitude (E):</b> |
| °                    | °                     |

In the case of linear activities:

Alternative:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

|                      |                       |
|----------------------|-----------------------|
| <b>Latitude (S):</b> | <b>Longitude (E):</b> |
| 25°47'52.16"°        | 27°59'30.18"°         |
| 25°47'45.84"°        | 27°59'26.88"°         |
| 25°47'40.49"°        | 27°59'24.45"°         |

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

n/a

The 21 digit Surveyor General code of each cadastral land parcel

|          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSAL | T | 0 | J | Q | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 8 | 0 | 0 | 0 | 0 | 2 |
| PROPOSAL | T | 0 | J | Q | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 8 | 0 | 0 | 0 | 0 | 3 |
| ALT. 1   | T | 0 | J | Q | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 8 | 0 | 0 | 0 | 0 | 2 |
| ALT. 1   | T | 0 | J | Q | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 8 | 0 | 0 | 0 | 0 | 3 |

## 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

## 4. LOCATION IN LANDSCAPE

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

|           |         |                          |        |       |                            |               |
|-----------|---------|--------------------------|--------|-------|----------------------------|---------------|
| Ridgeline | Plateau | Side slope of hill/ridge | Valley | Plain | Undulating plain/low hills | River front x |
|-----------|---------|--------------------------|--------|-------|----------------------------|---------------|

## 5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

a) Is the site located on any of the following?

- Shallow water table (less than 1.5m deep)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

|       |      |
|-------|------|
| YES   | NO x |
| YES   | NO x |
| YES x | NO   |
| YES   | NO x |
| YES   | NO x |
| YES   | NO x |
| YES   | NO x |
| YES   | NO x |

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)

YES    NO X

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

|                      |                       |
|----------------------|-----------------------|
| <b>Latitude (S):</b> | <b>Longitude (E):</b> |
| °                    | °                     |

c) are any caves located within a 300m radius of the site(s)  YES  NO X

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

|                      |                       |
|----------------------|-----------------------|
| <b>Latitude (S):</b> | <b>Longitude (E):</b> |
|                      |                       |

d) are any sinkholes located within a 300m radius of the site(s)  YES  NO X

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

|                      |                       |
|----------------------|-----------------------|
| <b>Latitude (S):</b> | <b>Longitude (E):</b> |
|                      |                       |

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

## 6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?  YES  NO X

**Please note:** The Department may request specialist input/studies in respect of the above.

## 7. GROUNDCOVER

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

Indicate the types of groundcover present on the site and include the estimated percentage found on site

|                                      |  |  |  |                                |
|--------------------------------------|--|--|--|--------------------------------|
| Natural veld - good condition<br>% = | Natural veld with scattered aliens<br>% = 30 | Natural veld with heavy alien infestation<br>% = | Veld dominated by alien species<br>% = | Landscaped (vegetation)<br>% = |
| Sport field<br>% =                   | Cultivated land<br>% =                       | Paved surface (hard landscaping)<br>% = 70       | Building or other structure<br>% =     | Bare soil<br>% =               |

**Please note:** The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site  YES  NO x

If YES, specify and explain:

|  |
|--|
|  |
|--|

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.  YES  NO x

If YES, specify and explain:

|  |
|--|
|  |
|--|

Are there any special or sensitive habitats or other natural features present on the site?  YES x  NO

If YES, specify and explain:

There is only one watercourse in the study area, namely the Hennops River, over which Bridge B649 crosses. The watercourse is a perennial river. According to the specialist study undertaken for the project by Flori, the following:

The study area is situated within the Magaliesberg Important Bird Area (IBA) and close to the Vaal Grasslands Focus Area (NPAES). Priority areas include formal and informal protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy (NPAES) focus areas.

Was a specialist consulted to assist with completing this section  YES x  NO  
If yes complete specialist details

Name of the specialist: Mr Johannes Oren Maree  
 Qualification(s) of the specialist: M.Sc  
 Postal address: PO Box 7222; Modimolle  
 Postal code: 0510  
 Telephone: (082) 564-1211 Cell: (082) 564-1211  
 E-mail: johannes@flori.co.za Fax: None  
 Are any further specialist studies recommended by the specialist? YES NO x  
 If YES, specify: \_\_\_\_\_  
 If YES, is such a report(s) attached? YES NO  
 If YES list the specialist reports attached below

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

**Please note;** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

### 8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

|   |   |   |                                       |   |
|---|---|---|---------------------------------------|---|
| 1. Vacant land                          | 2. River, stream, wetland x                       | 3. Nature conservation area                     | 4. Public open space                  | 5. Koppie or ridge                            |
| 6. Dam or reservoir                     | 7. Agriculture                                    | 8. Low density residential x                    | 9. Medium to high density residential | 10. Informal residential                      |
| 11. Old age home                        | 12. Retail  | 13. Offices                                     | 14. Commercial & warehousing          | 15. Light industrial                          |
| 16. Heavy industrial <sup>AN</sup>      | 17. Hospitality facility x                        | 18. Church                                      | 19. Education facilities              | 20. Sport facilities                          |
| 21. Golf course/polo fields             | 22. Airport <sup>N</sup>                          | 23. Train station or shunting yard <sup>N</sup> | 24. Railway line <sup>N</sup>         | 25. Major road (4 lanes or more) <sup>N</sup> |
| 26. Sewage treatment plant <sup>A</sup> | 27. Landfill or waste treatment site <sup>A</sup> | 28. Historical building                         | 29. Graveyard                         | 30. Archeological site                        |
| 31. Open cast mine                      | 32. Underground mine                              | 33. Spoil heap or slimes dam <sup>A</sup>       | 34. Small Holdings x                  |   |
| Other land uses (describe):             | Provincial road                                   |   |                                       |   |

**NOTE:** Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

|       |    |    |                 |    |    |
|-------|----|----|-----------------|----|----|
| NORTH |    |    |                 |    |    |
|       | 34 | 34 | Provincial Road | 34 | 34 |
|       | 34 | 34 | Provincial Road | 17 | 34 |
| WEST  | 34 | 34 |                 | 34 | 34 |
|       | 34 | 34 | Provincial Road | 34 | 34 |
|       | 34 | 34 | Provincial Road | 34 | 34 |
| SOUTH |    |    |                 |    |    |

**Note:** More than one (1) Land-use may be indicated in a block

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an <sup>A</sup> and with an <sup>N</sup> respectively.

Have specialist reports been attached  
If yes indicate the type of reports below

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

|  |
|--|
|  |
|--|

## 9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

### 1. Introduction

The City of Tshwane adopted its Integrated Development Plan (IDP) in 2011 which maps out the delivery agenda of the current term of office of the City for the period 2011 to 2016. Part of this process was the establishment of the seven (7) service delivery regions and this project falls within Region 3. This region is bordered by the Magaliesberg Mountain range to the north and the N4 freeway to the east, including a small part of East Lynne and Silverton.

### 2. Population

The population of Gauteng totals 13.1 million which is 24.4% of South Africa's total population of 53.7 million. Tshwane makes up more than 3.1 million of the total provincial population. Region 3 has the second highest population concentration of 649 831.

### 3. Age Groups

The age groups from 20 to 34 years are the largest in Region 3. This falls within the economically active age group, which will require employment opportunities in the area. It may also indicate that young working people prefer to live in the region near the CBD to be close to employment. There are relatively few people in the age group below 16, a possible indicator of a lower number of families staying in the region.

### 4. Employment

Approximately 19% of economically active persons are permanently unemployed. This is a lower figure than neighboring regions 1 and 2.

### 5. Level of Education

Region 3 has the following:

- 2% of adults have no schooling.
- 28% of adults are schooled up to grade 12.

Sources:

City of Tshwane approved Local Spatial Development Framework for Region 3.

## 10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
  - (i) exceeding 5 000 m2 in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) 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?

|       |    |
|-------|----|
| YES x | NO |
|-------|----|

If YES, explain:

The bridge is older than 60 years, originally built in 1940. In accordance with Section 38 of the NHRA, an independent heritage consultant, Dr J van Schalkwyk was appointed to compile a Notification of Intent to Develop and submitted to the South African Heritage Resources Agency. Please see the report included in Appendix G.

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

Due to ever increasing population figures resulting in increased traffic volumes, especially in Gauteng Province, upgrading and maintenance of infrastructure is an unavoidable and continuous process.

- It is our viewpoint that the proposed maintenance on Bridge 649 can continue on condition of the Provincial Heritage Resource Agency issue a permit to this effect and that the recommended documentation of the process is completed by a heritage practitioner in consultation with the consulting engineers.

Will any building or structure older than 60 years be affected in any way?  
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

|       |    |
|-------|----|
| YES x | NO |
| YES x | NO |

If yes, please attached the comments from SAHRA in the appropriate Appendix

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

### 2. LOCAL AUTHORITY PARTICIPATION

Local 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 thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

|   |                             |
|---|-----------------------------|
| YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> |
|---|-----------------------------|

If yes, has any comments been received from the local authority?

|                              |                             |
|------------------------------|-----------------------------|
| YES <input type="checkbox"/> | NO <input type="checkbox"/> |
|------------------------------|-----------------------------|

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

|  |
|--|
|  |
|--|

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

|  |
|--|
|  |
|--|

### 3. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

|                              |                             |
|------------------------------|-----------------------------|
| YES <input type="checkbox"/> | NO <input type="checkbox"/> |
|------------------------------|-----------------------------|

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

|  |
|--|
|  |
|--|

If "NO" briefly explain why no comments have been received

|   |
|---|
| The servitude holder is also the applicant for this project. There are no other services that will be affected with the widening of the bridge. |
|---|

### 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process 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 and ratepayers associations. 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 flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

### 5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&APs

# SECTION D: RESOURCE USE AND PROCESS DETAILS

**Note:** Section D is to be completed for the proposal and alternative(s) (if necessary)

## Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives  times (complete only when appropriate)

Section D Alternative No.  (complete only when appropriate for above)

## 1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

### Solid waste management

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

|       |    |
|-------|----|
| YES x | NO |
|-------|----|

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

|                          |
|--------------------------|
| Aprpr 100 m <sup>3</sup> |
|--------------------------|

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

All office (paper) and domestic refuse (foodstuffs, plastic, glass etc.) generated at the site could be placed in separate containers for recycling purposes.

The building rubble and solid construction waste (such as sand, gravel, concrete and waste material) that cannot be used for filling and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a City of Tshwane licensed landfill site.

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

The solid waste will be removed from the site and disposed of in a registered waste disposal site within the City of Tshwane.

Will the activity produce solid waste during its operational phase?

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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

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

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

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

|       |    |
|-------|----|
| YES x | NO |
|-------|----|

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

**Note:** 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, 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?

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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?

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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

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

All office (paper) and domestic refuse (foodstuffs, plastic, glass etc.) generated at the site could be placed in separate containers for recycling purposes.

**Liquid effluent (other than domestic sewage)**

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

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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

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

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

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

|     |      |
|-----|------|
| Yes | NO x |
|-----|------|

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

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

If yes describe the nature of the effluent and how it will be disposed.

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

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

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

If yes, provide the particulars of the facility:

|                 |       |  |
|-----------------|-------|--|
| Facility name:  |       |  |
| Contact person: |       |  |
| Postal address: |       |  |
| Postal code:    |       |  |
| Telephone:      | Cell: |  |
| E-mail:         | Fax:  |  |

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

No wastewater is applicable to this application. A small amount of water will be used in the construction camp site during the construction process.

**Liquid effluent (domestic sewage)**

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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

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

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

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

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

If yes describe how it will be treated and disposed off.

**Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

|     |      |
|-----|------|
| YES | NO x |
|-----|------|

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 emissions in terms of type and concentration:

**2. WATER USE**

Indicate the source(s) of water that will be used for the activity

|                |                              |             |                               |         |                                    |
|----------------|------------------------------|-------------|-------------------------------|---------|------------------------------------|
| Municipal<br>x | Directly from<br>water board | groundwater | river, stream, dam or<br>lake | Other x | the activity will not use<br>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:

|        |
|--------|
| liters |
|--------|

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

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

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, list the permits required

If yes, have you applied for the water use permit(s)?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, have you received approval(s)? (attached in appropriate appendix)

|     |    |
|-----|----|
| YES | NO |
|-----|----|



### 3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Municipal Power Supply.

If power supply is not available, where will power be sourced from?

Generators will be used if power is not available.

### 4. ENERGY EFFICIENCY

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

The activity does not require any energy to be operational as it is an existing road and bridge to be widened.

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

The mobile crane that will be used during construction, will be diesel operated.

A standby generator will provide power in the case of power outages during construction.

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, 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 as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

The following provides a summary of the issues raised:

1. How will the flow of traffic be affected from Sandton to Hartebeespoort and vice versa?
2. Will our client's rest be affected by the project?
3. How long will it take to complete the project?
4. Construction workers must be quiet during construction
5. Can we claim compensation from the Department of Transport for the possible loss of business as a result of the "stop-go" system that will be implemented?

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

A response given is as follows:

1. It is foreseen that the traffic will be disrupted for approximately 3 months.
2. The existing concrete on the bridge will be demolished and there will also be the standard construction noise associated with this project.
3. It is estimated that the project will take approximately 12 months to complete.
4. The contractor will be informed as such.
5. It is not foreseen that compensation could be claimed.

### 2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

#### **METHODOLOGY USED IN DETERMINING SIGNIFICANCE OF POTENTIAL IMPACTS**

Potential environmental impacts on the environment will be determined in terms of the following in order to determine the significance of each impact:

- Probability (how likely is it that the impact will occur?)
- Magnitude (how severe will the impact be?)
- Duration (how long will the impact last?)
- Scale of the impact (what size of the area will be affected?)

Thereafter, mitigation measures will be proposed in order to reduce or eliminate negative impacts and enhance positive impacts. The impact of the proposed activity

on the environment will be considered for the pre-construction, construction and operational phases. The necessary mitigation measures will be consolidated in the form of an Environmental Management Programme (EMPr).

### Assessment of significance – method

The significance of every environmental impact identified will be determined using the following approach:

In assessing the potential significance of an impact two aspects will be considered:

- i) Occurrence
- ii) Severity

Occurrence will be sub-divided into:

- Probability of occurrence
- Duration of occurrence

Severity will be sub-divided into:

- Magnitude (severity) of impact
- Scale/extent of impact

In order to assess each of these factors for each impact, ranking scales were employed as follows:

|                         |                              |
|-------------------------|------------------------------|
| <b>Probability:</b>     | <b>Duration:</b>             |
| 5 - Definite/don't know | 5 - Permanent                |
| 4 - Highly probable     | 4 - Long-term*               |
| 3 - Medium probability  | 3 - Medium-term (5-15 years) |
| 2 - Low probability     | 2 - Short-term (0-5 years)   |
| 1 – Improbable          | 1 - Immediate                |
| 0 – None                | 0 - None                     |
| <b>Scale:</b>           | <b>Magnitude:</b>            |
| 5 – International       | 10 - Very high/don't know    |
| 4 – National            | 8 - High                     |
| 3 – Regional            | 6 - Moderate                 |
| 2 – Local               | 4 - Low                      |
| 1 - Site only           | 2 - Minor                    |
| 0 – None                | 0 - None                     |

\*impact ceases after operational life of the activity

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the **construction phase** for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

### Proposal

| Potential impacts: | Significance rating of impacts (positive or | Proposed mitigation: | Significance rating of impacts after mitigation: | Risk of the impact and mitigation not being implemented |
|--------------------|---|----------------------|--|---|
|                    |   |                      |  |   |

|   |                   |  |            |            |
|---|-------------------|--|------------|------------|
|   | <b>negative):</b> |  |            |            |
| <b>AQUATIC</b>  |                   |  |            |            |
| <p>Loss of Riparian/Wetland Habitat and Ecological Structure</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Proliferation of alien and weed species in disturbed areas will lead to altered vegetation communities within the riparian and buffer zone;</li> <li>• Erosion of soils leading to increased incision and sedimentation of the riparian and aquatic features.</li> </ul> | <b>Medium</b>     | <ul style="list-style-type: none"> <li>• No temporary accommodation or temporary storage facilities may be setup within 50m of the any river, stream, drainage line, wetland or farm dam.</li> <li>• No temporary facilities (including portable toilets) to be positioned within 50m of the edge of the Hennops River.</li> <li>• Only existing roads to be used by vehicles during construction as far as possible. Especially in terms of crossing over the river.</li> <li>• Project activities close to watercourses to be carefully monitored in terms of erosion and possible resulting siltation of watercourses. Weekly inspection of work areas around watercourses to be conducted. Any signs of new erosion and siltation to be rectified immediately. Special attention must be given to</li> </ul> | <b>Low</b> | <b>Low</b> |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  | <p>the areas around the bridge pillars and the sloped riverbanks.</p> <ul style="list-style-type: none"> <li>• Disturbed surface areas to be rehabilitated as part of the construction phase.</li> <li>• All construction material, equipment and any foreign objects brought into the area by contractors to be removed immediately after completion of the construction phase.</li> <li>• Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site. Efforts need to be made to ensure that no debris and litter from contractors gets into the river system. This includes general litter such as plastic bottles and papers.</li> <li>• Restrict the proposed upgrade to the winter months if possible to avoid sedimentation of riparian features;</li> </ul> |  |  |
|--|--|--|--|--|

|  |                      |   |                   |                   |
|--|----------------------|---|-------------------|-------------------|
| <p>Changes to Riparian/Wetland Ecological and Sociocultural Service Provision</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Erosion and incision due to catchment hardening and stream flow alterations</li> <li>• Proliferation of alien and weed species in disturbed areas will lead to altered vegetation communities within the riparian as well as buffer zone.</li> </ul> | <p><b>Medium</b></p> | <ul style="list-style-type: none"> <li>• Regularly monitor and maintain the state of the infrastructure;</li> <li>• Ensure that all activities impacting on water resources of the study area are managed according to the relevant DWA Licensing regulations.</li> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected by construction should be rehabilitated upon completion of the construction phase of the development.</li> <li>• Areas should be reseeded with indigenous grasses as required.</li> </ul> | <p><b>Low</b></p> | <p><b>Low</b></p> |
| <p>Changes to Riparian Hydrological Function and Sediment Balance</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Sedimentation of the system may lead to altered riparian areas if these habitats are not effectively rehabilitated;</li> <li>• Erosion and incision of the riparian areas may</li> </ul>   | <p><b>Medium</b></p> | <ul style="list-style-type: none"> <li>• Water resources should be managed in line with the reserve determination for the catchment;</li> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected</li> </ul>  | <p><b>Low</b></p> | <p><b>Low</b></p> |

|  |                      |  |                   |                   |
|--|----------------------|--|-------------------|-------------------|
| <p>occur if these habitats are not effectively rehabilitated;</p> <ul style="list-style-type: none"> <li>• Loss of riparian biodiversity and habitat may occur; and</li> <li>• The extent of the riparian areas may be reduced due to poor management of water resources.</li> </ul>   |                      | <p>by construction should be rehabilitated upon completion of the construction phase of the development.</p> <ul style="list-style-type: none"> <li>• Areas should be reseeded with indigenous grasses as required.</li> <li>• Restrict construction to the drier winter months, if possible, to avoid sedimentation of wetland features in the vicinity of the proposed development.</li> </ul>   |                   |                   |
| <p>Changes to Instream Habitat</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Sedimentation of the system as a result of erosion may lead to altered instream habitat in a downstream direction;</li> <li>• Some changes to the hydrology of the system may occur affecting downstream habitat and infrastructure.</li> </ul> | <p><b>Medium</b></p> | <ul style="list-style-type: none"> <li>• Any infrastructure within the Hennops River should be placed on existing boulders or bedrock outcrop in order to limit the impact of the structure on streamflow, substrate and aquatic function and service provision.</li> <li>• Ensure the strategic placement of infrastructure in order to prevent any unnecessary obstruction of flow in the channel;</li> <li>• Only disturb the vegetation and stones/boulders that are absolutely necessary for</li> </ul> | <p><b>Low</b></p> | <p><b>Low</b></p> |

|  |               |  |            |            |
|--|---------------|--|------------|------------|
|  |               | <p>access purposes, and only remove vegetation and stones/boulders if absolutely necessary;</p> <ul style="list-style-type: none"> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected by construction should be rehabilitated upon completion of the construction phase of the development. Areas should be reseeded with indigenous grasses as required;</li> <li>• Regularly monitor and maintain the state of the infrastructure.</li> </ul> |            |            |
| <p>Impacts on Instream Biota</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Some changes to the hydrology of the system may occur affecting instream and riparian habitat and hence aquatic biodiversity;</li> <li>• Increased stormwater runoff into the system resulting in the displacement or loss of biota.</li> <li>• Increased erosion and sedimentation in the channel</li> </ul> | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Ensure the strategic placement of infrastructure in order to prevent any unnecessary obstruction of flow in the channel and loss of biota;</li> <li>• The capturing of any biota should be prohibited.</li> <li>• As far as possible, all construction activities should occur in the low flow season,</li> </ul>   | <b>Low</b> | <b>Low</b> |



|   |                       |   |            |            |
|---|-----------------------|---|------------|------------|
| <p>leading to loss of habitat for biota.</p> <ul style="list-style-type: none"> <li>• Impact on biota downstream of site as a result of the gradual downstream movement of silt.</li> </ul>   |                       | <p>during the drier winter months;</p> <ul style="list-style-type: none"> <li>• Biomonitoring during construction phase.</li> </ul>   |            |            |
| <b>NOISE</b>  |                       |   |            |            |
| <ul style="list-style-type: none"> <li>• Noise could be generated by the proposed development.</li> <li>• People living or working along the project area may be exposed to noise and vibration during the construction phase.</li> </ul> | <b>Medium to High</b> | <ul style="list-style-type: none"> <li>• The contractor shall ensure compliance with applicable SANS noise standards during the construction phase.</li> <li>• Construction activities may only take place between the hours of 07H00 and 17H00 weekdays and Saturdays from 07H00 to 13H00. Operation is prohibited on Sundays and public holidays.</li> <li>• Some of the activities that could constitute a noise nuisance include power tools, reverse safety signals from back actors, loading and shouting by the workers. This noise could be a major disturbance / nuisance to residents, and thus needs to be limited.</li> </ul> | <b>Low</b> | <b>Low</b> |
| <b>AIR QUALITY AND DUST</b>   |                       |   |            |            |
| Dust could be generated during demolition of existing bridge structure and widening of road   | <b>Medium</b>         | <ul style="list-style-type: none"> <li>• Dust suppressant techniques for instance water trucks on</li> </ul>  | <b>Low</b> | <b>Low</b> |

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|  |                        | <p>gravel/dirt access roads, exposed areas, stockpiles etc. where dust is generated.</p> <ul style="list-style-type: none"> <li>• Ensuring that the bulldozers are in an optimal working condition.</li> <li>• No cooking fires are permitted.</li> <li>• Burning of refuse, cement bags, etc. is prohibited.</li> </ul> |                        |            |
| <b>INFRASTRUCTURE AND SERVICES</b>   |                        |  |                        |            |
| <ul style="list-style-type: none"> <li>• Potential disturbance to existing services</li> </ul>         | <b>High</b>            | <ul style="list-style-type: none"> <li>• Existing services (water supply) could be disrupted during construction. Resident should be informed of possible disruption in the water supply.</li> </ul>   | <b>Medium</b>          | <b>Low</b> |
| <b>SOCIAL</b>  |                        |  |                        |            |
| <b>Employment opportunities</b>  | <b>High (positive)</b> | <ul style="list-style-type: none"> <li>• The contractor, in association with the Community Liaison Officer, will source local residents, where possible, for the project.</li> </ul>   | <b>High (positive)</b> | <b>Low</b> |
| <b>Traffic Impacts</b>   | <b>Medium</b>          | <ul style="list-style-type: none"> <li>• Proactive planning with reference to the undertaking of the construction activities outside peak hours will mitigate against the potential traffic congestion that could result.</li> </ul>   | <b>Medium</b>          | <b>Low</b> |
| <b>HERITAGE</b>  |                        |  |                        |            |
| <ul style="list-style-type: none"> <li>• Possible loss of feature with heritage importance.</li> </ul> | <b>Low</b>             | <ul style="list-style-type: none"> <li>• Permit should be obtained from the provincial PHRA</li> </ul>   | <b>Low</b>             | <b>Low</b> |

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|  |  | <p>before construction can commence.</p> <ul style="list-style-type: none"> <li>Should any artefact or skeletal material be revealed during the construction of the project, all work will be stopped by the contractor and the project proponent will be notified. The project proponent will order an investigation and evaluation of the find(s) by a qualified archaeologist or a professional in the related field, to take place according to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999).</li> </ul> |  |  |
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**WASTE**

|                                   |            |  |            |            |
|-----------------------------------|------------|--|------------|------------|
| <b>Solid Waste</b>                | <b>Low</b> | <p>All office (paper) and domestic refuse (foodstuffs, plastic, glass etc.) generated at the site could be placed in separate containers for recycling purposes. All refuse on-site shall be collected in drums and emptied at regular intervals.</p> <p>No waste shall be burned at the site offices, or anywhere else on the site.</p> | <b>Low</b> | <b>Low</b> |
| Possible littering by contractors | <b>Low</b> | No littering by construction   | <b>Low</b> | <b>Low</b> |

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|  |               | <p>workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition, and the site is to be kept free of litter.</p> <p>Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter collection facilities for later safe disposal at DWS approved waste disposal sites.</p> |            |            |
| <b>HAZARDOUS SUBSTANCES</b>  |               |  |            |            |
| Storage of Hazardous Substances<br>Soil Contamination with oils    | <b>High</b>   | Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials (i.e. diesel) will be stored in a secured, appointed area that is fenced and has restricted entry (See EMPr).   | <b>Low</b> | <b>Low</b> |
| <b>VISUAL</b>  |               |  |            |            |
| Visual impacts as a result of structure and construction camp site | <b>Medium</b> | <ul style="list-style-type: none"> <li>Exiting vegetation that act as screening material should, where possible, not be unnecessarily removed.</li> <li>Where areas are going to be disturbed</li> </ul>   | <b>Low</b> | <b>Low</b> |

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|  |  | <p>through the destruction of vegetation, i.e. the contractor must be contractually obliged to replace any indigenous trees that are destroyed;</p> <ul style="list-style-type: none"> <li>• Rehabilitate disturbed areas as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil;</li> <li>• If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation;</li> <li>• Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitive visual receptors;</li> <li>• Keep the construction sites and camps neat, clean and organised (i.e. no littering) in order to portray</li> </ul> |  |  |
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|  |  | <p>a tidy appearance;</p> <ul style="list-style-type: none"> <li>• Screen the construction camp and lay-down yards by enclosing the entire area with suitable material of no less than 2 m height;</li> <li>• The success of hydro-seeding and grass planting must be monitored over a period of 1 year and be repeated in areas of low success.</li> </ul> |  |  |
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**SOIL**

|                                   |               |   |            |            |
|-----------------------------------|---------------|---|------------|------------|
| Surface or gully erosion on site. | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Runoff from impermeable surfaces should be slowed down by the strategic placement of energy dissipaters or berms.</li> <li>• Attenuation of stormwater runoff should take place at strategic points to prevent erosion due to the increased runoff from the activity areas.</li> <li>• Should any erosion channels be noticed, sand bags or rocks should be placed in the gully to prevent erosion.</li> <li>• The time in which soils are exposed during</li> </ul> | <b>Low</b> | <b>Low</b> |
|-----------------------------------|---------------|---|------------|------------|

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|  |  | <p>construction activities should remain as short as possible.</p> <ul style="list-style-type: none"> <li>As small an area should be disturbed as possible.</li> </ul> |  |  |
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**ALTERNATIVE 1**

| <b>Potential impacts:</b> | <b>Significance rating of impacts (positive or negative):</b> | <b>Proposed mitigation:</b> | <b>Significance rating of impacts after mitigation:</b> | <b>Risk of the impact and mitigation not being implemented</b> |
|---------------------------|---|-----------------------------|---|--|
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**AQUATIC**

|   |                           |   |                   |                   |
|---|---------------------------|---|-------------------|-------------------|
| <p>Loss of Riparian/Wetland Habitat and Ecological Structure</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>Proliferation of alien and weed species in disturbed areas will lead to altered vegetation communities within the riparian and buffer zone;</li> <li>Erosion of soils leading to increased incision and sedimentation of the riparian and aquatic features.</li> </ul> | <p><b>Medium High</b></p> | <ul style="list-style-type: none"> <li>No temporary accommodation or temporary storage facilities may be setup within 50m of the any river, stream, drainage line, wetland or farm dam.</li> <li>No temporary facilities (including portable toilets) to be positioned within 50m of the edge of the Hennops River.</li> <li>Only existing roads to be used by vehicles during construction as far as possible. Especially in terms of crossing over the river.</li> <li>Project activities close to watercourses to be carefully monitored in terms of erosion and possible</li> </ul> | <p><b>Low</b></p> | <p><b>Low</b></p> |
|---|---------------------------|---|-------------------|-------------------|

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|  |  | <p>resulting siltation of watercourses. Weekly inspection of work areas around watercourses to be conducted. Any signs of new erosion and siltation to be rectified immediately. Special attention must be given to the areas around the bridge pillars and the sloped riverbanks.</p> <ul style="list-style-type: none"> <li>• Disturbed surface areas to be rehabilitated as part of the construction phase.</li> <li>• All construction material, equipment and any foreign objects brought into the area by contractors to be removed immediately after completion of the construction phase.</li> <li>• Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site. Efforts need to be made to ensure that no debris and litter from contractors</li> </ul> |  |  |
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|  |                                     | <p>gets into the river system. This includes general litter such as plastic bottles and papers.</p> <ul style="list-style-type: none"> <li>• Restrict the proposed upgrade to the winter months if possible to avoid sedimentation of riparian features;</li> </ul>   |                   |                   |
| <p>Changes to Riparian/Wetland Ecological and Sociocultural Service Provision</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Erosion and incision due to catchment hardening and stream flow alterations</li> <li>• Proliferation of alien and weed species in disturbed areas will lead to altered vegetation communities within the riparian as well as buffer zone.</li> </ul> | <p><b>Medium</b><br/><b>Low</b></p> | <ul style="list-style-type: none"> <li>• Regularly monitor and maintain the state of the infrastructure;</li> <li>• Ensure that all activities impacting on water resources of the study area are managed according to the relevant DWA Licensing regulations.</li> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected by construction should be rehabilitated upon completion of the construction phase of the development.</li> <li>• Areas should be reseeded with indigenous grasses as required.</li> </ul> | <p><b>Low</b></p> | <p><b>Low</b></p> |

|   |                           |   |                          |                   |
|---|---------------------------|---|--------------------------|-------------------|
| <p>Changes to Riparian Hydrological Function and Sediment Balance</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Sedimentation of the system may lead to altered riparian areas if these habitats are not effectively rehabilitated;</li> <li>• Erosion and incision of the riparian areas may occur if these habitats are not effectively rehabilitated;</li> <li>• Loss of riparian biodiversity and habitat may occur; and</li> <li>• The extent of the riparian areas may be reduced due to poor management of water resources.</li> </ul> | <p><b>High</b></p>        | <ul style="list-style-type: none"> <li>• Water resources should be managed in line with the reserve determination for the catchment;</li> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected by construction should be rehabilitated upon completion of the construction phase of the development.</li> <li>• Areas should be reseeded with indigenous grasses as required.</li> <li>• Restrict construction to the drier winter months, if possible, to avoid sedimentation of wetland features in the vicinity of the proposed development.</li> </ul> | <p><b>Medium Low</b></p> | <p><b>Low</b></p> |
| <p>Changes to Instream Habitat</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Sedimentation of the system as a result of erosion may lead to altered instream habitat in a downstream direction;</li> <li>• Some changes to the hydrology of the system may occur affecting downstream habitat</li> </ul>  | <p><b>Medium High</b></p> | <ul style="list-style-type: none"> <li>• Any infrastructure within the Hennops River should be placed on existing boulders or bedrock outcrop in order to limit the impact of the structure on streamflow, substrate and aquatic function and service provision.</li> </ul>   | <p><b>Low</b></p>        | <p><b>Low</b></p> |

|   |                           |  |                   |                   |
|---|---------------------------|--|-------------------|-------------------|
| <p>and infrastructure.</p>  |                           | <ul style="list-style-type: none"> <li>• Ensure the strategic placement of infrastructure in order to prevent any unnecessary obstruction of flow in the channel;</li> <li>• Only disturb the vegetation and stones/boulders that are absolutely necessary for access purposes, and only remove vegetation and stones/boulders if absolutely necessary;</li> <li>• Edge effects of activities including erosion and alien/ weed control need to be strictly managed during all phases.</li> <li>• All areas affected by construction should be rehabilitated upon completion of the construction phase of the development. Areas should be reseeded with indigenous grasses as required;</li> <li>• Regularly monitor and maintain the state of the infrastructure.</li> </ul> |                   |                   |
| <p>Impacts on Instream Biota</p> <p><b>Possible impacts</b></p> <ul style="list-style-type: none"> <li>• Some changes to</li> </ul> | <p><b>Medium High</b></p> | <ul style="list-style-type: none"> <li>• Ensure the strategic placement of infrastructure in order to prevent</li> </ul>   | <p><b>Low</b></p> | <p><b>Low</b></p> |

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| <p>the hydrology of the system may occur affecting instream and riparian habitat and hence aquatic biodiversity;</p> <ul style="list-style-type: none"> <li>• Increased stormwater runoff into the system resulting in the displacement or loss of biota.</li> <li>• Increased erosion and sedimentation in the channel leading to loss of habitat for biota.</li> <li>• Impact on biota downstream of site as a result of the gradual downstream movement of silt.</li> </ul> |  | <p>any unnecessary obstruction of flow in the channel and loss of biota;</p> <ul style="list-style-type: none"> <li>• The capturing of any biota should be prohibited.</li> <li>• As far as possible, all construction activities should occur in the low flow season, during the drier winter months;</li> <li>• Biomonitoring during construction phase.</li> </ul> |  |  |
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**NOISE**

|   |                      |   |                   |                   |
|---|----------------------|---|-------------------|-------------------|
| <ul style="list-style-type: none"> <li>• Noise could be generated by the proposed development.</li> <li>• People living or working along the project area may be exposed to noise and vibration during the construction phase.</li> </ul> | <p><b>Medium</b></p> | <ul style="list-style-type: none"> <li>• The contractor shall ensure compliance with applicable SANS noise standards during the construction phase.</li> <li>• Construction activities may only take place between the hours of 07H00 and 17H00 weekdays and Saturdays from 07H00 to 13H00. Operation is prohibited on Sundays and public holidays.</li> <li>• Some of the activities that could constitute a noise nuisance include power tools, reverse safety signals from back actors, loading and</li> </ul> | <p><b>Low</b></p> | <p><b>Low</b></p> |
|---|----------------------|---|-------------------|-------------------|

|  |                        |   |                        |            |
|--|------------------------|---|------------------------|------------|
|  |                        | shouting by the workers. This noise could be a major disturbance / nuisance to residents, and thus needs to be limited.   |                        |            |
| <b>AIR QUALITY AND DUST</b>  |                        |   |                        |            |
| Dust could be generated during demolition of existing bridge structure and widening of road    | <b>Medium</b>          | <ul style="list-style-type: none"> <li>• Dust suppressant techniques for instance water trucks on gravel/dirt access roads, exposed areas, stockpiles etc. where dust is generated.</li> <li>• Ensuring that the bulldozers are in an optimal working condition.</li> <li>• No cooking fires are permitted.</li> <li>• Burning of refuse, cement bags, etc. is prohibited.</li> </ul> | <b>Low</b>             | <b>Low</b> |
| <b>INFRASTRUCTURE AND SERVICES</b>   |                        |   |                        |            |
| <ul style="list-style-type: none"> <li>• Potential disturbance to existing services</li> </ul> | <b>High</b>            | <ul style="list-style-type: none"> <li>• Existing services (water supply) could be disrupted during construction. Resident should be informed of possible disruption in the water supply.</li> </ul>  | <b>Medium</b>          | <b>Low</b> |
| <b>SOCIAL</b>  |                        |   |                        |            |
| <b>Employment opportunities</b>  | <b>High (positive)</b> | <ul style="list-style-type: none"> <li>• The contractor, in association with the Community Liaison Officer, will source local residents, where possible, for the</li> </ul>   | <b>High (positive)</b> | <b>Low</b> |

|  |               |  |               |            |
|--|---------------|--|---------------|------------|
|  |               | project.   |               |            |
| <b>Traffic Impacts</b>   | <b>Medium</b> | <ul style="list-style-type: none"> <li>Proactive planning with reference to the undertaking of the construction activities outside peak hours will mitigate against the potential traffic congestion that could result.</li> </ul>   | <b>Medium</b> | <b>Low</b> |
| <b>HERITAGE</b>  |               |  |               |            |
| <ul style="list-style-type: none"> <li>Possible loss of feature with heritage importance.</li> </ul> | <b>Low</b>    | <ul style="list-style-type: none"> <li>Permit should be obtained from the provincial PHRA before construction can commence.</li> <li>Should any artefact or skeletal material be revealed during the construction of the project, all work will be stopped by the contractor and the project proponent will be notified. The project proponent will order an investigation and evaluation of the find(s) by a qualified archaeologist or a professional in the related field, to take place according to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999).</li> </ul> | <b>Low</b>    | <b>Low</b> |
| <b>WASTE</b>   |               |  |               |            |
| <b>Solid Waste</b>   | <b>Low</b>    | All office (paper) and domestic refuse (foodstuffs, plastic, glass etc.)   | <b>Low</b>    | <b>Low</b> |

|   |             |   |            |            |
|---|-------------|---|------------|------------|
|   |             | <p>generated at the site could be placed in separate containers for recycling purposes. All refuse on-site shall be collected in drums and emptied at regular intervals.</p> <p>No waste shall be burned at the site offices, or anywhere else on the site.</p>   |            |            |
| Possible littering by contractors                               | <b>Low</b>  | <p>No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition, and the site is to be kept free of litter.</p> <p>Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter collection facilities for later safe disposal at DWS approved waste disposal sites.</p> | <b>Low</b> | <b>Low</b> |
| <b>HAZARDOUS SUBSTANCES</b>                                     |             |   |            |            |
| Storage of Hazardous Substances<br>Soil Contamination with oils | <b>High</b> | <p>Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials (i.e. diesel) will be stored in a secured, appointed area that</p>  | <b>Low</b> | <b>Low</b> |

|  |               |  |            |            |
|--|---------------|--|------------|------------|
|  |               | is fenced and has restricted entry (See EMPr).   |            |            |
| <b>VISUAL</b>  |               |  |            |            |
| Visual impacts as a result of structure and construction camp site | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Existing vegetation that act as screening material should, where possible, not be unnecessarily removed.</li> <li>• Where areas are going to be disturbed through the destruction of vegetation, i.e. the contractor must be contractually obliged to replace any indigenous trees that are destroyed;</li> <li>• Rehabilitate disturbed areas as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil;</li> <li>• If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation;</li> <li>• Utilise existing screening features such as dense vegetation</li> </ul> | <b>Low</b> | <b>Low</b> |



|                                   |               |   |            |            |
|-----------------------------------|---------------|---|------------|------------|
|                                   |               | <p>stands or topographical features to place the construction camps and lay-down yards out of the view of sensitive visual receptors;</p> <ul style="list-style-type: none"> <li>• Keep the construction sites and camps neat, clean and organised (i.e. no littering) in order to portray a tidy appearance;</li> <li>• Screen the construction camp and lay-down yards by enclosing the entire area with suitable material of no less than 2 m height;</li> <li>• The success of hydro-seeding and grass planting must be monitored over a period of 1 year and be repeated in areas of low success.</li> </ul> |            |            |
| <b>SOIL</b>                       |               |   |            |            |
| Surface or gully erosion on site. | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Runoff from impermeable surfaces should be slowed down by the strategic placement of energy dissipaters or berms.</li> <li>• Attenuation of stormwater runoff should take place at strategic points to prevent</li> </ul>  | <b>Low</b> | <b>Low</b> |

|  |  |   |  |  |
|--|--|---|--|--|
|  |  | <p>erosion due to the increased runoff from the activity areas.</p> <ul style="list-style-type: none"> <li>• Should any erosion channels be noticed, sand bags or rocks should be placed in the gully to prevent erosion.</li> <li>• The time in which soils are exposed during construction activities should remain as short as possible.</li> <li>• As small an area should be disturbed as possible.</li> </ul> |  |  |
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List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.  
 BIODIVERSITY ASSESSMENT for the Proposed Widening of Bridge B649, Ecological Impact Assessment and Wetland Impact Assessment compiled by Johannes Oren Maree, Flori Scientific Services, January 2017

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

|  |
|--|
| <p>a. Assumptions</p> <ul style="list-style-type: none"> <li>• All information received from sources contributing to this project is correct;</li> <li>• That the applicant will consider and implement the recommendations derived from this study, and</li> <li>• The Gauteng Department of Agriculture and Rural Development will be the decision making authority with regard to this application.</li> </ul> <p>b. Limitations</p> <ul style="list-style-type: none"> <li>• None.</li> </ul> <p>c. Knowledge Gaps</p> <p>None</p> |
|--|

## 2. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

(REFERS ONLY TO THE DECOMMISSIONING OF THE CONSTRUCTION PHASE AS THE BRIDGE AND ROAD WILL NOT BE DECOMMISSIONED OR CLOSED IN THE NEAR FUTURE)

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

| <b>Proposal</b>                                  |  |   |   |  |
|--|--|---|---|--|
| <b>Potential impacts:</b>                        | <b>Significance rating of impacts(positive or negative):</b> | <b>Proposed mitigation:</b>   | <b>Significance rating of impacts after mitigation:</b> | <b>Risk of the impact and mitigation not being implemented</b> |
| Proliferation of alien vegetation<br><br>Erosion | <b>Low</b>   | <ul style="list-style-type: none"> <li>• Mechanical control of alien plants around disturbed areas caused by construction need to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous grasses and other pioneers to colonise the previously disturbed areas, thereby assisting in keeping out invasive weed species.</li> <li>• No chemical control (herbicides) of alien plants to be used within 100m of any watercourses.</li> <li>• Areas around foundations, culverts,</li> </ul> | <b>Low</b>  | <b>Low</b>   |

|   |               |   |            |            |
|---|---------------|---|------------|------------|
|   |               | <p>gabions, etc. need to be checked before and after the summer rainy season for signs of soil erosion due to stormwater runoff. Such sites need to be modified and rehabilitated to prevent ongoing erosion. These sites need to be monitored more closely than other sites which show no or minimal signs of erosion.</p> <ul style="list-style-type: none"> <li>• Inspection of road shoulders in areas of steep topography to be inspected after the summer rainy season for signs of erosion and rehabilitated and rectified as required.</li> </ul> |            |            |
| To ensure that the activity footprint is limited and that no unnecessary disturbance of natural areas takes place | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Minimise the duration of disturbance: prompt, progressive and ongoing re-vegetation and/or stabilisation of all disturbed areas as soon as final grades are achieved;</li> <li>• Minimize forward clearing to retain as much of the existing vegetation as possible.</li> </ul>  | <b>Low</b> | <b>Low</b> |

|   |               |   |            |            |
|---|---------------|---|------------|------------|
| To ensure that disturbed areas are rehabilitated after construction has been completed. | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Re-vegetate all disturbed areas with indigenous seed mixtures before the start of the rain season;</li> <li>• Re-vegetation must be conducted by utilising hydro-seeding methods;</li> <li>• The hydro-seeding must be conducted by a suitably qualified specialist/contractor;</li> <li>• The hydro-seeding mixture must be certified weed free.</li> </ul> | <b>Low</b> | <b>Low</b> |
|   |               |   |            |            |
|   |               |   |            |            |
|   |               |   |            |            |

**ALTERNATIVE 1**

| <b>Potential impacts:</b>                        | <b>Significance rating of impacts(positive or negative):</b> | <b>Proposed mitigation:</b>   | <b>Significance rating of impacts after mitigation:</b> | <b>Risk of the impact and mitigation not being implemented</b> |
|--|--|---|---|--|
| Proliferation of alien vegetation<br><br>Erosion | <b>Low</b>   | <ul style="list-style-type: none"> <li>• Mechanical control of alien plants around disturbed areas caused by construction need to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous</li> </ul> | <b>Low</b>  | <b>Low</b>   |

|  |               |  |            |            |
|--|---------------|--|------------|------------|
|  |               | <p>grasses and other pioneers to colonise the previously disturbed areas, thereby assisting in keeping out invasive weed species.</p> <ul style="list-style-type: none"> <li>• No chemical control (herbicides) of alien plants to be used within 100m of any watercourses.</li> <li>• Areas around foundations, culverts, gabions, etc. need to be checked before and after the summer rainy season for signs of soil erosion due to stormwater run-off. Such sites need to be modified and rehabilitated to prevent ongoing erosion. These sites need to be monitored more closely than other sites which show no or minimal signs of erosion.</li> <li>• Inspection of road shoulders in areas of steep topography to be inspected after the summer rainy season for signs of erosion and rehabilitated and rectified as required.</li> </ul> |            |            |
| To ensure that the activity footprint is limited and that no | <b>Medium</b> | <ul style="list-style-type: none"> <li>• Minimise the duration of disturbance: prompt,</li> </ul>  | <b>Low</b> | <b>Low</b> |

|   |               |   |            |            |
|---|---------------|---|------------|------------|
| unnecessary disturbance of natural areas takes place                                    |               | <p>progressive and ongoing re-vegetation and/or stabilisation of all disturbed areas as soon as final grades are achieved;</p> <ul style="list-style-type: none"> <li>Minimize forward clearing to retain as much of the existing vegetation as possible.</li> </ul>  |            |            |
| To ensure that disturbed areas are rehabilitated after construction has been completed. | <b>Medium</b> | <ul style="list-style-type: none"> <li>Re-vegetate all disturbed areas with indigenous seed mixtures before the start of the rain season;</li> <li>Re-vegetation must be conducted by utilising hydro-seeding methods;</li> <li>The hydro-seeding must be conducted by a suitably qualified specialist/contractor;</li> <li>The hydro-seeding mixture must be certified weed free.</li> </ul> | <b>Low</b> | <b>Low</b> |
|   |               |   |            |            |
|   |               |   |            |            |
|   |               |   |            |            |
|   |               |   |            |            |

**Alternative 2**

| <b>Potential impacts:</b> | <b>Significance rating of impacts (positive or negative):</b> | <b>Proposed mitigation:</b> | <b>Significance rating of impacts after mitigation:</b> | <b>Risk of the impact and mitigation not being implemented</b> |
|---------------------------|---|-----------------------------|---|--|
| none                      |   |                             |   |  |
|                           |   |                             |   |  |
|                           |   |                             |   |  |
|                           |   |                             |   |  |

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|--|--|--|--|--|

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

**BIODIVERSITY ASSESSMENT** for the Proposed Widening of Bridge B649, Ecological Impact Assessment and Wetland Impact Assessment compiled by Johannes Oren Maree, Flori Scientific Services, January 2017.

Notification of Intent to Develop:  
Rehabilitation of two Bridge Structures in the Tshwane Region of Gauteng Province by Dr J van Schalkwyk, April 2017 (Heritage report).

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

The Contractor appointed by the Gautrans will include provision for the rehabilitation of the site in the tender submitted. This will in turn be included in the contract signed between the client and the appointed contractor. The appointed contractor will also be responsible for maintenance of the site for a 1 year defects liability period after the construction phase has ceased.

#### 4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

The cumulative impacts associated with the project could be the following:

- Additional traffic on the local roads during construction;
- The influx of people in the area during construction;

These impacts would occur on a short term basis during the construction phase of the project.

#### 5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal 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.

##### Proposal

#### 1. Introduction

The preferred alternative entails the widening of bridge 649 and a Section of Road P249 by one lane and a shoulder on both sides of the bridge. The project falls within the Gauteng Province. The scope of works for this alternative entails the following:

- Widening of Bridge 649 and road P249 and 400m of road to accommodate wider traffic lanes and pedestrian sidewalks, 2 x 3.7m lane in each direction, 2.5m shoulders.
- Working on either sides of the active stream bed with associated removal of soil for the foundations of the bridge to be cast on bedrock.
- Install new F-shape barriers.
- Install back to back guardrails that are connected to end-blocks.
- Cut overgrown vegetation.
- Minor spalling and crack repairs to structure.



## **2. Ecological and Aquatic Resources**

The following conclusions were drawn during the survey of the ecological and aquatic assessment associated with the study area (Flori, 2017):

The following conclusions have been drawn from the study:

- The bridge (B649) is in urgent need of upgrade and repair.
- The bridge crosses over the Hennops River. All watercourses are viewed as sensitive.
- There are no other watercourses, including wetlands in the study area.
- The PES is C (Moderately Modified) and the EIS is C (Medium).
- There are no 'No-Go' zones in or immediately around the study site.
- The study site is within a CBA and a threatened veldtype area.
- The additional and long-term negative impacts of upgrading and repairing the bridge on the natural environment (in particular the Hennops River and riparian zone) is LOW.
- Mitigating measures have been recommended that will assist in reducing potential negative impacts on the environment from project activities.
- Depending on the methodology either a GA or WULA will be required. It is the opinion of the specialist that a GA should be sufficient for the project.

## **3. Impact Assessment**

From the results of the impact assessment, the following possible impacts were identified that may have an effect on the environment. These are:

- Possible impacts to the stream (Hennop river);
- Possible impact on fauna and flora;
- Possible erosion of soils;
- Possible invasion of exotic species;
- Possible pollution of solid waste;
- Possible sewage pollution;
- Possible pollution of fuels and gas as a result of inadequate storage;
- Possible pollution by cement or concrete;
- Possible noise pollution;
- Possible dust pollution;
- Possible impact on heritage sites and graves.

The possible impact on the watercourse were divided into the following:

- Impact 1: Loss of riparian habitat and ecological structure;
- Impact 2: Changes to riparian ecological and sociocultural service provision;
- Impact 3: Changes to riparian hydrological function and sediment balance;
- Impact 4: Changes to instream habitat;
- Impact 5: Impacts on instream biota.

Prior to mitigation, these identified impacts are at a medium-low level. Should mitigation be implemented as recommended, these impacts will be reduced to low level.

## **4. Essential Mitigation Measures**

The following general mitigating measures are recommended to help reduce the potential negative impacts of the project on the natural environment. The implementation of recommended mitigating measures is necessary if the conclusions and assessments of the report are to remain pertinent. The mitigating measures below must be considered in conjunction with those more site specific ones listed in the impact assessment.

### **Construction & Operation Phase**

- No temporary accommodation or temporary storage facilities may be setup within 50m of the any river, stream, drainage line or farm dam.
- No temporary facilities (including portable toilets) to be positioned within 50m of the edge of the Hennops River.
- Only existing roads to be used by vehicles during construction as far as possible. Especially in terms of crossing over the river.
- Project activities close to watercourses to be carefully monitored in terms of erosion and possible resulting siltation of watercourses. Weekly inspection of work areas around watercourses to be conducted. Any signs of new erosion and siltation to be rectified immediately. Special attention must be given to the areas around the bridge pillars and the sloped riverbanks.
- Disturbed surface areas to be rehabilitated as part of the construction phase.
- All construction material, equipment and any foreign objects brought into the area by contractors to be removed immediately after completion of the construction phase.
- Proper rubbish/waste bins to be provided. These to be emptied weekly and the waste to be removed to an official waste disposal site. Efforts need to be made to ensure that no debris and litter from contractors gets into the river system. This includes general litter such as plastic bottles and papers.

### **Maintenance phase (to be implemented in defect liability period for 1 year)**

- Mechanical control of alien plants around disturbed areas caused by construction need to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous grasses and other pioneers to colonise the previously disturbed areas, thereby assisting in keeping out invasive weed species.
- No chemical control (herbicides) of alien plants to be used within 100m of any watercourses.
- Areas around foundations, culverts, gabions, etc. need to be check before and after the summer rainy season for signs of soil erosion due to stormwater run-off. Such sites need to be modified and rehabilitated to prevent ongoing erosion. These sites need to be monitored more closely than other sites which show no or minimal signs of erosion.
- Inspection of road shoulders in areas of steep topography to be inspected after the summer rainy season for signs of erosion and rehabilitated and rectified as required.

## **5. Advantages for Preferred Alternative**

This is the preferred option for the following reasons:

- a. It is anticipated that the safety to the traveling public will be significantly improved as the lanes can be merged with the existing road before the

intersection to the south in a safe manner.

- b. The road reserve does not need to be widened for this option.
- c. This option is deemed more economical than option 1 as there is no land acquisition process associated with this option.
- d. The bridge deck will be designed and constructed to the current loading codes.
- e. The hydraulic capacity of the bridge will be increased.
- f. This option meets the required traffic bearing capacities.
- g. The safety to the traveling public will be significantly improved as the traffic will be flowing optimally.
- h. This option drastically lowers the possibilities of head-on collisions.
- i. This option accommodates future capacity upgrades if required.
- j. It is anticipated that the traffic accidents that occur on this road will be reduced with this option.
- k. It is anticipated that the road and bridge upgrade will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The widening of the road and bridge will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.

#### **6. Disadvantages of this Alternative**

- Traffic will be temporarily interrupted during the construction period.
- Potential short term noise impact on Vusalela Day spa.

#### **7. Sustainable Development**

It will be attempted to implement the following:

- Compact fluorescent lights will be installed in the site offices;
- All solid waste will be separated in different containers to make recycling possible;
- Storm water will be managed and improved to reduce erosion by installing gabion boxes or as detail engineering design dictate;
- Where new grassing is done, it will be done by using locally indigenous vegetation;
- Training of staff will be done to implement good housekeeping by the Environmental Control Officer (ECO). This will be done during toolbox talks.
- The ECO appointed will address the staff on good housekeeping actions.

#### **8. Contractor Camp site**

It is recommended that the contractor camp site be situated on the area that is already disturbed, appropriately zoned and not within 100 m from the Hennops river.

#### **9. Community Liaison Officer**

A Community Liaison Officer (CLO) will be budgeted for during the tender of the project for appointment during the construction phase.

### **Alternative 1**

This alternative entails the widening of bridge 649 and a Section of Road P249 with two lanes and a shoulder on one side of the bridge.

### **Advantages and Disadvantages of Alternative 1**

#### **i. Advantages of Alternative 1**

- a. The bridge deck will be designed and constructed to the current loading codes.
- b. The hydraulic capacity of the bridge will be increased.
- c. This option meets the required traffic bearing capacities.

#### **i. Disadvantages of this Alternative**

- a. It is not anticipated that the safety to the traveling public will be significantly improved as the lanes cannot be merged with the existing road before the intersection to the south in a safe manner.
- b. This option is therefore considered unsafe as the traffic will not be flowing optimally.
- c. It is not anticipated that the traffic accidents that occur on this road will be reduced significantly with this option.
- d. The road reserve needs to be widened and additional land will need to be acquired for this option.
- e. This option is deemed uneconomical as the land acquisition process could incur severe additional costs to the project.
- f. The land acquisition process could take a considerable time to complete and the work to the bridge is deemed very urgent.
- g. This option does not accommodate future capacity upgrades.
- h. Traffic will be temporarily interrupted during the construction period.
- i. Potential short term noise impact on Vusalela Day spa.

From information received from the consulting engineers and potential environmental impacts that were identified during the Basic Assessment process that are associated with this alternative, the construction of this alternative is, therefore, not preferred.

### **Alternative 2**

**None**

### **No-go (compulsory)**

Should the road not be upgraded, the traffic on the bridge 649 and a Section of Road P249 could experience increasingly unsafe driving conditions. The road and bridge width on this section of the road are not adequate to provide for the heavy traffic experienced in the area, especially during the peak holiday periods. This bridge and section of the road need to be urgently widened to ensure the safety of the traveling public. This will also accommodate the predicted increase in traffic volume and avoid high driver frustration.

Traffic volumes and design principals determine that the bridge and road needs to be widened to ensure the safety of the traveling public. If this is not done, it is

anticipated that accidents on this road will increase in future.

## 6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

### 1. Final Conclusion

This is the preferred alternative for the widening of the bridge and the road and will increase the safety to the traveling public to acceptable standards for the long term. The impacts related to the project are not anticipated to have any long term impact and the flow dynamics of the Hennops river will not be permanently altered.

The traffic disruption during the 3 month construction period when the first additional 2 lanes are added onto the bridge and road is considered high but is a short term impact. The construction related impacts are also considered to be short term and with mitigation measures, to be of low impact.

The primary findings for the widening of the bridge 649 and a Section of Road P249 would probably result in:

- No negative environmental impacts of high significance with mitigation;
- Positive impacts related to improved safety for the traveling public;
- Potential positive impacts due to increased economic activity, employment and training and capacity building.

Therefore, this alternative presents a better option than the alternative 1 for the proposed project in terms of the parameters investigated. The essence of the Basic Assessment process is aimed at ensuring informed decision-making and environmental accountability, and to assist in achieving environmentally sound and sustainable development. No long-term environmental impact should arise with this alternative.

In conclusion, it is believed the information contained in this report and the documentation attached hereto is sufficient to make a decision in respect of the activity applied for. This report covers the full suite of potential environmental issues related to the proposed development, and that sufficient information regarding the identification, assessment and potential mitigation of impacts has been presented to facilitate informed decision making by the appropriate authorities. Based on the specialist studies undertaken within this BA, both benefits and negative impacts are anticipated as a result of the proposed project. The findings of this BAR have highlighted these impacts and prioritised them in terms of high, medium or low significance. It is therefore recommended that this project be authorized by the authorities with the condition that the mitigation measures as stipulated in the EMPr should be adhered to. The authorities need to use this document to aid the decision-making process with respect to the future outcome of this proposal.

An Environmental Management Programme is included detailing the management of the environmental aspects during the design, construction and decommissioning period.

For alternative:

- It is not anticipated that the safety to the traveling public will be significantly

improved as the traffic will not be flowing optimally.

- It is not anticipated that this option will lower the possibilities of head-on collisions.
- This option does not accommodate future capacity upgrades.
- It is not anticipated that the traffic accidents that occur on this road will be reduced significantly with this option.
- Traffic will be temporarily interrupted during the construction period.

From information received from the consulting engineers and potential environmental impacts that were identified during the Basic Assessment process that are associated with this alternative, the construction of this alternative is, therefore, not preferred.

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

Providing the proposed mitigation measures are implemented, most of the impacts identified are considered to be low, being limited to the area immediately surrounding the proposed development. Most of the identified impacts are associated with the construction phase and are therefore short-term impacts, lasting only the duration of the construction period.

This is the preferred option for the following reasons:

- a. The safety to the traveling public will be significantly improved as the traffic will be flowing optimally.
- b. The road could be upgraded to acceptable horizontal and vertical geometric requirements.
- c. This option drastically lowers the possibilities of head-on collisions.
- d. This option accommodates future capacity upgrades if required.
- e. It is anticipated that the traffic accidents that occur on this road will be reduced with this option.
- f. It is anticipated that the road upgrade will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The upgrade of the road will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.

## 7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

The City Of Tshwane Region 3: Regional Integrated Development Plan 2014-15 was consulted for the project. This project supports the Infrastructure Management and Development as part of this plan.

Development in South Africa has traditionally occurred along routes that connect areas of industry with areas of trade. From industrial sites, raw materials pass along highways, railways, canals, and pipelines to ports for export, while finished products travel back through the same corridors. As a result, Infrastructure has been concentrated along these routes.

With the rapid development occurring in the South Africa, these geographic corridors are growing in importance, as they enable other sectors to maximise their productivity.

However, infrastructural bottlenecks along these corridors i.e. poor roads and bridges often hamper operations of these other industries.

It is recognized that these transport corridors require special attention and it is anticipated that the widening of bridge 649 and a Section of Road P249 will support development in the region.

## 8. RECOMMENDATION OF THE 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 as bound by professional ethical standards and the code of conduct of EAPASA).

|          |    |
|----------|----|
| YES<br>x | NO |
|----------|----|

If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

|  |
|--|
|  |
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|  |

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

- The mitigation and rehabilitation measures recommended by Flori, 2017 should be adhered to.
- There should be an environmental Control Officer on site during the construction period.
- Regular environmental audits should be undertaken, both internal and external by an independent auditor.
- During the construction phase, the premises and the works site must be maintained by the contractor in a reasonably neat and orderly condition and free from accumulation of waste materials and rubbish during the entire construction period.
- Appropriate precautions should be taken to ensure activities (including traffic) associated with the construction of the project, do not pose a danger to passing traffic or cause undue inconvenience to the residents.

## 9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

The widening of the bridge 649 and a Section of Road P249 is urgently necessary due to the poor state of the current bridge. Investigations and analyses of bridge by consulting engineers indicate that the bridge deck has several transverse cracks at the soffit, with void formers having floated resulting in the bottom reinforcing being in the wrong position. The parapets are out-dated and their steel top rail is missing.

The proposed widening of the bridge is therefore necessary to ensure the safety of the traveling public. This will also accommodate the predicted increase in traffic volume and avoid high driver frustration.

The volume of heavy vehicles is expected to increase significantly over the next 20 years. Traffic volumes and design principals determine that the bridge structure of the road needs to be maintained to ensure the safety of the traveling public. If this is

not done, the bridge could pose a severe safety hazard to the traveling public in future.

**10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED**  
*(CONSIDER WHEN THE ACITIVITY IS EXPECTED TO BE CONCLUDED)*

5 years

**11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)** (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

Yes



# SECTION F: APPENDIXES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

## CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.