



## Gauteng Department of Agriculture and Rural Development (GDARD)

### **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, 2010 (Version 1)**

List of all organs of state and State Departments where the draft report has been submitted, their full contact details and contact person

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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, 2010.
  2. This application form is current as of 2 August 2010. 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 to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken. The draft reports must be submitted to the relevant State Departments and on the same day, two CD's of draft reports must also be submitted to the Competent Authority (GDARD) with a signed proof of such submission of draft report to the relevant State Departments.**
  4. 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.
  5. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
  6. An incomplete report shall be rejected.
  7. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
  8. 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.
  9. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
  10. 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.
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#### **DEPARTMENTAL DETAILS**

Gauteng Department of Agriculture and Rural Development  
Attention: Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch  
P.O. Box 8769  
Johannesburg  
2000

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch  
18<sup>th</sup> floor Glen Cairn Building  
73 Market Street, Johannesburg

Admin Unit telephone number: (011) 355 1345  
Department central telephone number: (011) 355 1900

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**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

(For official use only)

<b>File Reference Number:</b>						
<b>Application Number:</b>						
<b>Date Received:</b>						

**\* Submission to State Departments (Number 3 above)**

Has a draft report for this application been submitted to 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 State Departments referred to above been attached to this report?  **Yes**

if no, state reasons for not attaching the list.

**N/A**

## SECTION A: ACTIVITY INFORMATION

### 1. ACTIVITY DESCRIPTION

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

**Proposed installation of a stormwater outlet in the Kaalplaas spruit, Martinus Rass Avenue Rosslyn, Tshwane.**

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**

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

**The application requires the issuing of a Water Use License by the Department of Water Affairs as per section 21 (c) and (i) of the National Water Act, 1998 [Act 36 of 1998].**

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

YES	<input checked="" type="checkbox"/> <b>NO</b>
YES	NO

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

### 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 No. 107 of 1998 as amended.	National & Provincial	27 November 1998
• The construction of facilities or infrastructure exceeding 1000m in length for the bulk transportation of water, sewerage or stormwater	Gauteng Department of Agriculture and Rural Development	

<p>–(i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more. [GNR 544. 9 (i)(ii)].</p> <ul style="list-style-type: none"> <li>• The construction of(ii) channels;(vi) bulk storm water outlet structures;(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line [GNR-544 11(ii)(vi)(xi)].</li> <li>• The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from a (i) watercourse. [GNR 544 18(i)].</li> <li>• The construction of (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse, measuring from the edge of the watercourse excluding where such construction will occur behind the development setback line (b) in Gauteng (iii) in sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the act and as adopted by the competent authority [GNR-546 16(iv)(b)(iii)]</li> </ul>	(GDARD)	
GDARD Requirements for Biodiversity Assessments	GDARD	August 2006
National Water Act, 36 of 1998	Department of Water Affairs	1998
National Heritage Resources Act 1999 (Act 25 of 1999)	South African Heritage Resource Agency (SAHRA)	1999
Environmental Management Framework for Tshwane	Tshwane Metropolitan Municipality	Volume 1: June 2005 Volume 2 and 3: September 2005

### 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.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design,	Description
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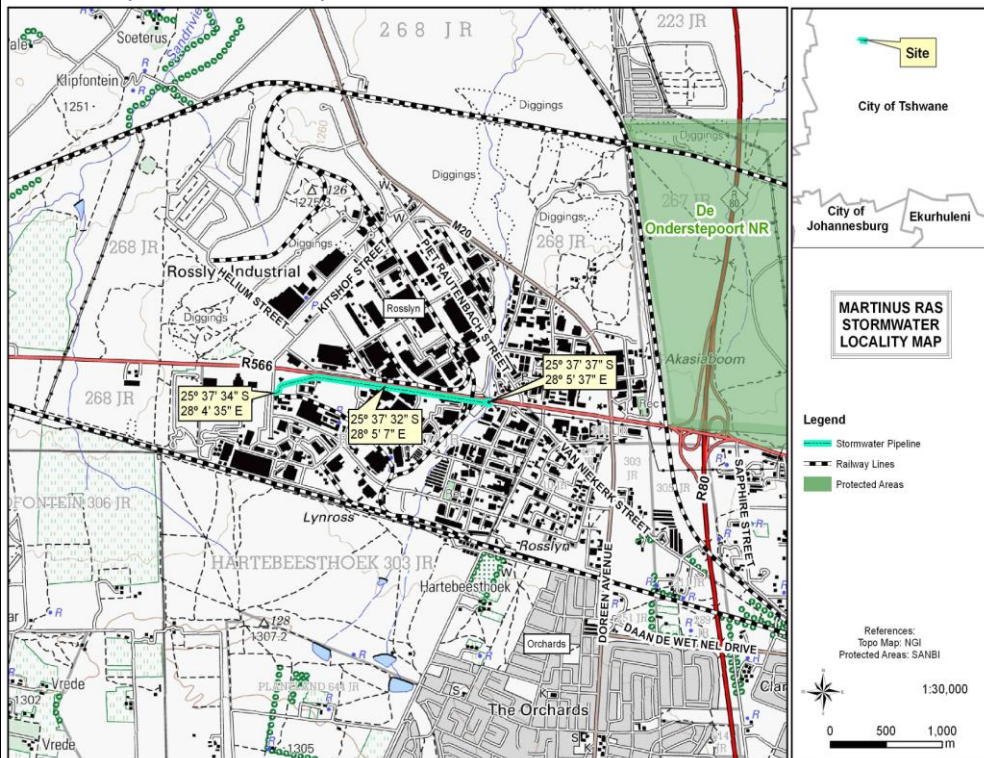
	technology, operational or other(provide details of "other")
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**Project Background**

Rosslyn is a fully developed industrial and residential area situated in northern Tshwane with growing infrastructure. The construction of a stormwater network serving the surrounding area and relocation of services as needed is being proposed where a stormwater pipeline along Martinus Ras Avenue will adjoin the existing stormwater system in Rosslyn and a box culvert along the Kaalplaas Spruit in which stormwater will discharge into the spruit. The stormwater pipeline and culvert will be constructed on the following locations:

- Start point:** 25° 37'37"S      28° 5'37"E  
**Middle point:** 25° 37'32"S      28° 5'7"E  
**End point:** 25° 37'34"S      28° 4'35"E

The start point is also the position where the culvert will be located.



**Figure 1: Locality map**

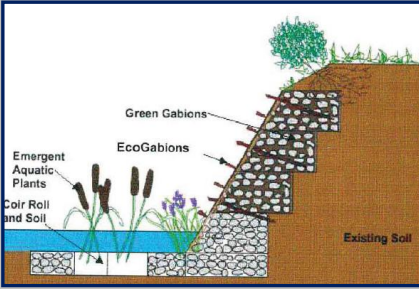

The stormwater pipeline is proposed to be implemented over a distance of approximately 2 km.


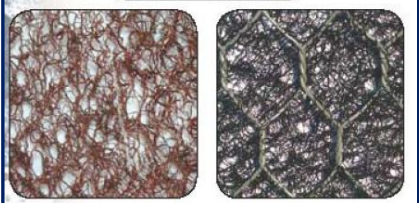
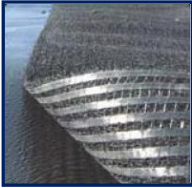
Depending on the characteristics of the area the diameter of the pipeline will be a minimum of 450 mm.

The stormwater network will serve the surrounding area to improve the natural low point in order to drain adjoining stormwater networks.

All the activities proposed are within a watercourse and therefore require authorisation from the deciding authority.

<b>Alternative 1</b>	<p><b>Proposal : Preferred ( Eco gabion, grass lined channel and concrete combination)</b></p> <p>The eco gabion structure has the same functionalities compared to the standard gabions. It can therefore be used for any hydraulic application. The addition</p>	<p>As per the standard gabion wall, the eco gabion wall is used for constructing the channel sides. The alignment will follow the existing channel resulting in a narrower cross section. A 170mm gabion mattress will be provided in the bottom where no hardpan ferricrete is present.</p> <ul style="list-style-type: none"> <li>The eco gabion structure has the same functionalities compared to the standard</li> </ul>
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	<p>of Biomac and Hydroseeding will ensure a more naturally finished product than standard gabions.</p>  <p><b>Figure 2: Eco gabion structure</b></p>	<p>gabions. It can therefore be used for any hydraulic application.</p> <ul style="list-style-type: none"> <li>• The addition of Biomac and Hydroseeding will ensure a more naturally finished product than standard gabions.</li> <li>• As per the standard gabion wall, the eco gabion wall is used for constructing the channel sides.</li> <li>• Construction is labour intensive.</li> <li>• With established vegetation on the sides maintenance will basically be required for removal of domestic waste and siltation.</li> <li>• As for standard gabions it is the most stable side protection for this application and eco gabions can accommodate flow conditions and will prevent further erosion encroaching on adjacent properties</li> <li>• A concrete lining can be used for erosion protection.</li> <li>• Re-enforced concrete centre wall to improve flow conditions and lower freeboard requirements.</li> </ul>
<p><b>Alternative 2</b></p>	<p><b>(Armorflex lined channel)</b> Depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel. This option is also not economically feasible.</p>  <p><b>Figure 3: An example of a Armorflex lined channel</b></p>	<p>The 2nd alternative is to construct Armorflex lined channels.</p> <ul style="list-style-type: none"> <li>• The Armorflex lining is the most expensive of all alternatives and requires wider cross sections than the other options.</li> <li>• The construction for the Armorflex lining is labour intensive.</li> <li>• Depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel.</li> <li>• It is however ideal for hydraulic controls around bends and for use of larger/longer channels.</li> <li>• The roughness coefficient is also advantageous for the lower flow velocities.</li> </ul>
<p><b>Alternative 3</b></p>	<p><b>(Macmat lined channel)</b> Good vegetation cover is possible in a permeable canal and allows for the establishment of a fairly natural habitat. The currently eroding channels can be stabilized and sediment and litter entering the watercourse will be decreased.</p>	<p>After excavation, trimming and compaction, a MacMat R lining will be installed. The MacMat R lining will require ground anchor beams at the top of the channel edge and a concrete cross beam. Additional anchoring will be required along the outside of the bends in the form of gabion box beams. This solution can accommodate flow velocities applicable to this section.</p>

	<p><b>All outlet positions should have a litter trap and sediment trap structure</b></p>    <p><b>Figure 4: MacMatR [image curtesy MaccaferriSA]</b></p>	
<p><b>Alternative 4</b></p>	<p><b>(Grass lined channel)</b></p> <p><b>It is however not preferred for hydraulic control or erosion protection.</b></p>	<p>The 4<sup>th</sup> alternative is a Grass lined channel.</p> <ul style="list-style-type: none"> <li>• The channel can be constructed in the shortest time and can be considered rehabilitation of the existing scenario.</li> <li>• Vegetation and siltation of the channel bottom are concerns that require frequent maintenance.</li> <li>• This is also the least expensive alternative and is the most preferable option from an environmental point of view.</li> <li>• It is however not preferred for hydraulic control or erosion protection.</li> </ul>

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

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**NOTE: The numbering in the above table must be consistently applied throughout the application report and process**

**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

**Alternatives:**

Alternative 1 (if any)

Alternative 2 (if any)

**Size of the activity:**

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or, for linear activities:

Proposed activity  
**Alternatives Proposal Alternative 1:**  
 Alternative 2 (if any)  
 Alternative 3 (if any)  
 Alternative 4 (if any)

Ha/m <sup>2</sup>	
<b>Length of the activity:</b>	
	2.0154
	2.0154
	2.0154
	2.0154
k/km	

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

Proposed activity  
**Alternatives:**  
 Alternative 1 (if any)  
 Alternative 2 (if any)  
 Alternative 3 (if any)  
 Alternative 4 (if any)

Size of the site/servitude:	
	5450
	5450
	5450
	5450
Ha/m <sup>2</sup>	

**5. SITE ACCESS**

**Proposal (Alternative 1)**

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

<b>YES</b>	NO
M	

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

Describe the type of access road planned:

The site is on Martinus Rass Avenue and that will be the access road.

Include the position of the access road on the site plan.

**Refer to Appendix A for site plan**

**Alternative 2**

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

<b>YES</b>	NO
m	

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

Describe the type of access road planned:

The site is on Martinus Rass Avenue and that will be the access road.

Include the position of the access road on the site plan.

**Refer to Appendix A for site plan**

**Alternative 3**

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

<b>YES</b>	NO
m	

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

Describe the type of access road planned:

The site is on Martinus Rass Avenue and that will be the access road.

Include the position of the access road on the site plan.

**Refer to Appendix A for site plan**

**Alternative 4**

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

<b>YES</b>	NO
m	

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

Describe the type of access road planned:

The site is on Martinus Rass Avenue and that will be the access road.

Include the position of the access road on the site plan.

**Refer to Appendix A for site plan**

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

Section A 6-8 has been duplicated  
(only complete when applicable)

**0** Number of times

**6. SITE 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 as Appendix A to this document. The site or route plans must indicate the following:

- the scale of the plan, which must be at least a scale of 1:2000 ( scale can not be larger than 1:2000 i.e. scale can not be 1:2500 but could where applicable be 1:1500)
- the property boundaries and numbers of all the properties within 50m of the site;
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- the exact position of each element of the application 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, street lights, sewage pipelines, septic tanks, storm water infrastructure and telecommunication infrastructure;
- walls and fencing including details of the height and construction material;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites 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);
- for gentle slopes the 1m contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- the positions from where photographs of the site were taken.
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the 32m position from the bank to be clearly indicated)

**7. SITE PHOTOGRAPHS *Refer Appendix B***

Color 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 *Refer Appendix C***

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)

**Further:**

### **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)

Note: As all alternatives are located on the same site this section of the report has not been duplicated.

### **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.

# BASIC ASSESSMENT REPORT [REGULATION 22(1)]

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: A Portion of the Farm Rosslyn 274-JR within the City of Tshwane.

## 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:	Latitude (S):	Longitude (E):
— Starting point of the activity		
— End point of the activity		

In the case of linear activities:

Alternative: **Martinus Ras Avenue**

	Latitude (S):	Longitude (E):
- Starting point of the activity	25.626944	28.093611
- Middle point of the activity	25.625556	28.085278
- End point of the activity	25.626111	28.076389

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 YES

## 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

<b>Flat</b> X	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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## 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	<b>River front</b> X
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## 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)

YES	<b>NO</b> X
YES	<b>NO</b> X
<b>YES</b> X	NO
YES	<b>NO</b> X
YES	<b>NO</b> X

## BASIC ASSESSMENT REPORT [REGULATION 22(1)]

Soils with high clay content (clay fraction more than 40%)

YES	<b>NO</b> X
YES	<b>NO</b> X
YES	<b>NO</b> X

Any other unstable soil or geological feature

An area sensitive to erosion

(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	<b>NO</b> X
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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	<b>NO</b> X
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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	<b>NO</b> X
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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 3)?

YES	<b>NO</b> X
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**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 % =	Natural veld with scattered aliens % =	Natural veld with heavy alien infestation % =	<b>Veld dominated by alien species</b> % =3	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	<b>Paved surface (hard landscaping)</b> % =10	<b>Building or other structure</b> % =85	<b>Bare soil</b> % =2

**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	<b>NO</b> X
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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	<b>NO</b> X
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If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on the site?	<b>YES</b> X	NO
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If YES, specify and explain:

**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

The project site is along a watercourse classified as a wetland canal which is an important natural feature and according to the Gauteng Conservation Plan Version 3 the proposed stormwater network will drain into the identified wetland which is an ecological support area. (Refer to **Appendix I1** for CPLAN Map)

Was a specialist consulted to assist with completing this section **YES**  
**X** NO

If yes complete specialist details

Name of the specialist: **Dr. B.J.Henning**  
 Qualification(s) of the specialist: **Pr. Sci. Nat**  
 Postal address: **Postnet no 74, Private Bag X07, Arcadia**  
 Postal code: **0007**

Telephone: **012751 2160** Cell: **086 607 2406**  
 E-mail: **www.ages-group.com** Fax:

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: **28 February 2014**

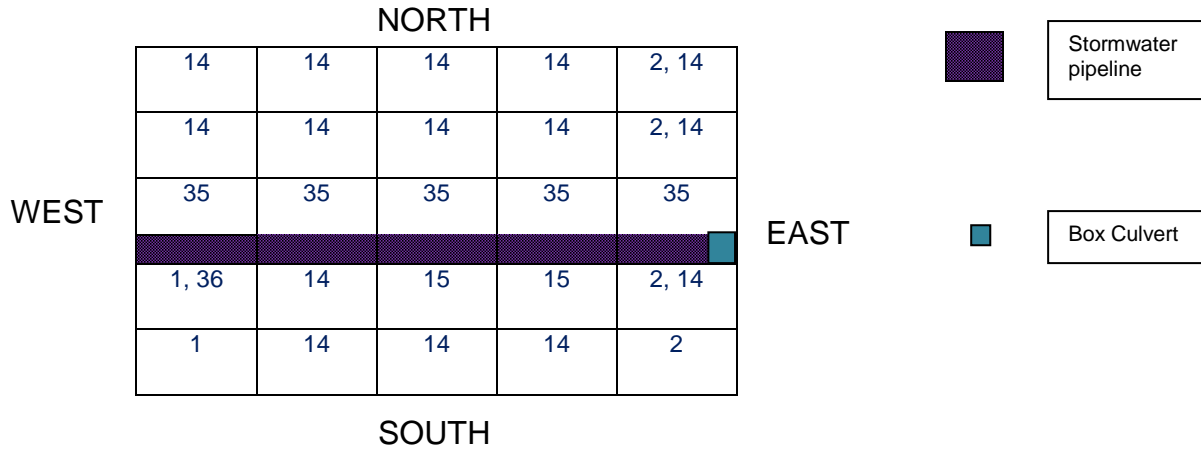
**Please note:** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

**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	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	<b>14. Commercial &amp; warehousing</b>	15. Light industrial
16. Heavy industrial <sup>AN</sup>	17. Hospitality facility	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	
Other land uses (describe):	<b>35. Regional road</b>		<b>36. Petrol station</b>	

**NOTE: Each block represents an area of 250m X250m**



**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 "A" and with an "N" respectively.

Have specialist reports been attached

<b>YES</b> <b>X</b>	NO
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If yes indicate the type of reports below

A Wetland Assessment report has been attached compiled by AGES Gauteng (Pty) Ltd. Please refer to <b>Appendix G1</b> .
A Heritage Impact Assessment report has been attached compiled by Dr J Van Schalkwyk. Please refer to <b>Appendix G2</b> .

**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.

Rosslyn is located towards the north of Pretoria and in 1962 Rosslyn was proclaimed as a border industrial area. Pretoria North is one of the oldest suburbs of Pretoria and is situated on the northern side of the kopie that separates the town. The surrounding land uses entail commercial and warehousing in the North and East, vacant land and commercial and warehousing in the West and finally light industrial in the South. Rosslyn is an industrial area and the purpose of the proposed infrastructure is to improve public Health and Safety as Stormwater drainage is an essential part of public Health and Safety. The construction of a stormwater network will contribute to public Health and Safety by reducing the risk of flooding in the area.



Figure 1: Industrial area in Rosslyn

**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 paleontological sites, on or close (within 20m) to the site?

YES	<b>NO</b> <b>X</b>
-----	-----------------------

# BASIC ASSESSMENT REPORT [REGULATION 22(1)]

If YES, explain:

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:

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to install a storm water pipeline. As no heritage sites are known to occur in the study area, there would be no impact resulting from the proposed development of the pipeline.

Therefore, from a heritage point of view it is recommended that the proposed development can continue, on condition of acceptance of the mitigation measures. We request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

Refer **Appendix G2** for Heritage Impact Assessment.

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

YES

**NO**  
**X**

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

YES

**NO**  
**X**

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

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT

The Environmental Assessment Practitioner must follow any relevant guidelines adopted by the competent authority in respect of public participation and must at least –

- 1(a) Fix a site notice at a conspicuous place, on the boundary of a property where it is intended to undertake the activity which states that an application will be submitted to the competent authority in terms of these regulations and which provides information on the proposed nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations on the application may be made;
- 1(b) inform landowners and occupiers of adjacent land of the applicant's intention to submit an application to the competent authority;
- 1(c) inform landowners and occupiers of land within 100 metres of the boundary of the property where it is proposed to undertake the activity and whom may be directly affected by the proposed activity of the applicant's intention to submit an application to the competent authority;
- 1(d) inform the ward councillor and any organisation that represents the community in the area of the applicant's intention to submit an application to the competent authority;
- 1(e) inform the municipality which has jurisdiction over the area in which the proposed activity will be undertaken of the applicant's intention to submit an application to the competent authority; and
- 1(f) inform any organ of state that may have jurisdiction over any aspect of the activity of the applicant's intention to submit an application to the competent authority; and
- 1(g) place an advertisement in one local newspaper and any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these regulations.

### 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 (GDARD).

Has any comment been received from the local authority?

YES	<b>NO</b> <b>X</b>
-----	-----------------------

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

The Local Authority is afforded the opportunity to comment on this Draft Basic Assessment Report.
---

### 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	<b>NO</b> <b>X</b>
-----	-----------------------

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

No comments have been received during the initial Public Participation Process. The stakeholders will be afforded the opportunity to comment on this Draft Basic Assessment Report.
---

### 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees 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 inadequate.

The practitioner must record all comments and respond to each comment of the public / interested and affected party before the application 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 to those persons detailed in 1(b) to 1(f) above**

**Appendix 3 – Proof of newspaper advertisements**

~~Appendix 4 – Communications to and from persons detailed in Point 2 and 3 above~~ **(No correspondence has been received)**

~~Appendix 5 – Minutes of any public and/or stakeholder meetings~~ **(no meetings have been held)**

**Appendix 6 - Comments and Responses Report**

~~Appendix 7 – Comments from I&APs on Basic Assessment (BA) Report~~ **(No comments on the BA as this is the Draft BAR)**

~~Appendix 8 – Comments from I&APs on amendments to the BA Report~~ **(There were no amendments to the BA)**

**Appendix 9 – Copy of the register of I&APs**

**Appendix 10 – Comments from I&APs on the application**

~~Appendix 11 – Other~~ **(No other information has been added)**

# 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 "insert No. of duplicates" times (complete only when appropriate)

Section D Alternative No. "insert alternative number" (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? 

550 m <sup>3</sup>
--------------------

How will the construction solid waste be disposed of (describe)?  
The construction waste will be carted away to a registered waste site.

Where will the construction solid waste be disposed of (describe)?  
The construction waste will be carted away to a registered waste site.

Will the activity produce solid waste during its operational phase? 

YES	NO X
-----	---------

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

N/A
-----

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

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	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:  
N/A

**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? 

N/A
-----

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? 

N/A
-----

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

# BASIC ASSESSMENT REPORT [REGULATION 22(1)]

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	<b>NO X</b>
-----	-----------------

If yes, provide the particulars of the facility:

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

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

**N/A**

### Liquid effluent (domestic sewage)

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

YES	<b>NO X</b>
-----	-----------------

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

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

	m <sup>3</sup>
YES	NO

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

YES	<b>NO X</b>
-----	-----------------

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

**N/A**

### Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	<b>NO X</b>
-----	-----------------

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

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

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

YES	NO
-----	----

**N/A**

## 2. WATER USE

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

municipal	Directly from water board	groundwater	river, stream, dam or lake	other	<b>the activity will not use water X</b>
-----------	---------------------------	-------------	----------------------------	-------	--

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?

<b>YES X</b>	NO
------------------	----

If yes, list the permits required

The activity requires a water use license in terms of the National Water Act, 1998 as follows:  
 Section 21 (c) 'impeding or diverting the flow of water in a watercourse'  
 Section 21 (i) 'altering the bed, banks, course or characteristics of a watercourse'

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

YES	<b>NO X</b>
-----	-----------------

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

**N/A**

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

**N/A**

**4. ENERGY EFFICIENCY**

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

N/A

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

N/A

**SECTION E: IMPACT ASSESSMENT**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2006, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

Summarise the issues raised by interested and affected parties.

No comments have been received to date.

Summary of response from the practitioner to the issues raised by the interested and affected parties  
(A full response must be provided in the Comments and Response Report that must be attached to this report):

Comments will be received after the Draft Basic Assessment Report has been made available to the relevant authorities and stakeholders, however no comments have been received to date.

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

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

The Significance Assessment Methodology in accordance with the DEAT (2006) Guideline Document 5 (Assessment of Impacts) is being followed. The mentioned document states that the significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature, duration, intensity, extent and probability of identified impacts. Furthermore the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows:

**SIGNIFICANCE**

**Significance** is the product of **probability** and **severity**.

**PROBABILITY (P)**

**Probability** describes the likelihood of the impact actually occurring, and is rated as follows:

- **Improbable** - Low possibility of impact to occur due to design or history. **Rating: 2**
- **Probable** - Distinct possibility that impact will occur. **Rating: 3**
- **Highly probable** - Most likely that impact will occur. **Rating: 4**
- **Definite** - Impact will occur regardless of any prevention measures. **Rating: 5**

**SEVERITY RATING (SR)**

The **severity rating** is calculated from the **factors** allocated to **intensity** and **duration**. Intensity and duration factors are awarded to each impact, as described below.

**INTENSITY FACTOR (I)**

The **intensity factor** is awarded to each impact according to the following method:

- **Low intensity** - nature and/or man made functions not affected (minor process damage or human/ wildlife injury could occur). **Factor 1**
- **Medium intensity** - environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). **Factor 2**
- **High intensity** - environment affected to the extent that natural and/or human-

made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). **Factor 4**

**DURATION (D)**

**Duration** is assessed and a **factor** awarded in accordance with the following:

- **Short term** - ≤1 to 5 years **Factor 2**
- **Medium term** - 5 to 15 years **Factor 3**
- **Long term** - impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention **Factor 4**
- **Permanent** - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient **Factor 4**

**SEVERITY FACTOR (SF)**

The **severity rating** is obtained from calculating a **severity factor**, and comparing the severity factor to the rating in the table below. For example:

**The Severity factor** = **Intensity factor X Duration factor**  
 = 2 x 3  
 = 6

A severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per Table 1.

**TABLE I: SEVERITY RATINGS**

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no significant impact	

**SIGNIFICANCE RATING**

**A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating.** The significance rating should influence the development project as described below:

- **Low significance (calculated Significance Rating 4 to 6)**
  - **Positive** and **negative impacts** of low significance should have no significant influence on the proposed development project.
- **Medium significance (calculated Significance Rating ≥ 7 to 12)**
  - **Positive impact:** Should weigh towards a decision to continue
  - **Negative impact:** Should be mitigated before project can be approved.
- **High significance (calculated Significance Rating ≥ 13 to 18)**
  - **Positive impact:** Should weigh towards a decision to continue, should be enhanced in final design.
  - **Negative impact:** Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least a low significance rating.

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• **Very High significance (calculated Significance Rating  $\geq 19$  to 25)**

- **Positive impact:**

Continue

- **Negative impact:**

If mitigation cannot be implemented effectively, proposal should be terminated

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 (Preferred) Alternative 1: Use of eco gabion, grass lined channel and concrete combination**

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<b>CONSTRUCTION PHASE</b>			
<b>ADVERSE IMPACTS</b>			
<b>BIOPHYSICAL ENVIRONMENT</b>			
The accumulation of debris and rubbish (particularly plastic) will pollute the area.	<b>12 Medium</b> P – 3 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>Recycling containers must be provided and be appropriately marked in such a way that workers can easily identify them and make use of them.</li> <li>Construction Contactor must provide proof of waste disposal at an approved disposal site.</li> </ul>	<b>4 Low</b> P – 2 I – 1, D – 2, SF – 2 SR – 2
Movement of vehicles may cause trampling and degradation of the wetland and vegetation.	<b>12 Medium</b> P – 3 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>Vehicles must remain on existing roads or tracks where possible.</li> <li>No unauthorised movement of vehicles shall take place outside demarcated areas.</li> </ul>	<b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2
Machinery maintenance could impact on surface and ground water as well as the environment as a whole.	<b>12 Medium</b> P – 3 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>No maintenance of machinery shall take place at the area of work or on any naturally vegetated areas.</li> <li>Machinery maintenance shall only take place at the construction camp.</li> <li>The contractor shall provide drip trays to prevent the contamination of soil or water during maintenance operations.</li> <li>The contractor must ensure that the construction vehicles are under the control of suitably qualified personnel and are in proper working order to avoid excessive noise and fumes, and have no fuel or lubricant leakages.</li> <li>All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the Contractor to, and used or worn by, the staff whose duty it is to manage and maintain the Contractor's and his subcontractor's and supplier's</li> </ul>	<b>4 Low</b> P – 2 I – 1, D – 2, SF – 2 SR – 2

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

		<p>plant, machinery and equipment.</p>	
<p>Stockpile areas for construction material could impact on surface and ground water.</p>	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>• The topsoil is regarded as the top 300mm of the soil profile irrespective of the appearance, structure, agricultural potential, and composition of the soil.</li> <li>• Topsoil, mulch and subsoil stockpiles must be placed in higher-lying areas of the site, and must not be positioned within stormwater channels or areas of ponding.</li> <li>• Topsoil stripped from different soil zones shall be stockpiled separately and clearly identified as such. Under no circumstances shall topsoil obtained from different soil zones be mixed.</li> <li>• Soil stockpiles shall not be higher than 2m or stored for a period longer than one year. The slopes of soil stockpiles shall not be steeper than 1 vertical to 2.5 horizontal.</li> <li>• No vehicles shall be allowed access onto the stockpiles after they have been placed.</li> <li>• Topsoil stockpiles shall be clearly demarcated in order to prevent vehicle access and for later identification when required.</li> <li>• The Contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site used during the contract period, including the defects liability period. This shall include existing spoil sites that are being re-entered.</li> <li>• Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the site agent for his approval. The location of these spoil sites must have signed approval from the affected landowner before submission to the site agent.</li> <li>• No spoil site shall be located within 500m of any watercourse.</li> <li>• A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		<p>and after re-vegetation.</p> <ul style="list-style-type: none"> <li>The contractor must plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material should be indicated and demarcated on the site plan submitted in writing to the Site Agent for his approval, together with the Contractor's proposed measures for prevention, containment, and rehabilitation against environmental damage.</li> <li>Stockpile material must not be placed on sensitive areas.</li> <li>The areas chosen should have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care should be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the Contractor shall at all times ensure that they are: <ul style="list-style-type: none"> <li>Positioned and sloped to create the least visual impact;</li> <li>Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and</li> <li>Kept free from all alien/undesirable vegetation.</li> </ul> </li> <li>In all cases, the Site Agent must approve the areas for stockpiling and disposal of construction rubble before any operation commences.</li> </ul>	
<p>Uncontrolled discharge of effluents could pollute surface and ground water.</p>	<p><b>15 High</b> P – 5 I – 2, D – 3, SF – 6 SR – 3</p>	<ul style="list-style-type: none"> <li>Any discharge of polluted water should be reported to the DWA and the necessary mitigation measures instituted.</li> <li>There is to be no uncontrolled discharge of effluent into any watercourse</li> <li>Runoff is to be controlled as close to the source as possible.</li> <li>Sediment traps may be necessary downstream until</li> </ul>	<p><b>6 Low</b> P – 2 I – 2, D – 4, SF – 8 SR – 3</p>

**Significance Rating Key:**  
PROBABILITY (P)  
INTENSITY FACTOR (I)  
DURATION (D)  
SEVERITY FACTOR (SF)  
SEVERITY RATING (SR)



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<p>Loss of vegetation cover in the area of construction of the stormwater channel and the outlet channels along the wetland.</p>	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<p>construction is completed</p> <ul style="list-style-type: none"> <li>• Only trees and shrubs directly affected by the works, and such others as may be indicated by the ECO, may be felled or cleared. No protected trees may be cleared, should any be identified.</li> <li>• In all areas where the Contractor intends to, or is required to clear the natural vegetation and soil, within the stormwater servitudes, or at designated or instructed areas outside the stormwater servitudes, a plan of action shall first be submitted to the Site agent. The site agent will consult with the ECO for the approval of the vegetation clearing plan.</li> <li>• The plan shall contain a photographic record and chainage/ land reference of the areas to be disturbed. This shall be submitted to the Site agent for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.</li> <li>• No vegetation shall be cleared outside of the demarcated construction areas.</li> <li>• Vegetation clearance must be done gradually and not all at once.</li> </ul>	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>
<p>Sanitation (chemical toilet facilities) could contaminate and impact soil &amp; water bodies</p>	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>• Chemical toilets shall be serviced daily to avoid overflowing and unpleasant odours.</li> <li>• The Contractor should arrange for regular emptying of toilets and should be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Site Agent.</li> <li>• Outside toilets should be provided with locks and doors and should be secured to prevent them from blowing over. The toilets should also be placed outside areas susceptible to flooding [no placement within the 1:100 year floodline].</li> <li>• Toilets to be placed on level</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

		surface.	
<p>Contamination risk to water bodies, during the rainy season (incl. groundwater pollution) due to spillages of dangerous substances such as petrol/diesel, cement and oil from vehicle.</p>	<p><b>15 High</b> P – 5 I – 2, D – 3, SF – 6 SR – 3</p>	<ul style="list-style-type: none"> <li>• Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions.</li> <li>• All hazardous materials i.e. bitumen binders will be stored in a secured, appointed area that is fenced and has restricted entry. A walled, concrete platform or dedicated store with adequate flooring or bermed area must be used to accommodate chemicals such as fuel, oil, paint, herbicide and insecticides, as appropriate, in well-ventilated areas. Storage of bituminous products shall only take place using suitable containers to the approval of the Site Agent.</li> <li>• A concrete floor that is bunded should be used. The Contractor shall provide bunding that can hold 110% of the volume of the bulk fuel storage containers. The Contractor shall provide proof to the Site Agent that relevant authorisation to store such substances have been obtained by the relevant authority.</li> <li>• Hazard signs indicating the nature of the stored materials shall be displayed on the storage facility / pump room / or containment structure. Access to material to be controlled.</li> <li>• Before containment or storage facilities can be erected, the Contractor shall furnish the ECO with details of the preventative measures proposed in order to mitigate against pollution of the surrounding environment from leaks or spillage.</li> <li>• The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.</li> <li>• Storage requirements of hazardous materials must be verified by the ECO prior to any storage taking place on site. Combined storage capacity may not exceed 30m<sup>3</sup> without</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

		<p>receiving formal approval by the GDARD;</p> <ul style="list-style-type: none"> <li>• All spillages from any potential groundwater contaminants such as lubricants, hydrocarbon-based fuels, etc. must be safely and immediately removed to an appropriate disposal facility.</li> <li>• Oil residue shall be treated with oil absorbent such as Drizit or similar and this material removed to an approved waste site.</li> <li>• Surface water draining off contaminated areas containing oil and petrol must be channelled towards an oil separator.</li> <li>• In the case of pollution of any surface water, the Regional Representative of the DWA must be informed immediately.</li> <li>• Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery should be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, should be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by mobile servicing unit should be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.</li> <li>• All used filter materials should be stored in a secure bin for disposal off site. Any contaminated soil should be removed and replaced. Soils contaminated by oils and lubricants should be collected and disposed of at a facility designated by the local authority to accept contaminated materials.</li> <li>• The refuelling area must be in a central area, and must comply with SABS standards.</li> <li>• All construction material shall be stored in the demarcated</li> </ul>	
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		<p>area of the construction camp. Under no circumstances may material be stored outside of the demarcated area on naturally vegetated areas.</p> <ul style="list-style-type: none"> <li>• The ELO must check for spillages at the fuel storage area on a weekly basis.</li> <li>• Streams should be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, the Contractor would be liable to arrange for competent instances to clear the affected area.</li> <li>• In case of accidental spillages, proper corrective measures must be followed to manage the spill and must also be reported to the ECO.</li> <li>• Responsibility for spill treatment lies with the Contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to the ELO. The ELO will assess the situation in consultation with the Site Agent and act as required. In all cases, the immediate response must be to contain the spill. The exact treatment of polluted soil/water will have to be determined by the Contractor in consultation with the ELO and the ECO. Areas cleared of hazardous waste should be re-vegetated according to the ECO's instructions.</li> <li>• Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Site Agent.</li> <li>• The costs of containment and rehabilitation will be for the Contractor's account, including the costs of specialist input.</li> </ul>	
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**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

<p>Unsupervised and misuse of fire on site could impact negatively on the environment</p>	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.</li> <li>Collection of firewood on site is prohibited. The Contractor shall provide adequate facilities for his/her staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor must ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.</li> </ul>	<p><b>4 Low</b> P – 2 I – 2, D – 2, SF – 4 SR – 2</p>
<p>Increased runoff flow and increase in resultant velocity of water entering the river which will increase erosion potential.</p>	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> <li>Attenuation structures need to be constructed to decrease the flow of runoff and to decrease the resultant velocities of water entering the river.</li> <li>These attenuation structures must be constructed outside the riparian zone on relatively flat stable areas to minimise the potential of erosion.</li> <li>Silt fences or hay bales need to be placed near the base of a slope in order to limit the amount of silt entering the watercourse and to reduce the velocity of runoff.</li> <li>Energy dissipaters should also be installed.</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>
<p>Increased turbidity of the stormwater runoff which can result in erosion.</p>	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> <li>Ensure that the runoff is not directed over areas that have been cleared of vegetation, and that are vulnerable to erosion.</li> <li>Vegetate areas ASAP where construction is complete.</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>
<p>Disturbance of the Wetland</p>	<p><b>15 High</b> P – 5 I – 2, D – 3, SF – 6 SR – 3</p>	<ul style="list-style-type: none"> <li>The Environmental Control Officer (ECO) should advise the construction team in all relevant matters to ensure minimum destruction and damage to the environment and specifically wetlands at the outlet area. The ECO should enforce any measures that he/she deems necessary. Regular environmental training should be provided to construction workers to ensure the protection of the wetland habitat;</li> <li>The removal of indigenous</li> </ul>	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

		<p>plants associated with the wetlands and riparian areas should be limited</p> <ul style="list-style-type: none"> <li>• Clearly demarcate the entire development footprint prior to initial site clearance and prevent construction personnel from leaving the demarcated area.</li> <li>• Limit pesticide use to non-persistent, immobile pesticides and apply in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.</li> <li>• Should the development be approved by authorities, monitoring of environmental aspects should be implemented during the construction phase of the development to ensure that minimal impact is caused to the wetlands of the area.</li> <li>• Work in rivers, streams and wetlands should preferably be done during the low flow season.</li> <li>• The following mitigation measures and management actions should be considered to minimize potential impacts of canal construction on the wetland:             <ul style="list-style-type: none"> <li>• Identify areas of historic or potential vulnerability, such as geologically unstable materials or areas subject to flooding;</li> <li>• Avoid or minimize construction in wetlands that will inevitably be inundated during major storm events</li> <li>• Minimize changes to natural drainage patterns and crossings to drainages. Drainage crossings are potentially problematic, so they must be well designed. Changes to natural drainage patterns often result in either environmental damage or failures;</li> <li>• Perform scheduled maintenance to be prepared for storms. Ensure that culverts have</li> </ul> </li> </ul>	
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		<p>their maximum capacity, ditches are cleaned, and that channels are free of debris and brush than can plug structures</p> <ul style="list-style-type: none"> <li>• Typically keep cut and fill slopes as flat as possible and well covered (stabilized) with vegetation to minimize slumping as well as minimize surface erosion. Well-cemented but highly erosive soils may best resist surface erosion with near-vertical slopes that minimize the surface area exposed to erosion;</li> <li>• Use deep-rooted vegetation for biotechnical stabilization on slopes. Use a mixture of good ground cover plus deep-rooted vegetative species, preferably native species, to minimize deep-seated mass instability as well as offer surface erosion control protection</li> <li>• Ensure that structural designs for road crossings at the wetland include appropriate storm water design criteria and have good foundations to prevent failures during floods</li> <li>• Place retaining structures, foundations, and slope stabilization measures into bedrock or firm, in-place material with good bearing capacity to minimize undermining, rather than placing these structures on shallow colluvial soil or on loose fill material;</li> <li>• During construction of the canal and the culvert design, the majority of the flow of the stream / river must be allowed to pass down the stream (i.e. no damming must be allowed to take place). In-stream diversions must allow for continuous water flow.</li> <li>• Appropriate measures must be taken to manage storm water run-off and potential flooding.</li> </ul>	
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**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

		<ul style="list-style-type: none"> <li>Concurrent rehabilitation should occur on all exposed areas created by construction. Only indigenous species should be used for rehabilitation.</li> </ul>	
<b>SOCIO-ECONOMIC ENVIRONMENT</b>			
Dust to be generated during construction activities, which could affect visibility of adjacent roads and also impact on adjacent properties	<b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>The contractor shall ensure that bare soil or soil stockpiles are dampened at least once per day during dry and windy periods. The DWA is to be notified of where the water for dampening is received from.</li> <li>Dust caused by strong winds should be controlled by means of water spray vehicles.</li> <li>The contractors must cover all vehicles transporting material that can be blown off (e.g. soil, rubble etc.), with a tarpaulin, and these vehicles are to travel at maximum speed of 40km/h on site.</li> </ul>	<b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2
The accumulation of debris and rubbish (particularly plastic) will pollute the area.	<b>12 Medium</b> P – 3 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>Waste area must be kept clean at all times to prevent health nuisance and offensive odour to the neighbourhood.</li> <li>Construction Contractor must provide proof of waste disposal at an approved disposal site.</li> </ul>	<b>4 Low</b> P – 2 I – 1, D – 2, SF – 2 SR – 2
Noise associated with digging and construction vehicles and construction activities could be a nuisance to residents.	<b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>The planning of construction activities (construction site) must endeavour to minimise the noise impact on adjacent landowners.</li> <li>Project management should endeavour to keep noise generating activities to a minimum. Compliance with the appropriate legislation with respect to noise should be mandatory.</li> <li>Residents and surrounding business owners should be notified well in advance of the construction schedule.</li> </ul>	<b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2
Heavy construction vehicles pose danger to residents and also cause traffic obstruction.	<b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2	<ul style="list-style-type: none"> <li>A road safety programme should be implemented in order to inform all relevant parties of the possible risks of the construction site.</li> <li>Ensure adequate and correct road signage in the construction affected areas.</li> <li>Red flags should be used to warn the public and construction vehicle operators at least 100m before crossing</li> </ul>	<b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)



**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

		<p>points or access routes into the construction area</p> <ul style="list-style-type: none"> <li>Ensure that heavy vehicles carrying construction material (gravel, sand etc.) are properly covered with tarpaulin to prevent messing of construction material on to roads.</li> </ul>	
Possible fire danger from cooking at the site camp.	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>No open fires are to be allowed on the camp site.</li> <li>Fires shall only be allowed in facilities or equipment specially constructed for this purpose</li> </ul>	<p><b>4 Low</b> P – 2 I – 2, D – 2, SF – 4 SR – 2</p>
Crime may increase as a result of contract workers in the area.	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>Only a limited number of two night watchmen to be allowed overnight on the property to ensure safety of equipment stored on site.</li> <li>Transport to and from the site must be arranged by the contractor if workers are from nearby communities.</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>
<b>BENEFICIAL IMPACTS</b>			
<b>SOCIO-ECONOMIC ENVIRONMENT</b>			
Skills development and creation of job opportunities.	<p><b>10 Medium</b> P – 5 I – 2, D – 2, SF – 4, SR – 2</p>	<ul style="list-style-type: none"> <li>As far as reasonably possible people from surrounding communities must be employed by the building contractor and sub-contractors.</li> <li>This should be included in the contract upon appointment of successful tenderer.</li> </ul>	<p><b>15 High</b> P – 5 I – 2, D – 4, SF – 8 SR – 3</p>
<b>OPERATIONAL PHASE</b>			
<b>ADVERSE IMPACTS</b>			
<b>BIOPHYSICAL ENVIRONMENT</b>			
Increased runoff flow and increase in resultant velocity of water entering the river which will increase erosion potential.	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> <li>Ensure that sufficient energy breakers and erosion protection are present downstream of the canal to prevent erosion of the downstream system.</li> </ul>	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4 SR – 2</p>
<b>BENEFICIAL IMPACTS</b>			
<b>BIOPHYSICAL ENVIRONMENT</b>			
Regular maintenance of stormwater infrastructure will manage and improve quality of run off.	<p><b>8 Medium</b> P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> <li>The effectiveness of re-vegetation and erosion control must be monitored periodically. In the event that rehabilitation is not successful, corrective action must be taken.</li> <li>This may include bringing in additional topsoil, reseeding and mulching, depending on the reasons for the failure of the prior re-vegetation methods.</li> </ul>	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

**BASIC ASSESSMENT REPORT [REGULATION 22(1)]**

		<ul style="list-style-type: none"> <li>• Re-vegetation should be completed as soon as possible after construction, using indigenous vegetation. Indigenous vegetation planted at the site must be in accordance with the approved rehabilitation plan.</li> <li>• Time permitting, the natural seed bank and vegetative structures retained in the topsoil can be utilised instead of using a seed mixture.</li> <li>• A seed mix will have to be used to revegetate disturbed areas, should the time period prior to revegetation commencement be excessive. This action will reduce the time the barren areas will be subject to the agents of erosion.</li> <li>• It is recommended that a rehabilitation specialist be appointed for rehabilitation of the wetland.</li> <li>• Rehabilitation plan to be drafted by a qualified Wetland Specialist and Landscape Architect &amp; implemented as soon as possible after installation of each portion of the channel is completed. The Developer (City of Tshwane Local Municipality) will be responsible for the costs of rehabilitation and the Contractor will be responsible to ensure that it is implemented.</li> <li>• Environmental audits should be conducted up until it can be confirmed that rehabilitation has been implemented successfully.</li> </ul>	
Landscaping	<p><b>6 Low</b> P – 3 I – 2, D – 2, SF – 4, SR – 2</p>	<ul style="list-style-type: none"> <li>• All cleared areas must be landscaped and re-vegetated with indigenous plants to resemble pre-construction topography as closely as possible.</li> </ul>	<p><b>12 Medium</b> P – 4 I – 2, D – 4, SF – 8 SR – 3</p>
<p><b>Impacts related to Alternatives 2, 3 and 4 are similar to those of Alternative 1 with exception to the following:</b></p>			
<p><b>Alternative 2: Armoflex lined channels. This alternative is not preferred because depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel. This option is also not economically feasible.</b></p>			
<p><b>Alternative 4: Grass lined channel. This alternative is not preferred for hydraulic control and erosion protection.</b></p>			
Increased turbidity of the stormwater runoff which	<p><b>15 High</b> P – 3</p>	<ul style="list-style-type: none"> <li>• Ensure that the runoff is not directed over</li> </ul>	<p><b>12 Medium</b> P – 4</p>

**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

## BASIC ASSESSMENT REPORT [REGULATION 22(1)]

can result in erosion.	I – 4, D – 4, SF – 16 SR – 5	areas that have been cleared of vegetation, and that are vulnerable to erosion.	I – 2, D – 4, SF – 8 SR – 3
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**Significance Rating Key:**  
 PROBABILITY (P)  
 INTENSITY FACTOR (I)  
 DURATION (D)  
 SEVERITY FACTOR (SF)  
 SEVERITY RATING (SR)

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

A Wetland assessment report has been attached compiled by AGES. Refer to **Appendix G1**.

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

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.

Due to the fact that the proposed development is the installation of a stormwater outlet it is anticipated that no decommissioning will take place in the foreseeable future.

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

N/A

### 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 **preferred proposal (Alternative 1)** when considered together with other surrounding construction activities are as follows:

#### Adverse Cumulative Impacts

- Noise
- Dust
- Contamination risk to water bodies;

With implementation of the mitigation measures as indicated in the impact tables above and included in the Environmental Management Plan (**Refer Appendix H**) these anticipated cumulative impacts can be successfully mitigated to a low significance with exception to loss of vegetation cover in the area of construction of the stormwater channel along the wetland that can be mitigated to a level of medium significance.

However the upgrade of the storm water system will create a much healthier environment for residents to live in, and their properties will be protected from flood damage during the rainy season.

#### Beneficial Cumulative Impacts

- Maintenance of stormwater infrastructure, will contribute to decreasing water pollution and pollution of the environment in general, decreasing the risk of erosion and contribute to creating a more hygienic environment for residents to live in;

The cumulative impacts associated with the **Alternatives 2, 3 and 4** are the same as for **Alternative 1 (preferred proposal)**.

### 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**

Preferred alternative consists Eco gabion, grass lined channel and concrete combination.

The benefits of the proposed alternative outweigh the impacts if impacts will be mitigated successfully by implementing the Environmental Management Plan.

**The adverse impacts have been identified as follows; note that the significance rating indicated is upon/after implementation of mitigation measures (For details on the likelihood of impacts occurring and the anticipated duration of impacts refer to Appendix H)**

- The accumulation of debris and rubbish (particularly plastic) will pollute the area. **(Low)**
- Movement of vehicles may cause trampling and degradation of the wetland and vegetation. **(Low)**
- Machinery maintenance could impact on surface and ground water as well as the environment as a whole. **(Low)**
- Stockpile areas for construction material could impact on surface and ground water. **(Low)**
- Uncontrolled discharge of effluents could pollute surface and ground water. **(Low)**
- Loss of vegetation cover in the area of construction of the stormwater channel and the outlet channels along the wetland. **(Low)**
- Sanitation (chemical toilet facilities) could contaminate and impact soil & water bodies. **(Low)**
- Unsupervised and misuse of fire on site could impact negatively on the environment. **(Low)**
- Increased runoff flow and increase in resultant velocity of water entering the river which will increase erosion potential. **(Low)**
- Increased turbidity of the stormwater runoff which can result in erosion. **(Low)**
- Disturbance of the Wetland. **(Medium)**
- Heavy construction vehicles pose danger to residents and also cause traffic obstruction. **(Low)**

***However with implementation of the mitigation measures as indicated in Section E the anticipated adverse impacts can be successfully mitigated to a degree of low significance, with the exception to the loss of vegetation cover and the disturbance of vegetation can be successfully mitigated to a degree of medium significance.***

It is recommended that the attached EMP be included in a condition of the Environmental Authorisation to ensure that activities on site are managed and monitored.

**It is therefore recommended that the GDARD consider this proposal for approval.**

**Alternative 2 (Armoflex lined channels.)**

This alternative is not preferred because depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel. This option is also not economically feasible.

**Alternative 4 (grass lined channel)**

This alternative is not preferred for hydraulic control and erosion protection.

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

**For proposal:**

Preferred alternative consists Eco gabion, grass lined channel and concrete combination.

In addition to the eco gabion and grass lined channel, a concrete bottom is provided to prevent erosion of the channel. Due to flat slopes for daylighting bottom velocities it is important to promote a self cleaning system. It also prevents over vegetation and siltation of the channel bottom to ensure continuous low flow conditions.

Formalization of a stormwater management infrastructure is required in order to successfully accommodate adjoining drainage networks as proposed in the Master SMP.

The following beneficial impacts are associated with the preferred proposal:

- Reduce current erosion and lower sedimentation loads;
- A permeable canal will allow for movement of water onto the adjacent soil profile, it also allows for some stream flow augmentation and good vegetation cover is possible, a permeable canal can assist with flood attenuation; and
- Reduction in litter through litter traps proposed at all outlets with the implementation of a regular maintenance and cleaning programs.

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.

Preferred alternative consists Eco gabion, grass lined channel and concrete combination. In addition to the grass lined channel, a concrete bottom is provided to prevent erosion of the channel. Due to flat slopes for daylighting bottom velocities it is important to promote a self cleaning system. It also prevents over vegetation and siltation of the channel bottom to ensure continuous low flow conditions.

***However with implementation of the mitigation measures as indicated in Section E the anticipated adverse impacts can be successfully mitigated to a degree of low significance.***

It is recommended that the attached EMP be included in a condition of the Environmental Authorisation to ensure that activities on site are managed and monitored.

## 7. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner).

<b>YES</b>	NO
<b>X</b>	

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


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:

- It is strongly recommended that a rehabilitation specialist be appointed for rehabilitation of the wetland.
- It is recommended that adherence to and implementation of the attached EMP be included as a condition to the Environmental Authorisation and that monthly environmental audits be conducted for submission to GDARD during the construction phase as well as a few times upon operational phase.
- The following mitigation measures for open space have been identified for the Municipality should they have the manpower and resources available to contribute to management of the open space area:  
*The Ecological Management Plan should:*
  - Include an ongoing monitoring and eradication programme for all non-indigenous species, with specific emphasis on invasive and weedy species;

- Ensure the persistence of all Red and Orange List species;
- Include a monitoring programme for all Red and Orange List species;
- Facilitate/augment natural ecological processes;
- Provide for the habitat and life history needs of important pollinators;
- Minimize artificial edge effects (e.g. water runoff from developed areas & application of chemicals);
- Include management recommendations for neighbouring land, especially where correct management on adjacent land is crucial for the long-term persistence of sensitive species present on the development site;
- Result in a report back to the Directorate of Nature Conservation on an annual basis; and
- Investigate and advise on appropriate legislative tools (e.g. the NEMA: Protected Areas Act 57 of 2003) for formally protecting the area (as well as adjacent land where it is crucial for the long-term persistence of sensitive species present on the development site).

***Also refer to Environmental Management Plan (EMP) attached as Appendix H.***

**8. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

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  
(Appendix  
H)**

## SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

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)**

**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~~ **(water use license still to be applied for)**

**Appendix G: Specialist reports**

Appendix G1: Wetland delineation

Appendix G2: Heritage Impact Study

**Appendix H: EMPr**

**Appendix I: Other information**

Appendix I1: CPlan map

## 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; and