

# BASIC ASSESSMENT REPORT

## HERONBRIDGE COLLEGE SPORT-FIELD

### DEVELOPMENT

**COMMENT PERIOD: 4 AUGUST 2017 TO 5 SEPTEMBER 2017**



**HeronBridge**  
COLLEGE

**Contact Details:**

**Name:** Grant Caw

**Address:** Postnet Suite 707, Private bag x153, Bryanston, 2021

**Tel:** 011 540 4800 **Fax:** 082 450 8816 **Email:** grant@heronbridge.co.za

**Report Compiled by:**



**Prism EMS**

P.O. Box 1401  
Wilgeheuwel  
Johannesburg  
1736

Tel: 011 475 0210  
Fax: 086 601 4800  
E-Mail: [prism@prismems.co.za](mailto:prism@prismems.co.za)

**Report Authors:**

Mr. A. Fourie (*BSc. (Hons) Environmental Science*)

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## EXECUTIVE SUMMARY

The proposed Heronbridge College Sports Field Development involves the transformation of a section of the property to sports-field's and related facilities, similar to the schools existing facilities with the addition of an Astro-turf hockey field, pool etc. The sports-field will aim to facilitate multiple sport's disciplines such as tennis & netball courts, cricket oval, a pool and the Astro-turf hockey field(s). Heronbridge will also apply for the rehabilitation of the drainage area by safely removing the illegal dumping material from the area using a registered 3<sup>rd</sup> party contractor.

Certain sections of the sports-field will be installed permanently due to its hard surfaces such as the Astro-turf hockey field and the tennis & netball courts. The construction of pavilions, ablution- and storage facilities will be regarded as permanent infrastructure.

### Need for the Project

The Gauteng Department of Roads and Transport (GPDRT) have aligned the proposed K52 road through the middle of Portion 38 of the farm Nietgedacht 535 JQ. Heronbridge College currently utilizes Portion 38 for their existing sports-field. Due to the road alignment, most of their facilities will be lost. The development of new sports fields on Portion 112 (A Portion of Portion 17) of Nietgedacht 535 JQ is therefore required. The sports fields will allow Heronbridge College to continue to offer high quality educational services. In terms of this, the following should be noted:

- The Heronbridge College has been in existence for many years. It is functioning effectively and requires expansion of the sport fields.
- The dire need for education and education facilities is a daily topic in South Africa and is also a matter that receives the highest priority on all Government levels.
- An improvement in the educational level of persons is seen to be directly linked to vast advantages such as poverty relief, improved employment, the development of business opportunities, skills improvement and professionalism.
- Education is, however, also tied to physical development. It is, therefore natural to expect that sports facilities are tied to educational facilities and are planned and developed in this manner. Sports training start in most cases at educational facilities and schools.
- The Heronbridge College, as a very successful educational facility, also experiences the need for sport facilities and has developed sport fields opposite the site where the College is situated.

### Environmental Sensitivity

An **Ecological Habitat Assessment** was undertaken and found that some impacts, such as alien invasive species, footpaths and a leaking sewage line, was observed. In terms of species diversity, the most important and sensitive plant is *Hypoxis hemerocallidea*, which is classified as 'Declining'. *Hypoxis hemerocallidea* is, however, easy to transplant.

However, overall, the specialist found that whilst the proposed development site is considered sensitive, some impacts can be reduced by implementing mitigating measures and proper planning in terms of site layout.

A **Heritage Impact Assessment** was undertaken and found that No Significant Stone Age sites were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly, no sites of archaeological significance were recorded by other studies in the area (e.g. Kusel (2007), van Schalkwyk (2013) van der Walt (2015 a and b, 2016).). No further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. According to the SAHRA Paleontological Sensitivity map the area is of zero paleontological sensitivity and no further studies are required in this regard.

In terms of the built environment of the area (Section 34), no structures occur within the study area and in terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation.

A **Wetland Assessment** was undertaken and established that the following Hydrogeomorphic wetlands were identified during the site evaluation:

- Drainage line (Stream Headwater)
  - 21659\_CHS was found on the northern slope draining towards the West.

Concluded from the results presented in this document, the development activities will impact on the drainage system even though, the rehabilitation will positively impact on the drainage line and impacts predicted can be mitigated to satisfactory standards if all mitigatory actions are implemented with due care. It is key to preserve water quality and supply to the downstream aquatic resources and is therefore not recommended to construct above-stream of the drainage line.

### **Social Impacts**

Further, a number of potential social impacts were identified such as safety, security, nuisance, noise, dust and visual impacts. These impacts can be effectively mitigated through implementation of appropriate environmental management measures and conditions as stipulated in the EMP. The proposed development will utilise vacant land adjacent to the school for an activity forced upon by the Department of Roads and Transport in relation to the K52 road alignment. During the construction phase of the project, the development will result in the generation of job opportunities for the local community. The sectional upgrade of certain roads and road-intersection will improve the current road infrastructure of the surrounding area thereby benefiting not only the proposed site but the neighbouring properties and thereby aligning development with the city's future planning (such as the K52). The development will secure the future existence of the school which will directly affect the surrounding community in a positive way.

### **Impact Assessment**

A detailed impact assessment has been undertaken and assessed the types of impact, duration of impacts, likelihood of potential impacts as well as the overall significance of the impact occurring. Most impacts have a low significance once mitigation measures were applied. Based on the impact assessment undertaken as well as the findings of the specialist studies and the need for the project, it is the opinion of the EAP, that the proposal be authorised.



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

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**Kindly note that:**

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

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**DEPARTMENTAL DETAILS**

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

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

Administrative Unit telephone number: (011) 240 3377

Department central telephone number: (011) 240 2500

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(For official use only)

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

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

Not Applicable

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

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

No Closure plan is required as the proposed project involves the permanent erection of sports facilities

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

This report is currently available for public review and a copy of the document has been submitted to the Gauteng Department of Agriculture and Rural Development (GDARD), Department of Water and Sanitation (DWS) and City of Johannesburg (CoJ).

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

If no, state reasons for not attaching the list.

Not Applicable

Have State Departments including the competent authority commented?

If no, why?

Not yet applicable.  
This document has been circulated to the relevant authorities, they have been given a 30-day commenting period in which they may provide comment on the proposed project. All comments received during the public review period will be submitted as part of the final submission of the BAR to GDARD

# SECTION A: ACTIVITY INFORMATION

## 1 Proposal or Development Description

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

Application for Environmental Authorisation for the proposed Heronbridge College Sports-field development on Portion 112 of the farm Nietgedacht 535 JQ, Gauteng Province.

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

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

 YES  NO

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

Water Use Licence Application (WULA): <u>General Authorisation</u>	
<b>Legislation</b>	<b>Competent Authority</b>
National Water Act, 1998 (Act No 36 of 1998)	Department of Water and Sanitation

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

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

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

The water use licence: General Authorisation Application will be submitted to DWS after the commenting period of this report expires and all relevant comments have been addressed.

## 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:
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	National (DEA) Provincial (GDARD)	4 December 1996
National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.	National (DEA) & Provincial (GDARD)	27 November 1998
National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.	National (DEA) & Provincial (GDARD)	27 November 1998 2 September 2014

Environmental Impact Assessment Regulations (GN R 982 of 4 December 2014) (as amended by GN 326 of 7 April 2017)	National (DEA) Provincial (GDARD)	8 December 2014 (as amended)
Listing Notice 1 (GN R 983 of 4 December 2014) (as amended by GN 327 of 7 April 2017)	National (DEA) Provincial (GDARD)	8 December 2014 (as amended)
Listing Notice 3 (GN R 985 of 4 December 2014) (as amended by GN 324 of 7 April 2017)	National (DEA) Provincial (GDARD)	8 December 2014 (as amended)
General Authorisation for water uses as defined in Section 21(c) or 21(i) (Act No. 509 of 2016)	Department of Water and Sanitation (DWS)	26 August 2016
National Heritage Resources Act, 1999 (Act No 25 of 1999)	South African Heritage Resources Agency (SAHRA) & Provincial Heritage Resources Authority Gauteng (PHRA-G)	14 April 1999
Generic Water Use Authorization Application Process – External Guideline	DWS	2007
Water Use Authorization Application Process – External Guideline	DWS	2007
General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998)	DWS	2016
Gauteng Environmental Management Framework	GDARD	2017
Guideline on Need and Desirability	DEA&DP	2010
Guideline on Alternatives	DEA&DP	2010
Guideline on Public Participation	DEA&DP	2011
GDARD Requirements for Biodiversity Assessments V3	GDARD	2014
IEMS Guideline series	DEA	2014

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

Legislation, policy of guideline	Description of compliance
DWS: Regulations regarding the procedural requirements for Water Use Licence Applications and Appeals (Act No. 267 of 2017)	Compliance in terms of NWA, 1998 in terms of section 41 of the Act for a Water Use License application for the proposed Heronbridge College Sports-field.
DWS, 2007b. Water Use Authorization Application Process – External Guideline – August 2007	Compliance in terms of NWA, 1998 for water uses in terms of sections 21 for the proposed Heronbridge College Sports-field.
DEA&DP, 2010a. Guideline on Need and Desirability	The need and desirability considers the different stages of an BAR. It considers individual questions of the needs, the impacts and effects on the environment. The Need and Desirability provides information and guidance for applicants when considering the need and desirability in terms of NEMA and the EIA Regulations.
DEA&DP, 2010b. Guideline on Alternatives	This guideline is applicable to this proposed development in terms of a description of feasible and reasonable alternatives. Different alternatives are considered and this guideline describes what each alternative involves and how these alternatives should be considered. The No-Go alternative is compulsory and must always be included.

DEA&DP, 2011. Guideline on Public Participation	Public participation processes have been followed with the consideration of the guideline as it provides the public or stakeholders with the scale of anticipated impacts, the public sensitivity to the project, indicates the types of potentially affected parties, the public participation mechanisms, whether it be public meetings, open days or press releases, etc. This guideline indicates how the EAP, Applicant and affected landowners can participate in a basis assessment and/or EIA.
DEA, 2014 – IEMS Guideline series	Compliance with the Integrated Environmental Management Series in terms of the NEMA, 1999 (EIA Regulations, 2014) for the proposed Heronbridge Sports-field Development. The guideline series informs the EAP of how the EIAs, public participation process, the listed activities in terms of the EIA Regulations, 2014 compare in an user friendly manner.
GDARD Requirements for Biodiversity Assessments V3, 2014	Compliance with the Gauteng Department of Agriculture and Rural Development Biodiversity Management Directorate in terms of the requirements for Biodiversity Assessments version 3. The Directorate establishes the minimum requirements for any biodiversity assessment undertaken by a competent specialist.
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998)	The following activities are triggered in terms of Section 24(2) of NEMA and the associated EIA Regulations, 2014 (GN R 982 of 4 December 2014) for: <ul style="list-style-type: none"> <li>• Listing Notice 1 (GN R 983 of 4 December 2014): <ul style="list-style-type: none"> <li>○ Activity 19</li> <li>○ Activity 27</li> </ul> </li> <li>• Listing Notice 3 (GN R 985 of 4 December 2014): <ul style="list-style-type: none"> <li>○ Activity 12</li> </ul> </li> </ul> The triggered activities from part of this application and basic assessment process.
National Water Act (NWA), 1998 (Act No. 36 of 1998)	The following water uses are triggered in terms of Section 21 of the NWA: <ul style="list-style-type: none"> <li>• <b>Section 21(a)</b></li> <li>• <b>Section 21(c)</b></li> <li>• <b>Section 21(i)</b></li> <li>• <b>Section 21(e)</b></li> <li>• <b>Section 21(g)</b></li> </ul> A Water Use License (WUL) will be applied for, for the proposed development.
SAHRA, 1999 – National Heritage Resources Act, 1999 (Act no. 25 of 1999)	The EMP has included management measures in the event of any heritage and/or cultural findings during the construction phase.

### 3 Alternatives

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.



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

**Note:** After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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

### **3.1 Nature of the Activities**

The nature of the activities to be undertaken is to transform a section of the property to sports-field's and related facilities, similar to the schools existing facilities with the addition of an Astro-turf hockey field, pool etc. The sports-field will aim to facilitate multiple sport's disciplines such as tennis & netball courts, cricket oval, a pool and the Astro-turf hockey field(s). Heronbridge will also apply for the rehabilitation of the drainage area by safely removing the illegal dumping material from the area using a registered 3<sup>rd</sup> party contractor.

### **3.2 Permanent Infrastructure**

Certain sections of the sports-field will be installed permanently due to its hard surfaces such as the Astro-turf hockey field and the tennis & netball courts. The construction of pavilions, ablution- and storage facilities will be regarded as permanent infrastructure.

### **3.3 Site Alternatives**

According to the EIA Regulations, 2014 the following types of alternatives may be considered for a proposed project, alternatives relating to:

- Different project activities;
- Site selection; and
- Location or layout alternatives within the proposed site.

The Gauteng Department of Roads and Transport (GPDRT) have aligned the proposed K52 road through the middle of Portion 38 of the farm Nietgedacht 535 JQ. Heronbridge College currently utilizes Portion 38 for their existing sports-field. Due to the road alignment, most of their facilities will be lost. Portion 112 of the Farm Nietgedacht 535 JQ was the only available and feasible location to relocated the existing facilities with sufficient space for expansions.

For the proposed development, the only alternatives that therefore may be considered are layout alternatives for the various activities to be undertaken on or within the proposed site as the only reason for developing is to relocate the existing facilities to accommodate the road alignment. Further, an alternative site is not feasible as Portion 112 was the only one practically and financially available to the school.

Even though the property extends over 25 hectares in size, only a portion of it will be used (19.38 Ha). This is mainly due to the road alignment on the southern side and the exclusion of a drainage area on the northern side of the property.

The following main components are required for consideration of the site layout, and are discussed or described further:

- Property Entrances
- Sports-facilities
- Development Footprint

### **3.3.1 Property Entrance**

The Gauteng Transport Infrastructure Act (No. 8 of 2001) dictates the minimum distance to construct an access road from a provincial road. This leaves little leeway for access alternatives as the proposed property can only be accessed from the proposed access road. The Act prevents any direct access to K-class roads and must therefore be provided from the Riverfield road. The location of the proposed access road aligns with Portion 38 and 38's proposed access which not only makes it safer but more cost effective.

It was therefore recommended that two (2) accesses be provided off Riverfield Road.

- **Access A:** Emergency access
- **Access B:** Vehicle and pedestrian entrance / exit

Access A will only be used during the emergency situations and will not allow public access. Alternative locations for the access roads were not investigated as the two provided will also serve neighbouring properties, and thus deviating from the proposed design would impact neighbouring properties access.

Heronbridge College is proposing to provide grass & gravel based internal parking for the sports-facilities. The alternative would be to provide tarred or paved parking. This will however, be very costly. Refer to [Appendix G.4: Traffic Impact Assessment](#).

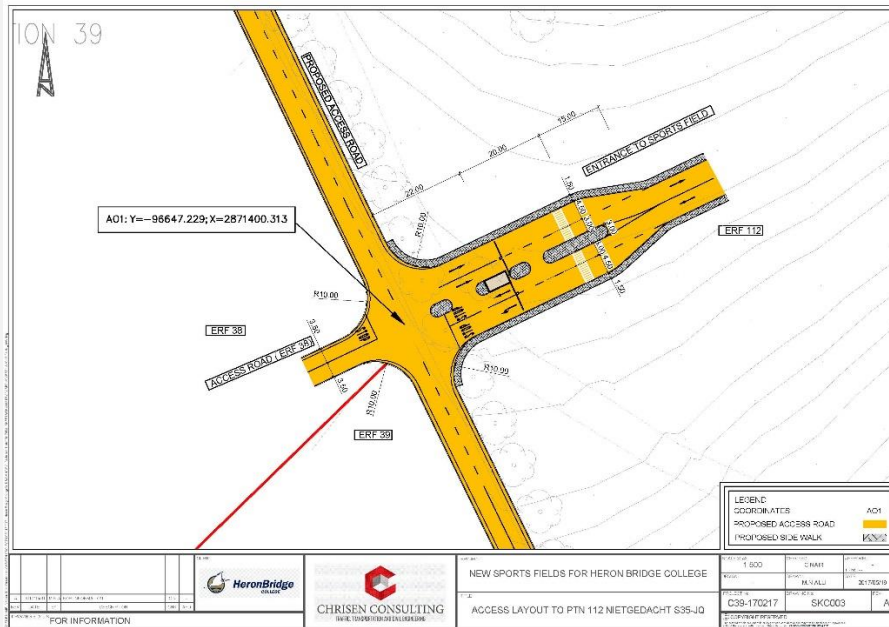


Figure 3-1: Proposed site entrance

### 3.3.2 Sports Facilities

The purpose of the development is to ultimately replace the sports facilities on Portion 38 on a section of Portion 112. A layout alternative was thus considered within the designated area. Due to the topography of the site, some facilities like the cricket oval could not move significantly from the proposed position, the facilities must also be placed in such a manner that the pavilions would get maximum exposure. The design specifications for such sports-field only allows for “cutting” and not “filling” during levelling of ground, and therefore limits the orientation alternatives of some of these facilities.

#### 3.3.2.1 Proposed Layout Plan

The proposed layout makes provision for the following developments on Portion 112 Nietgedacht is as follows:

- Two (2) cricket oval areas
- Two (2) hockey fields
- Tennis Courts
- Netball Courts
- Basketball Courts
- Three (3) change and ablution facilities
- Security office, Store and staff unit
- Vehicular Parking Areas





Figure 3-3: Alternative 2 site layout plan

The alternative layout allows for only one cricket oval within the allocated area, as mentioned above. The alternative was investigated but was not regarded as the preferred option as it allows for less sports-facilities within the allocated area. With Heronbridge aiming to successfully relocate all its existing facilities to Portion 112, alternative 2 will thus not achieve this aim.

### 3.3.3 Development Footprint

#### 3.3.3.1 Proposed Development Footprint:

The proposed layout transforms less than 20 ha (19.38) of natural vegetation on portion 112 of the farm Nietgedacht. The proposed layout is preferred as it transforms the least amount of land for the purpose of the proposed development. It also makes provision for the rehabilitation and protection of the sensitive area in the northern section of the property.

#### 3.3.3.2 Development Footprint Alternative (Alternative 1):

An alternative to the proposed layout would be to utilise the entire Portion 112 (25 hectares) and spread the facilities throughout the entire area. This is not the desired option even though it's a possible alternative as it would impose on the identified drainage area after rehabilitation, and would require additional pavilions to facilitate the large footprint. This alternative also creates a large cost and time implication as it would require a full EIA & Scoping process and the construction of such a large area would result in high costs and time.

Alternative one utilises the entire Portion 112 and would therefore have a greater impact on the environment, utilise more natural resources and transform the entire property, and is therefore not regarded as the preferred option.

### **3.3.4 Services**

#### **Energy**

##### 3.3.4.1 Proposed Energy utilisation:

An Electricity connection will have to be installed, no feasible alternative can be provided as the location and size of the electricity demand is to great. Electricity connection will connect to the ESKOM grid.

By providing sufficient electricity to the proposed site will not only benefit this development but provide services for future development in the surrounding area. The strategic densification will provide cost effective and efficient infrastructure provisions for services in the area. Especially providing more electricity in the area with a new line.

##### 3.3.4.2 Alternative Energy utilisation:

Alternative Energy sources was investigated for the proposed development. However, due to the size and number of the facilities for the site, conventional sources like City Power had to be used. It is however encouraged to make use of efficient and sustainable processes during the construction phase of the project, as well as the utilization of new sustainable resources and technology such as LED Spray-lights.

#### **Water**

##### 3.3.4.3 Proposed Potable Water Utilisation

Potable water will be required to service the proposed ablutions, security office and stores. Water for irrigation of the lawns and cricket fields is to be carried out with "Grey Water". Water is to be extracted from the existing borehole on site and treated accordingly. The "grey water" to be used will be extracted from the on-site treatment facility and the existing on-site "grey water" sewer line crossing the site.

##### 3.3.4.4 Alternative Potable Water Utilisation

Alternative water sources will also be investigated such as grey water recycling systems and rainwater catchments to support existing water infrastructure. Heronbridge College are currently in discussion with Johannesburg Water over the potential utilisation of the treater sewer water flowing through Portion 112. Mitigation measures for the efficient use of water is discussed in the EMP.

#### **Sewer**

##### 3.3.4.5 Proposed Sewer Treatment

Heronbridge College proposes to install an on-site SBR Activated Sludge Wastewater Package Plant to treat the sewer produced on site to "grey water" quality. The treated "grey water" will mainly be used for irrigation of the grassed facilities, any excess "grey water" will be released into the existing treated sewer pipeline servitude as needed.



The sewer pipeline servitude is 1.89m wide and will be protected and incorporated in the new development. The invert levels of the pipe will be confirmed prior to any bulk earthworks design and construction taking place. Heronbridge College has advised that the application for extracting "Grey Water" from the existing "Grey Water Sewer line" has been made to the department (JHB water). The department has advised that there are studies currently been undertaken in the area and will revert to them.

#### 3.3.4.6 Alternative Sewer Treatment

Due to the lack of formal infrastructure within the area, little feasible alternatives exist. The possibility of using septic tanks was investigated, however, demands required from Heronbridge's existing facilities indicates that the number of septic tanks required will be unfeasible. Using portable chemical facilities cannot be regarded as a permanent alternative and was therefore regarded as unfeasible. The only feasible option is to therefore, treat the sewer before releasing it. Alternative treatment plans were investigated, however the preferred option mentioned above provided the most cost-effective solution.

### **Stormwater**

#### 3.3.4.1 Proposed Stormwater Management

The site naturally drains in two directions viz. The upper portion drains in a westerly direction and the lower portion drains in a southerly direction. There is an existing stormwater drainage culvert located at the southern end of the plot. Of the 19.38 ha which can be used for development a total of 7.07 ha (70702 m<sup>2</sup>) will be utilised.

In the Post-Development state, the catchments are determined from the designed / asbuilt falls and drainage of the proposed facilities. The anticipated general drainage directions of the facilities which impact the size of the previously determined catchments however the outfall points remain the same. In general, the sporting facilities will vary in fall between 0.25% - 0.5% with the surface coverings. The parking facility is likely to not exceed 4% in longitudinal grade with a basic drainage cross-fall. As the outfall points are approached then the natural grade of the terrain will rule.

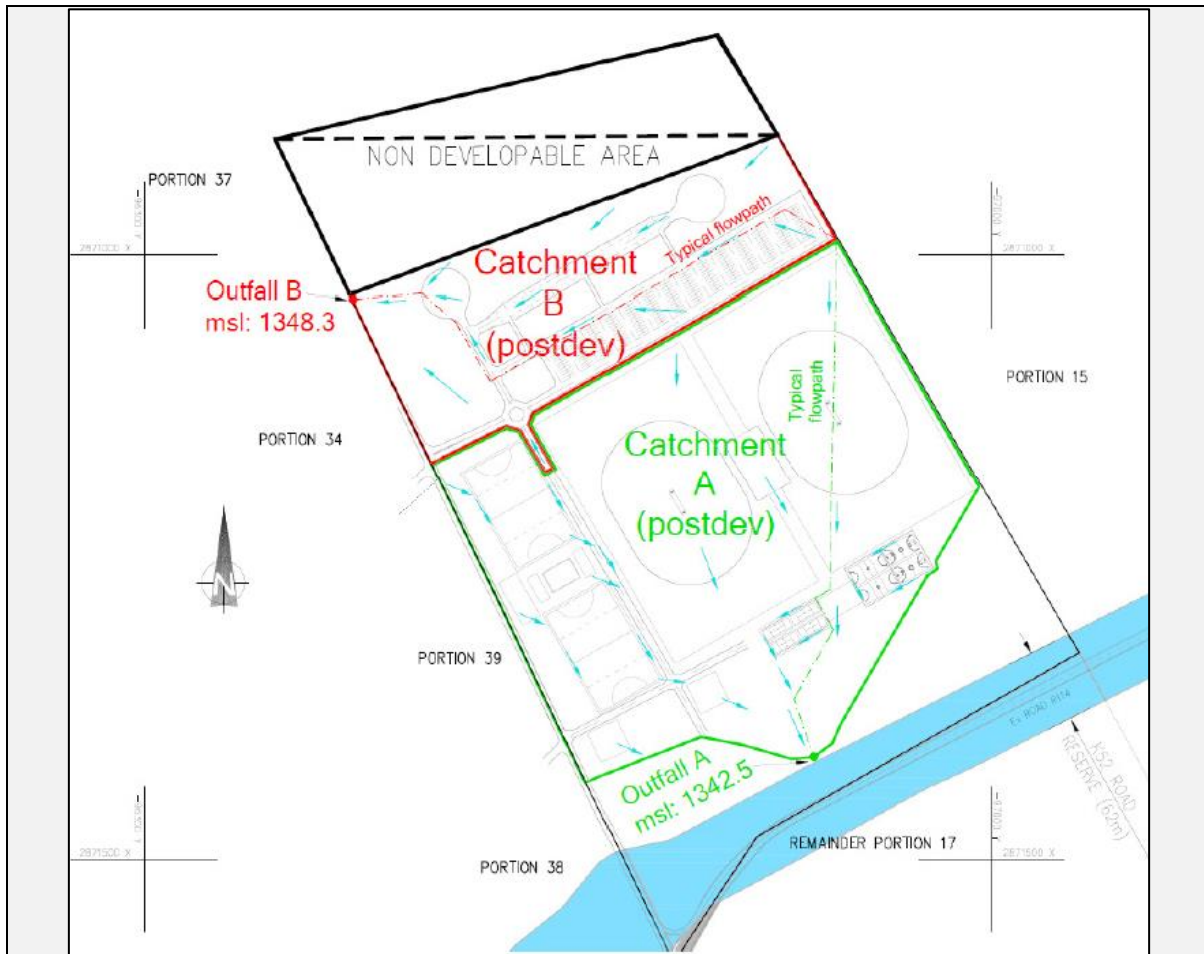


Figure 3-4: Catchments Post-Development

Outfall A post development hydrograph calculations indicate:

- In the 1:50 year rain event, the stormwater attenuation volume required = 1084 m<sup>3</sup>.
- the 1:10 year rain event, the stormwater attenuation volume required = 843 m<sup>3</sup>.

Outfall B post development hydrograph calculations indicate:

- In the 1:50 year rain event, the stormwater attenuation volume required = 182 m<sup>3</sup>.
- the 1:10 year rain event, the stormwater attenuation volume required = 178 m<sup>3</sup>.

Drainage is achieved by a network of open channels, grid inlets, field inlets and reticulation pipework. Attenuation is achieved in the attenuation ponds provided. The Hockey Fields, Netball Court, Tennis Courts and Basketball Courts shall be drained into half round concrete channels running adjacent the longitudinal lengths of the courts / fields. The cricket fields shall be drained by subsurface slotted pipes with the tie-in manhole situated at the low point. The roads shall be drained by catchpits situated at road edge. The car park will be drained into an open V drain channel running adjacent the longitudinal length, top width of 1.2 m with a depth of 200 mm (side slopes of 1:3). The channel will be lined with precast grass blocks which will assist with erosion control as well stability



when traversed over by light duty traffic. All buildings shall drain into manhole type structures situated adjacent each building.

The flow is then ponded in attenuation ponds specific to Outfall A (min pond volume of 1084 m<sup>3</sup>) and Outfall B (min pond volume of 182 m<sup>3</sup>). The ponds are formed by earth berms of side slopes 1:1 with a 2 m wide central top strip. The flow is directed by wingwalls toward the attenuation control structure which has orifices and weirs to regulate the flow such that the pre-development flow rate is not exceeded. Refer to [Appendix G.6: Stormwater Management Plan](#).

#### 3.3.4.2 [Alternative Stormwater Management](#)

The alternative option to managing the stormwater on site would be to install a network of closed channel-pipes instead of open-channels. This however, creates complications and difficulties during maintenance activities of the stormwater systems and may create flood potentials during peak run-off. During the stormwater investigation two drainage lines were identified as a result of the topography. It is therefore critical that all service water run-off be directed to two identified attenuation ponds. For this reason, an alternative stormwater system is not recommended.

Refer to [Appendix I.2: Outline Scheme Report](#).

### 3.3.5 **Summary**

Due to the nature of the project only a site layout alternative could be considered. The proposed layout incorporates a section of the site and utilises less than 20 hectares of Portion 112. It provides sufficient space for all the required sports facilities, associated infrastructure and stormwater management. The proposed layout is regarded as the most sufficient and cost affective option and is therefore regarded as the preferred layout. The designed layout plan and a feasible site layout alternative is indicated in [Appendix A.2.1: Proposed Layout Plan](#) & [Appendix A.2.2: Alternative Layout Plan](#).

## 3.4 **Environmental Attributes**

After a preliminary assessment was undertaken using the Gauteng Conservation Plan, rivers, wetlands and vegetation data sources as indicated in [Appendix A.3: Sensitive Overlay Map](#)

#### [Appendix A.4:](#)

The following environmental attributes were considered in the environmental impact phase to ascertain areas where further investigation was required prior to confirming a final site layout:

- Rivers and Wetlands: A drainage line originating within the study site was observed on the northern side of the site.
- Ecological sensitive areas including potential sensitive fauna and flora.
- Heritage and Cultural aspects.
- Vegetation Map.
- EMF Map.

### **3.6 No-go Option**

The no-go option includes not erecting Sports-facilities on the proposed site, however, if the sports-facilities are not relocated before the planned K52 is constructed, the school will lose all their facilities and will result in a detrimental effect on the school as they will be unable to compete in these sports disciplines. If the school is unable to compete it could result in the school closing down. This will not only have a devastating effect on the school but would affect the local community benefiting from the school as well.

If the sports-fields are not relocated to Portion 112, the property will remain vacant and be subject to illegal activities such as dumping and trespassing. The property was purchased with the sole purpose of becoming the new sports - grounds if the K52 were to be constructed, and would therefore be “useless” to Heronbridge if it was not utilised for sports-facilities.

### **3.7 Motivation for not Considering the Alternative**

Alternatives relating to the site layout have been considered. Due to the size and location of the proposed site, as well as the nature of the project only layout alternatives were considered as being a viable option. Therefore, the goal of the alternatives was to try and relocate the existing facilities by minimising the footprint without lowering the number of sports facilities. Such alternatives take into account different layouts and footprint size.

The motivation for not considering different sites or locations include:

- There is no other viable or available property within close proximity to the school.
- The school does not which to relocate there facilities but is forced to accommodate the planned K52 road.
- Portion 112 is the only adjacent property with sufficient open space to relocate the existing sports facilities.
- By relocating the facilities to far from the school could have high safety impacts on the pupils.

The motivation for not considering different activities on the proposed site:

- The site was purchased with the sole intention of providing ample space should the K-road be constructed.

### 3.8 Final Proposed Alternatives

Refer to [Appendix A.2.1: Proposed Layout Plan](#) & [Appendix A.2.2: Alternative Layout Plan](#) indicating the proposed site layout and the layout alternative for the proposed Sports-field. Alternative 1 was not considered during the layout phase as it's impacts to the environment would be too great. It was therefore only considered during the initial planning stages of the development.

As stated in Section 3.7, the alternatives relating to different layouts have been considered. The proposed site layout makes provision for more effective use of space through the minimization of the development footprint lowering the time and cost constraints related to the relocation of the facilities. During the impact assessment phase Alternative 1 was regarded as not being a feasible option and was therefore not included in the design phase of the project.

### 3.9 Concluding Statement indicating preferred Alternatives

The proposed site layout plan is the preferred layout as it makes provision for more effective use of space through the minimization of the development footprint lowering the time and cost constraints related to the relocation of the facilities.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	<b>Proposal</b>	The proposed layout utilises a section of Portion 112 and facilitates the relocation of the existing sports-field and provides sufficient space for future expansion without extending the development footprint. This is the most cost and time effective option and provides the best visual representation from the planned K52.
2	Alternative 1	The first alternative is to utilise the entire portion 112 thereby spreading out the layout across the entire site. Expanding the development footprint across the entire site will result in a full EIA & scoping report to be conduct as well as water use licences. The cost to spread out the development will also increase. This alternative will also result in a larger transformation of natural vegetation.
3	Alternative 2	The second alternative includes an alternative layout to the proposed option within the same development footprint. It will include less facilities and within different locations within the site. This alternative

		is viable but not the preferred option as it allows less facilities and affects the visual aesthetics of the site and does not visually represent as well as the preferred option.
4	No-Go Option	The no-go option includes not erecting Sports-facilities on the proposed site, however, if the sports-facilities are not relocated before the planned K52 is constructed, the school will lose all their facilities and will result in a detrimental effect on the school as they will be unable to compete in these sports disciplines. If the school is unable to compete it could result in the school closing down.

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

Not applicable
----------------

## 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:

	<b>Size of the activity</b>
Proposed activity ( <b>Total environmental (landscaping, parking, etc.) and the building footprint</b> )	19.38 ha
Alternative 1 (if any)	23.84 ha
Alternative 2	19.38 ha

or, for linear activities:

	<b>Length of the activity:</b>
Proposed activity	Not Applicable
Alternative 1 (if any)	Not Applicable
Alternative 2 (if any)	Not Applicable

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

	<b>Size of the site/servitude:</b>
Proposed activity	19.38 ha
Alternative 1 (if any)	23.84 ha
Alternative 2	19.38 ha

## 5 Site Access

### Proposal

Does ready access to the site exist, or is access directly from an existing road?  
If NO, what is the distance over which a new access road will be built

YES	NO
m	

Describe the type of access road planned:

The site currently has two (2) informal access roads from the R114 and the Riverfield road. However, due to nature of the project two (2) new entrances will be constructed from Riverfield road at a minimum distance of 100m from the planned K52 road reserve. At such time, the access road will also have to be realigned. It must also be noted that only one of the above-mentioned access roads will be utilised as the second will only serve as an emergency alternative.

The access roads will consist of a single lane road.

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

The proposed access and gate entrance is indicated on the layout map in [Appendix A.2.1: Proposed Layout Plan](#) and in the Traffic Impact Assessment in [Appendix G.4: Traffic Impact Assessment](#).

### Alternative 1

Does ready access to the site exist, or is access directly from an existing road?  
If NO, what is the distance over which a new access road will be built

YES	NO
m	

Describe the type of access road planned:

The site currently has two (2) informal access roads from the R114 and the Riverfield road. However, due to nature of the project two (2) new entrances will be constructed from Riverfield road at a minimum distance of 100m from the planned K52 road reserve. At such time, the access road will also have to be realigned. It must also be noted that only one of the above-mentioned access roads will be utilised as the second will only serve as an emergency alternative.

The access roads will consist of a single lane road.

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

The proposed access and gate entrance is indicated on the layout map in [Appendix A.2.1: Proposed Layout Plan](#) and in the Traffic Impact Assessment in [Appendix G.4: Traffic Impact Assessment](#).

### Alternative 2

Does ready access to the site exist, or is access directly from an existing road?  
If NO, what is the distance over which a new access road will be built

YES	NO
m	

Describe the type of access road planned:

The site currently has two (2) informal access roads from the R114 and the Riverfield road. However, due to nature of the project two (2) new entrances will be constructed from Riverfield road at a minimum distance of 100m from the planned K52 road reserve. At such time, the access road will also have to be realigned. It must also be noted that only one of the above-mentioned access roads will be utilised as the second will only serve as an emergency alternative.

The access roads will consist of a single lane road.

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

The proposed access and gate entrance is indicated on the layout map in [Appendix A.2.1: Proposed Layout Plan](#) and in the Traffic Impact Assessment in [Appendix G.4: Traffic Impact Assessment](#).

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

Section A 6-8 has been duplicated

2

Number of times

(only complete when applicable)

## **6 Layout or Route Plan**

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

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

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

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

REFER TO APPENDIX A



## 7 Site Photographs

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

REFER TO APPENDIX B

## 8 Facility Illustration

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

REFER TO Appendix A.2.1: Proposed Layout Plan

# SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

**Note:** Complete Section B for the proposal and alternative(s) (if necessary)<sup>1</sup>

### 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

**Not Applicable**

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

---

<sup>1</sup> No alternative description of receiving environment was investigated seeing as the alternative option does not include a new location but only an alternative layout design. Therefore, the affected environment will stay the same for both the alternatives and the proposed layout.

3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives

**Not Applicable**

times

(complete only when appropriate)

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

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

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

Section B - Section of Route

**Not Applicable**

(complete only when appropriate for above)

Section B – Location/route Alternative No.

**Not Applicable**

(complete only when appropriate for above)

## 1 Property Description

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

The proposed Heronbridge College Sports-field development is located on Portion 112 (Part of Portion 17) of the farm Nietgedacht 535 JQ, Gauteng Province. The property is situated adjacent to Road P39/1 [Planned K52], just to the South of the N14 Freeway. This road is the East-West road that runs to the south of the N14 and connects the Tshwane Area with Muldersdrift. It is also known as the "Old Krugersdorp Road". The property size of portion 112 is 25.07 hectares (ha) in extend. The development footprint will however, not exceed 20 ha. The property is currently vacant with no infrastructure or buildings. The site is subject to illegal dumping and trespassing.

## 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.

**Proposal:**

Layout alternative, therefor, site stays the same

**Latitude (S):**

**Longitude (E):**

-25.945264°	27.965636°
-------------	------------

**In the case of linear activities:**

**Alternative:**

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

**Latitude (S):**

**Longitude (E):**


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

Not Applicable
-------------------

The 21-digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	0	I	Q	0	0	0	0	5	3	5	0	0	0	0	0	1	1	2	0	0
Alternatives analysed are only layout design alternatives, thus, only the proposed property will be affected.																					

## 3 Gradient of the Site

Indicate the general gradient of the site.

Flat	<del>1:50 – 1:20</del>	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	------------------------	-------------	-------------	--------------	-------------	------------------

## 4 Location in Landscape

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

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	<del>Undulating plain/low hills</del>	River front
-----------	---------	--------------------------	--------	-------	---------------------------------------	-------------

## 5 Groundwater, Soil and Geological Stability of the Site

- a. Is the site located on any of the following?

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

YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>
YES	<del>NO</del>

(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	<del>NO</del>
-----	---------------

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

**Latitude (S):**

**Longitude (E):**

Not Applicable	Not Applicable
----------------	----------------

c) are any caves located within a 300m radius of the site(s)

YES	<del>NO</del>
-----	---------------

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

**Latitude (S):**

**Longitude (E):**

Not Applicable	Not Applicable
----------------	----------------

d) are any sinkholes located within a 300m radius of the site(s)

YES	<del>NO</del>
-----	---------------

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

**Latitude (S):**

**Longitude (E):**

Not Applicable	Not Applicable
----------------	----------------

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

## 6 Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

YES	<del>NO</del>
-----	---------------

According to GAPA version 4, Portion 112 is classified as having a low agricultural potential (see *Figure 6-1*).

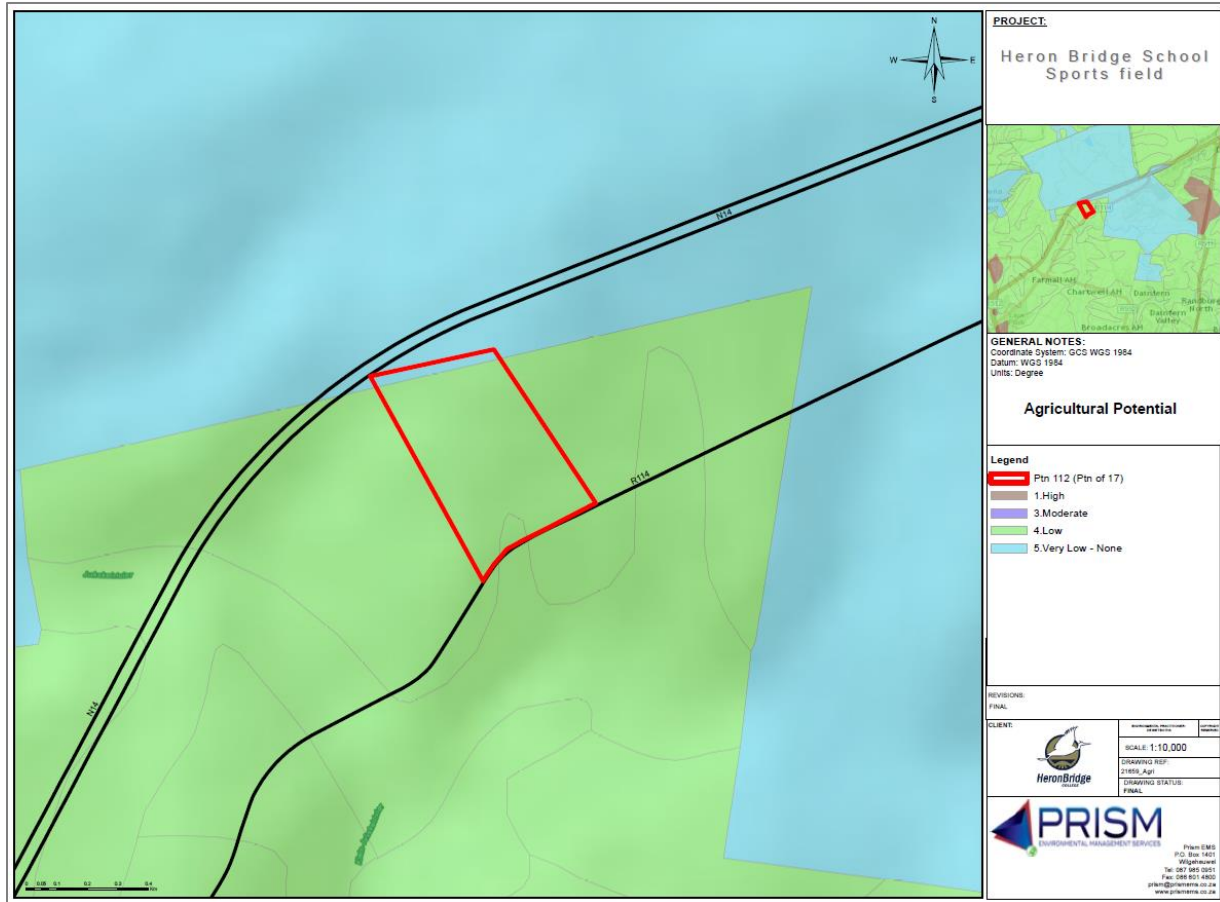


Figure 6-1: Agricultural Potential on Portion 112 (GAPA 4).

**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 % = 0	<b>Natural veld with scattered aliens</b> % = 0	<b>Natural veld with heavy alien infestation</b> % = 45	Veld dominated by alien species % = 0	Landscaped (vegetation) % = 20
Sport field % = 0	Cultivated land % = 0	Paved surface (hard landscaping) % = 10	Building or other structure % = 25	Bare soil % = 0

**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.

An Ecological Specialist study was conducted, please refer to [Appendix G.2: Ecological Assessment](#)

Are there any rare or endangered flora or fauna species (including red list species) present on the site?

<del>YES</del>	NO
----------------	----

If YES, specify and explain:

One Red-Data listed plant specimen was identified by the Ecological specialist during the site visit.:

- *Hypoxis hemerocallidea*

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.

<del>YES</del>	NO
----------------	----

If YES, specify and explain:

Even though, the scope of the field survey conducted by the specialist focused on the proposed study site, it can be assumed that due to the fact that red listed species were observed on the proposed site, they may also occur on the neighbouring properties.

Are there any special or sensitive habitats or other natural features present on the site?

<del>YES</del>	NO
----------------	----

If YES, specify and explain:

The Ecological specialist confirmed that a large section of the site is still represented by the Egoli Granite Grassland vegetation type which is classified as sensitive vegetation group (Refer to [Appendix G.2: Ecological Assessment](#))

Was a specialist consulted to assist with completing this section

<del>YES</del>	NO
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If yes complete specialist details

Name of the specialist:	Betsie le Roux		
Qualification(s) of the specialist:	MSc. Botany Pr. Sci.Nat. Reg No: 400283/12		
Postal address:	2 Coldstream Street, Little Falls, Johannesburg		
Postal code:	1736		
Telephone:	011 475 0210	Cell:	072 983 7976
E-mail:	betsielr@gmail.com	Fax:	None

Are any further specialist studies recommended by the specialist?

YES	<del>NO</del>
-----	---------------

If YES, specify:

Not Applicable

If YES, is such a report(s) attached?

YES	<del>NO</del>
-----	---------------

If YES list the specialist reports attached below

Not Applicable

Signature of specialist:

*Lot Raux*

Date:

26 June 2017

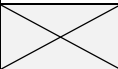
**Please note;** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated.

**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

<del>1. Vacant land</del>	<del>2. River, stream, wetland</del>	<del>3. Nature conservation area</del>	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	<del>7. Agriculture</del>	<del>8. Low density residential</del>	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial <sup>AN</sup>	<del>17. Hospitality facility</del>	<del>18. Church</del>	<del>19. Education facilities</del>	<del>20. Sport facilities</del>
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>	<del>25. Major road (4 lanes or more)<sup>N</sup></del>
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>	<del>34. Small Holdings</del>	<del>35. Pre-school</del>
Other land uses (describe):				


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

	NORTH					
	3, 7, 34	3, 7, 34	3, 7, 34	3, 7, 34	3, 7, 34	
	7, 17	17, 25	25	1, 3, 7, 25	1, 3, 7, 25	X= Site
WEST	7, 20	18, 20		1, 7	1, 7	EAST
	19, 20, 35	19, 20, 35	8	34	7	
	19, 20, 35	2, 19, 20, 35	8, 2	7	7	
	SOUTH					

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

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

Have specialist reports been attached

 YES	NO
---	----

If yes indicate the type of reports below

The following specialist reports have been attached:

- Wetland Assessment
- Ecological Assessment
- Heritage Assessment
- Water & Sewer Outline Scheme report
- Traffic Impact Study
- Electrical Services Study

Please refer to Appendix G: Specialist Reports

## 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.



**Regional Spatial Development Framework (RSDF), 2011: Administrative Region A:**

The RSDF represents the prevailing spatial planning policy within the City of Johannesburg and is adopted in terms of the Municipal Systems Act, 2000 (Act No. 32 of 2000) as an integral component of the City's Integrated Development Plan (IDP).

The proposed Heronbridge Sports-field development is situated within the City of Johannesburg Metropolitan Municipality in Region A. Region A, is one of seven administrative regions that make up the City of Johannesburg. It is located on the northern periphery of the City of Johannesburg Metropolitan area, bordered by Region C and Region E to the south, Mogale City Local Municipality to the west, City of Tshwane Municipality to the north and City of Ekurhuleni Municipality to the east. The Greater Diepsloot and Greater Ivory Park areas are classified as Marginalised areas and are among the most prioritised areas in terms of the Growth Management Strategy (GMS).

The proposed study site is situated in Sub-Area 3 of Region A according to the Regional Spatial Development Framework. Sub-Area 3 consists mainly of the Diepsloot Nature Reserve and the marginalized area of Diepsloot West and Extensions. The remainder of the sub area includes agricultural holdings and farm portions that fall within and outside the Urban Development Boundary (UDB). One of sub-area 3's main objectives is to improve access to Diepsloot and Extensions, hence the development of the planned K52 road, thereby reiterating the need to relocate the spots-facilities.

The Site falls outside of the Urban Development Boundary (see [Figure 9-1](#)) according to the 2010/2011 Regional Development Framework for region A,

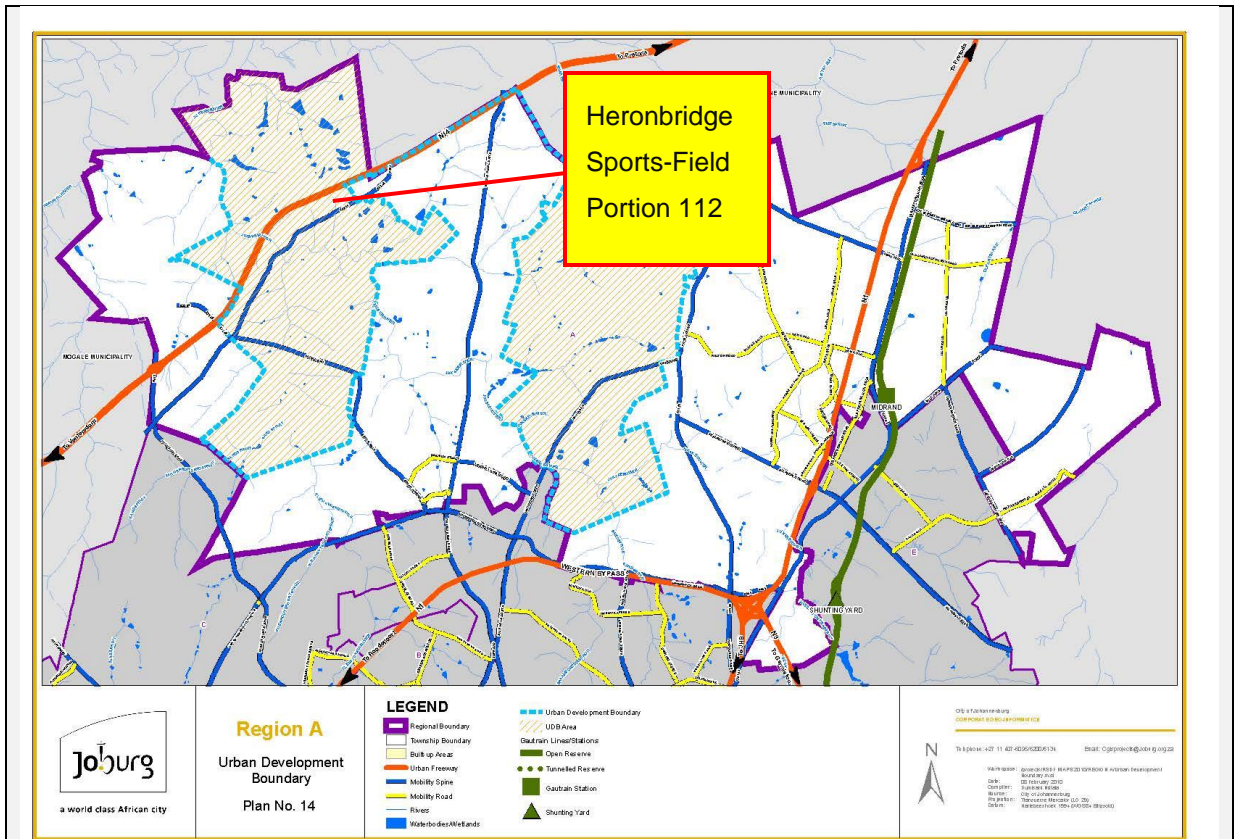


Figure 9-1: UDB of Region A

The study site is located between a major Urban Freeway (N14) and a critically important Mobility Spine (K52) within sub-area 2. The K52 is one of two mobility spines providing access to and from Diepsloot and is therefore seen as a high priority upgrade.

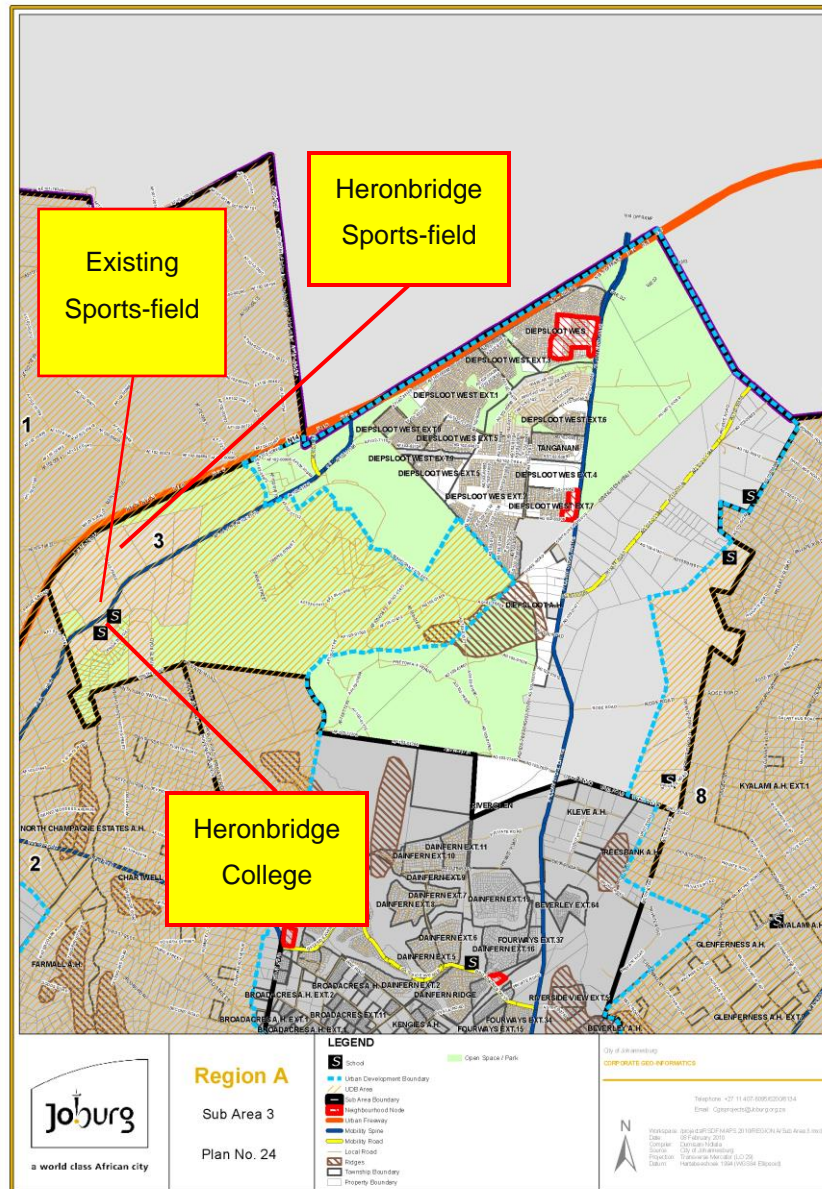


Figure 9-2: Region A Sub Area 3

The proposed study area is situated in the north-western side of Sub Area 3 (Diepsloot Precinct) within Region A and outside the Urban Development Boundary. Sub-Area 3 has three high priority development Objectives:

1. To ensure socio-economic integration, infrastructure upgrading, consolidation and long-term sustainability of Diepsloot and Extensions.
2. Strengthen the economic growth and social development of Diepsloot
3. To enable access to housing and security of tenure in the contained Diepsloot and Extensions.

### **Gauteng Spatial Development Framework 2030 (GSDF)**

The GSDF is part of the executive authority of the provincial government and an integral component of the governance structure of the province as a whole, and as such has to assist in ensuring the realization of national, regional, provincial and local development objectives.

One of the key National and Provincial Policy Directives relates to human settlements and the development of quality living environments and focuses on the development of adequate and affordable housing opportunities in activity nodes and corridors.

According to GSDF 2030 the demand for housing in Gauteng remains high, with the Gauteng demand of 687 015 housing units in the province. The highest demand for housing in Gauteng is in the CoJ municipality followed by Ekurhuleni.

<b>Municipality</b>	<b>Demand/Backlog</b>
City of Johannesburg	256,480
Ekurhuleni	203,361
City of Tshwane	120,498
West Rand	44,186
Sedibeng	62,490
<b>Total</b>	<b>687,015</b>

*Source: GDHS Strategic Plan 2014/2015 – 2018/2019*

Figure 9-3: Housing demand for the Gauteng Province

With the high demand for residential settlements it increases the need for school and educational facilities in and around these residential nodes. The relocation of the Heronbridge Sports-fields is therefore aligned with the Gauteng development Framework 2030 as it solidifies the existence of the school.

The Strategic Intervention 3 of the **Gauteng Spatial Development Perspective 2030** indicates the long term outward urban expansion close to main employment locations and socio-economic opportunities. According to this plan, the proposed site falls within the future intensification zone for Gauteng.

### **Gauteng Environmental Management Framework (EMF)**

The Gauteng EMF indicated that the proposed development is situated within Zone 1 and Zone 2 (Refer to [Appendix A.4: Gauteng EMF](#)).

Zone one is intended to streamline urban development activities and to promote development infill, densification and concentration of urban development. Zone two defines Sensitive areas within the urban development zone which must be conserved. Zone 2 is usually associated with environmental sensitivities such as natural drainage

lines and wetlands. Zone 2 identified within the study site is situated around the drainage line located in the north-west corner of the site.

**Regional Demographics (Stats Sa)**

According to StatsSA 2011, City of Johannesburg Metropolitan Municipality (CoJ MM) had the highest percentage population growth in Gauteng, between 2001-2011 the population growth for CoJ MM was 37% with a population increase of one million between 2001 and 2011. StatsSA also recorded that CoJ MM had the highest percentage of the total population of Gauteng, 36 percent of Gauteng’s population lives in CoJ MM. The Gauteng provincial government have projected a population increase of between 1.8 and 4.8 million by 2030. It has been projected that Gauteng will be home to an estimated 18-20 million people by 2030 during the Spatial Planning Summit of Gauteng City Region (2015). Midrand, Lanseria, Muldersdrift and Randburg areas are all classified in the 25 Year Integrated Transport Master plan as part of the top 20 employment nodes in 2025.

Table 9-1:Population Group of the area

Group	Percentage
Black African	36,8%
Coloured	8,6%
Indian/Asian	7,5%
White	45,7%
Other	1,5 %

The population groups of the area are tabled above. It illustrates that the majority of the area is occupied by Black African and White people with the Sex and Age Distribution figure as indicated below:

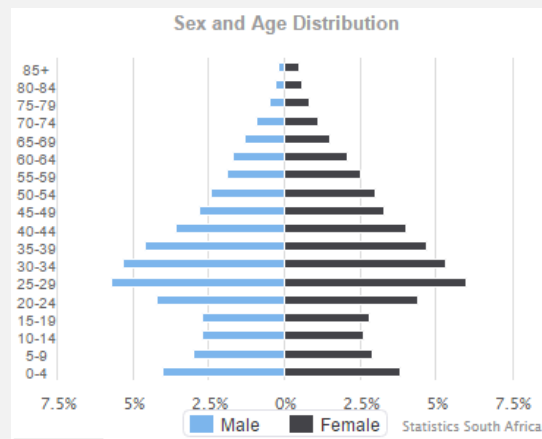


Figure 9-4: Sex and Age Distribution

The figure illustrates that the majority of the population in the area aged between 19 and 50 years of age. Indicating that the population in the area generally still contribute to the economy of the City. It also indicates an increase in new-born’s which will require schooling in the following years. The figure below indicates that more than 50% of the population speaks English.

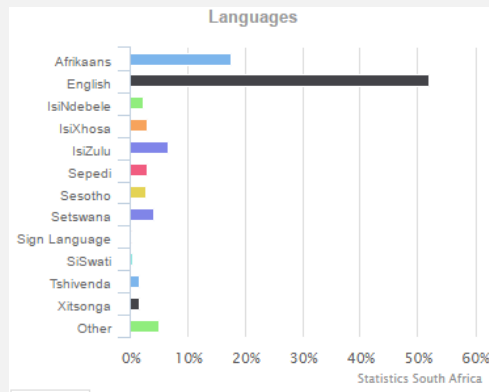


Figure 9-5: Language Distribution

Figure 9-6 illustrates that 42.6% of the population in the area are in possession of a higher education and 31% in possession of Matric Certificate. Figure 9-6 supports the need for schools and educational facilities in the area.

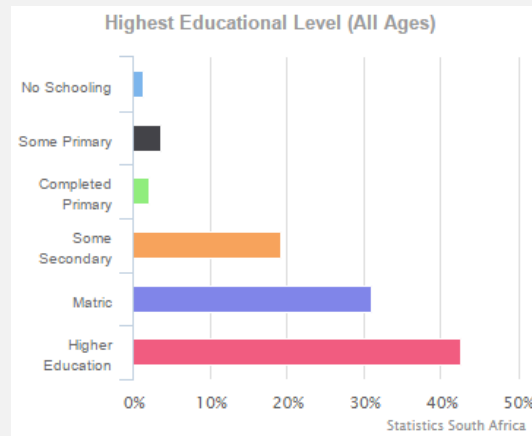


Figure 9-6: Highest Educational Level (All Ages)

### **Surrounding Land-uses**

The proposed site is situated on the outskirts of Diepsloot and Chartwell. The directly adjacent properties are dominated by small holdings and low-density residential households. There are little agricultural activities in the adjacent area with some of the small-holding properties participating in aquaculture and livestock grazing. Two of the adjacent properties is occupied by Heronbridge College. There is a private hospital and related facilities on Portion 34. The N14 is situated on the northern side of the study site.

### **Motivation for Relocation of Sports-fields**

The proponent is left with little choice but to relocate the current sports-facilities, due to the planned K52 road cutting through the middle of their existing facilities. Portion 112 is the only viable option for relocation as it provides sufficient space the relocation and possible future expansions. The nature of the project makes it impossible to replicate on any other portion nearby. As the project is related directly to the Heronbridge College it is required to be adjacent to the school for safety and practical reasons. The timeframes related to a relocation of this magnitude requires the application to commence as soon as possible as the competitive season relating to these sports

disciplines are stretched over an entire year, with the school not being able to afford any constraints relating to incomplete fields.

### **Employment**

The proposed development will employ people from the local community during the construction phase of the project. As the goal of the development is to relocate the existing facilities to Portion 112, no new permanent employment will be generated during the operational phase as all personnel from the existing facilities will remain. It must therefore be noted that if the facility is not allowed to relocate, it would result in a great employment loss for the College and the community.

### **Other Activities**

The surrounding area has experienced an increase in business and industrial nodes, as well as formalised residential areas, even though the area consists of many agricultural holdings and farms. The upgrading of mobile spines such as the K52 indicates the planned direction of development. The School is therefore placed within a strategic location to provide educational specialties. The proposed property is adjacent to the N14 highway, limiting the potential land uses for Portion 112.

## **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 m<sup>2</sup> 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 m<sup>2</sup> in extent; or*
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*



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

YES	<del>NO</del>
-----	---------------

If YES, explain:

A Heritage Impact Assessment was conducted to confirm whether any potential impacts to heritage resources may occur. See [Appendix G.3: Heritage Impact Assessment](#) for the full report.

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:

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA as part of the Environmental Impact Assessment (EIA) for the project. No significant Stone Age sites were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly no sites of archaeological significance were recorded by other studies in the area (e.g. Kusel (2007), van Schalkwyk (2013) van der Walt (2015 a and b, 2016)). According to the SAHRA Paleontological Sensitivity map the study area is of zero paleontological sensitivity and no further studies are required in this regard. No further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.

In terms of the built environment of the area (Section 34), no structures occur within the study area and in terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. Due to the subsurface nature of archaeological remains and the fact that graves can occur anywhere on the landscape, it is recommended that a chance find procedure is implemented for the project as part of the EMP.

No battlefields are on record for the study area and through the public participation process the presence of living heritage sites and oral histories was investigated but none was recorded. Similarly, no historical settlements or significant cultural landscapes were noted during the fieldwork. Due to the lack of significant heritage features in the study area HCAC is of opinion that the development can commence based on approval from SAHRA.

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

YES	<del>NO</del>
YES	<del>NO</del>

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



# SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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

## 1 Local Authority Participation

**Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.**

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

<del>YES</del>	NO
----------------	----

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

YES	<del>NO</del>
-----	---------------

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

Not yet applicable. The purpose of this report is to provide the reader with the required information for evaluation and to provide an opportunity to the local authority to provide comments if they feel necessary.

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

Pending comment on this circulation. The commenting period will extend from the 4<sup>th</sup> August to 5<sup>th</sup> September 2017.

## 2 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	<del>NO</del>
-----	---------------

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

Not yet applicable. The purpose of this report is to provide the reader with the required information for evaluation and to provide an opportunity to the public to provide comments if they feel necessary.

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

This report is currently available for comment until the 5<sup>th</sup> of September 2017. No comment has been received to date.

### **3 General Public Participation Requirements**

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

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

#### **3.1 Objectives and Purpose of Public Participation**

The purpose of the public participation process is to provide information regarding the proposed project to any potentially interested and/or affected person for use and consideration throughout the environmental assessment process. The information usually involves a combination of the technical project scope, environmental attributes and sensitives, cultural and heritage aspects as well as socio-economic factors that may be potentially beneficial or problematic to various role players.

The dissemination of such information is intended to assist the public with understanding how the proposed project and/or development may impact them and the environment in either a positive and/or negative manner, and especially where impacts are determined or perceived as significantly high, how such impacts may be influenced by project changes (layout or design aspects) or management measures may be implemented to reduce or minimise the significance of any identified impacts.

As a registered I&AP, members of the public of any affiliation are awarded the opportunity to remain informed of the steps, actions and decisions made within the environmental impact assessment process and are able to actively participate by reviewing all information provided by the EAP to the I&AP's in a reasonable period in order to provide comments, objections, suggestions or any other information that will assist the project to develop in a favourable for all manner or contribute to the competent authority's knowledge in order to make an informed decision on the application for environmental authorisation.

#### **3.2 Notification Phase of Public Participation**

The public participation process commenced with identifying and notifying all potential Interested and Affected Parties (I&AP's). Background information documents, comment forms and the Basic Assessment Report with all relevant supporting Documents were provided as a basic source of information or notices were viewed and potential interested and/or affected members of the public were invited to register as I&AP's for the remainder of the Basic Assessment Reporting phases of the process (refer to Section 3.3), as well as provide comment on the Basic Assessment Report (BAR) (this report).

### 3.2.1 Identified I&AP's

The following potential I&AP's were identified:

- South African National Roads Agency Limited (SANRAL)
- Department of Water and Sanitation
- Johannesburg Water
- Eskom
- The City of Johannesburg Metropolitan Municipality: Environmental Regulatory services
- City of Johannesburg Metropolitan Municipality: Department of Development Planning
- City of Johannesburg Metropolitan Municipality: Water
- JRA
- SAHRA
- Ward Councillor 96
- Surrounding Landowners / Occupiers
  - SA Trails
  - Lion Park Quarries
  - Life Healthcare Group Pty Ltd
  - Impact For Christ Ministries NPC & Little Jerusalem

Refer to Appendix E.9 – Copy of the register of I&APs for a detailed list of the interested and/or affected members of the public that were notified and/or subsequently registered as a I&AP.

### 3.2.2 Newspaper Notice

A notice was published in the following newspaper on the specified dates:

- **Provincial:** The Star, published on the 4<sup>th</sup> August 2017.

Refer to Appendix E.3 – Proof of newspaper advertisements for proof of the newspaper notice.

### 3.2.3 Site Notice

A site notice was placed on the proposed property boundary on the corner of the R114 (future K52) and Riverfield Road on 4 August 2017.

Refer to Appendix E.1 – Proof of site notice for proof of the notices placed on site.

### 3.2.4 Written Notifications

The surrounding landowners and/or occupiers and organs of state (listed in Appendix G.2: Ecological Assessment) were notified in writing via email or hand delivery and were issued with a copy of the Background Information Document (BID) to provide further information on the project. Refer to Appendix E.2 – Written notices issued as required in terms of the regulations for proof of the Written Notifications and hand delivery of BIDs.

All comments received during the public participation phase will be considered and will be incorporated into the Basic Assessment Report for final submission, the comments and response report to date, is located in [Appendix E.6 - Comments and Responses Report](#)

### **3.3 Basic Assessment Comment Period**

The Basic Assessment Report will be available for comment to all registered interested and affected parties and relevant organs of state for a period of 30 days:

- 4<sup>th</sup> August to 5<sup>th</sup> September 2017

As mentioned above, the Basic Assessment Report will be made available for public comment during the notification phase simultaneously.

All comments received during this phase will be considered and incorporated into the Final Basic Assessment Report, and will be attached in [Appendix E.6 - Comments and Responses Report](#).

### **3.4 Comments Raised by I&AP's**

All comments received during the public participation phase will be documented within [Appendix E.6 - Comments and Responses Report](#)

A summary of the comments received will be attached within section 3.4 during final submission of this report.

### **3.5 Outcome of the Decision**

Registered I&AP's will be notified in writing of the outcome of whether the environmental authorisation is refused/granted at the end of the Basic Assessment phase. The notification will include details of the process and timeframes in which to appeal the outcome of the decision made by the competent authority, GDARD.

## **4 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 E.1 – Proof of site notice

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

Appendix E.3 – Proof of newspaper advertisements

Appendix E.4 – Communications to and from interested and affected parties

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

Appendix E.6 - Comments and Responses Report

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

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

Appendix E.9 – Copy of the register of I&AP's

Refer to [Appendix E: Public Participation Information](#) for Public Participation information.

Please note that this report will be circulated during the notification phase and will be made available for comment for a period of 30 days, after which the comments will be incorporated in the BA report to be submitted to the GDARD for final decision.

# 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
2. Each alternative need to be clearly indicated in the box below
3. Attach the above documents in a chronological order

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

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

Section D was not duplicated for each alternative because

- no site alternatives were investigated
- no activity alternative was investigated

The following alternatives have been investigated

- a layout alternative
- a Development Footprint alternative within the same property

Thereby having the same resource use and process details as the proposed layout.

## 1 Waste, Effluent, and Emission Management

### Solid waste management

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

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

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

YES	NO
30m <sup>3</sup>	

Construction waste will be disposed of by a registered waste servicing company, by suppling and removing skips from the construction site as and when the need requires. The contractors will then be required to provide proof of safe disposal from a registered company or landfill.

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

The waste contractor, when appointed will be responsible to provide details regarding the final disposal of waste generated on site. Records will be kept on each skip to be emptied off-site with certification of safe disposal at a registered company or landfill.

Will the activity produce solid waste during its operational phase?

YES	<del>NO</del>
n/a	

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

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	<del>NO</del>
-----	---------------

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

Construction waste to be disposed of, will be disposed of by the waste contractors at a licenced facility, it is the responsibility of the contractor to locate facilities capable of facilitating the waste/ product. This could include a landfill or recycling facility.
---

**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	<del>NO</del>
-----	---------------

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	<del>NO</del>
-----	---------------

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:

The Environmental Management Plan will incorporate measures of optimal reuse or recycling without compromising the integrity of the site with possible pollution. As construction material is regarded as a waste material, it will not be recycled on site as it will require appropriate licensing.
---

**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	<del>NO</del>
-----	---------------

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	<del>NO</del>
-----	---------------

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

Yes	<del>NO</del>
n/a	

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

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

Not Applicable
----------------



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

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

YES	<del>NO</del>
-----	---------------

If yes, provide the particulars of the facility:

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

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

Treated Domestic Waste Water ("Grey Water") from the treatment plant will be used to irrigate the grassed sports-facilities and the landscaped areas.

A WULA will be undertaken for irrigation using treated waste water.

**Liquid effluent (domestic sewage)**

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

YES	<del>NO</del>
-----	---------------

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 domestic effluent to be generated by this activity(ies)?

YES	<del>NO</del>
-----	---------------

Not Applicable

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

<del>YES</del>	NO
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If yes describe how it will be treated and disposed off.

As no formal sewer infrastructure exists on site or in close proximity, Heronbridge College are required to treat their household waste (sewer) on-site before releasing it into an existing Johannesburg "grey water" pipe servitude crossing the study site.

Heronbridge College proposes to install an on-site SBR Activated Sludge Wastewater Package Plant to treat the sewer produced on site to "grey water" quality. It is then their intention to release the treated "grey water" into the existing treated sewer pipeline servitude when needed. The treated "grey water" will be used to irrigate the grassed facilities when needed. The sewer pipeline servitude is 1.89m wide and will be protected and incorporated in the new development. The invert levels of the pipe will be confirmed prior to any bulk earthworks design and construction taking place. The department has advised that there are studies currently been undertaken in the area and will revert to them.

Activity 25 of listing notice one, 2014 (GN R 983 of 4 December 2017) requires a throughput of more than 2000 m<sup>3</sup>/d, as the proposed activity is far below this threshold it will not be included during this application. A Water Use License will however be applied for, for the treatment of domestic waste water and for the irrigation of waste water (Section 21 (e) and (g) of the National Water Act, 1998).

### Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	<del>NO</del>
YES	<del>NO</del>

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:

Dust will be generated during the construction phase and will be regulated under the National Dust Control Regulations, 2013 (GN R 827). The dustfall rate (D) may not exceed 600 mg/m<sup>2</sup>/day. Dust suppression measures will be stipulated in the EMPr.

## 2 Water Use

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

municipal	Directly from water board	<del>groundwater</del>	river, stream, dam or lake	other	the activity will not use water
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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 day:

Average Demand = 63.75 kl/day Peak Demand = 255 kl/day
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If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Please refer to the OSR in Appendix I.2: Outline Scheme Report regarding the yield

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

<del>YES</del>	NO
----------------	----

If yes, list the permits required

**National Water Act, 1998 (NWA), 1998 (Act No. 36 of 1998):** The following Section 21 water uses of the NWA include:

**21(c):** Impeding or diverting the flow of water in a watercourse; and

**21(i):** Altering the beds, banks and characteristics of water in watercourse.

**21(g):** Disposing of waste in a manner which may detrimentally impact on a water resource.

**21(e):** Engaging in an controlled activity, identified as such in section 37(1)(a): irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork.

**21(a):** Taking of water from a water resource.

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

YES	<del>NO</del>
YES	<del>NO</del>

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

The Water Use License Application (WULA) is in process. The WULA and applicable forms will be submitted to the Department of Water and Sanitation for evaluation.

### 3 Power Supply

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

ESKOM

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

Not Applicable

### 4 Energy Efficiency

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

The design measures have made provision for the use of energy saving technology such as light globes and geysers that uses energy more efficient. Further steps have been taken in the Environmental Management Report to mitigate the effective use of electricity during the construction and operational phase. Notices of awareness regarding the effective use of energy will be posted within the proposed sports-facilities to make the people aware of the importance of using electricity effectively. See EMPr in [Appendix H: EMPr](#)

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

Alternative energy sources were investigated as part of the design of the proposed development, however, due to the nature of the project no alternative energy source was deemed feasible in terms of the practicality and economic implications of the proposed development. However, energy efficient technology will be promoted for this proposed development to lower the footprint on the current energy grid for the area. Additionally, the proposed development involves the relocation of the existing facilities, it is therefore safe to assume that the development will not increase the load on the grid as the facilities will only be replaced, the grid load may be reduced due to new energy saving technologies that will be applied on the new portion.

# SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

## **1 Issues raised by Interested and Affected Parties**

Summarise the issues raised by interested and affected parties.

Pending. The purpose of this document is to provide the reader with the required information for evaluation and to generate comment. The circulation period is between 4 August 2017 and 5 September 2017.

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

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

## 2 Impacts that may result from the Construction and Operational phase

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

The standard methodology used in the environmental impact assessment to determine the significance rating of the potential impacts are outlined in this section.

### 2.1 Significance

The **significance** of an impact is defined as the combination of the **consequence** of the impact occurring and the **probability** that the impact will occur. The nature and type of impact may be direct or indirect and may also be positive or negative, refer to Table 2-1 below for the specific definitions.

**Table 2-1: Nature and type of impact.**

<b>Nature and Type of Impact:</b>			
<b>IMPACT</b>	Direct	Impacts that are caused directly by the activity and generally occur at the same time and place as the activity	✓/✗
	Indirect	Indirect or induced changes that may occur as a result of the activity. These include all impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity	✓/✗
	Cumulative	Those impacts associated with the activity which add to, or interact synergistically with existing impacts of past or existing activities, and include direct or indirect impacts which accumulate over time and space	✓/✗
	Positive	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will benefit significantly, and includes neutral impacts (those that are not considered to be negative)	✓
	Negative	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes will be comprised	✓

Table 2-2 presents the defined criteria used to determine the **consequence** of the impact occurring which incorporates the extent, duration and intensity (severity) of the impact.

**Table 2-2: Consequence of the Impact occurring.**

<b>Extent of Impact:</b>			
<b>CONSEQUENCE</b>	Site	Impact is limited to the site and immediate surroundings, within the study site boundary or property (immobile impacts)	1
	Neighbouring	Impact extends across the site boundary to adjacent properties (mobile impacts)	2
	Local	Impact occurs within a 5km radius of the site	5
	Regional	Impact occurs within a provincial boundary	8
	National	Impact occurs across one or more provincial boundaries	10
<b>Duration of Impact:</b>			

	Incidental	The impact will cease almost immediately (within weeks) if the activity is stopped, or may occur during isolated or sporadic incidences	1
	Short-term	The impact is limited to the construction phase, or the impact will cease within 1 - 2 years if the activity is stopped	2
	Medium-term	The impact will cease within 5 years if the activity is stopped	5
	Long-term	The impact will cease after the operational life of the activity, either by natural processes or by human intervention	8
	Permanent	Where 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	10
<b>Intensity or Severity of Impact:</b>			
	Low	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are not affected	1
	Low-Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are modified insignificantly	2
	Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are altered	5
	Medium-High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are severely altered	8
	High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will permanently cease	10

The probability of the impact occurring is the likelihood of the impacts actually occurring, and is determined based on the classification provided in Table 2-3.

**Table 2-3: Probability and confidence of impact prediction.**

<b>Probability of Potential Impact Occurrence:</b>			
<b>PROBABILITY</b>	Improbable	The possibility of the impact materialising is very low either because of design or historic experience	5
	Possible	The possibility of the impact materialising is low either because of design or historic experience	10
	Likely	There is a possibility that the impact will occur	15
	Highly Likely	There is a distinct possibility that the impact will occur	25
	Definite	The impact will occur regardless of any prevention measures	30

The significance of the impact is determined by considering the consequence and probability without taking into account any mitigation or management measures and is then ranked according to the ratings listed in Table 2-4. The level of confidence associated with the impact prediction is also considered as low, medium or high (Table 2-5).

**Table 2-4: Significance rating of the impact.**

<b>Significance Ratings:</b>			
<b>SIGNIFICANCE</b>	Low	Neither environmental nor social and cultural receptors will be adversely affected by the impact. Management measures are usually not provided for low impacts	1-180
	Low-Medium	Management measures are usually encouraged to ensure that the impacts remain of Low-Medium significance. Management measures may be proposed to ensure that the significance ranking remains low-medium	181-360
	Medium	Natural, cultural and/or social functions and processes are altered by the activities, and management measures must be provided to reduce the significance rating	361-540
	Medium-High	Natural, cultural and/or social functions and processes are altered significantly by the activities, although management measures may still be feasible	541-720
	High	Natural, cultural, and/or social functions and processes are adversely affected by the activities. The precautionary approach will be adopted for all high significant impacts and all possible measures must be taken to reduce the impact	721-900

**Table 2-5: Level of confidence of the impact prediction.**

<b>Level of Confidence in the Impact Prediction:</b>			
<b>CONFIDENCE</b>	Low	Less than 40% sure of impact prediction due to gaps in specialist knowledge and/or availability of information	10
	Medium	Between 40 and 70% sure of impact prediction due to limited specialist knowledge and/or availability of information	50
	High	Greater than 70% sure of impact prediction due to outcome of specialist knowledge and/or availability of information	100

Once significance rating has been determined for each impact, management and mitigation measures must be determined for all impacts that have a significance ranking of Medium and higher in order to attempt to reduce the level of significance that the impact may reflect.

The EIA Regulations, 2014 specifically require a description is provided of the degree to which these impacts:

- can be reversed;
- may cause irreplaceable loss of resources; and
- can be avoided, managed or mitigated.

Based on the proposed mitigation measures the EAP will determined a mitigation efficiency (**Table 2-6**) whereby the initial significance is re-evaluated and ranked again to affect a significance that incorporates the mitigation based on its effectiveness. The overall significance is then re-ranked and a final significance rating is determined.

**Table 2-6: Mitigation efficiency.**

<b>Mitigation Efficiency</b>			
<b>MITIGATION EFFICIENCY</b>	None	Not applicable	0%
	Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact. Positive impacts will remain the same	20%
	Low	Where the significance rating reduces by one level, after mitigation	40%
	Medium	Where the significance rating reduces by two levels, after mitigation	60%

High	Where the significance rating reduces by three levels, after mitigation	80%
Very High	Where the significance rating reduces by more than three levels, after mitigation	100%

The reversibility is directly proportional the “Loss of Resource” where no loss of resource is experienced, the impact is completely reversible; where a substantial “Loss of resource” is experienced there is a medium degree of reversibility; and an irreversible impact relates to a complete loss of resources, i.e. irreplaceable (Table 2-7).

**Table 2-7: Degree of reversibility and loss of resources.**

<b>DEGREE REVERSIBILITY &amp; LOSS OF RESOURCES</b>	<b>Loss of Resources:</b>		
	No Loss	No loss of social, cultural and/or ecological resource(s) are experienced. Positive impacts will not experience resource loss	0
	Partial	The activity results in an insignificant or partial loss of social, cultural and/or ecological resource(s)	30
	Substantial	The activity results in a significant loss of social, cultural and/or ecological resource(s)	60
	Irreplaceable	The activity results in the complete and irreplaceable social, cultural and/or ecological loss of resource(s)	80
	<b>Reversibility:</b>		
	Irreversible	Impacts on natural, cultural and/or social functions and processes are irreversible to the pre-impacted state in such a way that the application of resources will not cause any degree of reversibility	20
	Medium Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if less than 50% resources are applied	40
	High Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if more than 50% resources are applied	70
	Reversible	Impacts on natural, cultural and/or social functions and processes are fully reversible to the pre-impacted state if adequate resources are applied	100

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.

**Take note:**

The impact assessment incorporated both the alternatives, the proposed activity and the no-go option within one Assessment. See Appendix I.1: Environmental Impact Assessment for the full assessment.



Table 2-8: Impact Assessment summary

		IMPACTS			SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)	
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE				
					Before mitigation		With Mitigation	
CONSTRUCTION PHASE								
Atmospheric Emissions	Direct	Dust emissions	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>A speed limit of 20km/h must be maintained on all dirt roads.</li> <li>Dust suppression by means of either water or biodegradable chemical agent is required.</li> </ul>	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
	Direct	Emissions from vehicles and equipment (CO <sub>2</sub> , NO <sub>x</sub> , SO <sub>x</sub> , VOC's etc.)	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>In terms of transportation of workers and materials, collective transportation arrangements should be made to reduce individual car journeys where possible.</li> <li>All vehicles used during the project should be properly maintained and in good working order.</li> <li>All vehicles and other machinery should comply with road worthy requirements and comply with legislation in terms of allowable emissions</li> </ul>	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
Noise	Direct	Noise increase due to construction activities	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>Equipment and/or machinery which will be used must comply with the manufacturer's specifications on acceptable noise levels.</li> <li>Construction activities should be limited to daytime only.</li> </ul>	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Discharge to Water	Direct	Sewage	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>The preferred design does not cross any watercourses and is not in close proximity to any wetlands as such minimal impacts apply. Thus to manage impacts to surface water, the preferred design should be implemented.</li> <li>Chemical toilets must be supplied and maintained during the construction phase</li> <li>Ablution facilities (chemical toilets) are to be provided by the Contractor, at a ratio of 1:10.</li> <li>Ablution facilities (chemical toilets) must be erected within 100m from all workplaces but within the development footprint.</li> <li>Toilets are to be secured to the ground, and must have a closing mechanism.</li> <li>Toilet paper must be provided at these facilities and must be serviced once per week.</li> <li>Certified contractors to maintain and remove chemical toilets regularly.</li> <li>The contractor must ensure that spillage does not occur when toilets are cleaned/serviced and contents must be properly stored and disposed of.</li> <li>Discharge of waste into the environment and/or burial of waste are strictly prohibited.</li> <li>Sanitary arrangements must be to the satisfaction of the PM, ECO, the local authorities and the applicable legal requirements.</li> </ul>	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low
			No-Go Option			None		None

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
Indirect	Silt	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>The preferred design does not cross any watercourses and is not in close proximity to any wetlands as such minimal impacts apply. Thus to manage impacts to surface water, the preferred design should be implemented.</li> <li>Instability and erosion of steep slopes must be stabilised immediately. Re-vegetation in consultation with landscape architect and ECO should be done if and where required.</li> <li>To reduce the loss of material by erosion, disturbance must be kept to a minimum.</li> <li>If clearing of slopes occur within the rainy season, earth berms must be created along the up-slope side of the construction area.</li> <li>Where possible, natural vegetation should be retained to reduce the risk of erosion.</li> <li>Silt fences must be used to stabilise the site, reduce erosion and silt entering the natural environment. No unchecked silt may enter the natural environment.</li> </ul>	Low
		Alternative 1			Low-Medium		Low
		Alternative 2			Low		Low
		No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
Direct	Surface water run-off	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>Storm water management during construction will be implemented however, as the preferred design does not cross any watercourses and is not in close proximity to any wetlands, thus to manage impacts to surface water, the preferred design should be implemented.</li> <li>Increased run-off during construction should be managed using berms, temporary cut-off drains, attenuation ponds or other suitable structures, in consultation with the ECO and resident Engineer.</li> <li>Stormwater management system is to be installed as soon as possible following site establishment, to attenuate stormwater during the construction phase, as well as during the operational phase.</li> </ul>	Low
		Alternative 1			Low		Low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		Alternative 2			Low	• Surface-water run-off and stormwater must be directed away from trenches and areas of excavation.	Low
		No-Go Option	No	Negative	Low	Not Applicable	Low
Direct	Contamination of water from hazardous substances	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• The preferred design does not cross any watercourses and is not in close proximity to any wetlands as such minimal impacts apply. Thus to manage impacts to surface water, the preferred design should be implemented.</li> <li>• Drip trays must be placed under all vehicles when immobile for longer than 24 hours. Vehicles suspected of leaking must be monitored and conduct a pre start-up inspection checklist.</li> <li>• Drip trays must be checked and replaced for vehicles standing (parked) for prolonged periods.</li> <li>• Drip trays must be of a sufficient size and volume to collect any hydrocarbon leakages from a stationary vehicle.</li> <li>• Spill kits (absorbent material) must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site.</li> <li>• Spilled substances must be contained in impermeable containers for removal to a licensed hazardous waste site.</li> <li>• Significant spills should be reported to the Project Manager or Contractors Manager and ECO who should report this to the relevant authority</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Disturbance of natural system	Proposal	Yes	Negative	Low	• The preferred design does not cross any watercourses and is not in close proximity to any wetlands as such minimal impacts apply. Thus to	Low

		IMPACTS				SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE	Before mitigation			
		Alternative 1			Low-Medium	manage impacts to surface water, the preferred design should be implemented. • Ensure that all workers or equipment remain within development footprint.	Low	
		Alternative 2			Low		Low	
		No-Go Option	Not Applicable	Not Applicable	Medium		It must be noted that if the proposed activities do not proceed, the site in its current form will continue to degrade, especially within the drainage area due to historical dumping.	Medium
	Direct	Disturbance of aquatic ecological systems	Proposal	No	Negative	Low	• The preferred design does not cross any watercourses and is not in close proximity to any wetlands as such minimal impacts apply. Thus to manage impacts to surface water, the preferred design should be implemented. • Ensure that all workers or equipment remain within development footprint.	Low
			Alternative 1			Low-Medium		Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	Medium		It must be noted that if the proposed activities do not proceed, the site in its current form will continue to degrade, especially within the drainage area due to historical dumping.
Waste Generation	Indirect	Domestic waste	No	Negative	Low-Medium	• Waste recycling to be put in place. • Solid waste shall only be stored in the designated general waste storage area which must be enclosed and impermeable. • All solid waste shall be disposed of by a certified contractor, off-site, at an approved landfill site. The Contractor shall supply the ECO with a certificate of disposal for auditing purposes.	low	
					Low-Medium		low	
					Low-Medium		low	
					No-Go Option		Not Applicable	Not Applicable

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
Direct	Construction waste	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>Litter (from outside the camp included) and concrete bags etc. must be collected and put into suitable closed bins on a daily basis.</li> <li>Construction rubble must be disposed of at a registered site</li> <li>No Construction rubble may be used for infilling.</li> </ul>	Low
		Alternative 1			Low-Medium		Low
		Alternative 2			Low-Medium		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Hazardous waste	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>The classification of waste determines the handling methods and the ultimate disposal of the material. The contractor shall manage hazardous waste that are anticipated to be generated by his operations as follows: Characterise the waste to determine if it is general or hazardous. Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.</li> <li>Only temporary storage of waste is allowed (once of storage of waste for a period less than 90 days). The volume of material should be limited to less than 80m3 of hazardous waste. Should this be exceeded the Norms and Standards for the Storage of Waste will need to be complied with.</li> </ul>	low
		Alternative 1			Low-Medium		low
		Alternative 2			Low		low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Soil Alteration	Loss of topsoil	Proposal	Yes	Negative	Medium	<ul style="list-style-type: none"> <li>Top soil should be separated and re-used where possible.</li> <li>The proposed designed (proposal) utilises a smaller footprint and thus will have less of an impact on top soil within the study site. It therefore should be implemented.</li> </ul>	Low-Medium
		Alternative 1			Medium-High		Medium

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		Alternative 2			Medium		Low-Medium
		No-Go Option	Not Applicable	Not Applicable	Low-Medium	Not Applicable	Low
Direct	Loss of land capability	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>The proposed site does not have a high agricultural potential nor is currently used for agriculture. No mitigation measures are therefore recommended or required.</li> <li>The proposed designed (proposal) utilises a smaller footprint and thus will have less of an impact on top soil within the study site. It therefore should be implemented.</li> </ul>	Low-Medium
		Alternative 1			Medium		Medium
		Alternative 2			Low-Medium		Low-Medium
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Alteration of topography	Proposal	Yes	Negative	Medium	<p>Most of the Topography within the development footprint will be altered as large sections of the development footprint will be levelled as part of the sports-field design, the</p> <ul style="list-style-type: none"> <li>Stormwater management measures must be implemented to ensure these designs do not impact on stormwater.</li> </ul>	Low-Medium
		Alternative 1			Medium-High		Medium
		Alternative 2			Medium		Low-Medium
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Soil erosion	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>Most of the Topography within the development footprint will be altered as large sections of the development footprint will be levelled as part of the</li> </ul>	Low

		IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE	Before mitigation	With Mitigation			
		Alternative 1			Low-Medium	<ul style="list-style-type: none"> <li>sports-field design, any instability and erosion of steep slopes must be stabilised immediately.</li> <li>Stormwater management measures must be implemented to ensure these designs do not impact on stormwater.</li> <li>If clearing of slopes occur within the rainy season, earth berms must be created along the up-slope side of the construction area.</li> <li>Where possible, natural vegetation should be retained to reduce the risk of erosion.</li> </ul>	Low		
		Alternative 2			Low		Low		
		No-Go Option			Not Applicable		Not Applicable	None	Not Applicable
	Direct	Soil pollution	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>All vehicle/equipment maintenance and washing must be done in the workshop area, equipped with a bund wall and grease trap oil separator.</li> <li>Workshop area must be monitored for fuel and oil spills.</li> <li>Spills must be cleaned up immediately and remediated to the satisfaction of the ECO and PM.</li> <li>Spill kits must be comprehensive and available on site at all times. An adequate supply of absorbent material must be available to accommodate emergency spills.</li> </ul>	low	
			Alternative 1			Low		low	
			Alternative 2			Low		low	
			No-Go Option			Not Applicable		Not Applicable	None
Resource Consumption	Direct	Electricity consumption	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>During the construction phase the contractors will mainly make use of generators.</li> <li>The nature of the project will not require high levels of electricity usage as most of the construction will make use of plant equipment</li> <li>Energy efficient/ saving technology must be incorporated within the design. during construction and for operations</li> </ul>	low		
					Alternative 1		Low-Medium	low	
					Alternative 2		Low-Medium	low	



IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Water consumption	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>Enforce water saving strategies.</li> <li>Environmental awareness training.</li> </ul>	low
		Alternative 1			Low-Medium		low
		Alternative 2			Low-Medium		low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Fuel consumption	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>Record and monitor fuel consumption</li> <li>Keep fuel consumption on record</li> <li>Reduce theft of fuel (increase security)</li> <li>Implement safe refuelling procedures if refuelling on site.</li> </ul>	low
		Alternative 1			Low		low
		Alternative 2			Low		low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Raw materials consumption	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>Promote effective use of raw material.</li> <li>Incorporate alternative materials within design.</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Effects on Biodiversity	Direct	Loss of habitat	Proposal	Yes	Negative	Medium	<ul style="list-style-type: none"> <li>The preferred design minimises the impact to Study site. The area that will be impacted upon is also less sensitive than the rest of Study site. It also does not impact on any wetlands or watercourses and therefore will not result in any loss of these habitats. It is therefore preferred and should be implemented.</li> <li>Exotic and invasive plants should be controlled and removed.</li> <li>The drainage area must be rehabilitated</li> </ul>	Low-Medium
			Alternative 1			Medium-High		Medium
			Alternative 2			Medium		Low-Medium
			No-Go Option	No	Negative	Low-Medium		<ul style="list-style-type: none"> <li>If the no go option is enforced, it will result in the uncontrolled spreading of alien invasive species.</li> </ul>
	Direct	Loss of fauna	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>If the preferred design is approved, construction contractors, sub-contractors and operators must ensure that no fauna taxa are unduly disturbed, trapped, hunted or killed</li> <li>All workers will undergo environmental awareness training to address potential human and wildlife interaction and the permissible reactions to this interaction.</li> <li>Search and Rescue operations must be implemented before any clearance of areas.</li> </ul>	low
			Alternative 1			Low-Medium		low
			Alternative 2			Low		low
			No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
	Direct	Loss of flora	Proposal	No	Negative	Low-Medium	<ul style="list-style-type: none"> <li>Search and Rescue operations must be implemented before any clearance of areas</li> <li>Individuals of the Declining plant species <i>Hypoxis hemerocallidea</i> need to be relocated where</li> </ul>	Low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		Alternative 1			Medium	<p>applicable, to a suitable site nearby before the construction work of the development, if approved, is initiated. This should be done by suitably qualified persons to ensure the success of the rescue effort. Permits for relocation are to be obtained from GDARD for the rescue effort if necessary.</p> <ul style="list-style-type: none"> <li>• <i>In situ</i> relocation of indigenous vegetation should be attempted</li> <li>• All landscaping must be done with indigenous vegetation from the surrounding area.</li> </ul>	Low-Medium
		Alternative 2			Low-Medium		Low
		No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
Indirect	Degradation of ecological systems	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>• The preferred design minimises the impact to the study site. The area that will be impacted upon is also less sensitive than the rest of the study site. It also does not impact on any wetlands or watercourses and therefore will not result in the ecological degradation of the area. It is therefore preferred and should be implemented.</li> <li>• Dedicated implementation of the EMPr</li> <li>• All landscaping must be done with indigenous vegetation from the surrounding area.</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	No	Negative	Low-Medium	No management of vacant land will result in the further degradation of the study site.	Low-Medium
Indirect	Disruption of natural corridors	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>• The preferred design minimises the impact to the study area. The area that will be impacted upon is also less sensitive than the rest of the study area. It also does not impact on any wetlands or watercourses and therefore limits the disruption of ecological corridors. It is therefore preferred and</li> </ul>	Low
		Alternative 1			Medium		Low-Medium

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			Alternative 2			Low-Medium	should be implemented. • Dedicated implementation of the EMPPr	Low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Incidents, accidents and potential emergency situations	Direct	Pollution incidents	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>Spill kits to be located in strategic areas for when needed</li> <li>Regular site and plant inspection must be conducted</li> <li>Environmental awareness training</li> </ul>	low
			Alternative 1			Low		low
			Alternative 2			Low		low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
	Direct	Health and safety	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>24 hour security and access control.</li> <li>Health and Safety awareness training.</li> <li>Contractor to submit a Health and Safety Plan, prepared in accordance with the Health and Safety Specification, for approval prior to the commencement of work.</li> <li>A Safety representative should be appointed</li> </ul>	low
			Alternative 1			Low		low
			Alternative 2			Low		low
			No-Go Option	No	Negative	Low-Medium	The historical dumping and trespassing could create a health and safety risk if vacant site is not managed	Low-Medium
	Direct	Storage of hydrocarbons	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>Best practice regarding storage of substances</li> <li>Spill kits to be located in strategic areas for when needed</li> </ul>	low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			Alternative 1			Low	<ul style="list-style-type: none"> <li>Environmental awareness training</li> <li>Firefighting equipment must be accessible on site at all times.</li> <li>Display of emergency numbers</li> <li>Quantity management of regarding storage area and quantities</li> </ul>	low
			Alternative 2			Low		low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
	Direct	Fire	Proposal			Low	<ul style="list-style-type: none"> <li>Adhere to the appropriate emergency procedures</li> <li>Firefighting equipment must be accessible on site at all times.</li> <li>Display of emergency numbers</li> <li>In addition, designated smoking areas should be provided and there should be zero tolerance to smoking outside these areas. Cooking over open flames is not allowed.</li> </ul>	low
			Alternative 1	No	Negative	Low		low
			Alternative 2			Low		low
			No-Go Option	No	Negative	Low		If site remains unmanaged, fires could occur as a result from illegal dumping
Social	Direct	Visual impact	Proposal			Low	<ul style="list-style-type: none"> <li>Suitable screening to be put in place during construction to minimise visual impacts.</li> <li>No littering to be allowed.</li> <li>Good housekeeping practices to be followed</li> <li>The construction footprint for the preferred alternative (Proposal) is smaller and thus this alternative is preferred to minimise visual impacts to the site and neighbouring properties.</li> </ul>	Low
			Alternative 1	No	Negative	Low-Medium		Low
			Alternative 2			Low		Low
			No-Go Option	No	Negative	Low		Illegal dumping and uncontrolled activities on site increases the visual impact on the neighbouring area

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
					Before mitigation		With Mitigation
Direct	Safety and security	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• 24 hour access control to the site and 24 hour security.</li> <li>• Workers found to be engaging in activities such as excessive consumption of alcohol, drug use or selling of any such items on site must be disciplined.</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	No	Negative	Low	No management on site will result in the increase of illegal activities.	Low
Direct	Traffic disruptions	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>• Traffic warning and calming measures will be put in place when construction activities may impact on traffic flow.</li> </ul>	Low
		Alternative 1			Low-Medium		Low
		Alternative 2			Low-Medium		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Loss of cultural heritage	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• No heritage resources have been identified in the vicinity of the re-alignment.</li> <li>• The chance find procedure in the EMPr must be adhered to.</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low

		IMPACTS			SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
					Before mitigation		With Mitigation
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Impacts on existing infrastructure and users	Proposal	No	Negative	None	None required	None
		Alternative 1			None		None
		Alternative 2			None		None
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Loss of sense of place	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• Suitable screening to be put in place during construction to minimise visual impacts.</li> <li>• No littering to be allowed.</li> <li>• Good housekeeping practices to be followed</li> <li>• The development involves the relocation existing sports-field to adjacent property</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Economic	Decline/increase in economy	Proposal	Yes	Positive	Low-Medium	<ul style="list-style-type: none"> <li>• Local contractors and suppliers to be used during the construction phase as far as possible.</li> </ul>	Medium-High
		Alternative 1			Low-Medium		Medium-High

		IMPACTS				SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)	
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE	Before mitigation				With Mitigation
		Alternative 2			Low-Medium		Medium-High		
		No-Go Option	No	Negative	Low	Should the project not go ahead, there will not be any generation of new employment opportunities.	Low		
	Direct	Employment	Proposal	Yes	Positive	Low-Medium	• Local contractors and suppliers to be used during the construction phase as far as possible.	Medium-High	
			Alternative 1			Low-Medium		Medium-High	
			Alternative 2			Low-Medium		Medium-High	
			No-Go Option	No	Negative	Low	Should the project not go ahead, there will not be any generation of new employment opportunities.	Low	
	<b>OPERATIONAL PHASE</b>								
	Atmospheric Emissions	Direct	Dust emissions	Proposal	Yes	Negative	None	The sports-fields do not contribute to dust emissions, therefore no mitigation measures required	None
Alternative 1				None			None		
Alternative 2				None			None		
No-Go Option				Not Applicable	Not Applicable	None	Not Applicable	None	



	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
	Direct	Emissions from vehicles and equipment (CO2, NOx, SOx, VOC's etc.)	Proposal	Yes	Negative	Low	<ul style="list-style-type: none"> <li>• Employ speed limits on internal road</li> <li>• Employ mechanisms to ensure that road users stick to the speed limit, such as speed traps etc. (sticking to the speed limit,</li> </ul>	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	Low
Noise	Direct	Noise increase due to vehicles using the road	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>•The proposed development involves the relocation of existing sports-fields. Thus the noise impacts generated from the existing fields will be transferred to the adjacent property, thereby not contributing to an increase of noise pollution.</li> <li>• Peak noise impacts will also be during sporting events and not on a daily basis</li> </ul>	Low
			Alternative 1			Low-Medium		Low
			Alternative 2			Low-Medium		Low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Discharge to Water (Surface and Groundwater)	Direct	Sewage	Proposal	No	Negative	Medium	<ul style="list-style-type: none"> <li>• Due to the lack in formal infrastructure, the school will install sewer treatment plants to address demand. The plant operates as an enclosed system and will therefore not impact any watercourses. However, due to the potential to spill as a result of breakage, it must be well maintained and placed within a bunded area.</li> </ul>	Low
			Alternative 1			Medium		Low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		Alternative 2			Medium		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Indirect	Silt	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>All alternatives include a formalised stormwater system. All surfaces altered during construction will be compacted and covered by an alternative surface or grass, thereby minimising citification.</li> </ul>	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Surface water run-off	Proposal	Yes	Negative	Medium	<ul style="list-style-type: none"> <li>Storm water management system to be implemented and maintained.</li> </ul>	Low
		Alternative 1			Medium		Low
		Alternative 2			Medium		Low
		No-Go Option	Yes	Negative	Low-Medium	No formalised structure in place	Low-Medium
Direct	Contamination of water from	Proposal	No	Negative	Low		Low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
	hazardous substances	Alternative 1			Low	Water Quality Measurements must be taken from the grey water used for irrigation to ensure the quality remains within set parameters.	Low
		Alternative 2			Low		Low
		No-Go Option	No	Negative	Low	No formalised structure in place, surface water may be contaminated by illegal dumping	Low
Direct	Disturbance of natural system	Proposal	Yes	Negative	None	During operation phase all channelized structures are in place and maintained to control run-off from natural areas.	None
		Alternative 1			Low		Low
		Alternative 2			None		None
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Disturbance of aquatic ecological systems	Proposal	No	Negative	None	During operation phase all channelized structures are in place and maintained to control run-off from natural areas.	None
		Alternative 1			Low		Low
		Alternative 2			None		None
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
Waste Generation	Direct	Domestic waste	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>As part of management of the sports-facilities, litter should be collected and disposed of at an approved landfill site.</li> <li>Waste bins must be distributed through-out entire site where applicable.</li> </ul>	low
			Alternative 1			Low		low
			Alternative 2			Low		low
			No-Go Option	Not Applicable	Not Applicable	None		Not Applicable
	Not Applicable	Construction waste	Proposal	Not Applicable	Not Applicable	None	Not Applicable	None
			Alternative 1			None		None
			Alternative 2			None		None
			No-Go Option			None		None
	Direct	Hazardous waste	Proposal	No	Negative	Low	The only hazardous waste expected is through incidents/accidents resulting in oil/fuel spillages from the maintenance equipment and workshop area.	Low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			Alternative 1			Low	Should this occur, the following process must be followed: • Characterise the waste to determine if it is general or hazardous (Use the Appendix 1 of the Norms and Standards for the Classification of Waste for landfill to determine whether additional classification is required). Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.	Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Soil Alteration	Not Applicable	Loss of topsoil	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
			Alternative 1			None		None
			Alternative 2			None		None
			No-Go Option			None	Not Applicable	None
	Not Applicable	Loss of land capability	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
			Alternative 1			None		None
			Alternative 2			None		None

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		No-Go Option			None	Not Applicable	None
Not Applicable	Alteration of topography	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
		Alternative 1			None		None
		Alternative 2			None		None
		No-Go Option			None	Not Applicable	None
Direct	Soil erosion	Proposal	Yes	Negative	Low	The only potential cause of soil erosion during operation is through poor management of stormwater. This can be mitigated through: • Stormwater management	Low
		Alternative 1			Low		Low
		Alternative 2			Low		Low
		No-Go Option	Yes	Negative	Low-Medium	Without a formal stormwater system in place erosion will continue and worsen in time	Low-Medium
Direct	Soil pollution	Proposal	No	Negative	Low	The only potential soil pollution expected is through incidents/accidents resulting in oil/fuel spillages. Should this occur, the following process must be	Low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation	With Mitigation	
			Alternative 1			Low	followed: • Characterise the waste to determine if it is general or hazardous (Use the Appendix 1 of the Norms and Standards for the Classification of Waste for landfill to determine whether additional classification is required). Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.	Low
			Alternative 2			Low		Low
			No-Go Option	No	Negative	Low-Medium	Without any management structures in place soil pollution can not be monitored or managed.	Low-Medium
Resource Consumption	Not Applicable	Electricity consumption	Proposal	Yes	Negative	Low	• The nature of the project will not require high levels of electricity usage as most of the activities will occur during the day • Energy efficient/ saving technology must be incorporated within the design. during operations. • Energy saving initiatives should be enforces: switching off lights during night. only turning on spot-lights when required.	Low
			Alternative 1			Low-Medium		Low
			Alternative 2			Low		Low
			No-Go Option	Not Applicable	Not Applicable	None		N/A during the operational phase.
	Not Applicable	Water consumption	Proposal	Yes	Negative	Low-Medium	• Water saving initiatives must be implemented. • Irrigation of sports-fields must be done at specific times to minimise evaporation. • Reuse of water must be promoted	Low
			Alternative 1			Low-Medium		Low
			Alternative 2			Low-Medium		Low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)	
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE				Before mitigation
		No-Go Option	Not Applicable	Not Applicable	None	N/A during the operational phase.	None	
Not Applicable	Fuel consumption	Proposal	Yes	Negative	Low-Medium	<ul style="list-style-type: none"> <li>Maintenance work must be managed as sufficient as possible to promote the efficient use of fuel.</li> </ul>	Low	
		Alternative 1			Low-Medium		Low	
		Alternative 2			Low-Medium		Low	
		No-Go Option	Not Applicable	Not Applicable	None	N/A during the operational phase.	None	
Not Applicable	Raw materials consumption	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None	
		Alternative 1			None		None	
		Alternative 2			None		None	
		No-Go Option			None	N/A during the operational phase.	None	
Effects on Biodiversity	Not Applicable	Loss of habitat	Not Applicable	Not Applicable	None	N/A during the operational phase.	None	
					Alternative 1		None	None
					Alternative 2		None	None



IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
					Before mitigation		With Mitigation
		No-Go Option	No	Negative	Low-Medium	Without formalising the vacant land, the site will continue to degrade which will result in the loss of Habitat	Low-Medium
Not Applicable	Loss of fauna	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
		Alternative 1			None		None
		Alternative 2			None		None
		No-Go Option	No	Negative	Low-Medium	Without formalising the vacant land, the site will continue to degrade which will result in the loss of Fauna.	Low-Medium
Not Applicable	Loss of flora	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
		Alternative 1			None		None
		Alternative 2			None		None
		No-Go Option	No	Negative	Low-Medium	Without formalising the vacant land, the site will continue to degrade which will result in the loss of Flora.	Low-Medium
Not Applicable		Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
		Degradation of ecological systems	Alternative 1			None		None
			Alternative 2			None		None
			No-Go Option			No		Negative
	Direct	Disruption of natural corridors	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
Alternative 1	None		None					
Alternative 2	None		None					
	No-Go Option		No	Negative	Low-Medium	Without formalising the vacant land, the site will continue to degrade the ecological system.	Low-Medium	
Incidents, accidents and potential emergency situations	Direct	Pollution incidents	Proposal	No	Negative	Low	The only potential soil pollution expected is through incidents/accidents resulting in oil/fuel spillages. Should this occur, the following process must be followed: • Characterise the waste to determine if it is general or hazardous (Use the Appendix 1 of the Norms and Standards for the Classification of Waste for landfill to determine whether additional classification is required). Obtain and provide an acceptable container with a label. Place hazardous waste material in the container. Inspect the container on a	low
			Alternative 1			Low		low

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
		Alternative 2			Low	regular basis Haul the full container to the licenced and correct disposal site. Provide documentary evidence of proper disposal of the waste.	low
		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Direct	Health and safety	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• Speed limits to be implemented.</li> <li>• Traffic calming and safety measures to be implemented during any maintenance activities taking place on the site (e.g. collecting litter, cutting grass and landscaping).</li> <li>• Appropriate medical personnel and equipment must be present on site during sporting events.</li> <li>• An Safety representative must be appointed within the workshop area.</li> </ul>	low
		Alternative 1			Low		low
		Alternative 2			Low		low
		No-Go Option	No	Negative	Low	Not Applicable	low
Direct	Storage of hydrocarbons	Proposal	No	Negative	Low	<ul style="list-style-type: none"> <li>• Best practice regarding storage of substances</li> <li>• Spill kits to be located in strategic areas for when needed</li> <li>• Environmental awareness training</li> <li>• Firefighting equipment must be accessible on site at all times.</li> <li>• Display of emergency numbers</li> </ul>	low
		Alternative 1			Low		low

	IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
	TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE			
						Before mitigation		With Mitigation
			Alternative 2			Low	• Quantity management of regarding storage area and quantities	low
			No-Go Option	Not Applicable	Not Applicable	None	N/A during the operational phase.	None
	Direct	Fire	Proposal			Low	<ul style="list-style-type: none"> <li>Adhere to the appropriate emergency procedures</li> <li>Firefighting equipment must be accessible on site at all times.</li> <li>Display of emergency numbers</li> </ul>	low
			Alternative 1	No	Negative	Low		low
			Alternative 2			Low		low
No-Go Option			No	Negative	Low-Medium	If site remains unmanaged, fires could occur as a result from illegal dumping		Low-Medium
Social	Direct	Visual impact	Proposal			Medium	<ul style="list-style-type: none"> <li>A well maintained sports-field will suit the sense of place.</li> <li>Well landscaped areas will be seen from the adjacent roads</li> </ul>	Medium
			Alternative 1	No	Positive	Medium		Medium
			Alternative 2			Medium		Medium
			No-Go Option	No	Negative	Medium		Illegal dumping and uncontrolled activities on site increases the visual impact on the neighbouring area
	Direct	Safety and security	Proposal	No	Positive	Medium	• Fence/wall to be put in place to limit unauthorised access to the sports-fields to ensure only access is	Medium

IMPACTS					SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)	
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE				Before mitigation
		Alternative 1			Medium	through official access points. • Lighting and movement on site will decrease illegal activities within the area.	Medium	
		Alternative 2			Medium		Medium	
		No-Go Option	No	Negative	Medium	No management on site will result in the increase of illegal activities.	Medium	
	Direct	Traffic disruptions	Proposal	Yes	Negative	Low-Medium	• Traffic warning and calming measures will be put in place when big sporting events may impact on traffic flow.	Low
			Alternative 1			Low-Medium		Low
			Alternative 2			Low-Medium		Low
			No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None
Not Applicable	Loss of cultural heritage	Proposal	Not Applicable	Not Applicable	None	N/A during the operational phase.	None	
		Alternative 1			None		None	
		Alternative 2			None		None	
		No-Go Option			None		N/A during the operational phase.	None

		IMPACTS				SIGNIFICANCE (WOM)	MANAGEMENT & MITIGATION MEASURES	SIGNIFICANCE (WM)
TYPE	DESCRIPTION	ALTERNATIVE	CUMULATIVE	NATURE	Before mitigation			
	Direct	Loss of sense of place	Proposal	Not Applicable	Not Applicable	None	The development involves the relocation of existing sports-fields to the adjacent property. Therefore, the sense of place will not be changed as most of the adjacent properties are associated with Heronbridge College.	None
			Alternative 1			None		None
			Alternative 2			None		None
			No-Go Option			None		The site in its current state will continue, therefore will not alter its current sense of place
Economic	Direct	Decline/increase in economy	Proposal	Yes	Positive	Medium	Development and formalisation of vacant land will secure future of Heronbridge College, thereby increasing the potential economy of the local community by providing more development and investment opportunities.	Medium
			Alternative 1			Medium		Medium
			Alternative 2			Medium		Medium
			No-Go Option	Yes	Negative	Medium	If the study site stays vacant it will not contribute to economical growth for the local community	Medium
	Direct	Employment	Proposal	Yes	Positive	Low	Local employment must be enforced if additional employment is required for the operation phase.	Low
			Alternative 1			Low		Low
			Alternative 2			Low		Low
	Not Applicable		No-Go Option	Not Applicable	Not Applicable	None	Not Applicable	None

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

The following Specialist reports were utilized to complete the Impact Assessment:

- Ecological Impact Assessment
- Archaeological Impact Assessment
- Wetland Assessment
- Electrical Engineering Services Report
- Outline Scheme report
- Traffic Impact Assessment

Please refer to Appendix G: Specialist Reports for full specialist reports

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

#### Archaeological Impact Assessment

It should be noted that due to safety concerns around the dumping areas, access to these areas were restricted. Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. This report only deals with the footprint area of the proposed development. High vegetation cover limited archaeological visibility. Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

#### Ecological Assessment

The following limitations apply to the study:

- The study was limited to one season during summer.
- The assessment of red data listed species was limited to a habitat assessment to determine the possibility of occurrence.
- The adjacent areas were not surveyed during the site investigation, but was considered during the desktop assessment.
- The species lists are not exhaustive, as only plant species encountered along transects were recorded. Likewise, if sensitive species are encountered, finding and recording the location of each individual was outside the scope of this assessment.

#### Wetland Assessment:

The study was limited to a snapshot view during a few site visits. The field investigations were undertaken during April 2017 to assess and confirm the delineated Wetland zones present on the survey area. Weather conditions during the survey were favourable for recordings. The delineations were recorded by hand held GPS.

It must be noted that, during the process of converting spatial data to final output drawings, several steps are followed that may affect the accuracy of areas delineated. Due care has been taken to preserve accuracy. Printing or other forms of reproduction may also distort the scale indicated in maps. It is therefore suggested that the wetland areas identified in this report be pegged in the field in collaboration with the surveyor for precise boundaries.

It is unlikely that more surveys would alter the outcome of this study radically.

### 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.

**Proposal:**

The sports-fields and related facilities form an integral part of Heronbridge College and it is not expected that these facilities will be decommissioned. As such, impacts related to decommissioning and closure are not applicable.

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

Not applicable

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

Not applicable



## 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:

Cumulative impacts are included in the detailed impact assessment included in **Appendix I** but in summary, the following impacts have been considered as cumulative for each phase of development:

### **Construction Phase:**

- Dust emissions
- Emissions from vehicles and equipment (CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, VOC's etc.)
- Noise increase due to construction activities
- Surface water run-off
- Disturbance of natural system
- Construction waste
- Loss of topsoil
- Loss of land capability
- Alteration of topography
- Soil erosion
- Electricity consumption
- Water consumption
- Fuel consumption
- Raw materials consumption
- Loss of habitat
- Degradation of ecological systems
- Disruption of natural corridors
- Traffic disruptions
- Decline/increase in economy
- Employment

### **Operational Phase:**

- Dust emissions
- Emissions from vehicles and equipment (CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, VOC's etc.)
- Noise increase due to construction activities
- Surface water run-off
- Disturbance of natural system
- Soil erosion
- Electricity consumption
- Water consumption
- Fuel consumption
- Traffic disruptions

- Decline/increase in economy
- Employment

It should be noted that even taking into account their cumulative nature, these impacts could be satisfactorily mitigated.

All the impacts with the potential to have cumulative impacts on the environment is evaluated in the above extraction of the Impact Assessment. As defined in the introduction of this section (4), a Cumulative impacts are those impacts that are created as a result of the combination of impacts of the proposed project, with impacts of other projects or operations, to cause related impacts, as well as a single impact over a certain time period which then results in the accumulation of negative/ positive impacts making the significance higher. These impacts occur when the incremental impact of the project, combined with the effects of other past, present and reasonably foreseeable future projects, are cumulatively considered. The assessment of cumulative impacts on a site-specific basis is however complex especially if many of the impacts occurs on a much wider scale than the site currently being assessed and evaluated. Through proper management of the EMPr and continual monitoring regarding the identified impacts will result in the, mineralisation of these cumulative impacts.

## **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.

### **5.1 Proposal**

The proposed Heronbridge Sports-field development will involve the relocation of various facilities pertaining to School sports, and is further described below.

The proponent is left with little choice but to relocate the current sports-facilities, due to the planned K52 road cutting through the middle of their existing facilities. Portion 112 is the only viable option for relocation as it provides sufficient space the relocation and possible future expansions. The nature of the project makes it impossible to replicate on any other portion nearby. As the project is related directly to the Heronbridge College it is required to be adjacent to the school for safety and practical reasons. The timeframes related to a relocation of this magnitude requires the application to commence as soon as possible as the competitive season relating to these sports disciplines are stretched over an entire year, with the school not being able to afford any constraints relating to incomplete fields.

The proposed layout transforms less than 20 ha of natural vegetation on portion 112 of the farm Nietgedacht. The proposed layout is preferred as it transforms the least amount of land for the purpose of the proposed development.

It also makes provision for the rehabilitation and protection of the sensitive area in the northern section of the property.

The proposed layout makes provision for the following facilities on Portion 112 Nietgedacht is as follows:

- Two (2) cricket oval areas
- Two (2) hockey fields
- Tennis Courts
- Netball Courts
- Basketball Courts
- Three (3) change and ablution facilities
- Security office, Store and staff unit
- Vehicular Parking Areas

Based on the findings of the specialist studies and the impact assessment and taking into account the successful implementation of the EMP, the EAP managing this application is of the opinion that the proposed development may be authorised. The following reasons form the basis of this opinion:

#### **5.1.1 Need for the Project**

The Gauteng Department of Roads and Transport (GPDRT) have aligned the proposed K52 road through the middle of Portion 38 of the farm Nietgedacht 535 JQ. Heronbridge College currently utilizes Portion 38 for their existing sports-field. Due to the road alignment, most of their facilities will be lost. The development of new sports fields on Portion 112 (A Portion of Portion 17) of Nietgedacht 535 JQ is therefore required. The sports fields will allow Heronbridge College to continue to offer high quality educational services. In terms of this, the following should be noted:

#### **5.1.2 Site Selection**

Portion 112 is regarded as the only viable option due to the following:

- It was the only land portion available Heronbridge could afford to purchase.
- It was the only portion available with sufficient space to successfully relocate the existing sports-facilities.
- It was the only adjacent land portion available within abovementioned specification.
- By utilizing the southern section of the property, it will minimize the impact on the environment.
- The proposed development is committed to the rehabilitation of the drainage area.

#### **5.1.3 Layout**

The layout alternatives that were considered refer to different layout options although neither of the options are significantly different from each other. By excluding the northern section of the site limits the designing options within the designated footprint. The preferred option most efficiently utilises the footprint area. The proposed layout

incorporates a section of the site and utilises less than 20 hectares of Portion 112. It provides sufficient space for all the required sports facilities, associated infrastructure and stormwater management. The preferred layout also displays the best in terms of visual presentation providing the best publicity from the planned K52 road. The proposed layout is regarded as the most efficient and cost affective option and is therefore regarded as the preferred layout.

#### **5.1.4 Environmental Sensitivities**

An **Ecological Habitat Assessment** was undertaken and found that apart from some impacts, such as alien invasive species, footpaths and a leaking sewage line, the vegetation of the grassland and rocky outcrops on the proposed development site is in a good condition, and represents the Egoli Granite Grassland vegetation type. In terms of species diversity, the most important and sensitive plant is *Hypoxis hemerocallidea*, which is classified as 'Declining'. *Hypoxis hemerocallidea* is, however, easy to transplant. A relocation plan must be developed to transplant the rescued plants within the site boundary preserving same locally.

However, overall, the specialist found that whilst the proposed development site is considered sensitive, some impacts can be reduced by implementing mitigating measures and proper planning in terms of site layout.

A **Heritage Impact Assessment** was undertaken and found that No Significant Stone Age sites were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly, no sites of archaeological significance were recorded by other studies in the area (e.g. Kusel (2007), van Schalkwyk (2013) van der Walt (2015 a and b, 2016).). No further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. According to the SAHRA Paleontological Sensitivity map the area is of zero paleontological sensitivity and no further studies are required in this regard.

In terms of the built environment of the area (Section 34), no structures occur within the study area and in terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation.

A **Wetland Assessment** was undertaken and established that the following Hydrogeomorphic wetlands were identified during the site evaluation:

- Drainage line (Stream Headwater)
  - 21659\_CHS was found on the slope draining towards the West.

Concluded from the results presented in this document, the development activities will not impact on the drainage system but, the rehabilitation will positively impact on the drainage line and impacts predicted can be mitigated to satisfactory standards if all mitigatory actions are implemented with due care. It is key to preserve water quality and supply to the downstream aquatic resources.

The rehabilitation of the drainage line is vital to recover the required ecological function. The aquatic drivers must be enhanced as part of the rehabilitation of the affected areas. In respect of the rehabilitation phase, it is important to

ensure that the required erosion protection and silt distribution curbing measures and storm water management linked to the rehabilitation be carefully designed and installed.

The project can be supported, should all the mitigation measures be implemented and monitored against to ensure compliance.

#### **5.1.5 Social impacts**

A number of potential social impacts were identified such as safety, security, nuisance, noise, dust and visual impacts. These impacts are able to be effectively mitigated through implementation of appropriate environmental management measures and conditions as stipulated in the EMPr. The proposed development will utilise vacant land adjacent to the school for an activity forced upon by the Department of Roads and Transport in relation to the K52 road alignment. During the construction phase of the project, the development will result in the generation of job opportunities for the local community. The sectional upgrade of certain roads and road-intersection will improve the current road infrastructure of the surrounding area thereby benefiting not only the proposed site but the neighbouring properties and thereby aligning development with the city's future planning (such as the K52). The development will secure the future existence of the school which will directly affect the surrounding community in a positive way.

#### **5.1.6 Services Infrastructure**

The preferred development is committed to the efficient use of resources. The proposed development can be supported as it will not significantly affect the existing provincial infrastructure through the effective management of their own sewer and effluent, as well as the abstraction of borehole water, the development can be supported. In terms of the contributions to road improvements and formalization of vacant land, it can be assumed that the proposed development will benefit the local community and minimise the impact on the natural environment.

#### **5.1.7 Impact Assessment**

A detailed impact assessment has been undertaken and assessed the types of impact, duration of impacts, likelihood of potential impacts as well as the overall significance of the impact occurring (**Appendix I**). Most impacts have a low significance once mitigation measures were applied. The following can be noted:

- During construction, dust emissions and emissions from vehicles will occur but will be of a low significance. A number of mitigation measures will be implemented and will further reduce the intensity of these impacts. During operation, no dust emissions are expected. Vehicle emissions will however occur but can be reduced to a low significance.
- The drainage section is located outside of the development footprint and due to the topography of the site will not be impacted upon by surface water run-off as the drainage line falls within a different catchment.
- During the construction phase of the project the significance for the generation of waste is relatively high, this will however be mitigated to a low significance.
- The Impact assessment indicated that the alteration to soil will be the biggest impact during the construction phase, this will however be mitigated to a low-medium significance.
- Effects on the biodiversity will be mitigated through proper management measures.

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## 5.2 Alternative 1

The first alternative is to utilise the entire portion 112 thereby spreading out the layout across the entire site. Expanding the development footprint across the entire site will result in a full EIA & scoping report to be conducted as well as water use licences. The cost to spread out the development will also increase. This alternative will also result in a larger transformation of natural vegetation as well as a significant impact on the drainage line.

### 5.2.1 Site Selection

Portion 112 is regarded as the only viable option due to the following:

- It was the only land portion available Heronbridge could afford to purchase.
- It was the only portion available with sufficient space to successfully relocate the existing sports-facilities.
- It was the only adjacent land portion available within abovementioned specification.

### 5.2.2 Layout

Alternative one makes provision for the entire portion 112 to be developed. Thereby extending the development footprint across the entire property. The layout of the sports-facilities will thus be stretched over the entire site. This will result in large open spaces between individual facilities which complicates the design of pavilions and would most likely result in the construction of numerous individual pavilions. Such a spread-out layout also complicates stormwater management and increases the use of energy over such a large surface. Using the entire extent of portion 112 will also result in the use of the drainage area which is not preferred. The proposed layout is thus regarded as the most sufficient and cost effective option and transforms the least amount of surface area, and is therefore regarded as the preferred layout.

### 5.2.3 Environmental Sensitivities

An **Ecological Habitat Assessment** was undertaken and found that apart from some impacts, such as alien invasive species, footpaths and a leaking sewage line, the vegetation of the grassland and rocky outcrops on the proposed development site is in a good condition, and represents the Egoli Granite Grassland vegetation type. In terms of species diversity, the most important and sensitive plant is *Hypoxis hemerocallidea*, which is classified as 'Declining'. *Hypoxis hemerocallidea* is, however, easy to transplant. A relocation plan must be developed to transplant the rescued plants within the site boundary preserving same locally.

However, overall, the specialist found that whilst the proposed development site is considered sensitive, some impacts can be reduced by implementing mitigating measures and proper planning in terms of site layout.

A **Heritage Impact Assessment** was undertaken and found that No Significant Stone Age sites were recorded in the study area and no ceramics or stone walls attributed to the Iron Age were recorded. Similarly, no sites of archaeological significance were recorded by other studies in the area (e.g. Kusel (2007), van Schalkwyk (2013) van der Walt (2015 a and b, 2016).). No further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. According to the SAHRA

Paleontological Sensitivity map the area is of zero paleontological sensitivity and no further studies are required in this regard.

In terms of the built environment of the area (Section 34), no structures occur within the study area and in terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation.

A **Wetland Assessment** was undertaken and established that the following Hydrogeomorphic wetlands were identified during the site evaluation:

- Drainage line (Stream Headwater)
  - 21659\_CHS was found on the slope draining towards the West.

Concluded from the results presented in this document, the development activities will impact on the drainage system even though, the rehabilitation will positively impact on the drainage line and impacts predicted can be mitigated to satisfactory standards if all mitigatory actions are implemented with due care. It is key to preserve water quality and supply to the downstream aquatic resources and is therefore not recommended to construct above-stream of the drainage line.

#### **5.2.4 Social impacts**

A number of potential social impacts were identified such as safety, security, nuisance, noise, dust and visual impacts. These impacts are able to be effectively mitigated through implementation of appropriate environmental management measures and conditions as stipulated in the EMP. The proposed development will utilise vacant land adjacent to the school for an activity forced upon by the Department of Roads and Transport in relation to the K52 road alignment. During the construction phase of the project, the development will result in the generation of job opportunities for the local community. The sectional upgrade of certain roads and road-intersection will improve the current road infrastructure of the surrounding area thereby benefiting not only the proposed site but the neighbouring properties and thereby aligning development with the city's future planning (such as the K52). The development will secure the future existence of the school which will directly affect the surrounding community in a positive way.

#### **5.2.5 Services Infrastructure**

Even though Alternative 1 is committed to the efficient use of resources, it will be slightly higher than the preferred option as it absorbs the entire portion 112. Alternative one will install the same infrastructure as the preferred option, but will require the extensions of most linear infrastructure as it will need to reach the same facilities but over a greater distance, such as sewer and potable water pipes. Alternative 1 will not significantly affect the existing provincial infrastructure through the effective management of their own sewer and effluent, as well as the abstraction of borehole water. In terms of the contributions to road improvements and formalization of vacant land, it can be assumed that alternative 1 will benefit the local community but will have a greater impact on the natural environment in relation to the preferred option.

### **5.2.6 Impact Assessment**

A detailed impact assessment has been undertaken and assessed the types of impact, duration of impacts, likelihood of potential impacts as well as the overall significance of the impact occurring (**Appendix I**). Most impacts have a low significance once mitigation measures were applied, however, as alternative one includes the drainage line (sensitive area) within the development, the impacts will be higher. The following can be noted:

- During construction, dust emissions and emissions from vehicles will occur but will be of a low significance. A number of mitigation measures will be implemented and will further reduce the intensity of these impacts. During operation, no dust emissions are expected. Vehicle emissions will however occur but can be reduced to a low significance.
- The drainage section is located inside of the development footprint and due to the topography of the site will be impacted through surface water run-off as the drainage line falls within the drainage catchment. This increases the impact significance.
- During the construction phase of the project the significance for the generation of waste is relatively high, this will however be mitigated to a low significance.
- The Impact assessment indicated that the alteration to soil will be the biggest impact during the construction phase, this will however be mitigated to a low-medium significance.
- Effects on the biodiversity will be mitigated through proper management measures.

### **5.3 Alternative 2**

The second alternative includes an alternative layout to the proposed option within the same development footprint. It will however not include the same amount of facilities as well as different locations within the site. This alternative is viable but not the preferred option as it affects the visual aesthetics of the site and does not visually represent as well as the preferred option.

As this alternative is identical to the preferred option, only differing in design layout within the same footprint area, it is safe to assume that alternative 2 will have the same environmental impacts as the preferred option and will thus not be duplicated within this section. As the activity and the size of facilities do not differ from the preferred option, the socio-impacts and services infrastructure sections can be read in conjunction with the preferred option.

### **5.4 No-Go Option**

The no-go option includes not erecting Sports-facilities on the proposed site, however, if the sports-facilities are not relocated before the planned K52 is constructed, the school will lose all their facilities and will result in a detrimental effect on the school as they will be unable to compete in these sports disciplines. If the school is unable to compete it could result in the school closing down. This will not only have a devastating effect on the school but would affect the local community benefiting from the school as well.



If the sports-fields are not relocated to Portion 112, the property will remain vacant and be subject to illegal activities such as dumping and trespassing. The property was purchased with the sole purpose of becoming the new sports - grounds if the K52 were to be constructed, and would therefore be “useless” to Heronbridge if it was not utilised for sports-facilities.

The socio-impact on portion 112 if the relocation is not authorised will result in no new job creation opportunities, the adjacent properties will remain subject to activities related to vacant land such as illegal dumping and trespassing.

Due to the illegal dumping on site, the environmental sensitivity will degrade even further if nothing is to be done on the currently vacant land.

## **6 Impact Summary of the Proposal or Preferred Alternative**

For proposal:

Please see **Table 6-1** for a summary of the impact assessment undertaken. In general, most negative impacts from both construction and operation could be mitigated to a low significance with the implementation of the proposed mitigation measures which are included in the EMPr. **For this reason, the proposal is preferred.**

Table 6-1: Summary of impacts on the proposed site layout for construction phase.

Impacts	Comment
<b>Atmospheric Emissions</b>	Dust emissions is evaluated as a low impact before mitigation, and is kept as low after mitigation measures are implemented. This is mainly due to construction vehicles operating on site, as well as the clearance of groundcover.
<b>Waste Generation</b>	During the construction phase of the project waste generation will be regarded as a low-medium impact, especially construction waste. This will however be successfully mitigated through formal waste management procedures.
<b>Soil Alteration</b>	In terms of the Environmental Impact assessment the alteration of soil is regarded as the biggest impact to the environment. Due to the loss of topsoil, land capability and the alteration of topography the impact on the soil is significant as a large portion of the property will be transformed for the sports-facilities.
<b>Resource Consumption</b>	The consumption of raw materials is regarded as low-medium impact due to the fact that during construction raw material is used with the erecting of structures. The effective use of raw materials will be promoted to minimise unregulated use.
<b>Effects on Biodiversity</b>	<p>A large portion of the site is regarded as an Ecological Support Area by the department as a large part of the study site is regarded as undisturbed. The Ecological specialist also identified biodiversity sensitivities and species of concern which all together raises the significance of the impact on the biodiversity of the proposed site. However, effectively implementing the proposed mitigation measures will minimise the impact on the environment. Impacts include:</p> <ul style="list-style-type: none"> <li>• The loss of habitat</li> <li>• Loss of fauna</li> <li>• Loss of flora</li> <li>• Degradation of ecological systems</li> </ul>
<b>Social</b>	Regarding the social impacts for the proposed development. Impacts on the safety and security of the people operating on site as well as the neighbouring properties could be affected by the increase in activity for the site. However, after implementing the mitigation measures the safety of the people operating on site and neighbouring properties can be secured. The impact on the current traffic network is also regarded as a medium impact as certain intersections in the local area will be upgraded and roads formulated which can put a strain on current traffic in the area. This will however be properly mitigated during the construction phase
<b>Economic</b>	The proposed development will positively affect the economic value of the local community by creating employment and increase the property value of neighbouring properties

Table 6-2: Summary of impacts on the proposed site layout for operational phase.

Impacts	Comment
<b>Noise</b>	The proposed operation phase of the project involves sporting events which will generate noise within the neighbouring area, however though proper mitigation the impact of noise will be lowered.
<b>Resource Consumption</b>	The consumption of electricity and water is regarded as low-medium impact due to the fact that during the operation phase water will be used for ablution facilities for relatively large populations. The effective consumption of water and electricity of raw materials will be promoted to minimise unregulated use.
<b>Discharge to water</b>	Due to the magnitude of the site and the presence of a sewer treatment plant on site, the potential for discharge to water is regarded as medium, this will however be mitigated through safety and prevention procedures.
<b>Social</b>	Regarding the social impacts for the proposed development. Impacts on the safety and security of the people operating on site as well as the neighbouring properties could be affected by the increase in activity for the site. However, after implementing the mitigation measures the safety of the people operating on site and neighbouring properties can be secured.
<b>Economic</b>	The proposed development will positively affect the economic value of the local community by creating employment and increase the property value of neighbouring properties

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.

As stated above, when comparing the proposed layout and the alternative layout, the results portraying to the Impact Assessment are the same. Because both options utilise the same property with the same proposed activity, the impacts are relatively the same. Even though, less units are provided in the alternative layout, the footprint stays the same due to the design. It can therefore be assumed that the statement made above, is correctly duplicated for the alternative layout. However, when evaluating the positive impacts of the proposed development it would be beneficial to promote the proposed layout as it will be more beneficial to the client and the surrounding community.

## 7 Spatial Development Tools

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

The following spatial development tools were applied and/or considered:

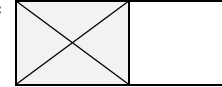
- Draft Regional Spatial Development Framework, 2010/11** for the City of Johannesburg Metropolitan Municipality was consulted as Spatial Development Tool. Within the framework Region A was further scrutinised to ensure that the development is in line with CoJ's future development planning.
- GDARD C-PLAN** and environmentally sensitive layers were utilized during the compilation of this report to identify biodiversity specialist reports as well as possible sensitive areas within the area.
- Gauteng Provincial Environmental Management Framework** was utilized in the compilation of this report. The development falls within zone 1 i.e. the urban development zone. The drainage area on the north-western end of the site is zoned as zone 2 which refers to high control zones.

## 8 Recommendation of the Practitioner

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

YES	NO
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Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).



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

Not Applicable

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

The following conditions have been identified for inclusion as part of the conditions of the environmental authorisation:

- All Conditions stipulated in the Environmental Authorisation (EA) must be complied with.
- The holder of the EA must comply with all the Conditions stipulated in the EMPr as approved by the Competent Authority.
- Any and all recommendations and conditions stipulated in the Specialist reports must be complied with.
- The development must remain within the designated development footprint as identified in the SDP
- A General Authorisation application must be submitted for the rehabilitation of the drainage area outside of the development footprint.
- All conditions stipulated within the General Authorisation must be adhered to.
- No construction waste may be used for infilling during construction of the sports-field.

## 9 The Needs and Desirability of the Proposed Development (as per notice 792 of 2012, or the updated version of this guideline)

### “securing ecological sustainable development and use of natural resources”

#### 1. How will this development (and its separate elements / aspects) on the ecological integrity of the area?

An ecological assessment study was undertaken for the proposed development and is contained in Appendix G. Mitigation measures are prescribed in the Specialist studies (Wetland and Ecological – Appendix G), which are incorporated within the Environmental Management Programme (EMPr) for the proposed Heronbridge College Sports-field. The proposed development considers the identified drainage area, and ecological features onsite, therefore allowing migration of species and adequate flow of drainage outside the proposed footprint area. A separate Water Use General Authorisation Process is currently underway to comply with the National Water Act [NWA], 1998 (Act No. 36 of 1998) for the rehabilitation of the drainage.

#### 1.1 How were the following ecological integrity considerations taken into account?

##### 1.1.1 Threatened Ecosystems.

The site assessed, contains a drainage line in the northern section and some sensitivity in terms of flora relating to Egoli Granite Grassland Vegetation. Some habitat conditions favourable for fauna exists in the surrounding environment. Information was sourced from GDARD and the GDARD Conservation-Plan v3, Google Earth, onsite examinations and using available literature and guide books to identify threatened species. Mitigation measures were provided in all specialist studies contained under Appendix G, while the EMPr contained under Appendix H, will guide the contractor as to what to do and where to obtain additional information should threatened ecosystems be encountered.

1.1.2 Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

The site assessed contains a drainage line. Information was sourced from GDARD and the GDARD Conservation-Plan v3, Google Earth, onsite examinations and using available literature and guide books to identify threatened species. Mitigation measures were provided in the Wetland Specialist Assessment under Appendix G, while the EMPr contained under Appendix H, will guide the contractor as to what to do and where to obtain additional information should threatened ecosystems be encountered. The development will exclude the northern section of the property in order to preserve the sensitive drainage area, therefore no activity will be allowed within this section. The General Authorisation will make provision for the rehabilitation of the drainage area.

1.1.3 Critical Biodiversity Areas (“CBAs”) and Ecological Support Areas (“ESAs”).

GDARD Conservation-Plan v3 was utilised to identify the extent of this feature, while the Ecologist assessed the ecological aspects of the proposed development site. Prism EMS have also included activity no 12 of listing notice 3 within the EIA Regulations, 2014 (as amended) as the site falls within CBA and ESAs. The GDARD Conservation Plan classifies most of the study site as an Ecologically Supported Area (ESA) (See Appendix A.4: Gauteng EMF), however it should be mentioned that the general area has been impacted by anthropogenic activities.

1.1.4 Conservation targets.

An Ecological Assessment and Wetland Assessment was undertaken to comply with NEM:BA. Mitigation measures are included in these Specialist Studies contained under Appendix G and the EMPr contained in Appendix H. Egoi Granite Grassland vegetation group was identified on site. The department has issued a conservation target of 24% for the total area of this vegetation group.

1.1.5 Environmental Management Framework.

The Gauteng Environmental Management Framework, EMF GIS layer was utilized as part of this assessment. The site falls within Zone 1: Urban Development zone and Zone 2: High control zone (around drainage line).

1.1.6 Spatial Development Framework, and

The following spatial development tools were applied and/or considered:

**Draft Regional Spatial Development Framework, 2010/11** for the City of Johannesburg Metropolitan Municipality was consulted as Spatial Development Tool. The RSDF represents the prevailing spatial planning policy within the City of Johannesburg and is adopted in terms of the Municipal Systems Act, 2000 (Act No. 32 of 2000) as an integral component of the City’s Integrated Development Plan (IDP).

The proposed Heronbridge Sports-field development is situated within the City of Johannesburg Metropolitan Municipality in Region A. Region A, is one of seven administrative regions that make up the City of Johannesburg. It is located on the northern periphery of the City of Johannesburg Metropolitan area, bordered by Region C and Region E to the south, Mogale City Local Municipality to the west, City of Tshwane Municipality to the north and City of Ekurhuleni Municipality to the east. The Greater Diepsloot and Greater Ivory Park areas are classified as Marginalised areas and are among the most prioritised areas in terms of the Growth Management Strategy (GMS).

The proposed study site is situated in Sub-Area 3 of Region A according to the Regional Spatial Development Framework. Sub-Area 3 consists mainly of the Diepsloot Nature Reserve and the marginalized area of Diepsloot West and Extensions. The remainder of the sub area includes agricultural holdings and farm portions that fall within and outside the Urban Development Boundary (UDB). One of sub-area 3's main objectives is to improve access to Diepsloot and Extensions, hence the development of the planned K52 road, thereby reiterating the need to relocate the spots-facilities. The study site is located between a major Urban Freeway (N14) and a critically important Mobility Spine (K52) within sub-area 2.

**1.1.8 Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.)**

Global and international responsibilities relating to the environment were considered, however these are not applicable to this type of development. The Heronbridge Sports-field relocation has however utilised energy efficiency in the design of the structure as indicated under Section D number 4.

**1.2 How will this development disturb or enhance ecosystems and / or result in the loss or protection of biological impacts that could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?**

Please refer to the Wetland Specialist Study and Ecological Assessment contained under Appendix G together with the EMPr contained under Appendix H for mitigation measures and ways to minimise and remedy the negative impacts associated with the proposed development. In Appendix I a complete impact rating and assessment is provided, while the engineering design report specifies the specific activities to be undertaken for the proposed development. The information contained in this Basic Assessment Report also aids in providing more information regarding the proposed development, the assessment of all impacts associated with its development and the opinion of the EAP regarding the proposal and alternative layout designs.

To remedy the impacts on the drainage area caused by historical dumping, an General Authorisation will be obtained for the rehabilitation of the drainage area. The entire northern section of the property will be excluded from any development for the conservation of the sensitive area. As die southern section of the portion is classified as the least sensitive area, the majority of the development will be focussed in this area.

**1.3 How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?**

Refer to this Basic Assessment Report (Section E) and the full assessment is contained under Appendix I.

**1.4 What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimize, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?**

Refer to EMPr in Appendix H and Impact Assessment in Appendix I

**1.5 How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?**

The proposed development will not impact on any cultural heritage. A heritage impact assessment was undertaken for the proposed development and is contained in Appendix G. Mitigation measures are contained in this report and under Appendix H the EMPr should archaeological/ historical finding be discovered through excavations during the construction period.

**1.6 How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?**

Refer to EMPr in Appendix H and Impact Assessment in Appendix I

**1.7 How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardize the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimize the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?**

The proposed development will not utilise renewable natural resources. These have been considered, however it is not applicable towards this proposed Heronbridge Sports-field development.

1.7.1 Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialized growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)

No, the proposed development is aimed at securing the future of Heronbridge College and its sports-fields through the relocation of its existing fields. The proposed development will however, aim to reduce the development and ecological footprint through the efficient use of materials and energy.

1.7.2 Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?).

Yes, the proposed development is aligned with the RSDF of the City of Johannesburg Metropolitan Municipality and secures the future of the educational facility within the local community. The proposed development is purely out of necessity due to external factors (K52 road development) and is therefore justified as the best use thereof.

1.7.3 Do the proposed location, type and scale of development promote a reduced dependency on resources?

Yes, due to its location and proportion towards the school it will promote a reduced dependency on resources. Once the sports-field is successfully relocated the facility will not significantly increase resource consumption as it merely replaces existing-operational facilities.

### **1.8 How were a risk-averse and cautious approach applied in terms of ecological impacts?**

Specialist studies in terms of Ecology, Wetlands and Heritage were undertaken by respective specialists. Engineering designs and studies focussed on utilising these sensitivity layouts, and incorporating the best approach to maximise efficiency with minimal impact on ecological aspects.

#### **1.8.1 What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?**

*To our knowledge, there are no gaps or uncertainties for the proposed development. An in-depth assessment of ecological and engineering aspects was undertaken for the proposed development and a Water Use License Application is currently underway.*

#### **1.8.2 What is the level of risk associated with the limits of current knowledge?**

Non, anticipated at this stage.

#### **1.8.3 Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?**

Not applicable, as stated above (1.8.2) the level of uncertainty and limits to current knowledge is regarded as low and is therefore not required.

### **1.9 How will the ecological impacts resulting from this development impact on people's environmental right in terms following:**

#### **1.9.1 Negative impacts e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimize, manage and remedy negative impacts?**

Above mentioned impacts were investigated during the Impact Assessment (see Appendix I.1: Environmental Impact Assessment). All identified impacts with a high impact or having the potential to have a high impact on the environment were considered within the Environmental Management report please refer to Appendix H for the EMPr. Within this document mitigation measures are provided and impacts remediated for the environment anticipated by the relocation of the existing sports-field. Both the construction and Operational phases were investigated for these impacts.

#### **1.9.2 Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?**

Please refer to Appendix H for the EMPr. Within this document mitigation measures are provided and impacts remediated for the environment anticipated by the relocation of the existing sports-field. Positive impacts associated with improved access are highlighted in this Basic Assessment Report.



**1.10 Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?**

The proposed development will be aligned with the future K52 road, and will thus not only secure the future of the school but will secure the livelihood of all employed personal not only associated with the sports-fields but with the entire college. It will also provide a better livelihood for some people within the community as the construction phase will require additional personnel.

**1.11 Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?**

The proposed development is aimed at securing continual operations for the school and associated sports-facilities. The development is not aimed at introducing a new activity, only relocating existing facilities due to the alignment of the K52 road.

**1.12 Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?**

After assessing the environmental related impact in terms of bio-physical and social the proposal was selected as it has the least impact on the environment and social aspects. Ecologically red data species were recorded, however if the EMPr contained in Appendix H and specialist study recommendations contained under Appendix G are followed, these impacts will drastically be reduced. In terms of drainage area, minimal impacts can be expected on the drainage line as the development will not impact this area as it falls outside of the development footprint and is located upstream of the development. Utilising the southern section of the property and by minimising the development footprint as much as possible allows for the protection of a larger portion of natural vegetation. The alternatives considered the same activity and amount of facilities but within a larger scale, thereby utilising a larger part of the property and thus securing a smaller part of the properties ecological integrity. It should also be mentioned that the drainage line has been degraded and impacted upon by human related activities such as illegal dumping. The rehabilitation of the drainage area is vital to recover the required ecological function. The drainage area drivers must be enhanced as part of the rehabilitation of the affected areas. Mitigation measures mentioned in the EMPr contained in Appendix H, have been developed to assist the contractor during the construction, and post-construction phases of the project to minimize any impacts on the environment. The proposal layout was selected as it was a cost-effective solution, it will tie in optimally with the K52 development and it will have the least impacts on the environment, especially the drainage area, flora and fauna and socially in terms of the local community.

**"promoting justifiable economic and social development"**

**2.1 What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?**

2.1.1 The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any strategic plans, frameworks of policies applicable to the area.

Please refer to Section B no 9 for more information on these aspects.

2.1.2 Spatial priorities and desired spatial patterns (e.g. need for integrated or segregated communities, need to upgrade informal settlements, need for densification, etc.).

Please refer to Section B no 9 for more information on these aspects. However, the development is in line with educational objectives for the area.

2.1.3 Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and

Please refer to Section B no 8 for more information on these aspects. The spatial characteristics of the area is dominated by low-density residential housing and low-intensity agricultural activities. In recent years the area has been pressured for development and infrastructure formalisation from Diepsloot and Chartwell expansions. The school and hospital occupies most of the adjacent properties with a large open field on the eastern side of the property. Portion 112 is also subject to 2 road reserves nl. N14 highway and the K52 road.

2.1.4 Municipal Economic Development Strategy (“LED Strategy”).

The City of Johannesburg (Joburg 2040) Growth and Development Strategy identifies economic growth, the environment and transport as a couple of strategies that need to be focussed on for its' 2040 Growth and Development strategy (Joburg 2040 – Growth and Development Strategy). Diepsloot is one of these development nodes and is situated in close proximity to Heronbridge College. The K52 is identified as a key mobility spine providing access to and from Diepsloot towards Johannesburg. Due to the high priority of the K52, the college is forced to relocate the existing sports-fields.

**2.2 Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?**

Improved safety of the area relating to the transformation of unoccupied land, continual existence of the school and job creation without altering the sense of place.

2.2.1 Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?

Yes, local skills will be encouraged within the EMPr (refer to Appendix H). Employment will also be provided to the local community during the construction period.

**2.3 How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?**

The proposed development is not intentially intending to address any of the above-mentioned needs and interests. Its intention is to relocate the existing sports-fields in order for Heronbridge College to continue operating as a high-level educational institution within the local community. Unintentionally, the school and related sports-fields will continue to address the local communities physical, psychological, cultural and social needs and interests through its educational and recreational activities within the community.

**2.4 Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?**

Yes, the location and design of the new sports-fields will be of such a nature that it not only aligns with CoJ's future infrastructure planning but will contribute to long-term socio- and economical sustainability within the area. By securing the the future of the school through the relocation of the sports-fields will also contribute to the long-term sustainability and prosperity of the local community.

**2.5 In terms of location, describe how the placement of the proposed development will:**

2.5.1 Result in the creation of residential and employment opportunities in close proximity to or integrated with each other.

In order to secure the employment of all personnel currently at the school the relocation of the sports-fields must proceed before the construction of the K52 road. New employment will be generated during the construction of the sports-fields. The development will not contribute to new residential opportunities as it relates to the relocation of existing facilities.

2.5.2 Reduce the need for transport of people and goods.

Not applicable. The development relates to the relocation of existing sports-fields.

2.5.3 Result in access to public transport or enable non-motorized and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),

No, the development will not result in densification and achievement of thresholds in terms of public transport as it relates to the relocation of existing facilities, and will therefore not increase.

2.5.4 Compliment other uses in the area.

Not applicable.

2.5.5 Be in line with the planning for the area.

The development will be aligned with the CoJ DRSDF 2010/2011 objectives for Region A.

2.5.6 for urban related development, make use of underutilized land available with the urban edge.

The proposed development utilises vacant land currently being exploited for illegal dumping, even though the development falls outside of the CoJ urban development boundary.

2.5.7 optimize the use of existing resources and infrastructure.

As the study site is currently vacant with no formal infrastructure it will not optimize the use of existing resources and infrastructure.

2.5.8 opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),

Not relevant due to the nature of the project.

2.5.9 discourage "urban sprawl" and contribute to compaction/densification.

The proposed activity relates to the relocation of existing sports-fields to the adjacent property. Thereby not contributing to urban sprawl or densification.

2.5.10 contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,

As the proposed development relates to the relocation of the existing sports-fields to outside of the planned K52 road reserve, Prism EMS is of the opinion that the development will align itself with best practices and future planning.

2.5.11 encourage environmentally sustainable land development practices and processes.

Yes, the design has taken the best approach to accommodate all environmental features with the least impact on the environment.

2.5.12 take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.).

Due to current activities and land uses within the vicinity of the school, portion 112 was the only available and viable alternative to the existing sports-fields with sufficient available space.

2.5.13 the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),

As the proposed development will be a forced relocation it may not be regarded as the possible best economic investment, however, the study site is currently vacant and will continue to lose land value due to ongoing illegal dumping, by formalising the property with high quality sports-facilities will improve the economic potential of the study area. It must be mentioned again, that the proposed development is solely due to the planned K52 road construction.

2.5.14 impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and

The proposed development will form part of the existing Heronbridge College and will thereby align with the area's sense of place and socio-cultural characteristics.

2.5.15 in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?

Not applicable, the proposed development aims to relocate the existing sports-fields before the construction of the K52 road.

**2.6 How were a risk-averse and cautious approach applied in terms of socio-economic impacts?**

Prism EMS did a social scan for the City of Johannesburg Metropolitan Municipality, refer to Section B no 9. All impacts related to socio-economic were assessed in the impact matrix. Refer to Appendix I.

2.6.1 What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?

To our knowledge, there are no gaps or uncertainties related to the socio environment.

2.6.2 What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?

No applicable.

2.6.3 Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?

Not applicable, the proposed development aims to relocate the existing sports-facilities to the adjacent property due to the planned K52 road. There is thus no uncertainty regarding the above-mentioned risks.

**2.7 How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:**

2.7.1 Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimize, manage and remedy negative impacts?

Refer to the EMPr contained in Appendix H. As indicated in the impact rating matrix for both the proposal and alternative, the social aspects are mostly positive. Impacts identified within the Impact Assessment relating to people's environmental and safety rights are mitigated to prevent and or minimizes the optional of set impacts from occurring.

2.7.2 Positive impacts. What measures were taken to enhance positive impacts?

Refer to the EMPr contained in Appendix H. As indicated in the impact rating matrix for both the proposal and alternative, the social aspects are mostly positive. Positive impacts identified within the Impact Assessment relating to people's environmental and safety rights are mitigated to increase the potential of set impacts from occurring.

**2.8 Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilization of natural resources, etc.)?**

The proposed development will insure the continual operation of Heronbridge College within the local community. The relocation of the existing sports-fields will have a negative impact on the ecological status of portion 112 in terms of the natural vegetation (Egoli Granite Grassland), however, the socio-economic impacts far out way the ecological impacts should the sports-fields not be relocated. A large part of the local community depend on the school and its continual operations. Should the fields not be relocated, the socio-economic impacts would be great for the local community.

**2.9 What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?**

Due to the alignment of the planned K52 road, few opportunities remained relating to the relocation of the sports-fields in terms of the location. Therefore, a best practicable environmental design option had to be followed within portion 112. The preferred option has the smallest development footprint and makes provision for the protection of sensitive areas such as the drainage line in the north of the property.

**2.10 What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the “best practicable environmental option” to be selected, or is there a need for other alternatives to be considered?**

An alternative layout was considered as indicated in this Basic Assessment Report and comparing it under the Environmental Impact Statement Section E no. 5. The alternative will have a higher impact on the ecological functionality of the general site. Prism EMS are of the opinion that by relocating the existing sports-fields will not contribute to any form of discrimination to anyone as it uplifts and secures the future of the local community.

**2.11 What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?**

Not applicable, as the nature of the development is simply to relocate existing facilities due to the planned K52 road.

**2.12 What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development’s life cycle?**

Please refer to Appendix H for the EMPr for mitigation measures and roles and responsibilities for the proposed development.

**2.13 What measures were taken to:**

2.13.1 ensure the participation of all interested and affected parties.

Please refer to Section C above. All Public Participation information is contained under Appendix E.

2.13.2 provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation.

Please refer to Section C above. All Public Participation information is contained under Appendix E.

2.13.3 ensure participation by vulnerable and disadvantaged persons.

Please refer to Section C above. All Public Participation information is contained under Appendix E.

2.13.4 promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

Please refer to Section C above. All Public Participation information is contained under Appendix E. Mitigation measures were also included for the continual promotion of environmental education and awareness see Appendix H.

2.13.5 ensure openness and transparency, and access to information in terms of the process.

Please refer to Section C above. All Public Participation information is contained under Appendix E.

2.13.6 ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and

Please refer to Section C above. All Public Participation information is contained under Appendix E.

2.13.7 ensure that the vital role of women and youth in environmental management and development were recognized and their full participation therein were promoted?

Please refer to Section C above. All Public Participation information is contained under Appendix E.

**2.14 Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)**

The proposed project will result in the continual operations of Heronbridge College. The relocation of the sports-field are critical if Heronbridge's operations are to continue, Even though the proposed development will not directly allow for the abovementioned, it will allow current operations to continue.

**2.15 What measures have been taken to ensure that current and / or future workers will be informed of work that potentially might be harmful to human health or the or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?**

Please refer to Appendix H, the EMPr containing mitigation measures for and to potential work seekers and employees related to the construction and operation phase.

**2.16 Describe how the development will impact on job creation in terms of, amongst other aspects:**

2.16.1 the number of temporary versus permanent jobs that will be created.

A contractor will be appointed by Heronbridge College whom will be responsible for the appointment of temporary and permanent staff during the construction phase. The appointments will be applicable to the sports-fields construction time. Prism EMS have indicated in the EMPr, contained under Appendix H, that local employment should be encouraged to promote skills transfer and development.

2.16.2 whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area).

Prism EMS have indicated in the EMPr, contained under Appendix H, that local employment should be encouraged to promote skills transfer and development. This will enhance the general area and provide job opportunities to potential job seekers and manage it in the best suitable way.

2.16.3 the distance from where labourers will have to travel,

*Diepsloot Informal Settlement is situated adjacent to the proposed P39-1 (N14) Diepsloot Interchange, therefore travel and access to get to work on the interchange will be minimal.*

2.16.4 the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits); and

During the construction phase of the project, the contractor will make use of local labour, and if needed transportation during this time could be provided if the need persists. The development will not have an impact on the existing employees of Heronbridge as only the sports-facilities will be relocated.

2.16.5 the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.)

Due to the nature of project there will be no impact on job creation, the study site vacant and will not impact on any jobs, it will however generate employment opportunities during the construction phase.

**2.17 What measures were taken to ensure:**

2.17.1 That there were intergovernmental coordination and harmonization of policies, legislation and actions relating to the environment, and

National Legislation i.e. NEMA, NWA, NHRA, NEM:BA were consulted in the preparation of this Basic Assessment Report. Provincial guidelines also formed part of the literature review. Spatial development tools also aided the EAP to assess and provide information pertaining to the proposed development.

2.17.2 That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?

Refer to Section C of this Report. All comments received by Organs of State were indicated and the responses and comments are located under Appendix E of the Basic Assessment Report.

**2.18 Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?**

Yes.

**2.20 What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?**

Refer to the Impact Rating Matrix contained in Appendix I and the EMPr under Appendix H.

**2.21 Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?**

Refer to Section E above.

**10 The Period for which the Environmental Authorisation is Required (consider when the activity is expected to be concluded)**



The proposed period for which the environmental authorisation is required is a minimum of 8 years before the commencement of the activity (relocation of sports-fields) with an option to apply for an extension in terms of an amendment of the authorisation if so required. However, the project cannot have an expiry date after the project has commenced (i.e. during the operational phase), because of the nature of the project and because the project is intending to construct permanent infrastructure on the proposed site.

**11 Environmental Management Programme (EMPR) (must include post construction monitoring requirements and when these will be concluded.)**

If the EAP answers “Yes” to Point 8 above then an EMP is to be attached to this report as an Appendix.

EMPr attached

Yes

Refer to Appendix H: EMPr

# SECTION F: APPENDICES

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

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

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

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

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

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

## CHECKLIST

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

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

Appendix A: Site Plan(s)



## **Appendix A.1: Locality Map**



## **Appendix A.2: Property layout Plan**

## **Appendix A.2.1: Proposed Layout Plan**

## **Appendix A.2.2: Alternative Layout Plan**

**Appendix A.3: Sensitive Overlay Map**





## **Appendix A.4: Gauteng EMF**

## Appendix B: Site Photographs



Appendix C: Facility illustration(s)

Not Applicable

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Appendix D: Route position information

Not Applicable

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## Appendix E: Public Participation Information

## **Appendix E.1 – Proof of site notice**

Please note that proof of site notice placement will only be provided during the submission of the final BAR as this report is currently circulated for public comment from the 4<sup>th</sup> August to the 5<sup>th</sup> September 2017. The public notification phase (placement of site notice) is currently underway from the 4<sup>th</sup> August to the 5<sup>th</sup> September. See however the notice Placed.

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

### **Appendix E.3 – Proof of newspaper advertisements**

Please note that proof of newspaper advertisement will only be provided during the submission of the final BAR as this report is currently circulated for public comment from the 4<sup>th</sup> August to the 5<sup>th</sup> September 2017. The public notification phase (newspaper advertisement) is currently underway from the 4<sup>th</sup> August to the 5<sup>th</sup> September.

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**Appendix E.4 –Communications to and from interested and affected parties**

No comments have received to date.

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

To date no Public meeting have been held, if such a meeting is required due notice will be given and the minutes of such a meeting will be attached to the final BAR.

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## **Appendix E.6 - Comments and Responses Report**

A comments and response report will only be provided during the submission of the final BAR as this report is currently circulated for public comment from the 4<sup>th</sup> August to the 5<sup>th</sup> September 2017. No comments have been received to date.

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## **Appendix E.7 –Comments from I&APs on Basic Assessment (BA) Report**

Please note that this report is currently circulated for public comment from the 4<sup>th</sup> August to the 5<sup>th</sup> September 2017. All comments received within the commenting period will be incorporated in the report before final submission

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

**Not Applicable**

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

I&AP register will be compiled during public participation phase  
and will be included in the BAR for final submission

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## Appendix F: Basic Assessment Application

Please note that the application form was submitted using the GDARD online submission. And that a copy thereof is attached.

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**Appendix F.2: Correspondence with Competent Authority (GDARD)**

No Correspondence received to date

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## Appendix G: Specialist Reports

## **Appendix G.1: Wetland Assessment**



## **Appendix G.2: Ecological Assessment**

## **Appendix G.3: Heritage Impact Assessment**

**Appendix G.4: Traffic Impact Assessment**

## **Appendix G.5: Electrical Engineer Report**

Still awaiting comments from ESKOM

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**Appendix G.6: Stormwater Management Plan**

**Appendix G.7: GTIA SECTION 7 REPORT**



## Appendix H: EMPr

## Appendix I: Other Information

## **Appendix I.1: Environmental Impact Assessment**

## **Appendix I.2: Outline Scheme Report**