

**PROPOSED EXPANSION OF THE  
GA-RANKUWA CEMETERY  
DRAFT BASIC ASSESSMENT REPORT**

May 2022

**GAUT Ref:002/22-23/E3222**

Prepared by:

Donné Krause (*M.Sc. Zoology*)

Reviewed by:

Yonanda Martin (*Pri. Sci. Nat*)

Environmental Assessment Practitioner

## GENERAL INFORMATION

<b>Report name:</b>	Draft Basic Assessment Report for the Proposed Ga-Rankuwa Cemetery Expansion Project
<b>Client:</b>	City of Tshwane Municipality (CoT)
<b>Project Manager/ Engineer:</b>	Pro-Plan Consulting Engineers (Pty) Ltd
<b>Report Compiled by:</b>	Donné Krause CV attached as Appendix I
<b>Report Reviewed by:</b>	Yonanda Martin CV attached as Appendix I
<b>Date of Report:</b>	20 May 2022
<b>Ref No:</b>	GAUT 002/22-23/E3222

## DECLARATION OF INDEPENDENCE

I, Yonanda Martin, appointed environmental assessment practitioner responsible for compiling the Draft Basic Assessment Report for the Proposed Expansion of the Ga-Rankuwa Cemetery, declare that I: -

- act as an independent environmental consultant, my conclusions are formed independently and without influence from external parties;
- I will perform the work relating to this scoping report in an objective manner, even if the results and findings are not favourable to the applicant;
- have no financial interest in Pro-Plan Consulting Engineers (Pty) Ltd or any of its subsidiaries;
- do not have any financial interest in the undertaking of the activity, other than remuneration for the work performed;
- undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document;
- based on information provided to me by the project proponent, and in addition to information obtained during the course of this study and the site visit, will present the results and conclusion within the associated document to the best of my professional judgment;
- will include all comments and inputs from stakeholders and interested and affected parties as part of the Basic Assessment Report; and
- will address the comments and inputs received from stakeholders and interested and affected parties to the best of my abilities.

Signed:

Date: 2022/05/01

## ABBREVIATIONS AND ACCORNYMS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
CoT	City of Tshwane Metropolitan Municipality
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMI	Environmental Management Inspectorate
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GA	General Authorisation
GDARD	Gauteng Department of Agriculture and Rural Development
GDARD C- Plan	Gauteng Department of Agriculture and Rural Development Conservation Plan (Version 3.3)
GIS	Geographical Information System
GPEMF	Gauteng Province Environmental Management Framework
GSDF	Gauteng Spatial Development Framework
I&AP	Interested and Affected Party
LC	Least Concern
LT	Least Threatened
l/s	Litre per second
MI	Mega Litre
NEMA	National Environmental Management Act, Act No. 107 of 1998
NEMAQA	National Environmental Management: Air Quality Act 39 of 2004
NEMBA	National Environmental Management Biodiversity Act 10 of 2004
NEMPA	National Environmental Management Protected Areas Act 57 of 2003
NEMWA	National Environmental Management: Waste Act 59 of 2008

NFEPA	National Freshwater Ecosystem Priority Areas
OH&S	Occupational Health & Safety
SANBI	South African National Biodiversity Institute
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
VU	Vulnerable

## TABLE OF CONTENT

GENERAL INFORMATION.....	
DECLARATION OF INDEPENDENCE .....	
ABBREVIATIONS AND ACCORNYMS .....	
<b>SECTION A: ACTIVITY INFORMATION.....</b>	
1. PROPOSAL OR DEVELOPMENT DESCRIPTION .....	
2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES.....	
3. ALTERNATIVES .....	
4. PHYSICAL SIZE OF THE ACTIVITY .....	
5. SITE ACCESS .....	
<b>SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT .....</b>	
1. PROPERTY DESCRIPTION.....	
2. ACTIVITY POSITION.....	
3. GRADIENT OF THE SITE .....	
4. LOCATION IN LANDSCAPE .....	
5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE .....	
6. AGRICULTURE .....	
7. GROUNDCOVER .....	
8. LAND USE CHARACTER OF SURROUNDING AREA .....	
9. SOCIO-ECONOMIC CONTEXT .....	
10. CULTURAL/HISTORICAL FEATURES.....	
<b>SECTION C: PUBLIC PARTICIPATION (SECTION 41).....</b>	
1.THE ENVIRONMENTAL ASSESSMENT PRACTITIONER MUST CONDUCT PUBLIC PARTICIPATION PROCESS IN ACCORDANCE WITH THE REQUIREMENT OF THE EIA REGULATIONS, 2014. ....	
2. LOCAL AUTHORITY PARTICIPATION .....	
3. CONSULTATION WITH OTHER STAKEHOLDERS .....	
4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS.....	
5. APPENDICES FOR PUBLIC PARTICIPATION .....	
<b>SECTION D: RESOURCE USE AND PROCESS DETAILS .....</b>	
1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT .....	
2. WATER USE.....	
3. POWER SUPPLY .....	
4. ENERGY EFFICIENCY.....	
<b>SECTION E: IMPACT ASSESSMENT .....</b>	
1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES .....	
2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE ....	

3.	IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE.....
4.	CUMULATIVE IMPACTS.....
5.	ENVIRONMENTAL IMPACT STATEMENT.....
6.	IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE.....
7.	SPATIAL DEVELOPMENT TOOLS.....
8.	RECOMMENDATION OF THE PRACTITIONER.....
9.	THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT.....
10.	THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.....
11.	ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr).....

**SECTION F: APPENDIXES**

Appendix A: Site plans

- Figure 1\_1: Locality Map – Aerial View
- Figure 1\_2: Locality Map – Topographical Map

Appendix B: Photographs

- Figure 1\_1: Photographic Record of Site Photographs
- Photograph 1\_1: View 01 - Alternative 2 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_2: View 02 - Alternative 2 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_3: View 03 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_4: View 04 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_5: View 05 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_6: View 06 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_7: View 07 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery (Pump Station in the north-western corner of proposed site)
- Photograph 1\_8: View 08 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery
- Photograph 1\_9: View 09 - Alternative 1 of proposed expansion of Ga-Rankuwa Cemetery

- Table 1\_1: Locations of Site Photographs

Appendix C: Facility illustration

- Figure 5\_1: Layout of Proposed Expansion of Ga-Rankuwa Cemetery – **NOT YET AVAILABLE**

Appendix D:

**Not Applicable to This Project**

Appendix E: Public participation information

Proof of Newspaper Advert

Proof of Site Adverts

Figure 1_1:	Photographic Record of Site Notices
Photograph 1_1:	Public Participation Process - Site Notice (Border of Alternative 1 and Alternative 2)
Photograph 1_2:	Public Participation Process - Site Notice (Pump Station, Alternative 1)
Photograph 1_3:	Public Participation Process - Site Notice (existing cemetery gate)
Photograph 1_4:	Public Participation Process - Site Notice (Western boundary wall of existing cemetery on Main street)
Photograph 1_5:	Public Participation Process - Site Notice (City Hall of Ga-Rankuwa)

Table 1_1:	Public Participation Process - Site Notice Locations
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Information to I&APs

Letters or Emails received from I&APs – **None received to date**

I&AP Register

Comments & Responses Report – **No comments received**

Appendix F: SAHRA Information, Service Letters from Municipalities, Water Supply Information

Confirmation of registration with SAHRIS

A Water Use License is not Required

Appendix G: Specialist reports

Heritage Impact Assessment Report

Biodiversity Assessment Report

Geohydrological Investigation Report

Appendix H: EMPr

Environmental Management Programme

Appendix I: Other information

Environmental Impact Assessment Criteria

Environmental Impact Assessment Matrix

CV of the Environmental Assessment Practitioner(s)



## PROJECT SUMMARY

Green Tree Environmental Consulting was appointed by City of Tshwane in association with Pro-Plan Consulting Engineers (Pty) Ltd to conduct the Environmental Impact Assessment (EIA) Process, resulting in a Basic Assessment Report (BAR) Process for the expansion of the Ga-Rankuwa cemetery, also known as the Kgabalatsane Cemetery, located on part of remainder of Portion 2 of the farm Sjambok Zijn Oude Kraal 258 JR, Region 1 of the City of Tshwane. The site is to the south of the existing cemetery along the Main Street in Ga-Rankuwa, refer to **Figure 1-1: Locality - Topographical Map** and **Figure 1-2: Locality -. Aerial View of the proposed expansion sites**.

### **Project Description and Location:**

City of Tshwane Metropolitan Municipality (CoT) has identified two proposed sites for the expansion of the Ga-Rankuwa cemetery on their property. The property owned by CoT is approximately 139,75 Ha in extent but only 19,8 Ha will be used for the expansion of the cemetery and is currently undeveloped and covered with field grass, scrubs and trees. The proposed project sites were identified based on the environmental sensitivities within the area. After careful evaluation of the alternatives, the first alternative was selected as the preferred alternative based on benefits and drawbacks compared to the other. The cemetery expansion will comprise of the extension of the boundary wall, layout of additional burial ground and might include a small building for management and maintenance purposes. The cemetery extension purpose is to provide more space for burial of human remains since the existing cemetery has run out of space. The proposed project sites were identified based on the environmental sensitivities within the area.

### **Alternative 1 (also referred to as Site 1):**

Alternative 1 is located South of the existing cemetery separated by a residential road or street. A small waterworks building is located in the north-western corner of the proposed area. The vegetation of the site is disturbed by grazing livestock, alien invasive species, a sewage leak and illegal dumping. This site alternative is suggested for the expansion as it is the closest to the original cemetery and therefore most accessible for extension of the water, sewage and electricity lines if a small building should be constructed on the expansion site. This site alternative is also the furthest away from the natural water source and will therefore be easier to maintain for cemetery purposes. This alternative doesn't have other infrastructure like power lines crossing the site. However, it falls within a part of the Critical Biodiversity Area (CBA), but the entire area is already impacted and disturbed. This alternative expansion will require an Environmental Authorisation since it is located within the CBA, this area has however been used for grazing, sewage leak and illegal dumping purposes and is therefore severely impacted.

**Alternative 2 (also referred to as Site 2):**

Alternative 2 is located further South from the first alternative. It is therefore the furthest away from the original cemetery (refer to **Figure 1-1** and **Figure 1-2**). This might complicate water, electricity and sewage extensions to the new cemetery expansion should a small building be constructed on the property. There are large transmission lines (Eskom) running through Alternative 2 on servitude and will physically also influence the proposed activity. According to the Aquatic assessment there are water present in the southern part of Site Alternative 2. This will trigger further legislation and a possible WULA. This alternative expansion will require Environmental Authorisation since it is also located within a CBA. This area has however been used for grazing and illegal dumping purposes and is also impacted.

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

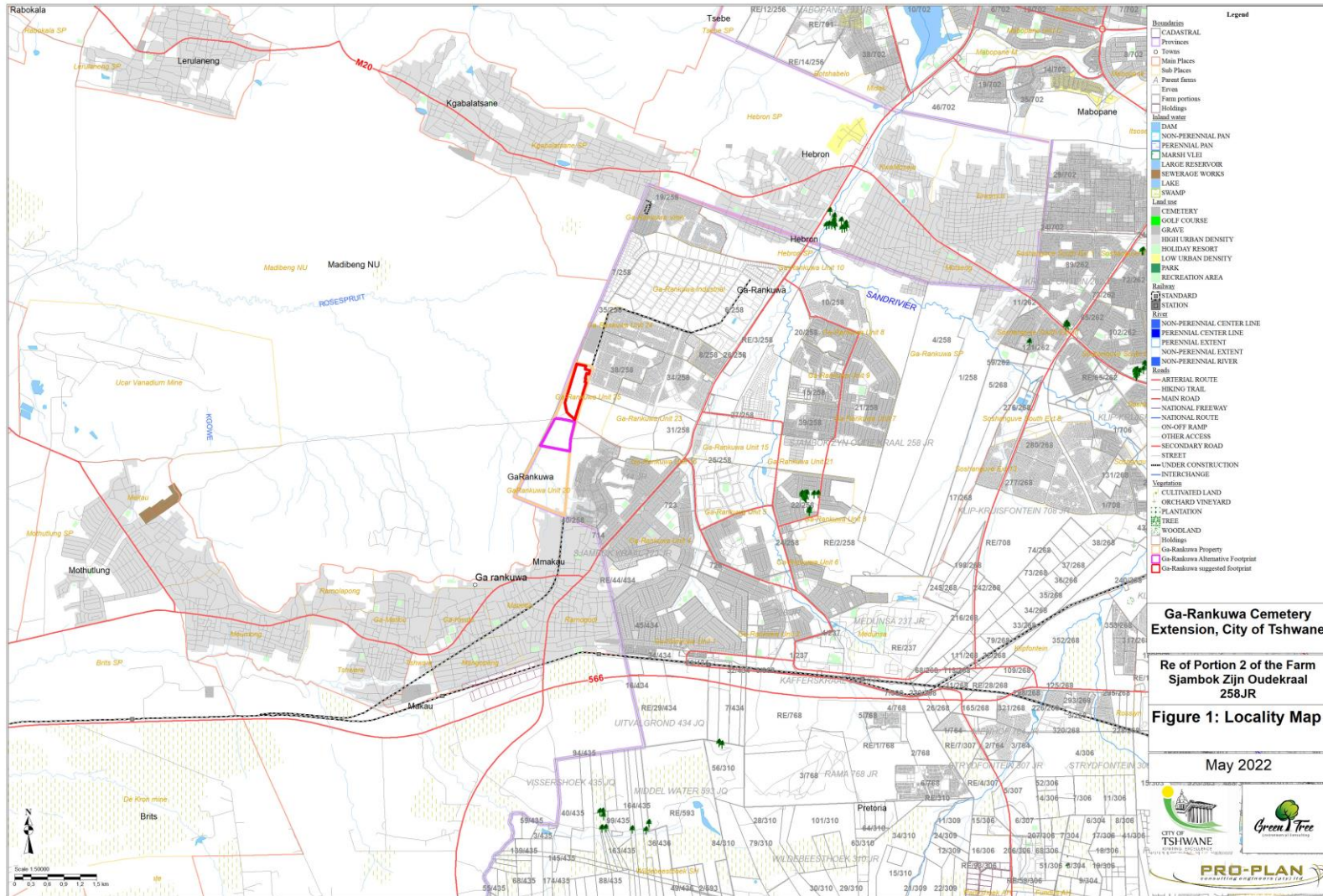


Figure 1-1: Locality Map Topography - Ga-Rankuwa Proposed Extension of Cemetery





Figure 1-2: Locality Map Aerial View - Ga-Rankuwa Proposed Extension of Cemetery

**Details of the Environmental Assessment Practitioner and the Applicant:**

**Table 1          Details of the EAP**

<b>Environmental Assessment Practitioner (Compile):</b>	Donné Krause CV attached as Appendix I
<b>Qualifications:</b>	M.Sc. Zoology
<b>Environmental Assessment Practitioner (Review):</b>	Yonanda Martin CV attached as Appendix I
<b>Qualifications:</b>	M.Sc. Ecological Remediation
<b>Professional Registration:</b>	South African Council for Natural Scientific Professions (SACNASP): 400204/09  Registered Environmental Assessment Practitioner (EAPASA): 2019/1307
<b>Company Information:</b>	Green Tree Environmental Consulting  7 Dublin Street Rangeview Ext 2 Krugersdorp Gauteng  082 409 0405  <a href="mailto:yonanda@gtec.net.za">yonanda@gtec.net.za</a>

**Table 2      Details of the Applicant**

<b>Applicant:</b>	City of Tshwane Metropolitan Municipality Tshwane House, 320 Madiba Street PO Box 440, Pretoria, 0001  012 358 9999
<b>Project Manager/ Engineer:</b>	Pro-Plan Consulting Engineers (Pty) Ltd  322 Voortrekker Road, Noordheuwel, Krugersdorp, 1740  011 907 6700

**Need and Desirability of the Project:**

The City of Tshwane is obligated to provide respectful and sensitive burial land to its communities. The Environmental Management and Parks Division manages a number of cemeteries and a crematorium as part of its core functions. Like many other local authorities, suitable burial land is a challenge and based on the current burial rate, the demand for land meant to be utilised for expansion of existing cemetery sites and establishment of new ones is very high. The Ga-Rankuwa area is vastly growing and the need for implementation of Municipal services are great within these areas. Unfortunately, the cemetery cannot accommodate the fast-growing area and will therefore have to be expanded in order to cater for the growth of the population. As part of the services rendered by the City of Tshwane’s Parks, Recreation and Crematorium Operations Department two potential sites were identified within Ga-Rankuwa for the new cemetery expansion.

Cemeteries in South African urban areas have historically been planned as spacious, landscaped gardens to house human remains. Older cemeteries, like the Ga-Rankuwa Cemetery, have run, or are running out of space for new burials, especially in major urban municipalities. This has motivated for the expansion of this cemetery. The expansion of the cemetery will benefit the local community by providing a larger greenspace for dignified disposition of human remains in accordance with provincial statutes and municipal by-laws. Among most cultures in South Africa, the cemeteries are more than just a place of burial. They also serve as historical, religious, memorial, cultural, spiritual, aesthetic and passive recreation greenspaces within the urban environment. The project will provide short term work opportunities during the construction phase of the cemetery but if proper training opportunities are given it could lead to long term employment or employment on similar construction projects. Long term job opportunities such as security and administrative management will be available.

**Legislation:**

As per the National Environmental Management Act 107 of 1998 (NEMA), Environmental Impact Assessment Regulations 2014, as amended on 7 April 2017, the proposed expansion of the cemetery and associated infrastructure will trigger activities listed in both Listing Notice 1, Activity 2 (GN. R 327) and Activity 44 (GN. R 327); and Listing Notice 3, Activity 12 (GN. R 324). The process that will be followed in order to receive an Environmental Authorisation is a Basic Assessment Process.

Activity	Description	Project Activity
<p><b>GN. R 327, 7 April 2017</b> <i>Listing Notice 1 -</i> <i>Activity 2</i></p>	<p>The clearance of an area of 1 Ha or more, but less than 20 Ha of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p> <ul style="list-style-type: none"> <li>i. the undertaking of a linear activity; or</li> <li>ii. maintenance purposes undertaken in accordance with a maintenance management plan.</li> </ul>	<p>Clearance of indigenous vegetation to accommodate more burial ground during the expansion of the cemetery.</p>
<p><b>GN. R 327, 7 April 2017</b> <i>Listing Notice 1 -</i> <i>Activity 44</i></p>	<p>The expansion of cemeteries by 2 500 square metres or more.</p>	<p>This cemetery will be expanded by 19.8 Ha.</p>
<p><b>GN. R 324, 7 April 2017</b> <i>Listing Notice 3 -</i> <i>Activity 12 (ii)</i></p>	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p><b>Gauteng</b></p> <p><b>Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans;</b></p>	<p>The expansion of the cemetery partly falls within a Critical Biodiversity Area (CBA) identified in the Gauteng C-plan.</p>



**Environmental Process & Public Participation Process:**

The proposed project is a Basic Assessment and will therefore follow the following environmental assessment procedure, as per the National Environmental Management Act, 1998 (Act 107 of 1998) as amended and the Environmental Impact Assessment Regulations, 2014, amended 7 April 2017, refer to the image below:

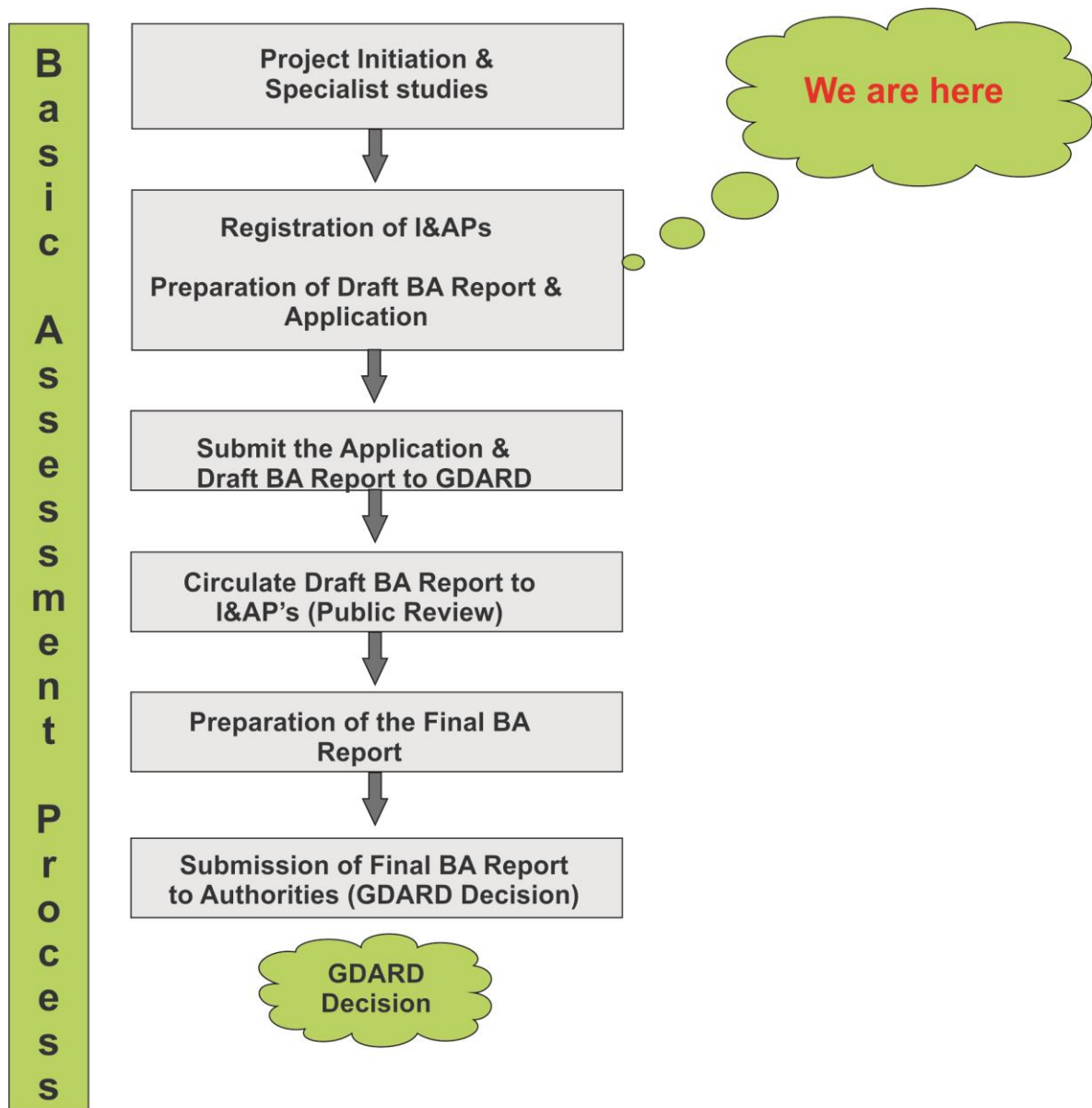
- Notification of Interested and Affected Parties (newspaper advert, site adverts and notices to landowners).
- Circulation of the draft BAR to I&APs, State Departments such as City of Tshwane Metropolitan Municipality, Conservancies and South African Heritage Resource Agency (SAHRA).
- Electronic submission of the application form and draft BAR to the Gauteng Department of Agricultural and Rural Development (GDARD).
- Comment received from registered I&APs will be included as part of the draft BAR and should additional comments be submitted it will be included as part of the Final BAR before submitting it to GDARD.
- GDARD will have 107 days to issue a decision on the proposed project.
- Registered I&APs will be notified of the final decision from GDARD.

The Public Participation Process, as described below, complies with the national Environmental Management Act 107 of 1998, and Environmental Impact Assessment Regulations 2014, as amended on 7 April 2017. The following public participation measures were implemented:

- Placing statutory advertising along the sites (31 March 2022). In addition to the normal placement of adverts along the route and on site, care has been taken to identify additional local places where the adverts could be viewed, these include shops and governmental buildings.
- Advertising in a local newspaper on 1 April 2022, the local newspapers in the area are the Pretoria Record Noweto Newspaper and Sosh Times Newspaper.
- Electronic Notices were submitted to the Councillors. There were no registered Home Owner Associations/ Community Forums and NGO's in the area.
- No registrations or comments have been received from I&AP's as of yet.
- The draft BAR was made available on the website on 16 May 2022 and copies was submitted to the Councillor, City of Tshwane and loaded on the SAHRIS system.

- I&APs will have 30 days to comment on the draft BAR.
- The draft BAR will be distributed to GDARD together with the signed Application and will be given 30 days to comment on the report.

The image below is an illustration of the Environmental Assessment and Public Participation Process that will be followed for this Basic Assessment Process.



**Specialist Studies:**

The following specialist assessments were conducted:

**Heritage Impact Assessment:**

The Heritage Impact Assessment was conducted by Leonie Marais Heritage Practitioner (March 2022) and according to the findings there are no heritage sites located in the development area except the current cemetery to be expanded. As this is a proposed cemetery expansion project, the existing cemetery will not be affected negatively by the development activities.

The following mitigation must be followed:

- During construction the formal cemetery situated near the proposed access road must be clearly demarcated during construction;
- Development must be at least 50m from the graves; and
- It is strongly advised that the cemetery be fenced.

Recommendations include:

- Other than the above there are no visible restrictions or negative impacts in terms of heritage associated with the sites (Alternative 1, 2 and the proposed access road);
- In terms of heritage the proposed project may continue; and
- The discovery of subsurface archaeological and/or historical material as well as graves must be taken into account in the Environmental Management Programme. See 3.2.6 and 3.2.7; and
- Submit this report as a Section 38 application to the relevant heritage authority for approval/comment.

It is important to note that although no other heritage sites were noted during the site visit there is always a possibility of sub-surface archaeological and/or historical deposits and graves. Care should therefore be taken during burial activities of the new proposed cemetery that should any of the above be discovered, an archaeologist/heritage practitioner must be commissioned to investigate.

Biodiversity and Aquatic Assessment:

**Terrestrial Ecology**

*Vegetation*

According to Flori Scientific Services (April 2022) the study site falls within the Central Bushveld Bioregion of the Savanna Biome.

The site is within the original extent of the veldtype known as Marikana Thornveld, which is a threatened veldtype / ecosystem with a status of 'Vulnerable'.

The vegetation of the study site is moderately degraded with small patches of high levels of degradation and alteration, and patches of bushveld / thornveld in fairly good condition. There are, however, no large or significant areas of pristine vegetation present within the study site itself. The open thornveld areas in the study site are characteristic of Marikana Thornveld. There is a fair amount and presence of alien flora (weeds) on site. It is likely that a plant permit will be required to lift and relocate the ODL plants found on the study site, even though there are only a few scattered specimens.

*Species of conservation concern (SCC)*

No red data listed (RDL) floral species were observed on site and none are expected to occur.

A few scattered plants of two orange data listed (ODL) species were observed, *namely Hypoxis hemerocallidea* (African potato) and *Boophone disticha* (Gifbol, sore-eye flower).

There are no protected trees on the study site.

*Fauna*

No red data listed (RDL) faunal species or species of conservation concern (SCC) were observed in the study area or immediate surroundings during site investigations

No large- or medium-sized mammals were observed during field investigations. A few small burrows were found occasional within the road reserve, which appear to be used by small field mice and other rodents such as rock mouse (*Aethomys namaquensis*), striped mouse (*Rhabdomys pumilio*), multimate mouse (*Mastomus natalensis*) and bushveld gerbil (*Tatera leucogaster*). Some evidence was found of scrub hare (*Lepus sacatilis*) and possibly yellow mongoose (*Cynictis penicillata*).

The Study Site is not within an Important Bird Area (IBA).

## Aquatic Ecology

### *Watercourses in the study area*

According to Flori Scientific Services (April 2022) there are no naturally occurring watercourses within the study site, including rivers, streams and wetlands. The study site is not situated within any national priority areas. Priority areas include formal and informal protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; national fresh water ecosystem priority areas (NFEPAs) and national protected areas expansion strategy (NPAES) focus areas.

The study site is situated within a demarcated Critical Biodiversity Area (CBA).

### *Sensitivity analyses*

The ecological sensitivity of the study area is determined by combining the sensitivity analyses of both the floral and faunal components. The highest calculated sensitivity unit of the two categories is taken to represent the sensitivity of that ecological unit / habitat, whether it is floristic or faunal in nature. The table below shows the actual ecological sensitivity of the various habitats within the study area.

Ecological community	Floristic sensitivity	Faunal sensitivity	Ecological sensitivity
Thornveld	Medium	Medium / Low	Medium
Watercourses	Medium	Medium	Medium

High: 80 – 100%; Medium/high: 60 – 80%; Medium: 40 – 60%; Medium/low: 20 – 40%; Low: 0 – 20%

### Geohydrological Investigation:

#### **Topography and Drainage**

The Sjambok property site is relatively flat to undulating with no distinct hills or valleys. The landscape surrounding the site is, however, more undulating with a prominent ridge to the south of the site along the eastern boundary of the site. Rocky outcrop and a small ridge are present along the eastern boundary of the site.

A small non-perennial stream cuts through the southern section of the property.

## **Geological Setting**

According to the published 1:250 000 geological map, sheet 2526 RUSTENBURG, the Sjambok site is underlain by magnetite gabbro, diorite, syenite, magnetite layer, gabbro, norite and/or anorthosite (Vg, Vu), of the Bushveld Igneous Complex. These lithologies are not commonly associated with sustainable aquifer development. High yielding boreholes are associated with fracturing within the rock formations. The regional geology at the site and surroundings is shown in Figure 3.1 of the Geohydrological Investigation Study as included in Appendix G.

### **Borehole Drilling:**

Two percussion boreholes (BH1 and BH2) were drilled for the geohydrological investigation. Borehole BH1 was drilled on the northern boundary of the site and borehole BH2 towards the centre of the site (Figure 3.2, Geohydrological Investigation Study as included in Appendix G). Borehole BH1 is regarded as an up-gradient borehole which will monitor the receiving water quality to the site. BH2 is down-gradient from the site and will be monitoring potential impacts from the site.

No boreholes / groundwater users were identified within 2 Km of the proposed cemetery site. Water in the nearby Ga-Rankuwa community is supplied by the municipality

## **Conclusions and Recommendations**

The purpose of the geohydrological investigation was to assess the potential impacts that the cemetery development may have on the groundwater regime. The following main conclusions were derived from the investigation:

- The Sjambok site is underlain by gabbro – norite of the Bushveld Igneous Complex. These lithologies are not commonly associated with sustainable aquifer development. High yielding boreholes are associated with fracturing within the rock formations.
- The aquifer system at the Sjambok site can be described as follows:
  - A shallow weathered aquifer, which comprises unconsolidated sandy silt and clay. The depth of weathering is approximately 15 m and recharge to this aquifer most likely occurs from rainfall, as well as from surface water sources. This is the aquifer that can potentially impact or be impacted on by the cemetery. The investigative boreholes therefore focussed on this aquifer.
  - A deeper fractured aquifer is present in the unweathered “fresh” norite underlying the weathered material. The two aquifers may or may not be hydraulically connected, dependent on the local geology.
- The groundwater quality in the Sjambok boreholes is relatively good.

- The nitrate concentration in borehole BH2 is, however, very high. There are no potential contaminant sources close to this borehole and the high concentration is either natural or periodical contaminated flow down the nearby stream has impacted on this borehole over time.
- Iron concentrations are also high in both boreholes and manganese is elevated in borehole BH2.
- The aquifer is characterised as a minor aquifer and the vulnerability of the aquifer is very low.
- It is therefore concluded that the proposed cemetery will not have an adverse impact on the groundwater regime. Since the groundwater is relatively deep (>10m below surface) burial will take place above the groundwater level. And the groundwater will therefore also not impact on the graves.

No mitigation measures are recommended at this stage, other than groundwater monitoring in the two boreholes. Bi-annual monitoring is recommended, and the water should be analysed for the same parameters as listed in Table 3.4.

**Activities causing potential impacts:**

The following activities are activities that could cause potential impacts if not managed properly or if no mitigation measure is implemented, these activities are discussed in more detail in Section E of this report:

- Removal of vegetation;
- Establishment of the construction site camp;
- Movement of machinery/heavy vehicles/equipment on site;
- Hydrocarbon spills/ leakages;
- Poor waste management and littering;
- Dumping of material/waste;
- Stockpiling of soil and material;
- Poor management of ablution facilities.

## **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 1/2022)**

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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 template is current as of April 2022. It is the responsibility of the EAP to ascertain whether subsequent versions of the template 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 must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority (uploaded to the EIA online system) empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.
5. A copy (PDF) of the final report and attachments must be uploaded to the EIA online system. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.
6. Draft and final reports submitted in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) must be emailed to [environmentsue@gauteng.gov.za](mailto:environmentsue@gauteng.gov.za).
7. 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.
8. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
9. An incomplete report may lead to an application for environmental authorisation or Waste Management License being refused.
10. 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 authorization or Waste Management License being refused.
11. 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 or Waste Management License being refused.
12. The applicant must fill in all relevant sections of this form. Incomplete applications will not be processed. The applicant will be notified of the missing information in the acknowledgement letter that will be sent within 10 days of receipt of the application.
13. 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.
14. 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.



**DEPARTMENTAL DETAILS**

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

Ground floor, Umnotho House, 56 Eloff Street, Johannesburg  
Administrative Unit telephone number: (011) 240 3051/3052  
Department central telephone number: (011) 240 2500

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Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

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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, the report was submitted within the timeframes

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

NO

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

A Closure Plan is not required for this application.

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

YES

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

YES

If no, state reasons for not attaching the list.

Not applicable, a list is attached.

Have State Departments including the competent authority commented?

No

If no, why?

This is the first circulation of the draft Report and there are therefore no comments yet.

## SECTION A: ACTIVITY INFORMATION

### 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Proposed extension of the Ga-Rankuwa Cemetery

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

The application is for the extension of existing cemetery on a new site

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

NO

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

Not applicable, no other legislation required.

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

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

YES  NO

### 2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act 107 of 1998	DEFF & GDARD	27 November 1998
NEMA: Environmental Impact Assessment Regulations 2014, as amended on 7 April 2017	DEFF & GDARD	4 December 2014
Constitution of the Republic of South Africa, Act 108 of 1996	DEFF & GDARD	18 December 1996
National Environmental Management Biodiversity Act 10 of 2004	DEFF & GDARD	7 June 2004
National Environmental Management Protected Areas Act 57 of 2003	DEFF & GDARD	18 February 2003
National Environmental Management: Air Quality Act 39 of 2004	DEFF & GDARD	11 September 2004
National Water Act No. 36 of 1998	DWS	26 August 1998
National Environmental Management: Waste Act 59 of 2008	DEFF & GDARD	10 March 2008
Conservation of Agricultural Resources Act 43 of 1983	DEFF & GDARD	21 April 1983
Occupational Health and Safety Act No 85 of 1993	Department of Labour	23 June 1993
Hazardous Substances Act No 5 of 1973	Department of Health	1973
Gauteng Sustainability Development Guideline	GDARD	April 2017
Gauteng Conservation Plan – Version 3.3	GDARD	October 2011
Gauteng Pollution Buffer Zones	GDARD	March 2017
Bioregional Plan for City of Tshwane	CoT	2016
City of Tshwane Open Space Framework	CoT	2005
Tshwane Metropolitan Spatial Development Framework	CoT	July 2021

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

Legislation, policy or guideline	Description of compliance
National Environmental Management Act 107 of 1998	NEMA forms the overarching framework for Environmental Legislation. In terms of NEMA: EIA

(NEMA)	Regulations 2014, as amended on 7 April 2017, an Environmental Authorisation (EA) must be obtained for the expansion of the proposed cemetery.
NEMA: Environmental Impact Assessment Regulations 2014, as amended on 7 April 2017	The Basic Assessment Report (BAR) and the Environmental Management Programme (EMPr) complies with the format as provided in the NEMA: EIA Regulations 2014, as amended on 7 April 2017, Appendix 1 and 4. Activities as listed in GN R 983 and R 985 have been applied for.
Constitution of the Republic of South Africa, Act 108 of 1996	The Project focus on the minimization of environmental impacts that might result from the construction and the operation of the proposed project in order to comply with the requirements as per Section 24 of the Constitution.
National Environmental Management Biodiversity Act 10 of 2004 NEMBA	NEMBA provides for the management and conservation of the biodiversity of South Africa. The proposed project falls within the Critical Biodiversity Area (CBA), as per GDARD's C-Plan, and therefore the EMPr addresses additional management measures to protect these areas.
National Environmental Management Protected Areas Act 57 of 2003 NEMPA	NEMPA allows for the protection and conservation of ecological viable areas within South Africa. The proposed project is not located within a Protected Area as defined by NEMPA.
National Environmental Management: Air Quality Act 39 of 2004 NEMAQA	According to GNR 893, NEMAQA (Act 39 of 2004) the proposed project triggers none of the listed activities. The EMPr addresses the minimise of any emissions that could have an impact on the air quality of the area.
Gauteng Noise Control Regulations	These Regulations are there to ensure that noise impact is avoided or kept to a minimum. The EMPr sets out management measures in order to minimise the impact of noise.
National Water Act No. 36 of 1998 NWA	The NWA (Act 36 of 1998), regulates the use of/ and impacts on natural watercourses within South Africa.
National Environmental Management: Waste Act 59 of 2008 NEMWA	NEMWA (Act 59 of 2008) provides for the management of waste. No waste management license will be required for the proposed project. The EMPr addresses the management of waste on site during construction and operational phases of the proposed project.
Occupational Health and Safety Act No 85 of 1993	The Act provides for health and safety of persons at work. The EMPr addresses management and mitigation measures that must be implemented during the construction and operational phase to ensure that all persons working on site are safe.
Hazardous Substances Act No 5 of 1973	This Act addresses the handling and management of hazardous substances. The EMPr allows for the mitigation and management of hazardous substances on site during the construction phase of the proposed project.
Gauteng Conservation Plan – Version 3.3	Complying with the suggested CBA and ESA and appointing a specialist to determine the extent of these areas and management/ mitigation measures.
Gauteng Pollution Buffer Zones	This document was used in order to determine whether the project needs to abide to any pollution buffer zones.
Bioregional Plan for City of Tshwane	This report was used to ensure that the proposed project falls within the requirements of the Environmental Framework and doesn't impose on the environmental sensitive areas as identified by the Framework.
Tshwane Metropolitan Spatial Development Framework	This report was used to ensure that the proposed project falls within the requirements of the Environmental Framework and doesn't impose on the environmental sensitive areas as identified by the Framework

### 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

During initial project planning, the property of 139,75 Ha (owned by CoT) was nominated for the expansion of the Ga-Rankuwa cemetery. A desktop assessment indicated two obvious sites of 19.8 Ha each that was clear of structures, watercourses and inadequate terrain for the proposed cemetery. Site visits were conducted to evaluate each site to determine which alternative would be best suited for the expansion of the cemetery. Factors that influenced the decision-making include access to the site, natural watercourses and wetlands that will be impacted, sensitive areas and existing infrastructure. Benefits and drawbacks of each alternative were examined and it was finally determined that the first site alternative would be the preferred alternative with the most benefits and the least drawbacks.

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: Alternative 1</b>	Alternative 1 is located South of the existing cemetery separated by a residential road or street. A small waterworks building is located in the north-western corner of the proposed area. The vegetation of the site is disturbed by grazing livestock, alien invasive species, a sewage leak and illegal dumping. This site alternative is suggested for the expansion as it is the closest to the original cemetery and therefore most accessible for extension of the water, sewage and electricity lines if a small building should be constructed on the expansion site. This site alternative is also the furthest away from the natural water source and will therefore be easier to maintain for cemetery purposes. This alternative doesn't have other infrastructure like power lines crossing the site. However, it falls within a part of the CBA, but the entire area is already impacted and disturbed. This alternative expansion will require an Environmental Authorisation since it is located within the CBA, this area has however been used for grazing, sewage leak and illegal dumping purposes and is therefore severely impacted.
2	<b>Alternative 2</b>	Alternative 2 is located further South from the first alternative. It is therefore the furthest away from the original cemetery. This might complicate water, electricity and sewage extensions to the new cemetery expansion should a small building be constructed on the property. There are large electricity lines running through Alternative 2 on servitude and will physically also influence the proposed activity. According to the Aquatic assessment there are water present in the southern part of the site. This will trigger further legislation and a possible WULA. This alternative expansion will require Environmental Authorisation since it is also located within a CBA. This area has however been used for grazing and illegal dumping purposes and is also impacted.

3	<b>No-go option</b>	The City of Tshwane is obligated to provide respectful and sensitive burial land to its communities. The Environmental Management and Parks Division manages a number of cemeteries and a crematorium as part of its core functions. Like many other local authorities, suitable burial land is a challenge and based on the current burial rate, the demand for land meant to be utilised for expansion of existing cemetery sites and establishment of new ones is very high. Without the expansion of the Ga-Rankuwa cemetery, the residents of the area will not have a greenspace for dignified disposition of human remains. This will result in backyard graves which can have health and environmental impacts if not controlled properly.
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In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Not applicable, two alternative options were provided.
--

#### 4. PHYSICAL SIZE OF THE ACTIVITY

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

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

**Size of the activity:**

--

**Alternatives:**

Alternative 1 (if any)

19.8 ha
---------

Alternative 2 (if any)

19.8 ha
---------

Ha/ m<sup>2</sup>

or, for linear activities:

Proposed activity

**Length of the activity:**

N/A
-----

**Alternatives:**

Alternative 1 (if any)

N/A
-----

Alternative 2 (if any)

N/A
-----

m/km

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

Proposed activity

**Size of the site/servitude:**

--

**Alternatives:**

Alternative 1 (if any)

19.8 ha
---------

Alternative 2 (if any)

19.8 ha
---------

Ha/m<sup>2</sup>

#### 5. SITE ACCESS

**Proposal**

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

<b>YES</b>	
------------	--

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

30 m
------

Describe the type of access road planned:

Paved road from street to cemetery and small cemetery roads to burial ground.
---

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

**Alternative 1**

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

<b>YES</b>	
------------	--

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

30m
-----

Describe the type of access road planned:

Paved road from Main street and small cemetery roads to burial ground
---

## Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

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

### Alternative 2

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

YES	<input checked="" type="checkbox"/>
50m	<input type="checkbox"/>

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

Describe the type of access road planned:

Paved road from Main street and small cemetery roads to burial ground.

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

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

Section A 6-8 has been duplicated  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 ( $\pm 10\ 000$ )

shapefiles of the activity must be included in the electronic submission on the CD's;

the property boundaries and Surveyor General numbers of all the properties within 50m of the site;

the exact position of each element of the activity as well as any other structures on the site;

the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;

servitudes indicating the purpose of the servitude;

sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):

Rivers and wetlands;

the 1:100 and 1:50 year flood line;

ridges;

cultural and historical features;

areas with indigenous vegetation (even if it is degraded or infested with alien species);

Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

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

the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;

the locality map and all other maps must be in colour;

locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;

for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;

areas with indigenous vegetation (even if it is degraded or infested with alien species);

locality map must show exact position of development site or sites;

locality map showing and identifying (if possible) public and access roads; and

the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

### **7. SITE PHOTOGRAPHS**

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

### **8. FACILITY ILLUSTRATION**

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



## SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

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

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

Section B has been duplicated for expansion of cemetery

times

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

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

Section B has been duplicated for location/route alternatives

times (complete only when appropriate)

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

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

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

Section B - Section of Route

(complete only when appropriate for above)

Section B – Location/route Alternative No.

(complete only when appropriate for above)

## Proposed Expansion of Ga-Rankuwa Cemetery

### 1. PROPERTY DESCRIPTION

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

The proposed property is owned by City of Tshwane and falls on the outskirts of the Ga-Rankuwa area. The proposed property is approximately 139,75 Ha in extent but only 19,8 Ha will be used for the expansion of the cemetery. The proposed project sites were identified based on the environmental sensitivities within the area. The project is located on Part of Remainder of Portion 2 of the farm Sjambok Zijn Oude Kraal 258 JR, Region 1 of the City of Tshwane. The site is to the south of the existing cemetery along the M 17 Road in Ga-Rankuwa.

### 2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**Alternative:**

- Alternative 1
- Alternative 2

**Latitude (S):**

**Longitude (E):**

25° 34' 31.82"	27° 58' 04.78"
25°34'55.24"	27°57'57.37"

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 co-ordinates attached

N/A

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

SITE	T	0	J	R	0	0	0	0	0	0	0	0	0	2	5	8	0	0	0	0	2
etc.																					

### 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

### 4. LOCATION IN LANDSCAPE

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

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

### 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

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

An area sensitive to erosion

YES	NO
-----	----

(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)

	NO
--	----

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):

--

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

	NO
--	----

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):

--

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

	NO
--	----

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):

--

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

## 6. AGRICULTURE

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

YES	NO
-----	----

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 20	Natural veld with scattered aliens 80 %	Natural veld with heavy alien infestation % = %	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % = 10%

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

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

	NO
--	----

If YES, specify and explain:

Not applicable, no rare or endangered flora or fauna species were present on site.
--

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.

	NO
--	----

If YES, specify and explain:

N/A
-----

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

YES	
-----	--

If YES, specify and explain:

A CBA was identified in the proposed area although disturbed.
---

Was a specialist consulted to assist with completing this section

YES	
-----	--

If yes complete specialist details

Name of the specialist:

Johannes Maree – Flori Scientific Services

Qualification(s) of the specialist:

Pri Sci Nat

Postal address:

PO Box 7222, Modimolle

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

Postal code: 0510  
 Telephone: N/A Cell: 082 564 1211  
 E-mail: johannes@flori.co.za Fax: N/A  
 Are any further specialist studies recommended by the specialist? NO  
 If YES, specify: N/A  
 If YES, is such a report(s) attached? NO  
 If YES list the specialist reports attached below  
 N/A

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

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

Was a specialist consulted to assist with completing this section YES

If yes complete specialist details

Name of the specialist: Leonie Maree – Heritage Practitioner

Qualification(s) of the specialist: Heritage Practitioner

Postal address: 868 Endeman Street  
Wonderboom South  
Pretoria

Postal code: 0084

Telephone: N/A Cell: 082 576 6253  
 E-mail: leoniebotes@gmail.com Fax: N/A  
 Are any further specialist studies recommended by the specialist? NO  
 If YES, specify: N/A  
 If YES, is such a report(s) attached? NO  
 If YES list the specialist reports attached below  
 N/A

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

Was a specialist consulted to assist with completing this section YES

If yes complete specialist details

Name of the specialist: John Glendinning

Qualification(s) of the specialist: Geohydrologist - Director

Postal address: PO Box 1434, Rivonia

Postal code: 2128

Telephone: 00 27 11 519 0200 Cell: 00 27 11 519 0200  
 E-mail: post@jaws.co.za Fax: N/A  
 Are any further specialist studies recommended by the specialist? NO  
 If YES, specify: N/A  
 If YES, is such a report(s) attached? NO  
 If YES list the specialist reports attached below  
 N/A

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

**8. LAND USE CHARACTER OF SURROUNDING AREA:**

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

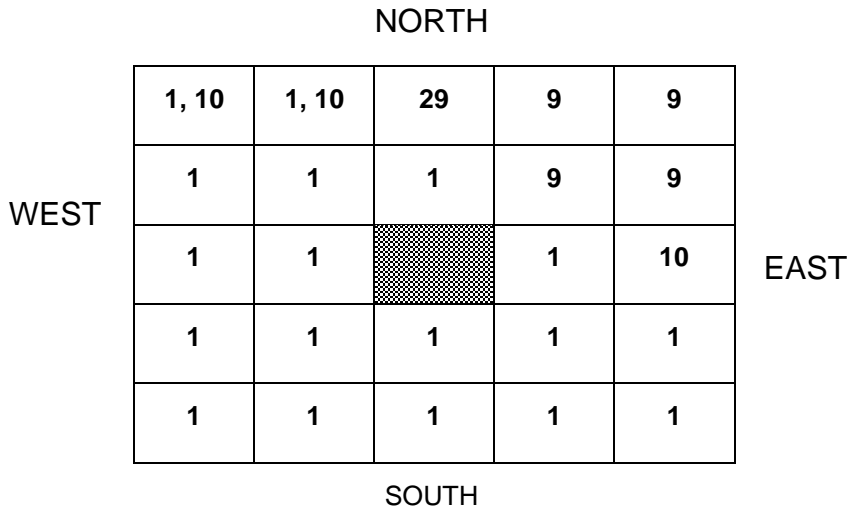
1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing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

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	34. Small Holdings	
Other land uses (describe):				

**ALTERNATIVE 1**

**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**



**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  
If yes indicate the type of reports below

YES	
-----	--

Biodiversity & Aquatic Assessment
Heritage Impact Assessment
Geohydrological Investigation Report

**ALTERNATIVE 2**

NORTH					
WEST	1	1	1	1	1, 10
	1	1	1	1	1, 10
	1	1		1	1, 9
	2	1	1	1	1, 9
	2	2	1	1	1, 9
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  
If yes indicate the type of reports below

YES	
-----	--

Biodiversity & Aquatic Assessment
Heritage Impact Assessment
Geohydrological Investigation Report

**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.

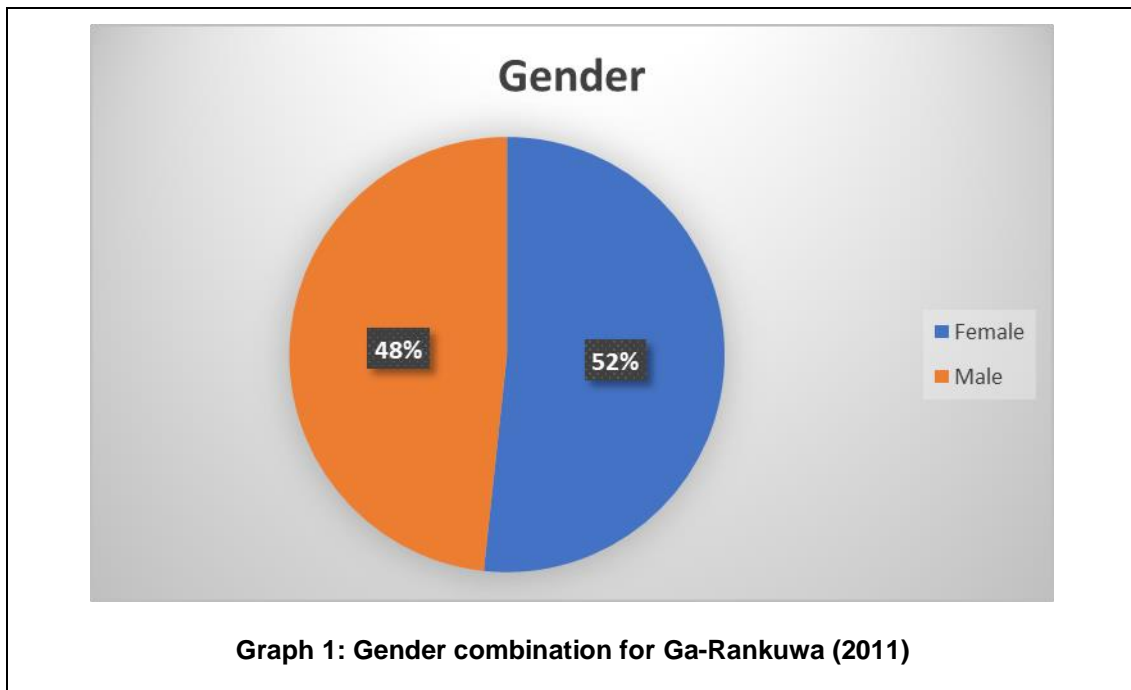
The socio-economic description is mainly based on the Ga-Rankuwa Census 2011 data (<http://www.statssa.gov.za/>).

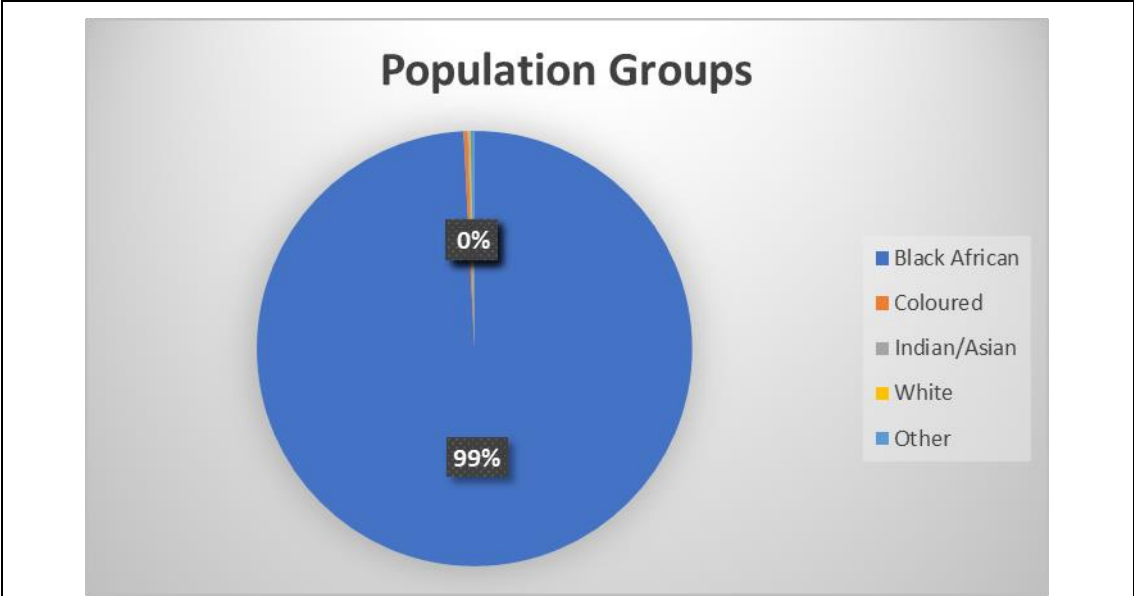
According to the Census Data (2011), Ga-Rankuwa has a population of approximately 90 945. The majority of the population is Black African (99.2%) with approximately 3.7% of the population with no schooling, 7.5% with some primary education, 38.9 % of the population with some secondary education and 16.1% with some Higher education. Approximately 70% of the population falls in the working age group (15 - 64 years) but the majority of the population earns an income of R38 200 or less per year. The population of Ga-Rankuwa is reliant on the local municipality to provide water and a proper sewer system, there is only a handful of the population that either has a borehole or

their own sewer system. Proper services provided by the municipality is therefore essential. The population data are comprised of the following and presented in the graphs below; Gender, Population Group, Education, Household Income, Water Source and Sewer System (Toilet Facilities).

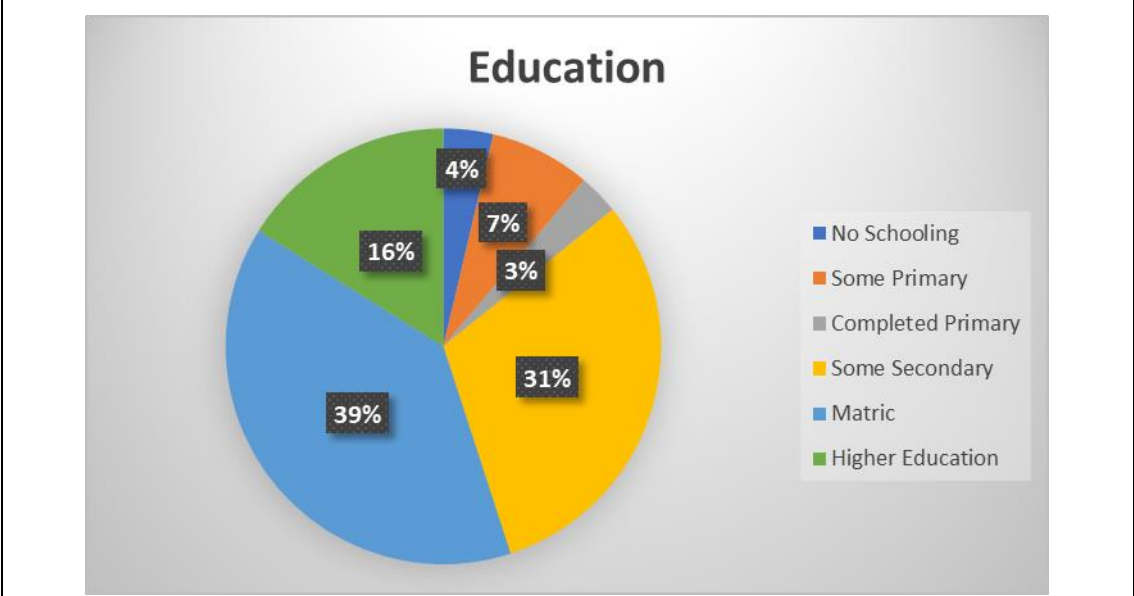
**Please note that this section is the same for the entire project and will therefore not be repeated for each section of the route.**

The Ga-Rankuwa cemetery is located in the western part of the residential area. The Ga-Rankuwa residential area is a formal residential township with smaller patches that are still informal township. The residential areas are mostly medium to lower income area.



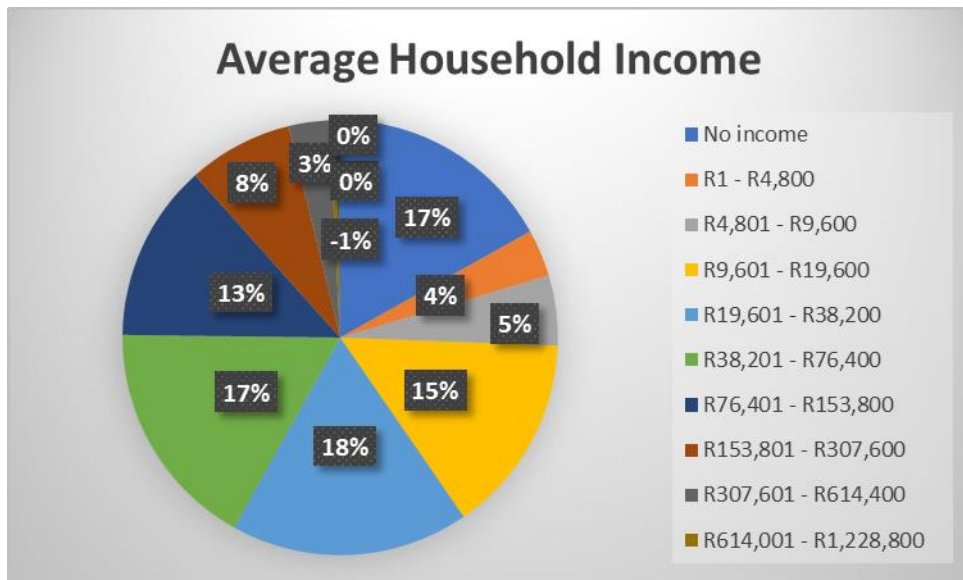


Graph 2: Population Group for Ga-Rankuwa (2011)

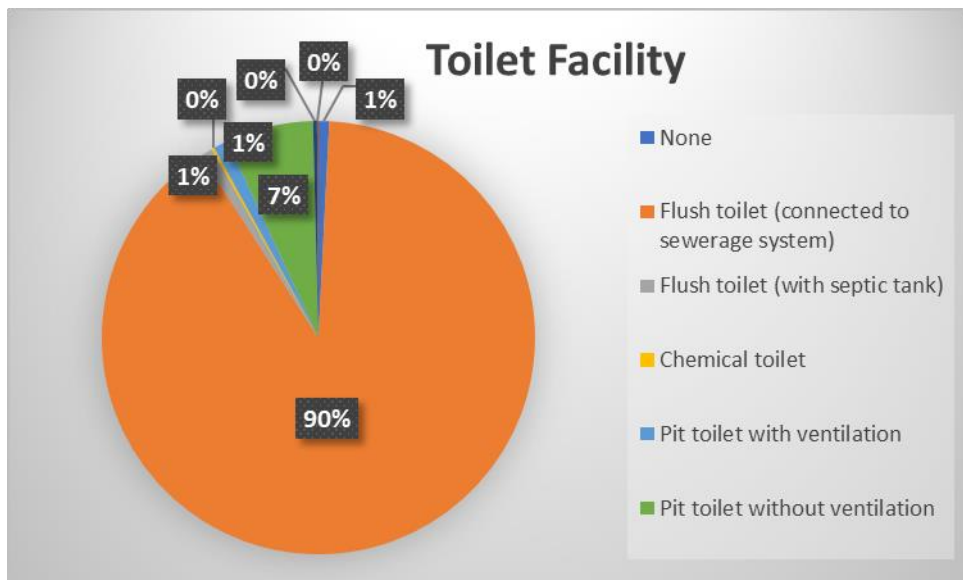


Graph 3: Level of Education for Ga-Rankuwa (2011)





**Graph 5: Household Income for Ga-Rankuwa (2011)**



**Graph 6: Toilet/ Sewer System for Ga-Rankuwa (2011)**



**10. CULTURAL/HISTORICAL FEATURES**

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

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

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site-

(i) exceeding 5 000 m2 in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m2 in extent; or

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

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

	NO
--	----

If YES, explain:

N/A

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

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

The Heritage Impact Assessment was conducted by Leonie Marais (Heritage Practitioner) during March 2022 and according to the findings there are no heritage sites located in the development area.

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)?

	NO
	NO

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

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. THE ENVIRONMENTAL ASSESSMENT PRACTITIONER MUST CONDUCT PUBLIC PARTICIPATION PROCESS IN ACCORDANCE WITH THE REQUIREMENT OF THE EIA REGULATIONS, 2014.

### 2. LOCAL AUTHORITY PARTICIPATION

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

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

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

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

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

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

Currently no registrations and comments were received from I&AP's after initial newspaper adverts and site notices.

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

No comments have been received yet as this is the first draft of the report.

### 3. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders?

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

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

Not applicable, no comments have been received yet as this is the first draft of the report.

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

No comments have been received yet as this is the first draft of the report.

### 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

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

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

## **5. APPENDICES FOR PUBLIC PARTICIPATION**

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

Appendix 1 – Proof of site notice

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

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

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

Appendix 6 - Comments and Responses Report

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

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

Appendix 9 – Copy of the register of I&APs

# SECTION D: RESOURCE USE AND PROCESS DETAILS

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

**Instructions for completion of Section D for alternatives**

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

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

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

## 1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

**Solid waste management**

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

YES	
-----	--

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

5m <sup>3</sup>
-----------------

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

Minimal construction waste will be generated during the construction of the cemetery wall and possible small maintenance or ablution building. The cemetery wall will consist of concrete staffs and might have minimal waste that will be disposed of at the local Municipality Solid Waste Disposal site.
---

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

The non-recyclable material will be disposed of at the Local Municipality Solid Waste Disposal site by the works contractor. This facility will still be confirmed.
---

Will the activity produce solid waste during its operational phase? 

	YES
--	-----

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

0.1968 m <sup>3</sup>
-----------------------

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

Solid, unrecyclable waste will be disposed of by the local waste disposal services.
---

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? 

	NO
--	----

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

The recyclable waste will be taken to a 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? 

	NO
--	----

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

	NO
--	----

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

The solid recyclable waste will be taken to a recycling facility.
---

**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? 

	NO
--	----

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

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

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

	NO
--	----

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

	NO
--	----

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

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

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

N/A
-----

## Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

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

Will the activity produce effluent that will be treated and/or disposed of at another facility?  YES  NO

If yes, provide the particulars of the facility:

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

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

N/A

### Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?  YES  NO

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

m<sup>3</sup>

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?  YES  NO

Will the activity produce any effluent that will be treated and/or disposed of on site?  YES  NO

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

N/A

The effluent, as refer to above, is the effluent associated with day-to-day activity on site which refers to the ablution and basic sewage in the office/maintenance building for a small number of day-to-day staff.

### Emissions into the atmosphere

Will the activity release emissions into the atmosphere?  YES  NO

If yes, is it controlled by any legislation of any sphere of government?  YES  NO

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

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

The emissions will be from the dust created during the construction and operational phase.

## WATER USE

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

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

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

N/A

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

Does the activity require a water use permit from the Department of Water Affairs?  YES  NO

If yes, list the permits required

Municipal water for basic gardening and office related uses

If yes, have you applied for the water use permit(s)?  YES  NO

If yes, have you received approval(s)? (attached in appropriate appendix)  YES  NO

## 2. POWER SUPPLY

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

Municipal/Eskom power will be used for office, gardening and maintenance purposes.

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

Generator might be used.

**3. ENERGY EFFICIENCY**

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

N/A

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

N/A



## SECTION E: IMPACT ASSESSMENT

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

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

Summarise the issues raised by interested and affected parties.

The following issues were raised during the circulation of the draft BAR:  
**Draft circulated report – no comments at this stage**

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):

The following responses were given by the engineer and the EAP:  
**Draft circulated report – no comments at this stage**

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

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

In order to discuss the significance of the Project impacts the intensity, duration, extent and probability for each impact will be determined. The following criteria will be used:

<b>Nature of Impact</b>	Negative or Positive
<b>Extent of Impact</b>	Site Local Regional National Global
<b>Duration of Impact</b>	Construction period only Short term Medium term Long term Permanent
<b>Intensity / Severity (Negative or Positive)</b>	High Moderate – High Moderate Low- Moderate Low
<b>Probability</b>	Improbable Unlikely Probable Highly Probable Definite
<b>Significance</b>	None Low Moderate High Fatally Flawed

**Alternative 1 for the expansion of the Ga-Rankuwa cemetery**

Aspect and Description		Impact Rating (before mitigation)	Impact Rating (after mitigation)	Mitigation Measures	Risk of the impact and mitigation not being implemented
Aspect	Description	Significance	Significance		
<b>FLORA - Damage or loss of habitat due to construction activities</b>	Weeds and alien species will be introduced and seeds will spread due to disturbance	8	3,5	Implementation of an Alien Invasive and Weed Eradication Plan	Moderate
	Vegetation will be removed in order to establish site camp, access road and more burial ground	7	4	Implementation of a well-constructed cemetery plan considering green corridors for mobile species and optimum use of indigenous trees already on study site. Improving current state by planting more indigenous vegetation.	Moderate

	<p>Destruction, further loss and fragmentation of the vegetation community classified as CBA or ESA.</p>	<p>7</p>	<p>4</p>	<p>Study area falls in CBA must be kept to the minimum footprint and must be rehabilitated after construction. A well-constructed cemetery plan/layout including green corridors and planting of indigenous trees and vegetation.</p>	<p>Moderate</p>
	<p>Destruction of protected plant species</p>	<p>7</p>	<p>4</p>	<p>All protected plant species, as identified by the specialist must be removed before construction starts and relocated to green spaces in cemetery or</p>	<p>Moderate</p>
	<p>Staff members/ Contractors might create new pathways across the natural vegetation.</p>	<p>6</p>	<p>1,2</p>	<p>Staff members/ Contractors must be informed/ educated regarding environmental issues, pathways created due to construction activities must be rehabilitated. Well-constructed cemetery layout plan must be clearly marked on site.</p>	<p>Moderate</p>

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Dumping of waste outside the designated area.	8	4,5	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste. Implementation must be enforced as soon as possible.	Moderate
	Burning of vegetation on site.	8	4	No fires allowed on site. Staff members/ contractors must be educated.	Moderate
	Construction vehicles damaging vegetation when driving around the site or accessing the site.	8	6	Access roads must be clearly identified and trucks must stick to the designated areas. The proposed cemetery extension is located next to a residential road which must be used to access site.	Moderate
	Storing of construction material and soil stockpiles outside the designated areas	7	5,25	A designated area at the construction camp site must be identified for the stockpiling of material and soil	Moderate

	Damage to existing sewage line during the construction phase	12	6	Maintenance of the sewage line through the site must be monitored thoroughly and regularly. All staff must be educated about the sewage line and the necessary emergency protocol. Authorities must be notified and proper clean up must be done if damaged during construction.	High
<b>FAUNA &amp; AVIFAUNA - Loss of species</b>	Removal of the plant species	14	7,5	A cemetery layout must be implemented and planned to accommodate green spaces, corridors and indigenous plants must be planted.	High
	Injury / death to fauna and avifauna due to poaching	8	0,4	No poaching allowed on site. Staff members/ contractors must be educated. Security	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	<p>Dumping of waste and construction material outside the designated area</p>	6	0,4	<p>Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste.</p>	Moderate
	<p>Fires</p>	15	3	<p>No fires allowed on site. Staff members/ contractors must be educated and emergency numbers must be easily accessible.</p>	High
	<p>Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise, dust and excavation.</p>	14	3	<p>The ECO must walk the site before construction starts to identify any breeding areas. A Rehabilitation Plan, as per the specialist reports, must be followed after the completion of the project. Green corridors must be left for migration purposes.</p>	High

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Movement of construction vehicles in order to access the site but also while working on site.	8	0,4	Access roads must be clearly identified and vehicles must stick to the designated areas.	Moderate
	Damage to existing sewage line during the construction phase	15	0,6	Regular maintenance of the sewage line will be essential to avoid any spills or possible leaks.	High
<b>WATERCOURSE (WETLAND &amp; STREAMS) - Damage or loss of wetland due to construction of the bridge and stream crossings. Alternative 1</b>	Weeds and alien species will be introduced and seeds will spread due to disturbance within the watercourse.	8	0,4	Implementation of an Alien Invasive and Weed Eradication Plan	Moderate
	Groundwater pollution / contamination due to burial ground	15	3,5	Implementation of proper stormwater program and cemetery layout considering soil types.	High
	Some of the vegetation within the watercourse and buffer area will be removed in order to create more burial ground.	0,3	0,3	No watercourse or buffer will be influenced during activities	None
	Staff members/ Contractors might create new pathways within the watercourse areas and buffer zones.	0,3	0,3	Staff members/ Contractors must be informed/ educated regarding environmental issues, pathways created due to construction activities must be rehabilitated.	None

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Dumping of waste outside the designated area.	13	0,4	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste.	High
	Burning of vegetation on site.	7	3,75	No fires allowed on site. Staff members/ contractors must be educated.	Moderate
	Construction vehicles driving through the watercourse and damaging vegetation.	0	0	No probability as there is no watercourse on site or in 500m radius of site	None
	Dumping of construction material within the watercourse or buffer area	0	0	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste. This activity is very far from the nearest water course and therefore wont have an	None



Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				impact on the water course.	
	Damage to existing sewage line during the construction phase	0	0	Maintenance of the sewage line will be essential to avoid any spills or possible leaks.	None
	Erosion and siltation will result in destruction of the remaining vegetation	0	0	Erosion measures must be in place, refer to the EMPr for details. The exposed soil must be vegetated as soon as possible.	None
	Spillage/leak of hydrocarbon or other hazardous material	8	3,5	Trucks and machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbonc must be stored within a bunded area.	Moderate

<b>SURFACE WATER - Pollution or loss of surface water</b>	Spillage of fuel / oil from construction vehicles	13	2,5	Machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbonc must be stored within a bunded area. Cemetery layout plan must include clear parking options and a well thought through traffic plan to avoid visitors parking on residents and in open spaces.	High
	Spillage of chemicals	10	0,4	Chemicals must be stored in a lockable container and on an impervious surface.	High
	Spillage of cement	7	0,4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate

	Mixing of cement on soil surface	7	0,3	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	3,5	0,4	No maintenance or fixing of vehicles on site. Should there be an emergency the maintenance and fixing of vehicles must be done on an impervious surface or with a drip tray.	Low
	Washing of vehicles / machinery on site	0,5	0,3	No washing of vehicles on site.	Low
	Siltation and Erosion	14	3,5	Erosion measures must be in place, refer to the EMPr for details. The exposed soil must be vegetated as soon as possible. Fence must be erected around cemetery to avoid entering of local livestock grazing. Stormwater plan must	High

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				be implemented properly.	
	Washing up (bathing, hand washing and washing of dishes / containers or clothes)	6	0,6	All washing must be done in a designated area which is the office and no washing will be allowed anywhere else on site.	Moderate
	Excessive water usage	8	6	Staff members/ Contractors must be informed/ educated regarding environmental issues.	Moderate
	Damage to existing sewage line during the construction phase	12	6	Maintenance of the sewage line will be essential to avoid any spills or possible leaks.	High

<b>GROUNDWATER - Pollution of the ground water system</b>	Spillage of fuel / oil from construction vehicles or machinery	6	3	Vehicles and machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbonc must be stored within a bunded area.	Moderate
	Spillage of chemicals	13	4	Chemicals must be stored in a lockable container and on an impervious surface.	High
	Spillage of cement	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Mixing of cement on soil surface	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	8	4	No maintenance or fixing of vehicles on site. Should there be an emergency the maintenance and fixing of vehicles must be done on an impervious surface or with a drip tray.	Moderate
	Washing of vehicles / machinery on site	7	3,5	No washing of vehicles on site.	Moderate
	Ablution facilities risk leakage	8	4	Ablution facilities must be maintained and cleaned.	Moderate
	Washing up (bathing, hand washing an washing of dishes / containers)	6	3	All washing must be done in a designated area which is the office and no washing will be allowed anywhere else on site.	Moderate

	Damage to existing sewage line during the construction phase	12	6	Maintenance of the sewage line will be essential to avoid any spills or possible leaks. Staff must be educated on the existence of the sewer and layout plan of cemetery must consider the location and possible damage to the sewer that can be done during construction phase of cemetery.	High
<b>SOIL - Pollution and Compaction</b>	Removal of vegetation	11	6	Implementation of a well-constructed cemetery plan considering green corridors for mobile species and optimum use of indigenous trees already on study site. Improving current state by planting more indigenous vegetation.	High

	Spillage of fuel / oil from construction vehicles or containers	8	4	Machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbonc must be stored within a bunded area. Cemetery layout plan must include clear parking options and a well thought through traffic plan to avoid visitors parking on graves and in open vegetation spaces where spillage can occur.	Moderate
	Spillage of chemicals	8	4	Chemicals must be stored in a lockable container and on an impervious surface.	Moderate
	Spillage of cement	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement	Moderate



Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				spilling.	
	Mixing of cement on soil surface	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	8	4	No maintenance or fixing of vehicles and machinery on site. Should there be an emergency the maintenance and fixing of vehicles must be done on an impervious surface or with a drip tray.	Moderate
	Washing of vehicles / machinery on site	7	3,5	No washing of vehicles on site.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Erosion of soil	7	3,5	Erosion measures must be in place, refer to the EMPr for details. The exposed soil must be vegetated as soon as possible.	Moderate
	Unnecessary loss of soils due to site preparation	7	3	Soil must be stockpiled correctly and measures implemented to prevent soil from washing away during rainy seasons.	Moderate
	Compaction of the soil due to digging of graves	5	2,5	Construction areas must be rehabilitated according to the recommendations made by the specialist	Moderate
	Washing away of soil from stockpiles	3	2,5	No stockpiles will be made during construction	Low
	Damage to existing sewage line during the operational phase	11	5,5	Maintenance of the sewage line will be essential to avoid any damages and staff needs to be educated.	High
<b>AIR QUALITY - Polluting or decreasing the quality of the air</b>	Fires on site	7	3,5	No fires allowed on site. Staff members/ contractors must be educated. A fire extinguisher must be available on site in	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				order to extinguish a fire.	
	Emissions from construction vehicles	6	3	Construction vehicles must be maintained.	Moderate
	Waste flying through the air.	7	3,5	Waste must be contained in a bin that can close. During very windy conditions the skips must be covered to avoid waste from flying through the air.	Moderate
	Cement bags / particles flying through the air	7	3,5	A designated bin or container, that can close properly, must be provided for the cement bags.	Moderate
	Particulate matter and dust due to digging of graves	7	3,5	Soil must be watered to avoid dust especially in dry windy seasons.	Moderate
	Particulate matter may be lifted from the site and pose a health threat	7	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/ OHS Officer.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

<b>VISUAL IMPACT</b> - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of vegetation	9	3,5	The site must be planned and layout designed according to the recommendations by the specialist to increase green areas and trees.	High
	Dust created during the construction activities	7	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/ OHS Officer.	Moderate
	Waste on site	6	4,5	Bins must be provided for the waste on site. The bins must be able to close properly and enough bins must be provided.	Moderate
<b>HEALTH - Spreading of deceases/ degradation in health due to the site camp/office and construction</b>	Using the feld for ablution instead of toilets	4	3	Enough toilets must be provided. The toilets must be located in close proximity to the construction and operational area for site camp. Staff members/ contractors must be educated.	Low

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

<b>activities</b>	Dust created during construction	4	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/ OHS Officer.	Low
	Dumping of waste on site	4	3	Bins must be provided for the waste on site. The bins must be able to close properly and enough bins must be provided.	Low
	Workers not using / wearing PPE	4	2	Staff members/ contractors must be educated regarding PPE. Daily checks must be done by the OHS Officer.	Low
	Burning of material / hazardous waste on site	4	2,2	No fires or burning of material on site. A fire extinguisher must be provided on site.	Low
	Spreading of diseases such as COVID-19	4	2,6	Staff members/ contractors must be educated regarding the spreading of diseases and the correct PPE and measures must be implemented to prevent spreading.	Low

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Inappropriate hygiene (not covering when coughing and sneezing, not washing hands)	4	6	Staff members/ contractors must be educated regarding the spreading of diseases.	Low
	Dehydration due to a lack of drinking water	4	3	Drinking water must be provided for workers. Staff members/ Contractor must also be informed/ educated regarding this issue.	Low
<b>NOISE</b>	Noise from construction related activities	5	2,5	Noise must be kept to a minimum and construction activities must be kept to the normal working hours.	Low
<b>TRAFFIC - disturbance to the flow of traffic</b>	Increase in construction vehicles	4	2	Daily traffic hours must be taken into consideration when construction vehicles move from and to the site.	Low
	Traffic congestions due to the construction activities	4	2	Traffic must be regulated to avoid congestions, especially during the peak traffic hours.	Low
<b>SAFETY &amp; SECURITY</b>	Theft of construction material and equipment	6	3	Security guards must be appointed to control or guard site at night until fence is constructed.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	The site is unsafe for locals, especially kids playing on construction site or residents passing through the site	6	1,6	Strict measures must be implemented to demarcate the site, especially the deep graves. The local community must be educated regarding the safety of the construction sites.	Moderate
	Home owner security at risk due to influx of workers into area	8	4,5	Contractors must control the influx of workers in the area. No staff members/ contractors are allowed to sleepover at the construction site.	Moderate
	Construction vehicles at risk of theft or vandalism	5	3	Construction vehicles must be locked in the evenings and a security must patrol the area.	Moderate
	Unfair treatment of staff member can lead to dispute or strikes	7	4,5	The project manager and contractor must ensure that workers are treated fairly, this includes payment of salaries, ablution facilities, lunch times and other privileges.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Using inappropriate working methods or equipment	10	5	Staff members/ Contractors must be educated on how to use specific equipment or material.	High
	Workers not wearing the correct PPE	12	2,4	Staff members/ contractors must be educated regarding PPE. Daily checks must be done by the OHS Officer.	High
<b>SOCIO-ECONOMIC</b>	Risk of ground subsidence affecting other public services or landowner activities	7	3,5	Storm water management on site must be done according to the engineer's specification. Construction activities that result in ground subsidence must be halted and the area rehabilitated as soon as possible.	Moderate
	Disruption arising during the construction activities	7	2	The project manager and contractor must ensure that workers are treated fairly, this includes payment of salaries, ablution facilities, lunch times and other privileges.	Moderate



**Alternative 2 – Alternative 2 for the expansion of the Ga-Rankuwa cemetery**

Alternative 1 - Preferred Alternative					
Aspect and Description		Impact Rating (before mitigation)	Impact Rating (after mitigation)	Mitigation Measures	Risk of the impact and mitigation not being implemented
Aspect	Description	Significance	Significance		
<b>FLORA - Damage or loss of habitat due to construction activities</b>	Weeds and alien species will be introduced and seeds will spread due to disturbance	8	3,5	Implementation of an Alien Invasive and Weed Eradication Plan	Moderate
	Vegetation will be removed in order to establish site camp, access road and more burial ground	7	5	implementation of a well-constructed cemetery plan considering green corridors for mobile species and optimum use of indigenous trees already on study site. Improving current state by planting more indigenous vegetation.	Moderate

	<p>Destruction, further loss and fragmentation of the vegetation community classified as CBA or ESA.</p>	7	8	<p>Study area falls in CBA must be kept to the minimum footprint and must be rehabilitated after construction. A well-constructed cemetery plan/layout including green corridors and planting of indigenous trees and vegetation.</p>	Moderate
	<p>Destruction of protected plant species</p>	7	7	<p>All protected plant species, as identified by the specialist must be removed before construction starts and relocated to green spaces in cemetery or</p>	Moderate
	<p>Staff members/ Contractors might create new pathways across the natural vegetation.</p>	6	1,2	<p>Staff members/ Contractors must be informed/ educated regarding environmental issues, pathways created due to construction activities must be rehabilitated. Well-constructed cemetery</p>	Moderate

				layout plan must be clearly marked on site.	
	Dumping of waste outside the designated area.	8	4,5	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste. Implementation must be enforced as soon as possible.	Moderate
	Burning of vegetation on site.	8	4	No fires allowed on site. Staff members/ contractors must be educated.	Moderate

	<p>Construction vehicles damaging vegetation when driving around the site or accessing the site.</p>	<p>8</p>	<p>6</p>	<p>Access roads must be clearly identified and trucks must stick to the designated areas. The proposed cemetery extension is located next to a residential road which must be used to access site.</p>	<p>Moderate</p>
	<p>Storing of construction material and soil stockpiles outside the designated areas</p>	<p>7</p>	<p>5,25</p>	<p>A designated area at the construction camp site must be identified for the stockpiling of material and soil</p>	<p>Moderate</p>
	<p>Damage to existing sewer line during the construction phase</p>	<p>12</p>	<p>6</p>	<p>Maintenance of the sewage line through the site must be monitored thoroughly and regularly. All staff must be educated about the sewage line and the necessary emergency protocol. Authorities must be notified and proper clean up must be done.</p>	<p>High</p>

<b>FAUNA &amp; AVIFAUNA - Loss of species</b>	Removal of the plant species	14	7,5	A cemetery layout must be implemented and planned to accommodate green spaces, corridors and indigenous plants must be planted.	High
	Injury / death to fauna and avifauna due to poaching	8	2	No poaching allowed on site. Staff members/ contractors must be educated. Security	Moderate
	Dumping of waste and construction material outside the designated area	6	2	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste.	Moderate
	Fires	15	3	No fires allowed on site. Staff members/ contractors must be educated and emergency numbers must be easily accessible.	High

	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise, dust and excavation.	14	3	The ECO must walk the site before construction starts to identify any breeding areas. A Rehabilitation Plan, as per the specialist reports, must be followed after the completion of the project. Green corridors must be left for migration purposes.	High
	Movement of construction vehicles in order to access the site but also while working on site.	8	2	Access roads must be clearly identified and vehicles must stick to the designated areas.	Moderate
	Damage to existing sewage line during the construction phase	15	3	Regular maintenance of the sewage line will be essential to avoid any damages and staff must be educated.	High
<b>WATERCOURSE (WETLAND &amp; STREAMS) -</b>	Weeds and alien species will be introduced and seeds will spread due to disturbance within the watercourse.	8	2	Implementation of an Alien Invasive and Weed Eradication Plan	Moderate

<p><b>Damage or loss of wetland due to construction of the bridge and stream crossings. Alternative 1</b></p>	<p>Groundwater pollution / contamination due to burial ground</p>	15	3,5	<p>Implementation of proper stormwater program and cemetery layout considering soil types.</p>	High
	<p>Some of the vegetation within the watercourse and buffer area will be removed in order to create more burial ground.</p>	13	6	<p>No watercourse or buffer will be influenced during activities and workers must be educated</p>	None
	<p>Staff members/ Contractors might create new pathways within the watercourse areas and buffer zones.</p>	12	5,5	<p>Staff members/ Contractors must be informed/ educated regarding environmental issues, pathways created due to construction activities must be rehabilitated.</p>	None
	<p>Dumping of waste outside the designated area.</p>	13	2	<p>Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste.</p>	High

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Burning of vegetation on site.	7	3,75	No fires allowed on site. Staff members/ contractors must be educated.	Moderate
	Construction vehicles driving through the watercourse and damaging vegetation.	9	4	Educate construction workers with strict rules and clear paths.	High
	Dumping of construction material within the watercourse or buffer area	12	5,5	Staff members/ contractors must be educated. Clear signs must be erected indicating where waste can be disposed. Bins must be provided for waste and a skip must be provided for the construction waste.	High
	Erosion and siltation will result in destruction of the remaining vegetation	12	5,5	Erosion measures must be in place, refer to the EMP for details. The exposed soil must be vegetated as soon as possible.	High



	Spillage/leak of hydrocarbon or other hazardous material	8	4	Trucks and machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbon must be stored within a bunded area.	Moderate
<b>SURFACE WATER - Pollution or loss of surface water</b>	Spillage of fuel / oil from construction vehicles	13	2,5	Machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbon must be stored within a bunded area. Cemetery layout plan must include clear parking options and a well thought through traffic plan to avoid visitors parking on residents and in open spaces.	High

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Spillage of chemicals	10	2	Chemicals must be stored in a lockable container and on an impervious surface.	High
	Spillage of cement	7	2	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Mixing of cement on soil surface	7	1,5	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	7	2	No maintenance or fixing of vehicles on site. Should there be an emergency the maintenance and fixing of vehicles must be done on	Low

				an impervious surface or with a drip tray.	
	Washing of vehicles / machinery on site	5	1,5	No washing of vehicles on site.	Low
	Siltation and Erosion	14	3,5	Erosion measures must be in place, refer to the EMPr for details. The exposed soil must be vegetated as soon as possible. Fence must be erected around cemetery to avoid entering of local livestock grazing. Stormwater plan must be implemented properly.	High
	Washing up (bathing, hand washing an washing of dishes / containers or clothes)	6	3	All washing must be done in a designated area which is the office and no washing will be allowed anywhere else on site.	Moderate

	Excessive water usage	8	6	Staff members/ Contractors must be informed/ educated regarding environmental issues.	Moderate
	Damage to existing sewage line during the construction phase	12	6	Maintenance of the sewage line will be essential to avoid any spills or possible leaks.	High
<b>GROUNDWATER - Pollution of the ground water system</b>	Spillage of fuel / oil from construction vehicles or machinery	6	3	Vehicles and machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbon must be stored within a bunded area.	Moderate
	Spillage of chemicals	13	4	Chemicals must be stored in a lockable container and on an impervious surface.	High

	Spillage of cement	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Mixing of cement on soil surface	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	8	4	No maintenance or fixing of vehicles on site. Should there be an emergency the maintenance and fixing of vehicles must be done on an impervious surface or with a drip tray.	Moderate
	Washing of vehicles / machinery on site	7	3,5	No washing of vehicles on	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				site.	
	Ablution facilities risk leakage	8	4	Ablution facilities must be maintained and cleaned.	Moderate
	Washing up (bathing, hand washing and washing of dishes / containers)	6	3	All washing must be done in a designated area which is the office and no washing will be allowed anywhere else on site.	Moderate
	Damage to existing sewage line during the construction phase	12	6	Maintenance of the sewage line will be essential to avoid any spills or possible leaks. Staff must be educated.	High
<b>SOIL - Pollution and Compaction</b>	Removal of vegetation	11	6	Implementation of a well-constructed cemetery plan considering green corridors for mobile species and optimum use of indigenous trees already on study site. Improving current state by planting more indigenous vegetation.	High

	Spillage of fuel / oil from construction vehicles or containers	8	4	Machinery must be checked regularly to avoid any leaks. Hazardous material must be stored in a lockable container and on an impervious surface. Hydrocarbonc must be stored within a bunded area. Cemetery layout plan must include clear parking options and a well thought through traffic plan to avoid visitors parking on graves and in open vegetation spaces where spillage can occur.	Moderate
	Spillage of chemicals	8	4	Chemicals must be stored in a lockable container and on an impervious surface.	Moderate

	Spillage of cement	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Mixing of cement on soil surface	8	4	Cement must be mixed on an impervious surface such as a mixing tray, a wheelbarrow or a bunded area. Should cement trucks be used during construction trucks must be checked to avoid any cement spilling.	Moderate
	Maintenance or fixing of vehicles / machinery on site	8	4	No maintenance or fixing of vehicles and machinery on site. Should there be an emergency the maintenance and fixing of vehicles must be done on an impervious surface or with a drip tray.	Moderate



Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Washing of vehicles / machinery on site	7	3,5	No washing of vehicles on site.	Moderate
	Erosion of soil	7	3,5	Erosion measures must be in place, refer to the EMP for details. The exposed soil must be vegetated as soon as possible.	Moderate
	Unnecessary loss of soils due to site preparation	7	3	Soil must be stockpiled correctly and measures implemented to prevent soil from washing away during rainy seasons.	Moderate
	Compaction of the soil due to digging of graves	5	2,5	Construction areas must be rehabilitated according to the recommendations made by the specialist	Moderate
	Washing away of soil from stockpiles	3	2,5	No stockpiles will be made during construction	Low
	Damage to existing sewage line during the construction phase	11	5,5	Maintenance of the sewage line will be essential to avoid any spills or possible leaks. Staff must be educated	High

<b>AIR QUALITY - Polluting or decreasing the quality of the air</b>	Fires on site	7	3,5	No fires allowed on site. Staff members/ contractors must be educated. A fire extinguisher must be available on site in order to extinguish a fire.	Moderate
	Emissions from construction vehicles	6	3	Construction vehicles must be maintained.	Moderate
	Waste flying through the air.	7	3,5	Waste must be contained in a bin that can close. During very windy conditions the skips must be covered to avoid waste from flying through the air.	Moderate
	Cement bags / particles flying through the air	7	3,5	A designated bin or container, that can close properly, must be provided for the cement bags.	Moderate
	Particulate matter and dust due to digging of graves	7	3,5	Soil must be watered to avoid dust especially in dry windy seasons.	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Particulate matter may be lifted from the site and pose a health threat	7	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/OHS Officer.	Moderate
<b>VISUAL IMPACT</b> - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of vegetation	9	3,5	The site must be planned and layout designed according to the recommendations by the specialist to increase green areas and trees.	High
	Dust created during the construction activities	7	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/OHS Officer.	Moderate
	Waste on site	6	4,5	Bins must be provided for the waste on site. The bins must be able to close properly and enough bins must be provided.	Moderate

<b>HEALTH - Spreading of deceases/ degradation in health due to the site camp/office and construction activities</b>	Using the veld for ablution instead of toilets	4	3	Enough toilets must be provided. The toilets must be located in close proximity to the construction and operational area for site camp. Staff members/ contractors must be educated.	Low
	Dust created during construction	4	3,5	Dust suppression must take place during very windy conditions or as per the instructions of the ECO/ OHS Officer.	Low
	Dumping of waste on site	4	3	Bins must be provided for the waste on site. The bins must be able to close properly and enough bins must be provided.	Low
	Workers not using / wearing PPE	4	2	Staff members/ contractors must be educated regarding PPE. Daily checks must be done by the OHS Officer.	Low

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

	Burning of material / hazardous waste on site	4	2,2	No fires or burning of material on site. A fire extinguisher must be provided on site.	Low
	Spreading of diseases such as COVID-19	4	2,6	Staff members/ contractors must be educated regarding the spreading of diseases and the correct PPE and measures must be implemented to prevent spreading.	Low
	Inappropriate hygiene (not covering when coughing and sneezing, not washing hands)	4	6	Staff members/ contractors must be educated regarding the spreading of diseases.	Low
	Dehydration due to a lack of drinking water	4	3	Drinking water must be provided for workers. Staff members/ Contractor must also be informed/ educated regarding this issue.	Low
<b>NOISE</b>	Noise from construction related activities	5	2,5	Noise must be kept to a minimum and construction activities must be kept to the normal working hours.	Low

<b>TRAFFIC - disturbance to the flow of traffic</b>	Increase in construction vehicles	4	2	Daily traffic hours must be taken into consideration when construction vehicles move from and to the site.	Low
	Traffic congestions due to the construction activities	4	2	Traffic must be regulated to avoid congestions, especially during the peak traffic hours.	Low
<b>SAFETY &amp; SECURITY</b>	Theft of construction material and equipment	6	3	Security guards must be appointed to control or guard site at night until fence is constructed.	Moderate
	The site is unsafe for locals, especially kids playing on construction site or residents passing through the site	8	1,6	Strict measures must be implemented to demarcate the site, especially the deep graves. The local community must be educated regarding the safety of the construction sites.	Moderate
	Home owner security at risk due to influx of workers into area	8	4,5	Contractors must control the influx of workers in the area. No staff members/ contractors are allowed to	Moderate

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

				sleepover at the construction site.	
	Construction vehicles at risk of theft or vandalism	5	3	Construction vehicles must be locked in the evenings and a security must patrol the area.	Moderate
	Unfair treatment of staff member can lead to dispute or strikes	7	4,5	The project manager and contractor must ensure that workers are treated fairly, this includes payment of salaries, ablution facilities, lunch times and other privileges.	Moderate
	Using inappropriate working methods or equipment	10	5	Staff members/ Contractors must be educated on how to use specific equipment or material.	High
	Workers not wearing the correct PPE	12	2,4	Staff members/ contractors must be educated regarding PPE. Daily checks must be done by the OHS Officer.	High

<b>SOCIO-ECONOMIC</b>	Risk of ground subsidence affecting other public services or landowner activities	7	3,5	Storm water management on site must be done according to the engineers' specification. Construction activities that result in ground subsidence must be halted and the area rehabilitated as soon as possible.	Moderate
	Disruption arising during the construction activities	7	2	The project manager and contractor must ensure that workers are treated fairly, this includes payment of salaries, ablution facilities, lunch times and other privileges.	Moderate



**No-Go Alternative for the expansion of the Ga-Rankuwa cemetery**

Aspect and Description		Impact Rating (before mitigation)	Impact Rating (after mitigation)	Mitigation Measures	Risk of the impact and mitigation not being implemented
Aspect	Description	Significance	Significance		
<b>FLORA - Damage or loss of existing vegetation</b>	Loss of vegetation due to backyard graves or damage to existing cemeteries, unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High
<b>FAUNA &amp; AVIFAUNA - Loss in species due to the decommissioning of the depots</b>	Loss of fauna & flora due to backyard graves or damage to existing infrastructure, current cemeteries unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High
<b>SURFACE WATER - Pollution/ Contamination of surface water (storm water/ runoff)</b>	Pollution due to backyard graves or damage to existing infrastructure, existing cemeteries unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High
<b>GROUND WATER - Pollution/ Contamination of surface water (storm water/ runoff)</b>	Pollution due to backyard graves or damage to existing infrastructure (eg. Stormwater system), existing cemeteries unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High

Draft Basic Assessment Report – Proposed Expansion of the Ga-Rankuwa Cemetery

Aspect and Description		Impact Rating (before mitigation)	Impact Rating (after mitigation)	Mitigation Measures	Risk of the impact and mitigation not being implemented
Aspect	Description	Significance	Significance		
<b>WATERCOURSE - Pollution/ Contamination of wetlands and streams</b>	Pollution due to backyard graves or damage to existing infrastructure, current cemeteries unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High
<b>SOIL - Pollution/ Contamination of Soil</b>	Pollution due to backyard graves or damage to existing infrastructure, current cemeteries unable to cope with demand.	High	Moderate	Maintenance of the existing systems	High
<b>HEALTH - Spreading of deceases/ degradation in health</b>	Unhealthy conditions due to backyard graves or damage to existing infrastructure, current cemeteries unable to cope with demand.	High	High	Maintenance of the existing systems	High
<b>SOCIO-ECONOMIC</b>	Restriction in development due to the necessary infrastructure such as cemeteries and dignified burial space for human remains.	High	High		

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

Biodiversity & Aquatic Assessment

Heritage Impact Assessment

Geohydrological Investigation Report

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

The environmental assessment was done based on the information provided by the Project Team.

Refer to the specialist reports for any gaps or assumptions made by the specialist.

### **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.

There is currently no decommissioning and closure phase for the proposed project.

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

N/A

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

N/A

### **4. CUMULATIVE IMPACTS**

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

The proposed project is mainly implemented/ constructed within already developed areas or areas that has been degraded due to human activities such as informal settlements, pathways, veld fires, illegal dumping in open veld, erosion and invasion of alien invasive species. Cumulative impacts that could therefore result due to the proposed project activities are:

**Pollution due to littering or waste on study site;**

As mentioned above there is already a problem with littering and illegal dumping on the proposed site. If waste is not managed properly during the construction and operational period there will be an increase in waste and within the open veld areas.

**Increase of alien invasive species on the proposed project site;**

Most of the study area has been invaded by alien invasive species. If the construction and operational phase is not managed properly it could lead to an increase and spreading of alien invasive species along the route alignments. Sites that haven't really been exposed to alien invasive species could be exposed to the infestation of these species.

**Loss of Habitat;**

A large portion of the proposed cemetery will be located within areas that are marked as CBA. The removal of the additional vegetation to accommodate more burial ground will lead to the loss of habitat within that CBA.

**Erosion;**

Sections of the study site had already eroded and if the construction activities is not managed properly it will only increase the erosion. A proper stormwater management plan is required to control runoff and minimize

erosion of site.

**Dust;**

Dust is will be a problem, especially in the dry windy season. Dust management must be implemented to avoid the cumulative effect of dust in the area during construction phase.

**Groundwater pollution / contamination** is a common occurrence at cemeteries. It is important that stormwater plan and cemetery layout take into consideration the types of soil found on the study site as this will give guidance to where the proper layout of burial ground should be. Seepage must be controlled to control groundwater pollution.

## 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.

### **Alternative 1**

This alternative is located not far South of the original cemetery. As displayed on the map, a small pump station is located in the north-western corner of the proposed study area. The vegetation of the site is already disturbed by over-grazing livestock and illegal dumping. This site alternative is preferred for the expansion as it is the closest to the original cemetery and therefore most accessible for extension of the water, sewage and electricity lines if a small building should be constructed on the expansion site. This site alternative is also the furthest away from the water source and will therefore be easier to maintain cemeterial activities while no water legislation will be triggered.

During construction the impacts will include general activities associated with constructions such as spillages, erosion, weeds and invasive plant species, litter and construction waste, dust, and noise. These impacts during construction are for a short term and can be mitigated and managed in order to keep the community safe, happy and protect the environment.

Medium to long term impacts would result if the stormwater management plan and proper cemetery layout is not properly implemented and will include impacts such as soil erosion, open or bare areas, and groundwater pollution / contamination which could result in dust and compaction of the soil, invasion of alien invasive species and therefore a loss in indigenous flora and fauna species.

After the successful implementation of mitigation measures during construction the impact of the proposed project will still be high since the activity will result in the loss of habitat. Loss of habitat can be mitigated by allowing green corridors and planting and keeping indigenous vegetation where possible. It is also suggested that the cemetery construction takes place in steps over time to enable mobile fauna to relocate and this will also decrease impact.

### **Alternative 2**

This alternative is located further South from Alternative 1 (refer to Figure 1-1). The impact associated with this alternative will be more than Alternative 1. There are large electricity lines running through Alternative 2 on servitude and will physically also influence the proposed activity. Alternative 2 is located within 32m of a watercourse and wetland. This will have a large impact on the surface water as well as groundwater and will need further legislation.

Due to the close proximity of the water, this site is considered difficult to maintain proper burial conditions. This site alternative logistically is also not the better alternative as it is located must further away from the existing / original cemetery and will have complications with extending water, sewage and electricity lines to the site.

After the successful implementation of mitigation measures the impact of the proposed project will be still be moderate to high. During construction the impacts will include general activities associated with constructions such as spillages, erosion, weeds and invasive plant species, litter and construction waste, dust, and noise. These impacts are however for a short term and can be mitigated and managed in order to keep the community safe, happy and protect the environment.

Medium to long term impacts would result if the study area is used for the extension of the original cemetery.

**No-go option**

The City of Tshwane is obligated to provide respectful and sensitive burial land to its communities. The Environmental Management and Parks Division manages a number of cemeteries and a crematorium as part of its core functions. Like many other local authorities, suitable burial land is a challenge and based on the current burial rate, the demand for land meant to be utilised for expansion of existing cemetery sites and establishment of new ones is very high.

The impact associated with the No-Go option is most socio-economic and health related issues. Without the expansion of the Ga-Rankuwa cemetery, the residents of the area will not have a greenspace for dignified disposition of human remains. This will result in backyard graves which can have health and environmental impacts if not controlled properly. Should the project not be implemented there is a higher risk that the existing cemeteries will not be able to cope with the current demands and result in a system failure – backyard graves, no stormwater systems to protect environment, etc. This could result in health concerns but will also overflow in the surrounding cemeteries/environments which will result in the pollution of open veld or watercourses and aquifers.

The future development of Ga-Rankuwa is also depended on the cemeteries. Should this not take place it will mean that future development will be stalled.

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

**For proposal:**

**Alternative 1**

The first alternative refers to the site closest to the original cemetery. The impact will be significant since soil and vegetation will be removed from this sensitive environment. The movement of trucks and people along this section will also result in the degradation or loss of biodiversity. This is the preferred alternative due to its number of benefits over Alternative 2 but if the impacts are not mitigated properly, it could still have a negative impact on the environment.

**For alternative:**

**Alternative 2**

This alternative was considered as an alternative since it still falls on the property owned by CoT. This site is, however, located close to a natural watercourse and therefore the impact associated with this site be much more severe than Alternative 1.

**7. SPATIAL DEVELOPMENT TOOLS**

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

**Gauteng Conservation Plan: C-Plan ver 3.3**

Geographic Information Systems were used in determining the status quo of the receiving environment. The Gauteng Conservation Plan (C-Plan ver 3.3) was used to determine whether there are any sensitive surrounding environments. It was established that the proposed development falls within CBA and ESA areas.

**Gauteng Environmental Management Framework (2014)**

The Gauteng Environmental Management Framework (EMF) was used to determine in which zone the proposed project falls and if the project could be exempted.

**8. RECOMMENDATION OF THE PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

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

[Redacted area]

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:

- Adhere to the Environment Management Programme (EMPr).
- The area should be kept clear of litter and construction rubble.
- Proper site management must be undertaken.
- Appointment of an Environmental Control Officer
- An alien invasive plant species eradication plan must be implemented to protect the indigenous plant species but also to protect the avifauna habitat.
- Rehabilitation after construction must be done according to the recommendations made by the specialist.
- Construction camp to be erected where it will have the least environmental impact – preferably on the site of the existing cemetery.
- Designated parking area for trucks and construction vehicles must be created where it will have the least environmental impact – preferably on the site of the existing cemetery.
- It is recommended that cemetery on-site roads be planned and designed properly.
- A stormwater plan and design to avoid contamination of the groundwater.
- It is recommended that proper fire breaks are implemented and maintained especially during dry season.
- Dust control especially in dry, windy season.
- Only indigenous vegetation should be utilised during rehabilitation.
- Disposal of waste at a registered waste disposal site.
- Proper site safety is essential to avoid any accidents.
- Proper traffic control must be implemented.
- A sewage leak is currently a problem and must be rectified and rehabilitated before construction of the cemetery can begin. It is also essential that cemetery planning and layout takes into account all existing sewage systems and stormwater plan to avoid damage when burial ground is expanded.
- Groundwater monitoring in the two boreholes. Bi-annual monitoring is recommended, and the water should be analysed for the same parameters as listed in Table 3.4 (Geohydrological Investigation Report as included in Appendix G.)

**9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT**

(as per notice 792 of 2012, or the updated version of this guideline)

The City of Tshwane is obligated to provide respectful and sensitive burial land to its communities. The Environmental Management and Parks Division manages a number of cemeteries and a crematorium as part of its core functions. Like many other local authorities, suitable burial land is a challenge and based on the current burial rate, the demand for land meant to be utilised for expansion of existing cemetery sites and establishment of new ones is very high. The Ga-Rankuwa area is vastly growing and the need for implementation of Municipal services are great within these areas. Unfortunately, the cemetery cannot accommodate the fast-growing area and will therefore have to be expanded in order to cater for the growth. As part of the services rendered by the City of Tshwane’s Parks, Recreation and Crematorium Operations Department two potential sites were identified within Ga-Rankuwa for the new cemetery expansion. This includes the expansion of the burial ground with 19.8 Ha and possibly the construction of a small building for maintenance, storage and ablution facilities.

Cemeteries in South African urban areas have historically been planned as spacious, landscaped gardens to house human remains. Older cemeteries, like the Ga-Rankuwa Cemetery, have run, or are running out of space for new burials, especially in major urban municipalities. This has motivated for the expansion of this cemetery. The expansion of the cemetery will benefit the local community by providing a larger greenspace for dignified disposition of human remains in accordance with provincial statutes and municipal by-laws. Among most cultures in South Africa, the cemeteries are more than just a place of burial. They also serve as historical, religious, memorial, cultural, spiritual, aesthetic and passive recreation greenspaces within the urban environment. The project will provide short term work opportunities during the construction phase of the cemetery but if proper training opportunities are given it could lead to long term employment or employment on similar construction projects. Long term job opportunities such as security and administrative management will be available.

**10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED**

(consider when the activity is expected to be concluded)

The implementation/ construction of the cemetery services is essential for future development of Ga-Rankuwa. Due to the nature of a cemetery, this proposed activity does not have a closure plan and will become a heritage site. The implementation of the project is therefore urgent and it is suggested that a 5-year period be granted for the Environmental Authorisation.

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

(must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers “Yes” to Point 7 above then an EMPr is to be attached to this report as an Appendix

EMPr attached

## SECTION F: APPENDIXES

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

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

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

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

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

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

### CHECKLIST

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

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