ecosphere

Environmental Management Services

Environmental Scoping Report:

Frankfort Cemetery Development

October 2018

Contents

1. Introduction 3
   1.1. Details of the Author 3
   1.2. Aim of the Scoping Report 4
   1.3. Project Description 4
   1.4. Activity Motivation 4
   1.5. Locality 5
   1.6. Applicable Legislation 5
2. Identification of Possible Alternatives 7
   2.1. Locality Alternatives 7
   2.2. Layout Alternatives 7
   2.3. Technological Alternatives 7
   2.4. No Go 7
3. Receiving Natural Environment 8
   3.1. Climate 8
   3.2. Land Use 8
   3.3. Topography 8
   3.4. Sensitivity 9
   3.5. Biodiversity 10
   3.5.1. Fauna 10
   3.5.2. Flora 11
   3.6. Geology & Soil 11
   3.7. Water Resources 12
4. Receiving Social Environment 13
   4.1. Public Participation 13
   4.2. Heritage 13
   4.3. Noise 13
   4.4. Traffic 13
   4.5. Socio-Economic 13
5. Possible Impacts 15
   5.1. Solid Waste 15
   5.2. Liquid Effluents 15
   5.3. Air Emissions 15
   5.4. Noise 15

5.5. Water Use 15
5.6. Heritage 16
5.7. Biodiversity 16
5.8. Soil & Geology 16
5.9. Traffic 16
5.10. Erosion 16
6. Listed Activities & Triggers 17
6.1. The National Environmental Management Act 17
6.2. The National Water Act 17
6.3. National Heritage Resources Act 18
7. Plan for Assessment 18
8. Conclusion 18
9. References 19

1. Introduction

Ecosphere Environmental Management Services (Pty) Ltd was appointed by Mafube Local Municipality to conduct environmental scoping for a proposed development of a new cemetery for the town of Frankfort.

According to Section 14 of the Local Government: Municipal Systems Act, (Act No 32 of 2000), it is illegal to dispose of human remains other than by burial in a cemetery or by cremation in a crematorium. Therefore, it dictates that councils must provide the appropriate facilities for the disposal of human remains.

The development of the proposed cemetery will endeavour to do just this. Ensuring that is done in an environmentally responsible manner is very important. Environmental Scoping is therefore the first step towards achieving this goal.

1.1. Details of the Author

This report was compiled by:

Ecosphere Environmental Management Services

18A Hertz Boulevard
Vanderbijlpark
1911
Tel: 016 981 0591

Contact Persons:	
Michael Ryan Email: info@ecosphere.co.za Cell: 071 607 6548	Christelle Myburgh Email: christelle@ecosphere.co.za Cell: 084 284 3333
Qualifications and Affiliations	
B.Sc Hons. Geography and Environmental Science	*M.Sc. Environmental Management* *Registered Professional Natural Scientist with SACNASP*
Experience	
Michael has 1 year of experience in the environmental management field, with a good understanding of the environmental processes, doing impacts assessments, license applications, GIS etc.	Christelle has 4.5 years' experience in the environmental management and biodiversity fields, with extensive knowledge of the environmental processes, doing impact assessments, licenses applications, EMP's, rehabilitation plans etc.

1.2. Aim of the Scoping Report

The aim of this scoping report is to:

- Evaluation of the identified site with the identification of possible alternate ones if deemed unsuitable.
- Identify any environmental or social “fatal flaws” or “red flags” associated with any of the projects;
  Fatal flaws and red flags refer to any issues or impacts of the proposed development that can have an effect on the progression of the development.
- Evaluate the receiving environment to determine the key environmental impacts or issues associated with the proposed development, such as possible affected species; and
- To identify if from an environmental perspective the authorisations and specialist studies that the proposed development will require to continue.
- Develop a plan of assessment for the suitability of the proposed site and obtain environmental authorisation.

1.3. Project Description

The proposed area for development encompasses approximately 52500 m^2. The entrance to the site will be along the R26 provincial main road. It is unknown at this stage how many graves will be included within the site due to space requirements by associated infrastructure.

1.4. Activity Motivation

The Free State only accounts for 7% of South Africa’s mortality rate. This translates to 31 796 bodies that need burial across its 18 local municipalities. Due to the steady population growth within all of the towns of the Mafube Local Municipality over the last 20 years, the cemetery in Frankfort has begun to reach its full designed capacity.

With a further 3.22% projected population growth rate and nowhere else for the burial of human remains in the vicinity there is a clear need for a new cemetery within the Municipality. After the development of the new cemetery, it will accommodate Frankfort as well as the towns of Cornelia and Villiers with a place to bury their loved ones.

The need for a new cemetery can also be motivated by the health concerns of not having an adequate location for burials. What started with the Great Plague of London in 1665 to stop the spread of the Bubonic plague has become a legislative minimum depth for a grave to be dug. This is to allow for the safe decomposition of human remains without being dug up by any wildlife and to prevent the spread of disease from the corps.

1.5. Locality

The proposed development is located within the town of Frankfort and falls within the Mafube Local Municipality along with three additional towns namely: Cornelia, Tweeling and Villiers. The municipality falls on the border of both the Mpumalanga and Gauteng provinces. The proposed new cemetery is located to the north-east of the town at co-ordinates 27.233334°S and 28.535260°E as seen in Figure 1.

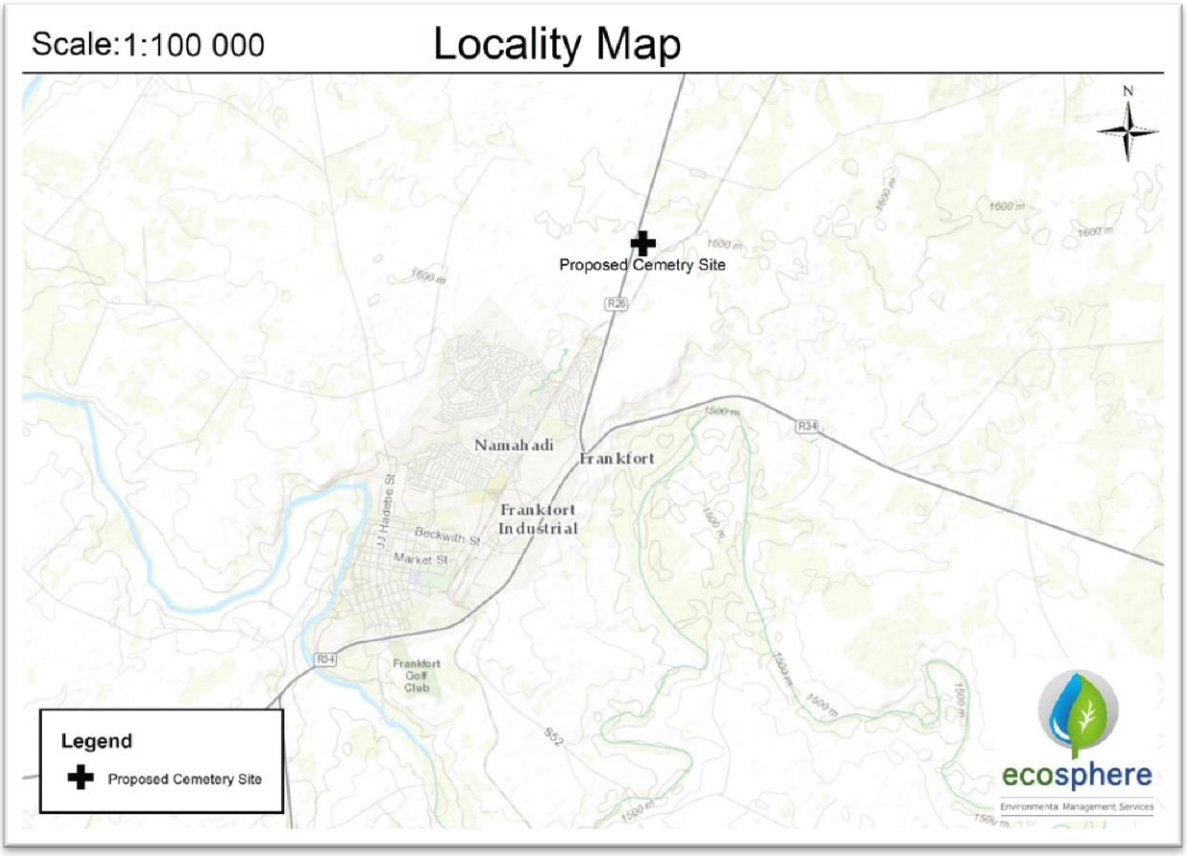

Figure 1: Locality Map of the new proposed cemetery in Frankfort.

1.6. Applicable Legislation

The following legislation was reviewed regarding the proposed project:

Title of legislation, policy or guideline	**Applicability to the project**	**Administering authority**
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	Everyone has the right to an environment that is not harmful to their health or well-being.	Constitutional court
National Environmental Management Act (Act No. 107 of 1998)	Serves as the framework for all environmental legislation in South Africa.	Department of Environmental Affairs
Environmental Impact Assessment Regulations (Government Notice No. R. 983 of 2014)	Regulates the procedure and criteria as contemplated in NEMA.	Department of Environmental Affairs

The National Water Act (Act No. 36 of 1998)	Forms the basis for the management of South Africa's water resources.	Department of Water Affairs and Sanitation
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Management and conservation of the indigenous biological diversity and the sustainable use of biological resources in South Africa.	Department of Environmental Affairs
National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	Manage and conserve South Africa's biodiversity (protected areas) within the framework of national legislation.	Department of Environmental Affairs
The Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Promote the conservation of soil, water use and vegetation.	Department of Environmental Affairs
National Heritage Resources Act (Act No. 25 of 1999)	Conservation and management of national heritage resources (archaeological and historically significant).	Department of Environmental Affairs
National Environmental Management: Waste Act (Act No. 59 of 2008)	Regulates waste management activities in South Africa, with primary aim of preventing pollution and ecological degradation.	Department of Environmental Affairs
Spatial Planning and Land Use Management Act (Act No. 16 of 2013)	Provides a framework for spatial planning and land use management in South Africa, to specify the relationship between the spatial planning and the land use management system. Determine the land zoning for where the proposed development would take place.	Department of Environmental Affairs
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Regulates air quality in order to protect the environment by providing reasonable measures for the prevention and ecological degradation for securing ecologically sustainable development.	Department of Environmental Affairs
Local Government: Municipal Systems Act, 2000 (Act No 32 of 2000). Section 14(2)(a)(i)	Section 14 covers the legislation around Burial and cremation in the Mafube Local Municipality	Department of Environmental Affairs
The National Health Act (Act No. 61 of 2003)	Regulates the safe disposal of human remains	Department of Health

2. Identification of Possible Alternatives

Alternatives are a requirement in the process to obtain environmental authorisation. The following are alternatives considered for the proposed cemetery development:

2.1. Locality Alternatives

With most projects it is required that proposed alternative sites be identified and considered to allow for the movement of the proposed site if there are unforeseen circumstances which deem the proposed site unsuitable. In this case the town planning from the municipality has deemed the current proposed site to be the preferred site for the development of the new cemetery based on the available properties and requirements for a cemetery. No locality alternatives have therefore been considered.

2.2. Layout Alternatives

During the design phase the exact layout of the cemetery will be determined, this will be done by taking all the necessary factors such as the availability of services, possible environmental impacts and cost into consideration.

The position of the proposed cemetery on the proposed property could also be changed if found to be necessary due to the large size of the land owned by the Municipality. The proposed cemetery only requires an area of 52 500 m^2, which falls within a property of approximately 40ha. Therefore, if deemed necessary for any reason, the location of the site within the property should be re-evaluated.

2.3. Technological Alternatives

An alternative approach on how to dispose of human remains, which should be considered is the use of cremation. There is however a stigma against cremation in a South African context. Not only is it an issue of faith, but many people consider it a personal choice that cannot be taken away without infringing on a person's human rights. The need for cemeteries will therefore never be completely eliminated and planning has to be done accordingly.

2.4. No Go

Should the impacts of the project be to great the last resort will be to abandon the project completely. Should this be the case there will be no place for the residents of Mafube Local Municipality and the surroundings to dispose of their loved ones.

Residents will therefore have to travel far to the next cemetery which the socio-economic state of the town suggests is not possible for them. People may then choose to dispose of remains illegally due to no alternative which will attributed to health concerns as well as pose a problem for future development on the land they bury their loved ones.

3. Receiving Natural Environment

The following is an evaluation of the receiving environment on the site where the proposed development will take place:

3.1. Climate

The climate within the town of Frankfort is classified as cold, semi-arid local steppe climate. According to the Köppen-Geiger system, the climate of Frankfort is classified as a BSk. The town receives very little rainfall throughout the year with a mean annual precipitation of 647mm taken from Frankfort Rain station SAWS Number 0403886_A (Design Rainfall Estimation in South Africa version 3).

With temperatures that average at 22.4°C, January is the warmest month of the year. June is the month with the lowest average temperatures in the year around 8.8°C. The average annual temperature is 16.6°C. The climate here is classified as mild, generally warm and temperate.

In winter, there is much less rainfall than in summer. Between the driest and wettest months, the difference in precipitation is 92 mm. The average temperatures vary during the year by 13.6°C. The yearly temperature and rainfall of the district is represented in Table 1.

Table 1: Climate of Mafube Local Municipality (Climate-Data.org)

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	22.4	21.8	20	16.2	12.3	8.8	9	11.5	15.9	18.8	20.2	21.8
Min. Temperature (°C)	15.5	15.2	13.2	8.8	4	0.1	0	2	7.1	10.8	12.9	14.6
Max. Temperature (°C)	29.3	28.4	26.9	23.6	20.6	17.5	18	21	24.8	26.8	27.6	29
Avg. Temperature (°F)	72.3	71.2	68.0	61.2	54.1	47.8	48.2	52.7	60.6	65.8	68.4	71.2
Min. Temperature (°F)	59.9	59.4	55.8	47.8	39.2	32.2	32.0	35.6	44.8	51.4	55.2	58.3
Max. Temperature (°F)	84.7	83.1	80.4	74.5	69.1	63.5	64.4	69.8	76.6	80.2	81.7	84.2

3.2. Land Use

Frankfort remains the growth point in Mafube Local Municipality, and plays a major role in terms of regional service provision, including industrial and commercial development. It is a town, which provides goods and services to the predominant surrounding agricultural community. Primary agricultural activities include sheep and cattle farming, maize, wheat, grain and sorghum production. The current land use of the surrounding area is for cattle farming, as well as roads and railway lines running in close proximity to the site. The site is currently being used for agricultural purposes.

3.3. Topography

The site can be classified as a plain with a very gentle gradient of between 1:50 – 1:20. The gradient dips in a South Easterly direction at 2% to 5%.

3.4. Sensitivity

As can be seen in Figure 2, the site of the proposed development falls within an Ecological Support Area 2. According to SANBI an Ecological Support Areas are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of Critical Biodiversity Areas and/or in delivering ecosystem services.

These are areas where there are more options to conserve biodiversity whilst implementing other kinds of land use. The desired management objective for these areas is to maintain ecological processes by keeping them in at least a fair ecological condition, and manage to maintain ecological functionality. Some loss of ecosystem composition or structure can be accepted (SANBI).

An evaluation of the data revealed that there are no endangered or critically endangered threatened ecosystems in the Mafube Local Municipality or its surrounding area that would or could be impacted upon by the development of the proposed cemetery.

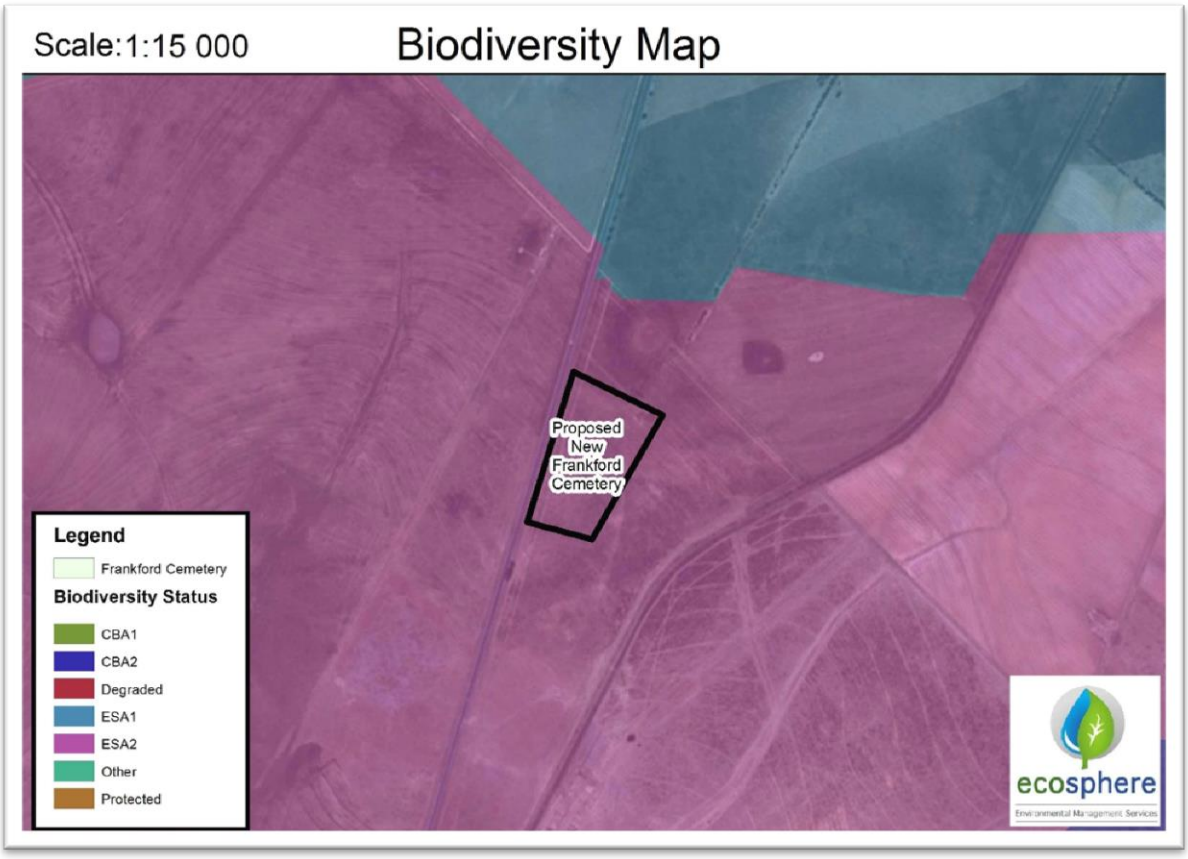

Figure 2: The biodiversity areas in and around the proposed new cemetery for Frankfort.

3.5. Biodiversity

3.5.1. Fauna

There is an array of fauna that inhabit the Frankfort area. A list of potential mammals to be found on site is listed in Table 2. The only possibly affected bird life is the rare, endemic and threatened species of African Grass Owl (SANBI). No evidence of these owls was found on site.

Table 2: List of Mammals which could occur on the proposed site.

Likelihood of Occurrence	Species	Common Name	Red list Category
Low	*Chlorotalpa sclateri*	Sclater's golden mole	Vulnerable
Low	*Amblysomus hottentotus*	Hottentot golden mole	
High	*Elephantulus myurus*	Eastern rock elephant-shrew	
Low	*Orycteropus afer*	Aardvark	
Moderate	*Procavia capensis*	Rock hyrax	
High	*Pronolagus rupestris*	Smith's red rock rabbit	
High	*Hystrix africaeaustralis*	Cape porcupine	
Moderate	*Pedetes capensis*	Springhare	Vulnerable
High	*Xerus inauris*	South African ground squirrel	
High	*Rhabdomys pumilio*	Four-striped grass mouse	
High	*Mastomys coucha*	Southern multimammate mouse	
High	*Micaelamys namaquensis*	Namaqua rock mouse	
High	*Otomys irroratus*	Vlei rat	
High	*Rattus rattus*	House rat	Exotic
Low	*Cercopithecus pygerythrus*	Vervet monkey	
Low	*Atelerix frontalis*	Southern African hedgehog	
High	*Neoromicia capensis*	Cape serotine bat	
Low	*Manis temminckii*	Ground pangolin	Extinct
Low	*Parahyaena brunnea*	Brown hyaena	LR/nt
Low	*Caracal caracal*	Caracal	
Moderate	*Felis silvestris*	African wild cat	
Low	*Felis nigripes*	Black-footed cat	Vulnerable
Low	*Genetta genetta*	Small-spotted genet	
High	*Cynictis penicillata*	Yellow mongoose	
High	*Galerella pulverulenta*	Marsh mongoose	
Moderate	*Otocyon megalotis*	Bat-eared fox	
Moderate	*Vulpes chama*	Cape fox	
Moderate	*Canis mesomelas*	Black-backed jackal	
Moderate	*Aonyx capensis*	African clawless otter	
Moderate	*Poecilogale albinucha*	African striped weasel	
Low	*Ictonyx striatus*	Striped polecat	
Low	*Sylvicapra grimmia*	Common duiker	
Low	*Redunca fulvorufula*	Mountain reedbuck	LR/cd

3.5.2. Flora

The flora on the proposed site is part of the Frankfort Highveld Grassland as seen in Figure 3, which falls within the Mesic Highveld Grassland Bioregion. The area is classified as Frankfort Highveld Grassland (Gm6) according to SANBI's Threatened Ecosystems in South Africa. According to SANBI this Grassland falls within the least threatened Ecosystem Threat Status. The conservation status of the Mesic Highveld Grassland Bioregion has only 1.6% of vegetation protected (Carbutt, et al., 2011).

The Mesic Highveld Grassland Bioregion comprises of 17 national vegetation types. The vegetation type consists mainly of highly productive sourveld grasslands with shrubs and occasional trees. The grassland vegetation favours re-sprouting through fires.

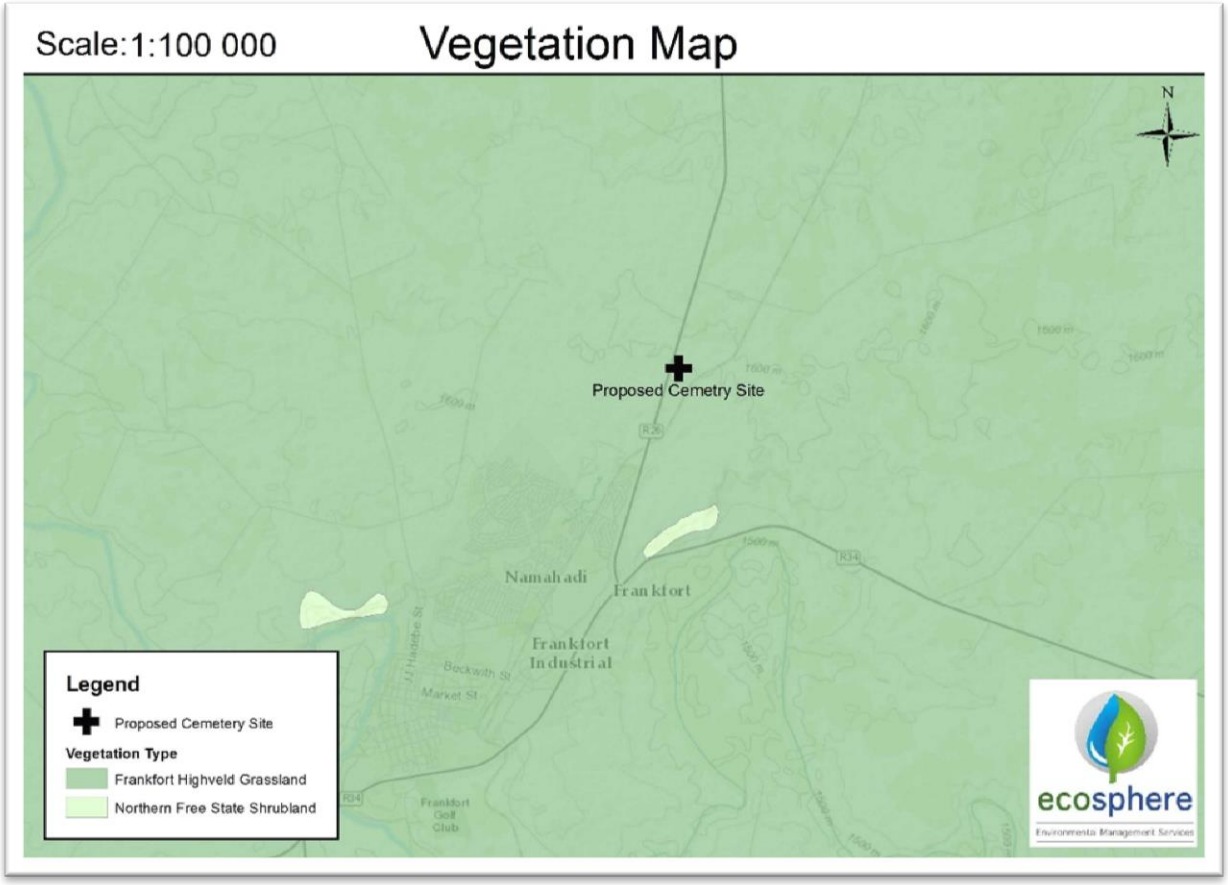

Figure 3: Vegetation map showing the classification of the bioregion of the site and its surroundings

3.6. Geology & Soil

The soils within the Mesic Highveld Grassland Bioregion are generally deep, fertile and free-draining but can have impervious layers of hardpan if infused with minerals such as calcium carbonate or iron oxide. The diversity of soil types is influenced by the underlying geology.

Within the region it is comprised of sedimentary rock (shales, mudstones and sandstones), cut through by dykes and ridges of dolerite, quartzite and gabbro (SANBI). This is found to

be true for the town of Frankfort, which is, underlain by the mudstones and shales of the Estcourt formation of the Ecca group (Karoo Supergroup) which is intruded by dolerite dykes as seen by Figure 5. There are no outcrops of the underlying geology on site. Therefore, further investigation must be taken.

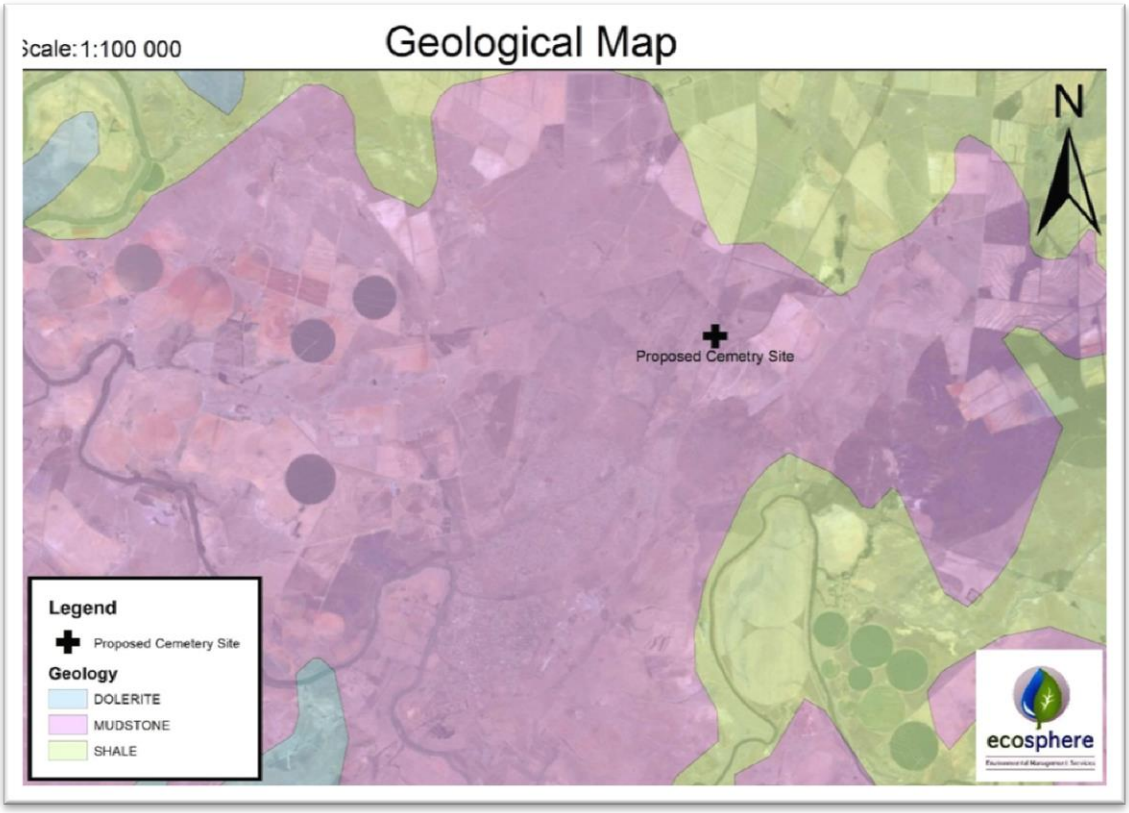

Figure 4: Map showing the geological units within and around the proposed new cemetery.

3.7. Water Resources

The town of Frankfort is built on the eastern side of the Wilgeriver, which is the main source of water for the town.

On site there are 2 boreholes which could likely be used as water source for the construction and operational phase of the project, however this will require a Water Use Licence Application (WULA). The source of water for the proposed cemetery will be detailed by the engineers appointed on the project.

The main concern for the development of a cemetery is the possibility that groundwater could be polluted by the decomposing corpses. This poses health risks to other water users in the area who use the groundwater and could possibly impact on the aquatic health of nearby watercourses as the quality of the water will be changed.

The nearest surface water resource will be the Wilge River which is approximately 7km from the site. It is therefore unlikely that the proposed cemetery will have any impact on surface water resources.

4. Receiving Social Environment

4.1. Public Participation

The Pubic Participation will be conducted in terms of the Environmental Impact Assessment Regulations (GN No. R. 982 as amended) which include notifying the public of the basic assessment process to be followed through the placement of notices on site, in public places and in a locally distributed newspaper. This will allow any person with an interest in the proposed project to register as an interested affected party where their concerns will be considered and addressed during the process.

4.2. Heritage

According to the South African Heritage Resource Agency (SAHRA), the proposed development does not require any palaeontological studies and there were no graves or artefacts found during the site visit. A Heritage Impact Assessment is required because the proposed development exceeds 5000m² (National Heritage Resources Act 1999).

4.3. Noise

The proposed development will generate noise during the construction phase but thereafter it will no longer have a negative impact. A noise impact study will not be required, as the noise will only occur for short periods of time.

4.4. Traffic

The provincial main road, R26, is situated right next to the proposed development. The site access for the proposed cemetery will likely be situated on this road. The possible traffic impacts will be considered by the civil engineers during the design of the cemetery.

4.5. Socio-Economic

The new proposed cemetery falls within the boundary of the Mafube Local Municipality. The Municipality covers 3 971km² of land which is populated by 57 574 people according to the 2016 census.

The male/female density of the population is divided as 93.6 males per 100 females. 64.6% of the population are between the ages of 15 to 64. 28.2% are below the age of 15 which shows the predicted population growth due to the large population section below the age of 18.

The bigger part of the population of the district falls under the worker class (Figure 6) which related to high levels of unemployment as seen in Table 4. The main economic sectors within the Municipality are comprised of the following: The Community services (28.1%), manufacturing (24%), agriculture (13.9%), finance (12.1%), trade (9%), transport (7%) and construction (4.5%).

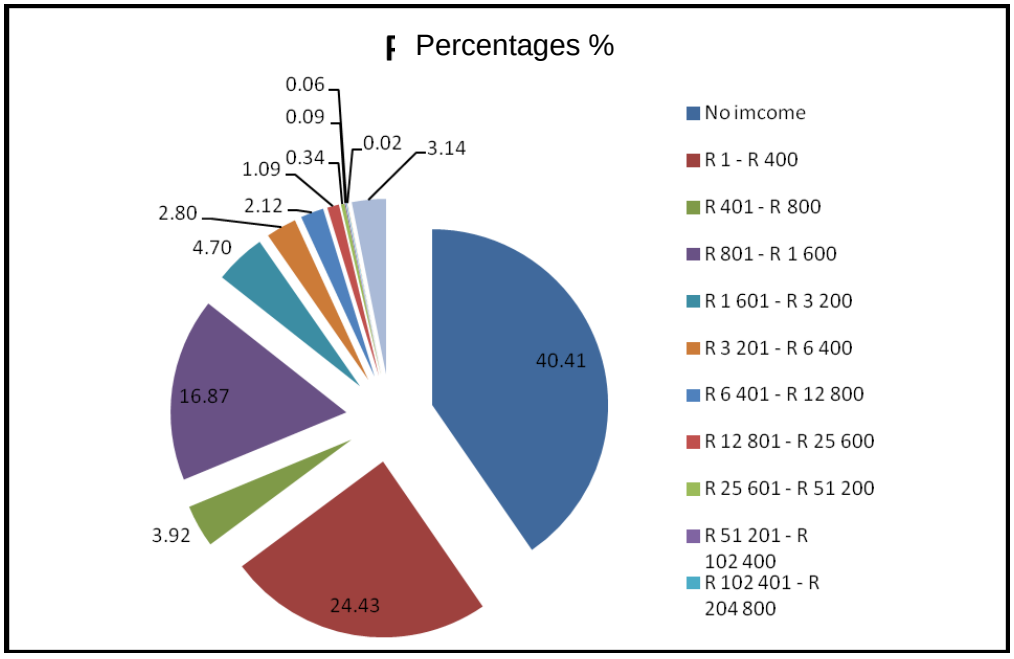

Figure 5: The total monthly earnings of the local population within the municipality

The employment status of Mafube LM as of 2016 is indicated in Table 4 below.

Table 3: Employment Status of Mafube Local Municipality

Gender	Employed	Unemployed	Discouraged work seeker	Not economical active
Male	7 495	2 497	982	6 269
Female	4 301	3 425	1 900	9 066
Total	**11 796**	**5 922**	**2 882**	**15 335**

The educational level of the people in the Mafube Local Municipality is relatively good, with the majority of the people having at least grade 12 or some sort of secondary education. There is however a large percentage of their population which has no schooling of any kind. The distribution of the population's education level can be seen in Table 5.

Table 4: Education level of people within the Mafube Local Municipality

Gender	Grade 12 / STD 10	Higher Diploma	B. degree and post graduate	Higher Degree Masters/ PHD	No schooling
Male	4 232	152	45	34	2 146
Female	4 407	181	54	16	3 091
Total	**8 639**	**332**	**99**	**49**	**5 237**

5. Possible Impacts

5.1. Solid Waste

The type of general waste from domestic use needs to be considered. Paper and plastics as well as food waste needs to be appropriately disposed of in sufficient binning facilities on site.

Construction waste and rubble (general waste) will be produced in the construction phase of the project which needs to be appropriately disposed of in a properly licenced disposal facility as they will not be of a sufficient amount to be reused.

5.2. Liquid Effluents

The generation of liquid effluent from the ablution facilities to be constructed on site will need to be connected to the municipal sewage system. An alternative consideration could be the use of a septic tank system, this will however be considered by the civil engineers during the design of the cemetery.

5.3. Air Emissions

Air emissions in the form of exhaust gasses and dust will be produced during the construction phase of the project as well as in the operational phase of the cemetery. Large equipment will be necessary for the construction of the infrastructure associated with the cemetery as well as for digging graves when needed.

These along with the cars to enter the proposed development will release harmful gasses in the form of Particulate matter (Pm) such as soot, Volatile Organic Compounds (VOCs) which when reacted with sunlight form ground level ozone, Nitrogen Oxides (NOx), Carbon Monoxide (CO) and Sulphur Dioxide (SO2). The levels of emissions are low, and would not warrant an Air Emissions License or further studies.

5.4. Noise

There will be noise associated with the construction phase of the project as a result of use of machinery and equipment. The associated traffic during the operational phase will increase noise pollution, however will have a very low impact on the surrounding areas.

5.5. Water Use

While there is no river or wetland near the site, the water table will likely be affected by the decomposing bodies. There are many minerals such as nitrates, phosphates and carbohydrate as well as carbonates from bones which can leach out and into the groundwater. This is also a concern if fertilizers are used.

The water table could also be contaminated by spills during the construction phase and measures will need to be put in place.

5.6. Heritage

While no visible concerns are visible in the area, there is concern that there may be Trace Fossils or plant fossils of Glossopteris on site. These are found in the Estcourt formation in Frankfort and could occur on site (SAHRA).

5.7. Biodiversity

The ecosystem status of the proposed area as well as altered state of the proposed site which has been used for agricultural purposes indicated that the impact on biodiversity will be minimal and no further studies will be required.

5.8. Soil & Geology

Soil profiles will be disturbed through excavation of graves and then followed by the burial. This will mix the soil from different zones and destroy the profiles continuity which in turn will affect infiltration of water. There will also be enrichment of the soil with organics as a result of the decomposition of the bodies on site.

5.9. Traffic

There is a concern of possible increases in traffic due to large funerals at given time intervals. The large influx of vehicles attending the funeral may cause associated traffic congestion on arrival and departure of the event. This is exasperated if there are not adequate parking facilities provided and parking along the road is required. The associated civil engineers will assess the potential traffic to assess whether a traffic assessment is required.

5.10. Erosion

Erosion is a concern mainly in the construction phase where bare soil is exposed. The increase of runoff by artificial surfaces such as parking lots may also result in erosion along the artificial surfaces.

6. Listed Activities & Triggers

6.1. The National Environmental Management Act

Authorisation in terms of the National Environmental Management Act (107 of 1998) will also be required for the following listed activities:

Activity	Description
Activity 10 - GN R 983 as amended	The development and related operation of infrastructure exceeding 1000 meters in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) With an internal diameter of 0,36m or more (ii) With a peak throughput of 120l/s or more Excluding where – (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area
Activity 23 - GN R 983 as amended	The development of cemeteries of 2500 square meters or more in size.
Activity 27 - GN R 983 as amended	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation

**The conditions with in Activity 10 need to be considered as a possible trigger by the civil engineers for the project as the specifications listed in the activity should be avoided.*

6.2. The National Water Act

A water use licence may be required for the development of the cemetery in terms of the National Water Act (Act no. 36 of 1998):

- Section 21(a) taking water from a water resource:

  If water for the proposed cemetery is abstracted from the borehole then it will trigger and a water use licence is required.

- Section 21(g) disposing of waste in a manner which may detrimentally impact on a water resource.

  This depends on whether the leaching from the decomposing bodies into the water table qualifies as waste, as human remains are not considered a waste. This will be confirmed with the Department of Water and Sanitation as well as by the Geohydrological study.

6.3. National Heritage Resources Act

A Heritage Impact Assessment is required for the proposed development in terms of the National Heritage Resources Act (No 25 of 1999) section 38 (1), subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(c) any development or other activity which will change the character of a site—
(i) exceeding 5 000 m² in extent
(d) the re-zoning of a site exceeding 10 000 m² in extent

7. Plan for Assessment

Due to the listed activities that are triggered above a Basic Assessment process will need to be undertaken in order to obtain environmental authorisation for the proposed project.

The process will include public participation, a risk assessment and the compilation of an Environmental Management Plan to ensure that all risks are adequately assessed.

The following specialist studies will also be conducted during the basic assessment process to aid in the assessment of possible impacts:

- Heritage Impact Assessment (Site exceeding 5 000 m² in extent and the re-zoning of a site exceeding 10 000 m² in extent).
- Geotechnical Assessment (Determine if the site allows for depth required by graves due to underlying geology as well as required equipment required for digging graves).
- Geohydrological Assessment (do a hydrocensus to determine the nature scale, flow and use of the water table as well as if boreholes will be affected by the graves).

8. Conclusion

All of the findings mentioned in this environmental scoping report combined with the relevant legislation have been considered to reach the following conclusions:

Due to triggers in National Environmental Management Act (107 of 1998) a Basic Assessment process is required.

The process will include public participation, a risk assessment and the compilation of an Environmental Management Plan to ensure that all risks are adequately assessed, as well as a heritage impact assessment, geotechnical investigation and geohydrological assessment.

It should also be noted that the development could require a water use licence according to section 21(a) or (g) depending on where water for the construction and operation of the cemetery is sourced from.

9. References

Carbutt, C., Tau, M., Stephens, A. and Escott, B., 2011. The conservation status of temperate grasslands in southern Africa. Grassroots, 11(1), pp.17-23.

Climate-Data.org (www.en.climate-data.org)

Mafube Local Municipality Economic Development (LED) Strategy (2014/2016)

Masango, M.J., 2005. Cremation a problem to African people. HTS: Theological Studies, 61(4), pp.1285-1297.

National government of South Africa (https://municipalities.co.za/overview)

SAHRA- South African Heritage Resources Agency (www.sahra.org.za)

SANBI- South African National Biodiversity Institute (www.sanbi.org)

SANBI. 2013. Grasslands Ecosystem Guidelines: landscape interpretation for planners and managers. Compiled by Cadman, M., de Villiers, C., Lechmere-Oertel, R. and D. McCulloch. South African National Biodiversity Institute, Pretoria. 139 pages.

The Constitution of the Republic of South Africa (Act No. 108 of 1996).