

**BASIC ASSESSMENT REPORT
IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107
OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS
AMENDED)**

October 2017

PROJECT TITLE

Proposed Calcutta Public Cemetery and Memorial Park on Farm Calcutta No. 29, Stellenbosch Municipality

NOVEMBER 2018

| REPORT TYPE CATEGORY | REPORT REFERENCE NUMBER | DATE OF REPORT |
|---|--------------------------------|-----------------------|
| Pre-Application Basic Assessment Report (if applicable) ¹ | 16/3/3/6/7/1/B4/45/1288/17 | November 2018 |
| Draft Basic Assessment Report ² | 16/3/3/6/7/1/B4/45/1288/17 | January 2019 |
| Revised Draft Basic Assessment Report ² | 16/3/3/6/7/1/B4/45/1288/17 | April 2019 |
| Final Basic Assessment Report ³ or, if applicable Revised Basic Assessment Report⁴ (strikethrough what is not applicable) | 16/3/3/1/B4/45/1030/19 | May 2019 |

Notes:

1. In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".
2. In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report, which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.

DEPARTMENTAL REFERENCE NUMBER(S)

| | |
|--------------------------------------|----------------------------|
| Pre-application reference number: | 16/3/3/6/7/1/B4/45/1288/17 |
| File reference number (EIA): | 16/3/3/1/B4/45/1030/19 |
| NEAS reference number (EIA): | |
| | |
| File reference number (Waste): | |
| NEAS reference number (Waste): | |
| | |
| File reference number (Air Quality): | |
| NEAS reference number (Air Quality): | |
| | |
| File reference number (Other): | |
| NEAS reference number (Other): | |

CONTENT AND GENERAL REQUIREMENTS

Note that:

1. The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.
2. This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.
3. This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this checklist.
4. The required information 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 tables may be expanded where necessary.
5. The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.
6. While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.
7. Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This Report must be submitted to the Department and the contact details for doing so are provided below.
10. Where this Department is also identified as the Licensing Authority to decide applications under NEM:WA or NEM:AQA, the submission of the Report must also be made as follows, for-
 - Waste management licence applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office.
 - Atmospheric emissions licence applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (tel: 021 483 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

| CAPE TOWN OFFICE | | GEORGE REGIONAL OFFICE |
|---|---|---|
| REGION 1 (City of Cape Town & West Coast District) | REGION 2 (Cape Winelands District & Overberg District) | REGION 3 (Central Karoo District & Eden District) |
| Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1) at: Tel.: (021) 483-5829 Fax: (021) 483-4372 | Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 2) at: Tel.: (021) 483-5842 Fax: (021) 483-3633 | Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4 th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel.: (044) 805-8600 Fax: (044) 805 8650 |

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ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

| | |
|----------|---|
| BAR | Basic Assessment Report |
| CBA | Critical Biodiversity Area |
| DEA | National Department of Environmental Affairs |
| DEA&DP | Western Cape Government: Environmental Affairs and Development Planning |
| DWS | National Department of Water and Sanitation |
| EIA | Environmental Impact Assessment |
| EMPr | Environmental Management Programme |
| ESA | Ecological Support Area |
| HWC | Heritage Western Cape |
| I&APs | Interested and Affected Parties |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NEM:AQA | National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) |
| NEM:ICMA | National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) |
| NEM:WA | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| NHRA | National Heritage Resources Act, 1999 (Act No. 25 of 1999) |
| PPP | Public Participation Process |

DETAILS OF THE APPLICANT

| | | | |
|--|---|--------------|----------------|
| Applicant / Organisation / Organ of State: | Stellenbosch Municipality | | |
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DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

| | | | |
|----------------------------------|---|--------------|----------------|
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| Person who compiled this Report: | Vivienne Thomson | | |
| EAP Reg. No.: | A.I.A.I. (S.A.) Membership Number: 219 (Bernard de Witt, Owner, EnviroAfrica) | | |
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| EAP Qualifications: | <p><u>Vivienne Thomson</u>: BSc, Zoology (UCT); EIA short course (PU), Environmental Law (PU), Advanced Environmental Law (Mandela Institute School of Law, Wits), ISO 14001 Lead Auditors Course (WTH Management and Training), Root Cause Analysis Technique (IRCA), Environmental Performance Measurement Workshop (African Centre for Energy and Environment), Basic Principles of Ecological Rehabilitation and Mine Closure (PU), Member: National Association for Clean Air; South African Coal Ash Association</p> <p><u>Bernard de Witt</u>: BSc Forestry (SU); BA (Hons) Public Administration (Stellenbosch); National Diploma in Parks and Recreation Management; EIA Short course (UCT); ISO 14001 Auditors course (SABS); Member: AIAI-SA</p> | | |

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Vivienne Thomson:

Vivienne holds a BSc in Zoology from the University of Cape Town (1995) and has over twenty years industry experience in the construction, power generation and mining sectors. She has completed an ISO 14001 Lead Auditors course, as well as several environmental short courses and has guest lectured for the MSc in Environmental Science Environmental Impact Assessment (EIA) course at the University of the Witwatersrand.

Vivienne is a member of the National Association for Clean Air (NACA) and has served as NACA National Council Member. She is a member of the South African Coal Ash Association and an affiliate of the Institute of Innovators and Inventors. She was also a member of the Committee of Interested Parties which acted as an independent, advisory body to ensure impartiality of Pricewaterhouse Coopers' Certification Body in their governance and sustainability division.

Since 2004, Vivienne has been involved in environmental consulting with experience in EIAs, establishing and implementing ISO 14001 EMSs, contract management, legal compliance evaluations, as well as developing, implementing and assessing environmental management plans and monitoring programmes.

Bernard De Witt:

After qualifying with a BSc in Forestry and a BA (Hons) in Public Administration at the University of Stellenbosch, Bernard joined the Department of Forestry as an Indigenous Forest Planner in 1983, going on to become Manager of the Table Mountain Reserve with the Cape Town Council.

He then joined Cape Nature Conservation (CNC) and headed its Conservation Planning Section before taking up the position of District Manager of the Boland area (including the Hottentots Holland and Kogelberg).

As a Regional Ecologist, he co-ordinated managerial and scientific inputs into Provincial Nature Reserves in the Boland, Overberg and West Coast regions.

For the last four years of his employment he assessed and evaluated development applications, from an environmental perspective, on behalf of CNC (now DEA&DP). Since he left DEA&DP 20 years ago, Bernard has been involved in environmental consulting in the private sector as director of EnviroAfrica.

EXECUTIVE SUMMARY OF THE BASIC ASSESSMENT REPORT:

Public cemeteries in the Stellenbosch Municipal area are nearing maximum occupation. The shortage of suitable land for the development of cemeteries has long been one of the major challenges facing many South African municipalities.

Despite the availability of various alternatives, conventional burial and funeral practises are still the most common and preferred, thus, funeral and burial services offered by local municipalities cannot be decontextualised from the cultural and religious customs that communities follow (SALGA, 2016).

The strategy employed by the Applicant, Stellenbosch Municipality, was to expand local cemeteries where possible, as an interim measure, while establishing new cemeteries in at least two of the three Municipal regions identified viz. Northern Stellenbosch, Eastern Stellenbosch (Franshoek Valley) and Southern Stellenbosch, as per the map in Figure 1 below. This allows easier access to the various communities in these regions.

To address the increasing predicament of a lack of available regional burial space, Stellenbosch Municipality appointed CK Rumboll and Partners to facilitate the identification and various licencing processes required for the establishment of at least two regional cemeteries.

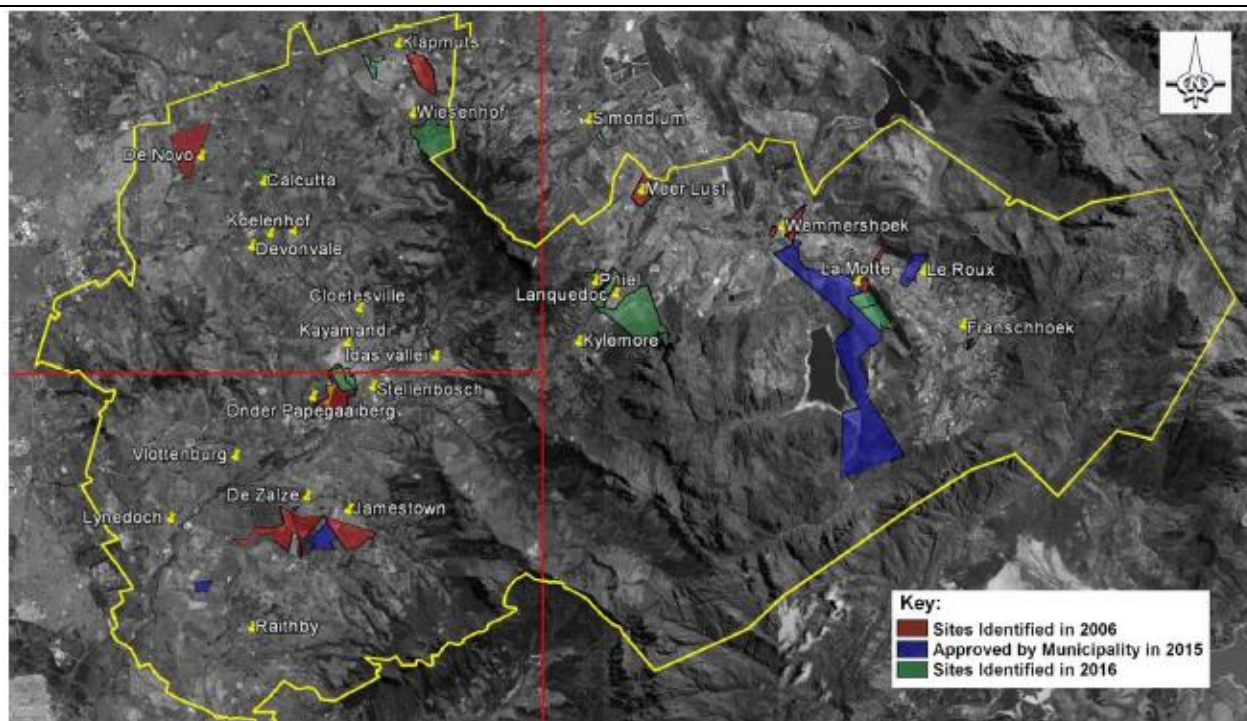


Figure 1: Stellenbosch Municipality jurisdiction outlined in yellow and divided into three regional areas viz. Northern Stellenbosch (top left corner), Eastern Stellenbosch (right half) and Southern Stellenbosch (bottom left corner)

In the period from 2015 to end of 2017, utilising, as a starting point, the Cemetery Feasibility Study, Stellenbosch Municipal Area, Consultative Draft 1 Report (2006) as prepared by Dennis Moss Partnership and attached as Appendix N, as well as the nine potential sites approved by the Stellenbosch Municipal Council at a February 2015 Council meeting, over fifty potential proposed development sites were identified and investigated.

By mid-2017, through a systematic assessment of various criteria as detailed in Appendices L (*First Report, Final October 2016: Identification and Acquisition of Authorisations and Approvals for the Establishment of One or More Regional Cemeteries for Stellenbosch Municipality*) and Appendix M (*Motivation to obtain Stellenbosch Council's endorsement of Regional Cemetery Sites in fulfilment of tender B/SM No. 17/16: Acquisition of Authorisations and Approvals for the establishment of one or more regional cemeteries for Stellenbosch Municipality*), as well as various precluding factors detailed in these Appendices, five potential sites for the entire Municipal area were identified as best suited for the proposed development of regional public cemeteries and memorial park (as per section 4 of Appendix M).

These five sites comprised two from the nine potential sites already approved by the Municipality in 2015, as well as three additional sites. Municipal endorsement for the three additional sites was obtained in August 2017 (partial minutes attached as Appendix K). These five potential sites were further evaluated in terms of their suitability, albeit to varying degrees, to service the three relevant Municipal regions identified above. Besides regional suitability, and the criteria mentioned in Appendices L and M, two of the critical factors in determining whether land was viable for the proposed development or to be used as a possible alternative development site, were ownership of the land and whether the land had already been earmarked for some other infrastructural or development project.

Note: Although some of the preliminary reports attached in the appendices list various sites in a comparison, the purpose of these reports was to refine the list of potential sites and possible alternatives per Municipal region, so that applications to develop a cemetery and memorial park in at least two municipal regions could be made.

It must further be noted that although the Dennis Moss Feasibility Study was undertaken in 2006, it was conducted in order to prevent a future shortage of burial space. The then future shortage is now a reality and has been exacerbated by the increase in population numbers in the Stellenbosch region together with the utilisation of existing burial spaces. The criteria for site suitability and By-law framework mentioned in the 2006 study, are still relevant today which is why the report was used as a starting point for the 2016/2017 feasibility assessments undertaken (as per Appendices L and M).

Providing the amenity of a cemetery and memorial park in two regions in the Municipal area provides a more accessible service to local communities. This FBAR focuses only on the **Northern** Municipal region:

The proposed Calcutta public cemetery and memorial park aims to promote a novel concept to that of traditional public cemeteries: The memorial park concept is well suited to Stellenbosch Municipality's desire to keep the region 'green' and promote and areas.

Currently the Calcutta site is degraded and heavily infested with alien *Eucalyptus* species and some *Acacia saligna*. Clearance of the property for development will facilitate the reintroduction of indigenous vegetation in landscaped areas. Besides allocating areas for traditional burial methods and a remembrance wall or columbarium, a garden of remembrance will be established where the ashes of a loved one may be buried at the foot of a tree or shrub indigenous to the area. The Garden of remembrance will follow a landscaped plan and patrons may purchase a tree and plaque to serve as a living memory of their deceased loved one. This also serves as greener approach to the establishment of burial grounds, while promoting an alternate, less land-demanding options for burial and/or remembrance.

The seasonal stream that runs through the western portion of the proposed development site will be rehabilitated and besides the initial restoration and rehabilitation, two wooden pedestrian bridges, a grass block 'drift' low river crossing to the south, and portions of the boundary fence, no other development will take place within the setback required for watercourse/wetland conservation.

To the west of the stream, it is proposed that burial free areas which will form of the 'public park' area of the memorial park be established. Conservation and awareness regarding the heritage resources of the site viz. outspans, will be undertaken in this region (utilising information boards/pedestals).

Several walkways and seating benches within the public cemetery and memorial park will be made available particularly, along the south-western section of the property where educational information boards regarding the unique "outspan" heritage of the region will be highlighted to help preserve this part of the region's history – a modern analogy of the resting places the historic 'outspans' provided.

It is proposed that the memorial park be an area where critical areas of biodiversity and heritage are rehabilitated and preserved, as much as possible as a part of the 'park' aspect of the cemetery/memorial park. In additional, indigenous vegetation reintroduction will be promoted through the landscaping and memorial park and garden of remembrance areas within the proposed public cemetery and memorial park.

Community or social utilisation of the memorial park other than for burial/remembrance purposes is advocated through the rehabilitation and preservation of the "Outspan" heritage significance of particularly the south-western section of the proposed development site, as well as the rehabilitation of the seasonal stream and re-introduction of indigenous riparian habitat within the set back of the currently degraded seasonal stream that runs through the western/south western portion of the property.

Proposed Development Rationale:

It is estimated that most of the existing municipal/public cemeteries in the region have less than 5% of their original capacity left to provide surrounding communities with this important service.

Proposed Development Description:

The Applicant, Stellenbosch Municipality, is the owner of the land proposed for this development. The land, remainder of Calcutta Farm No. 29 is currently zoned for Agricultural 1.

The current proposed site is strategically positioned to meet this community need since it services the northern region of the Municipal area and will be relatively convenient for local communities to use.

Legislated Environmental Requirements

The National Environmental Management Act No. 107 of 1998 (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority, based on the findings of an Environmental Impact Assessment.

The NEMA is a national act, which is enforced by the national Department of Environmental Affairs (DEA). In the Western Cape, these national powers have been delegated to the Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities:

Government Notice R327 (Listing Notice 1):

Activity No. 12: "**Development** within a watercourse/32m from a watercourse."

Activity No. 19: "The **infilling or depositing** of any material of more than **10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;**

(a) will occur behind a development setback;

(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or

(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies."

Activity No. 23: "The **development of cemeteries** of 2500 square metres or more in size."

Activity No. 24: "The **development** of;

(i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or

(ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;

but excluding;

- (a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014;
or
(b) roads where the entire road falls within an urban area."

Government Notice R324 (Listing Notice 3):

Activity No. 4: "The **development** of a **road** wider than 4 metres with a reserve less than 13.5 metres."

(Possibly) Activity No. 12: "The **clearance of an area** of 300 square metres or more of **indigenous vegetation** except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan."

It should be noted that the exclusion of Government Notice R327 (Listing Notice 1), Activity 27 has been confirmed by the botanical specialist. It is the opinion of the botanical specialist that any possible dormant indigenous floral species which may surface after alien tree/plantation removal would not be in excess of 1ha.

Site Description

The property is approximately 39.64 ha and a maximum of 30 ha is proposed for the development of the public cemetery /memorial park (which includes any buffer/setback areas).

The site co-ordinates are **33° 51' 13.55"S, 18° 48' 35.96"E**.

Please refer to **Appendix A** for the locality map, as well as **Appendix B** (site plans) and **Appendix C** for photographs of the site.

Civil Services

Storm water will be transported from hardened surfaces (roofs of buildings and roads) to a storm water attenuation system or retention pond where storm water can be polished and used for irrigation of gardens/trees/park areas.

Storm water from outside the actual developed cemetery footprint within the proposed site i.e. purely from park areas, will be incorporated into the storm water reticulation system leading to the attenuation facility.

The option of providing permeable paving will be investigated in order to transport storm water from the development. It is envisaged that any overflow (however unlikely) from the attenuation facility could be taken to the ephemeral stream on the western boundary.

The provision of a cut off trench facility on the north and eastern boundaries will be investigated during the design phase.

Surface storm water from the areas earmarked for graves and informal areas will be taken via swales or rock lines channels to the storm water reticulation system in order to feed into the attenuation facility.

Subsurface drainage will be provided to minimise the potential negative effects of a possible high-water table in winter months. Soil tests and profiling of the terrain have been performed to establish

the exact condition of the in-situ material and water table. The design of pavement structures and other amenities will take cognizance of the prevailing geotechnical conditions.

Electrical Services

It is further proposed that while electricity may be provided by Eskom, wherever possible, electricity supply should be supplied through off-grid electricity resources (e.g. solar panels). The terrain for the development is within the Eskom Provision Area and the option of connecting to Eskom power will be investigated. It is however envisaged that a solar and/or wind turbine system be provided in order to supply electricity to the development.

During winter months sunlight might necessitate the introduction of a wind turbine to provide electricity. The cost of this installation will be compared to the rates from Eskom as a supplier and installation costs. The position of the closest Eskom connecting point will contribute to additional costs, if connecting electrical lines need to be established. During the design phase of the electrical distribution network, both options will be investigated.

Water

There is a Municipal potable water pipeline that runs along the R304 adjacent to the proposed site. A single point tie in will be made to this line for potable water only. Refer to Appendix E5 of BAR (Communication from Stellenbosch Municipality).

Non-potable water for toilets and irrigation will be obtained from the on-site water treatment package plant and reed-bed polishing system i.e. will be recycled. It is proposed that a borehole/s be provided to supply additional (non-potable) water to the development. Initial investigations indicated poor quality of water and the yield of 1 l/s could necessitate more than one borehole. Further study is required to determine the position/s of the borehole/s. During this phase of the project, the detail of water provision will be finalised.

From the boreholes, water will be pumped to the offices and toilets via an underground pipe system. It is foreseen that a network of Ø 110 / Ø 160 mm main feed lines will be provide for the development. Analysis during the design stage, will however verify the required sizes of the water lines.

Sewage

Sewage during construction will be managed via a portable toilet contract with regular servicing.

Sewage during operation will be managed via an on-site sewage/effluent treatment plant. There is currently no existing sewer network services on the terrain or any municipal reticulation system close to the proposed site for development. It is therefore proposed that a package plant be constructed on site which can treat the effluent from the offices/toilets. It is furthermore proposed that the sewer treatment occurs upstream of the attenuation facility/retention pond which can then contribute to the capacity to irrigate the green areas.

A reticulation underground system will be provided, leading from wet areas to the treatment plan, via sewer pipes and manholes. It is foreseen that a network of 160 mm piping will be adequate with smaller 110mm individual connections to different buildings.

Waste Management

Any solid waste from the activity during construction and operation will be removed to the nearest registered Municipal landfill site, or appropriately registered waste disposal site.

Access

Access to the proposed development site will be from a dedicated, two-way intersection as per the diagram provided in Appendix G11 of the BAR (*Final Traffic Study*) and Appendix G12 of the BAR (*Road Access Possibilities*). According to the Final Traffic Study, a 2012 Arterial Management Plan (AMP) indicated that an intersection off the R304 at \pm km50.58 will be required. The Final Traffic Study proposes that this intersection be relocated to km50.37, allowing for a municipal street to be constructed along the northern boundary of the development site which would provide access to the cemetery.

The proposed access road off the R304 (MR174) should be a Class 3 municipal street which would also serve possible future developments to the east. The distance from the edge of the R304 shoulder to the proposed development's western boundary is approximately 28m. The proposed actual main entrance to the cemetery and memorial park is approximately 460m from the R304. This would ensure that any queuing that may occur at the entrance to the cemetery would not impact the two-way intersection of the access road on MR174. The access road (from and to) the R304 will be stop controlled.

The 2012 AMP further concluded the section of road in which the intersection will occur will require additional through lanes, i.e. two lanes per direction within the next 10 to 15 years and will operate acceptably for the next 30 years under moderate growth scenarios. However, with higher growth, a third through lane per direction will be required in the next 25 to 30 years."

It is not anticipated that the signalisation of the intersection on the R304 (MR174) will be required before the dualing of the R304 takes place. The proposed location for the access will still ensure sufficient access spacing to the adjacent accesses/intersections.

Page four of Appendix G12 of the BAR also states that:

- Posted Speed Limit on MR174 (or R304) is 100km/h
- Access only from MR174 (R304) according to AMP
- Shoulder Sight Distance required: 220m (Passenger Vehicle, 15m road width)
- Stopping Sight Distance: 155m (UTG1)
- AADT: \pm 12 900 vpd (15 January 2016)
- Will require right turn lane
- WCG Design Dwg: WCS/11/2/D3
- Access will need to comply with access spacing (MR174 AMP)

Access control to the proposed development will most likely be facilitated via fencing/palisade fencing and a lockable gate with a security guard on duty. This also provides a local employment opportunity.

Conclusion

Based on the specialist reports in Appendix G of the BAR, the proposed Calcutta Public Cemetery and Memorial Park will provide a much-needed service to the regional community whilst also facilitating the rehabilitation and protection of the property in terms of biodiversity and existing water courses.

In addition, the cultural/heritage aspects of the property which have been somewhat neglected and lost, will be rehabilitated and preserved through the proposed development.

The aesthetic impact of the proposed public cemetery and memorial park will improve since the current property is infested with alien plants and is often used as a dumping ground.

The following specialist assessment further highlights the environmental benefits of the proposed development, as indicated below:

- i. **Biodiversity** – the site currently has a low biodiversity significance but can be rehabilitated provided the requirements as detailed in the botanical statement/scan reports (attached as Appendices G1 and G2) are taken into account.
- ii. **Freshwater** – the proposed development will likely result in a net positive change from the current land-use (or lack thereof) in terms of freshwater impact, as long as the wetlands and drainage lines, with buffers, are incorporated within the parkland and rehabilitated and the freshwater rehabilitation, maintenance and management plan (FRMMP) attached as Appendix G5, are adhered to.
- iii. **Geohydrology** – the majority of the site is classified as having a 'low/medium' groundwater vulnerability rating. The southern portion of the site has been classified as 'medium', grading into a 'very high' vulnerability classification.
- iv. **Geotechnical** – provided the cemetery is sited as recommended in the geotechnical report, the site is considered satisfactory for development of a cemetery.
- v. **Heritage** – The potential impact of the proposed cemetery site on the old outspan is significant in that it is a wholesale change of land use from woodlot to cemetery. However, the draft concept plan has sensitively, if not, fortuitously, allowed for the conservation of the southern outspan site and surrounds in its overall framework. It would now be placed in the buffer informal parkland zone. Were the outspan site and surrounds carefully conserved and landscaped, this would retain a memory of its core purpose and allow for local associations to be retained of the site's outspan purpose and character thus mitigating associative impact and retaining landmark value.
 - a. **Archaeology** – Archaeological visibility is extremely low due to dense vegetation cover, but indications are that the receiving environment is not a sensitive archaeological landscape.

- b. Palaeontological – No fossil remains were recorded on Farm Calcutta RE/29 during the short palaeontological site visit. It is concluded that the palaeontological sensitivity of the Memorial Park study area is very low.
- c. Visual – The proposed development will have a moderate impact on the landscape causing some change to the visual environment. The development's visual impact has site-related to local extent, long term duration, medium intensity, definite probability, and medium significance on the landscape.
- vi. **Socio-economic** – socio-economic costs and benefits were listed in section five of the report. Eleven potentially positive impacts (job and skill levels increase; the creation of a social space; continuation of social networks; equality and exclusivity; employment equity of vulnerable groups; use of social amenities; positive change in the sense of place; preservation of social history; access to leisure opportunities; access to natural resources; sales and GGP) versus three (crime/neglect; individual and family changes; dust and noise levels) potentially negative impacts were listed related to the proposed development.

According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations).

Refer to Appendix D for Biodiversity sensitivity maps.

A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree *Eucalyptus*, but with *Acacia saligna* also prominent (Also refer to Appendix C -Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary.

The proposed development will positively impact and improve the ESA, CBA condition, as well as eliminate the dense infestation of alien trees on the property.

In addition to preserving and promoting the introduction of indigenous vegetation in the area, the proposed public cemetery and memorial park will preserve the cultural heritage of the regions Outspan site and provide employment for local individuals, while meeting the need for the essential service of a contextualised public cemetery and memorial park.

Considering all the information, it is not envisaged that this will have a significant overall negative impact on the environment.

It is therefore recommended that this application be authorised with the necessary conditions of approval as described throughout this BAR.

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

| | |
|---|---|
| Location of all proposed sites: | Calcutta Farm No. 29, Stellenbosch Municipality, Western Cape |
| Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site: | Calcutta Farm No. 29, Stellenbosch Municipality, Western Cape |
| Property size(s) in m ² for each proposed site: | 396 400 m ² (39.64 ha) |
| Development footprint size(s) in m ² : | 300 000 m ² (30 ha) |
| Surveyor General (SG) 21 digit code for each proposed site: | C06700000000002900000 |

2. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:

YES ✓

NO

(b) Provide a detailed description of the scope of the proposed development (project).

Proposed Development Rationale:

Public cemeteries in the Stellenbosch Municipal area are nearing maximum occupation. It is estimated that most of the existing municipal/public cemeteries in the region have less than 5% of their original capacity left to provide surrounding communities with this important service. The shortage of suitable land for the development of cemeteries has long been one of the major challenges facing many South African municipalities.

Despite the availability of various alternatives, conventional burial and funeral practises are still the most common and preferred, thus, funeral and burial services offered by local municipalities cannot be decontextualised from the cultural and religious customs that communities follow (SALGA, 2016).

The strategy employed by the Applicant, Stellenbosch Municipality, was to expand local cemeteries where possible, as an interim measure, while establishing new cemeteries in at least two of the three Municipal regions identified i.e. Northern Stellenbosch, Eastern Stellenbosch (Franshoek Valley) and Southern Stellenbosch. This would allow for easier access by the various communities in these regions to the facilities.

To address the increasing predicament of a lack of available regional burial space, Stellenbosch Municipality appointed CK Rumboll and Partners to facilitate the identification and various licencing processes required for the establishment of at least two regional cemeteries.

In the period from 2015 to end 2017, utilising, as a starting point, the Cemetery Feasibility Study, Stellenbosch Municipal Area, Consultative Draft 1 Report (2006) as prepared by Dennis Moss Partnership and attached as Appendix N to this BAR, as well as the nine potential sites approved by the Stellenbosch Municipal Council at a February 2015 Council meeting, over fifty potential proposed development sites were identified and investigated.

By mid-2017, through a systematic assessment of various criteria as detailed in Appendix L (*First Report, Final October 2016: Identification and Acquisition of Authorisations and Approvals for the Establishment of One or More Regional Cemeteries for Stellenbosch Municipality*) and Appendix M

(Motivation to obtain Stellenbosch Council's endorsement of Regional Cemetery Sites in fulfilment of tender B/SM No. 17/16: Acquisition of Authorisations and Approvals for the establishment of one or more regional cemeteries for Stellenbosch Municipality), five potential sites for the entire Municipal area were identified as best suited for the proposed development of regional public cemeteries and memorial parks.

These five sites comprised two from the nine potential sites already approved by the Municipality in 2015 and three additional sites. Municipal endorsement for the three additional sites was obtained in April 2017 as indicated under point 7.3.2 of the 8th Council Meeting of the Council of Stellenbosch Municipality (partial minutes attached as Appendix K).

The five potential sites were further evaluated by a team of specialists in terms of their suitability, albeit to varying degrees, to service the three relevant Municipal regions identified above. Besides regional suitability, and the criteria mentioned in Appendices L and M, two of the critical factors in determining whether land was viable for the proposed development or to be used as a possible alternative development site, were ownership of the land and whether the land had already been earmarked for some other infrastructural or development project.

Although some of the preliminary reports by the different specialist members on the project team, list various sites in a comparison, the purpose of these reports was to refine the list of potential sites as well as possible alternative sites per Municipal region, leaving at least two municipal regions with potential sites and associated alternative sites.

In the case of the proposed Calcutta public cemetery and memorial park, after a thorough process of assessing several sites in the Northern Stellenbosch region, two sites (viz. De Novo and Calcutta) would remain as the preferred site and an alternative site for proposal in the NEMA authorisation applicant process (besides the no-go alternative).

However, due to land ownership issues (the land is not owned by Stellenbosch Municipality and transfer of ownership from the state to the local municipality was not forthcoming), as well as several competing land uses at a national/state and local level which were already allocated to the property, and the fact that the biodiversity rating placed it as the most sensitive of the five shortlisted sites, De Novo was precluded from the shortlist of potential sites/alternative sites.

Therefore, in the Northern Stellenbosch Municipal region, only one alternative remained to provide a regional cemetery and memorial park for the area – Calcutta. This BAR focuses on the Northern Municipal region only.

Proposed Development Description:

The Applicant, Stellenbosch Municipality, is the owner of the land proposed for this development. The land, remainder of Calcutta Farm No. 29 is currently zoned for Agricultural 1.

The proposed Calcutta public cemetery and memorial park aims to promote a novel concept to that of traditional public cemeteries: The memorial park concept is well suited to Stellenbosch Municipality's desire to keep the region's 'green'/garden status.

Currently the Calcutta site is degraded and heavily infested with alien *Eucalyptus* species and some *Acacia saligna*. Clearance of the property for development will facilitate the reintroduction of indigenous vegetation in landscaped areas. Besides allocating areas for traditional burial methods and a remembrance wall or columbarium, a garden of remembrance will be established where

the ashes of a loved one may be buried at the foot of a tree or shrub indigenous to the area. The Garden of remembrance will follow a landscaped plan and patrons may purchase a tree and plaque to serve as a living memory of their deceased loved one. This also serves as greener approach to the establishment of burial grounds, while promoting an alternate, less land demanding options for burial and/or remembrance.

The seasonal stream that runs through the western portion of the proposed development site will be rehabilitated and besides the initial restoration and rehabilitation and an access bridge across the watercourse, no other development will take place within the 32m setback required for watercourse conservation.

To the west of the stream, it is proposed that burial free areas which will form of the 'public park' area of the memorial park be established. Conservation and awareness regarding the plant life , history of the site and the heritage resources of the site will be undertaken in this region. Several walkways and seating benches within the public cemetery and memorial park will be made available particularly along the south-western section of the property where educational information boards/pedestals highlighting the unique "outspan" heritage of the region will be highlighted to help preserve this part of the region's history – a modern analogy of the resting places the historic 'outspans' provided.

It is proposed that the memorial park be an area where critical areas of biodiversity and heritage are rehabilitated and preserved, as much as possible as a part of the 'park' aspect of the cemetery/memorial park. In additional, indigenous vegetation reintroduction will be promoted through the landscaping and memorial park and garden of remembrance areas within the proposed public cemetery and memorial park.

Community or social utilisation of the memorial park other than for burial/remembrance purposes is advocated through the rehabilitation and preservation of the "Outspan" heritage significance of particularly the south-western section of the proposed development site, as well as the rehabilitation of the seasonal stream and re-introduction of indigenous riparian habitat within the set back of the currently degraded seasonal stream that runs through the western/south western portion of the property.

The current proposed site is strategically positioned to meet this community need since it services the northern region of the Municipal area and will be relatively convenient for local communities to use.

Legislated Environmental Requirements

The National Environmental Management Act No. 107 of 1998 (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority, based on the findings of an Environmental Impact Assessment.

The NEMA is a national act, which is enforced by the national Department of Environmental Affairs (DEA). In the Western Cape, these national powers have been delegated to the Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities:

Government Notice R327 (Listing Notice 1):

Activity No. 12: "**Development** within a watercourse/32m from a watercourse."

Activity No. 19: "The **infilling or depositing** of any material of more than **10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse**;

(a) will occur behind a development setback;

(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or

(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies."

Activity No. 23: "The **development of cemeteries** of 2500 square metres or more in size."

Activity No. 24: "The **development** of;

(i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or

(ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;

but excluding;

(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or

(b) roads where the entire road falls within an urban area."

Government Notice R324 (Listing Notice 3):

Activity No. 4: "The **development of a road** wider than 4 metres with a reserve less than 13.5 metres."

Activity No. 12: "The **clearance of an area** of 300 square metres or more of **indigenous vegetation** except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan."

Site Description

The property is approximately 39.64 ha and a maximum of 30 ha is proposed for the development of the public cemetery and memorial park (which includes any buffer/setback areas).

An ephemeral stream runs almost parallel through most of the western boundary portion of the site. The stream is very degraded and will be rehabilitated and restored as part of the development. Associated setbacks and wetland areas will be accommodated as part of the 'park' aspect of the development. It is proposed that one or two walkways/bridges will cross the stream.

The site co-ordinates are **33° 51' 13.55"S, 18° 48' 35.96"E**.

Please refer to **Appendix A** for the locality map, as well as **Appendix B** (site plans) and **Appendix C** for photographs of the site.

Civil Services

Storm water will be transported from hardened surfaces (roofs of buildings and roads) to a storm water attenuation system or retention pond where storm water can be polished and used for irrigation of gardens/trees/park areas.

Storm water from outside the actual developed cemetery footprint within the proposed site i.e. purely from park areas, will be incorporated into the storm water reticulation system leading to the attenuation facility.

The option of providing permeable paving will be investigated in order to transport storm water from the development. It is envisaged that any overflow (however unlikely) from the attenuation facility could be taken to the ephemeral stream on the western boundary.

The provision of a cut off trench facility on the north and eastern boundaries will be investigated during the design phase.

Surface storm water from the areas earmarked for graves and informal areas will be taken via swales or rock lines channels to the storm water reticulation system in order to feed into the attenuation facility.

Subsurface drainage will be provided to minimise the potential negative effects of a possible high-water table in winter months. Soil tests and profiling of the terrain have been performed to establish the exact condition of the in-situ material and water table. The design of pavement structures and other amenities will take cognizance of the prevailing geotechnical conditions.

Electrical Services

It is further proposed that while electricity may be provided by Eskom, wherever possible, electricity supply should be supplied through off-grid electricity resources (e.g. solar panels). The terrain for the development is within the Eskom Provision Area and the option of connecting to Eskom power will be investigated. It is however envisaged that a solar and/or wind turbine system be provided in order to supply electricity to the development.

During winter months sunlight might necessitate the introduction of a wind turbine to provide electricity. The cost of this installation will be compared to the rates from Eskom as a supplier and installation costs. The position of the closest Eskom connecting point will contribute to additional costs, if connecting electrical lines need to be established. During the design phase of the electrical distribution network, both options will be investigated.

Water

There is a Municipal potable water pipeline that runs along the R304 adjacent to the proposed site. A single point tie in will be made to this line for potable water only. Refer to Appendix E5 of BAR (Communication from Stellenbosch Municipality).

Non-potable water for toilets and irrigation will be obtained from the on-site water treatment package plant and reed-bed polishing system i.e. will be recycled. It is proposed that a borehole/s be provided to supply additional (non-potable) water to the development. Initial investigations indicated poor quality of water and the yield of 1 l/s could necessitate more than one borehole. Further study is required to determine the position/s of the borehole/s. During this phase of the project, the detail of water provision will be finalised.

From the boreholes, water will be pumped to the offices and toilets via an underground pipe system. It is foreseen that a network of Ø 110 / Ø 160 mm main feed lines will be provide for the development. Analysis during the design stage, will however verify the required sizes of the water lines.

Sewage

Sewage during construction will be managed via a portable toilet contract with regular servicing.

Sewage during operation will be managed via an on-site sewage/effluent treatment plant. There is currently no existing sewer network services on the terrain or any municipal reticulation system close to the proposed site for development. It is therefore prosed that a package plant be constructed on site which can treat the effluent from the offices/toilets. It is furthermore proposed

that the sewer treatment occurs upstream of the attenuation facility/retention pond which can then contribute to the capacity to irrigate the green areas.

A reticulation underground system will be provided, leading from wet areas to the treatment plan, via sewer pipes and manholes. It is foreseen that a network of 160 mm piping will be adequate with smaller 110mm individual connections to different buildings.

Waste Management

Any solid waste from the activity during construction and operation will be removed to the nearest registered Municipal landfill site, or appropriately registered waste disposal site.

Access

Access to the proposed development site will be from a dedicated, two-way intersection as per the diagram provided in Appendix G11 of the BAR (*Final Traffic Study*) and Appendix G12 of the BAR (*Road Access Possibilities*). According to the Final Traffic Study, a 2012 Arterial Management Plan (AMP) indicated that an intersection off the R304 at ±km50.58 will be required. The Final Traffic Study proposes that this intersection be relocated to km50.37, allowing for a municipal street to be constructed along the northern boundary of the development site which would provide access to the cemetery.

The proposed access road off the R304 (MR174) should be a Class 3 municipal street which would also serve possible future developments to the east. The distance from the edge of the R304 shoulder to the proposed development's western boundary is approximately 28m. The proposed actual main entrance to the cemetery and memorial park is approximately 460m from the R304. This would ensure that any queuing that may occur at the entrance to the cemetery would not impact the two-way intersection of the access road on MR174. The access road (from and to) the R304 will be stop controlled.

The 2012 AMP further concluded the *section of road in which the intersection will occur will require additional through lanes, i.e. two lanes per direction within the next 10 to 15 years and will operate acceptably for the next 30 years under moderate growth scenarios. However, with higher growth, a third through lane per direction will be required in the next 25 to 30 years.*"

It is not anticipated that the signalisation of the intersection on the R304 (MR174) will be required before the dualling of the R304 takes place. The proposed location for the access will still ensure sufficient access spacing to the adjacent accesses/intersections.

Page four of Appendix G12 of the BAR also states that:

- Posted Speed Limit on MR174 (or R304) is 100km/h
- Access only from MR174 (R304) according to AMP
- Shoulder Sight Distance required: 220m (Passenger Vehicle, 15m road width)
- Stopping Sight Distance: 155m (UTG1)
- AADT: ±12 900 vpd (15 January 2016)
- Will require right turn lane
- WCG Design Dwg: WCS/11/2/D3
- Access will need to comply with access spacing (MR174 AMP)

Access control to the proposed development will most likely be facilitated via fencing/palisade fencing and a lockable gate with a security guard on duty. This also provides a local employment opportunity.

Conclusion

Based on the specialist reports in Appendix G of the BAR, the proposed Calcutta Public Cemetery and Memorial Park will provide a much-needed service to the regional community whilst also facilitating the rehabilitation and protection of the property in terms of biodiversity and existing water courses.

In addition, the cultural/heritage aspects of the property which have been somewhat neglected and lost, will be rehabilitated and preserved through the proposed development.

The aesthetic impact of the proposed public cemetery and memorial park will improve since the current property is infested with alien plants and is often used as a dumping ground.

The following specialist assessment further highlights the environmental benefits of the proposed development, as indicated below:

- i. **Biodiversity** – the site currently has a low biodiversity significance but can be rehabilitated provided the requirements as detailed in the botanical statement/scan reports (attached as Appendices G1 and G2) are taken into account.
- ii. **Freshwater** – the proposed development will likely result in a net positive change from the current land-use (or lack thereof) in terms of freshwater impact, as long as the wetlands and drainage lines, with buffers, are incorporated within the parkland and rehabilitated and the freshwater rehabilitation, maintenance and management plan (FRMMP) attached as Appendix G5, are adhered to.
- iii. **Geohydrology** – the majority of the site is classified as having a 'low/medium' groundwater vulnerability rating. The southern portion of the site has been classified as 'medium', grading into a 'very high' vulnerability classification.
- iv. **Geotechnical** – provided the cemetery is sited as recommended in the geotechnical report, the site is considered satisfactory for development of a cemetery.
- v. **Heritage** – The potential impact of the proposed cemetery site on the old outspan is significant in that it is a wholesale change of land use from woodlot to cemetery. However, the draft concept plan has sensitively, if not, fortuitously, allowed for the conservation of the southern outspan site and surrounds in its overall framework. It would now be placed in the buffer informal parkland zone. Were the outspan site and surrounds carefully conserved and landscaped, this would retain a memory of its core purpose and allow for local associations to be retained of the site's outspan purpose and character thus mitigating associative impact and retaining landmark value.

- a. Archaeology – Archaeological visibility is extremely low due to dense vegetation cover, but indications are that the receiving environment is not a sensitive archaeological landscape.
 - b. Palaeontological – No fossil remains were recorded on Farm Calcutta RE/29 during the short palaeontological site visit. It is concluded that the palaeontological sensitivity of the Memorial Park study area is very low.
 - c. Visual – The proposed development will have a moderate impact on the landscape causing some change to the visual environment. The development's visual impact has site-related to local extent, long term duration, medium intensity, definite probability, and medium significance on the landscape.
- vi. **Socio-economic** – socio-economic costs and benefits were listed in section five of the report. Eleven potentially positive impacts (job and skill levels increase; the creation of a social space; continuation of social networks; equality and exclusivity; employment equity of vulnerable groups; use of social amenities; positive change in the sense of place; preservation of social history; access to leisure opportunities; access to natural resources; sales and GGP) versus three (crime/neglect; individual and family changes; dust and noise levels) potentially negative impacts were listed related to the proposed development.

According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations).

Refer to Appendix D for Biodiversity sensitivity maps.

A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree *Eucalyptus*, but with *Acacia saligna* also prominent (Also refer to Appendix C -Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary.

The proposed development will positively impact and improve the ESA, CBA condition, as well as eliminate the dense infestation of alien trees on the property.

In addition to preserving and promoting the introduction of indigenous vegetation in the area, the proposed public cemetery and memorial park will preserve the cultural heritage of the regions Outspan site and provide employment for local individuals, while meeting the need for the essential service of a contextualised public cemetery and memorial park.

Please note: This description must relate to the listed and specified activities in paragraph (d) below.

- (c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

| | |
|--|---|
| (i) the period within which commencement must occur, | Uncertain - it is hoped during 2020/2021 due to the rapid depletion of current burial |
|--|---|

| | | |
|-------|---|---|
| | | space together with the need to obtain a water use licence. Should an environmental authorisation (EA) be granted, seven calendar days' notice, in writing, will be given to the Competent Authority before commencement of construction activities. |
| (ii) | the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects; | The EA for construction must be valid for five years from the date of issue which ideally will be 2019/2020 and the development/construction must be concluded within five years from the date of commencement of the first listed activity. |
| (iii) | the period that should be granted for the non-operational aspects of the environmental authorisation; and | A period of 10 years should be granted for the development of the non-operational aspects of the EA. |
| (iv) | the period that should be granted for the operational aspects of the environmental authorisation. | At least 30 years |

Please note: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

Please note: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):

| Listed Activity No(s): | Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 327) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
|------------------------|---|--|--|
| 12 | "Development within a watercourse/32m from a watercourse." | An ephemeral stream runs almost parallel through most of the western boundary portion of the site. The stream is very degraded and will be rehabilitated and restored as part of the development. Associated setbacks and wetland areas will be accommodated as part of the 'park' aspect of the development. It is proposed that one or two | Development and operational |

| | | | |
|----|--|--|-----------------------------|
| | | walkways/bridges and a grass block 'drift'/low water crossing will cross the stream. | |
| 19 | <p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>(a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies."</p> | <p>An ephemeral stream runs almost parallel through most of the western boundary portion of the site. The stream is very degraded and will be rehabilitated and restored as part of the development. Associated setbacks and wetland areas will be accommodated as part of the 'park' aspect of the development. It is proposed that one or two walkways/bridges and a grass block 'drift'/low water crossing will cross the stream.</p> <p>What appears as the northern most portion of the ephemeral stream is actually an artificial/dug drainage line (indicated in Appendices G3 to G5). This portion will be restored filled in and rehabilitated to its natural condition.</p> <p>Stormwater will also be managed through swales and a retention/detention pond and landscaping, freshwater rehabilitation will require the depositing or excavation of more than 10m³ from a watercourse.</p> | Development and operational |
| 23 | "The development of cemeteries of 2500 square metres or more in size." | The total property is approximately 39.64ha and a maximum of 30ha is proposed for the development of the public cemetery and memorial park (which includes any buffer/setback areas). | Development and operational |
| 24 | "The development of; (i) a road for which an environmental authorisation was obtained for the route determination | A new access road and/or slip-road will need to be constructed from the existing public road to the development. Access to the proposed | Development |

| | | | |
|-------------------------------|---|---|---|
| | <p>in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</p> <p>(ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding;</p> <p>(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or</p> <p>(b) roads where the entire road falls within an urban area."</p> | <p>development site will be from a dedicated, two way road and will eventually be a circle or signaled intersection as per the diagram provided in the Proposed Establishment of a Memorial Park (Cemeteries), Stellenbosch Municipality, Road Access Possibilities Report, attached as Appendix G11 (Final Traffic Study).</p> | |
| Listed Activity No(s): | Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3 (GN No. R. 324) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
| 4 (possibly) | "The development of a road wider than 4 metres with a reserve less than 13.5 metres." | A new access road and/or slip-road will need to be constructed from the existing public road to the development. | Development - to be confirmed after Spring botanical scan (once alien trees cleared from site) |
| 12 | "The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan." | Clearance of proposed development site after verifying (as per CapeNature's comment captured in Appendices G1 and G2 (Biodiversity Assessments) | Development and operational |

Waste management activities in terms of the NEM: WA (GN No. 921):

| | | |
|-----------------------------------|--|---|
| Category A Listed Activity No(s): | Describe the relevant <u>Category A</u> waste management activity in writing as per GN No. 921 | Describe the portion of the development that relates to the applicable listed activity as per the project description |
| N/A | | |
| | | |

Note: If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I**.

Atmospheric emission activities in terms of the NEM: AQA (GN No. 893):

| | | |
|------------------------|--|--|
| Listed Activity No(s): | Describe the relevant atmospheric emission activity in writing as per GN No. 893 | Describe the portion of the development that relates to the applicable listed activity as per the project description. |
| N/A | | |
| | | |

- (e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (e.g., architectural drawings or perspectives, engineering drawings, process flowcharts, etc.).

| | | |
|---|-------|------|
| Buildings Provide brief description below: | YES ✓ | NO |
| Proposed associated infrastructure includes a bridge/s to cross the watercourse and access the site, structured pathways around and within the site, an entrance wall and perimeter fencing, parking, a memorial wall, possible columbarium, offices, storage room, ablutions (septic tank), possible borehole and solar panel. | | |
| Infrastructure (e.g., roads, power and water supply/ storage) Provide brief description below: | YES ✓ | NO |
| Proposed associated infrastructure includes access roads leading to and within the site, and possible intersection and/or slip way to facilitate access to and from the R 304. It is proposed that a renewable, 'off-grid' solution to electricity be utilised. The small amount of electricity required for lighting could be supplied from solar panels. Water will either be supplied by the local Municipality, or sourced from site (i.e. possible borehole groundwater extraction). | | |
| Processing activities (e.g., manufacturing, storage, distribution) Provide brief description below: | YES | NO ✓ |
| | | |
| Storage facilities for raw materials and products (e.g., volume and substances to be stored) Provide brief description below: | YES | NO ✓ |
| | | |
| Storage and treatment facilities for effluent, wastewater or sewage: Provide brief description below: | YES ✓ | NO |
| Septic tanks will be utilised for ablutions – these may need to be serviced by the Municipality from time to time. Storm water runoff from the site will be directed towards the watercourse on or directly north-east of the proposed site. | | |
| Storage and treatment of solid waste Provide brief description below: | YES | NO ✓ |
| | | |
| Facilities associated with the release of emissions or pollution. Provide brief description below: | YES | NO ✓ |
| | | |
| Other activities (e.g., water abstraction activities, crop planting activities) – Provide brief description below: | YES ✓ | NO |
| Possible groundwater extraction for water supply to the site for amenities and maintenance of the park areas. | | |

3. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

| | | |
|--|---------|----------------|
| (a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken | 396 400 | m ² |
| (b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken | 300 000 | m ² |
| (c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (i.e., the physical size of the development together with all its associated structures and infrastructure) | 300 400 | m ² |
| (d) Size of the activity: Indicate the physical size (footprint) of the development proposal | 300 000 | m ² |
| (e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal | (L) N/A | m |
| | (W) N/A | m |
| (f) For storage facilities: Indicate the volume of the storage facility | N/A | m ³ |
| (g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated) | N/A | m ³ |

4. SITE ACCESS

| | | |
|---|-------|----|
| (a) Is there an existing access road? (Informal road from R304 to site) | YES ✓ | NO |
|---|-------|----|

(b) If no, what is the distance in (m) over which a new access road will be built?

m

(c) Describe the type of access road planned:

Access to the proposed development site will be from a dedicated, two-way intersection as per the diagram provided in Appendix G11 of the BAR (*Final Traffic Study*) and Appendix G12 of the BAR (*Road Access Possibilities*). According to the the Final Traffic Study, a 2012 Arterial Management Plan (AMP) indicated that an intersection off the R304 at \pm km50.58 will be required.

The Final Traffic Study proposes that this intersection be relocated to km50.37, allowing for a municipal street to be constructed along the northern boundary of the development site which would provide access to the cemetery.

The proposed access road off the R304 (MR174) should be a Class 3 municipal street which would also serve possible future developments to the east. The distance from the edge of the R304 shoulder to the proposed development's western boundary is approximately 28m. The proposed actual main entrance to the cemetery and memorial park is approximately 460m from the R304. This would ensure that any queuing that may occur at the entrance to the cemetery would not impact the two-way intersection of the access road on MR174. The access road (from and to) the R304 will be stop controlled.

The 2012 AMP further concluded the section of road in which the intersection will occur will require additional through lanes, i.e. two lanes per direction within the next 10 to 15 years and will operate acceptably for the next 30 years under moderate growth scenarios. However, with higher growth, a third through lane per direction will be required in the next 25 to 30 years."

It is not anticipated that the signalisation of the intersection on the R304 (MR174) will be required before the dualling of the R304 takes place. The proposed location for the access will still ensure sufficient access spacing to the adjacent accesses/intersections.

Page four of Appendix G12 of the BAR also states that:

- Posted Speed Limit on MR174 (or R304) is 100km/h
- Access only from MR174 (R304) according to AMP
- Shoulder Sight Distance required: 220m (Passenger Vehicle, 15m road width)
- Stopping Sight Distance: 155m (UTG1)
- AADT: \pm 12 900 vpd (15 January 2016)
- Will require right turn lane
- WCG Design Dwg: WCS/11/2/D3
- Access will need to comply with access spacing (MR174 AMP)

Please note: The position of the proposed access road must be indicated on the site plan.

5. DESCRIPTION OF THE PROPERTY(IES) ON WHICH THE LISTED ACTIVITY(IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY(IES) ON THE PROPERTY

- 5.1 Provide a description of the property on which the listed activity(ies) is/are to be undertaken and the location of the listed activity(ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

There are no alternative development properties to service this region of the Municipality although alternative site layout plans have been investigated and three possible alternatives, besides the no-go alternative, are presented in this report. Alternative 1 is the best practical environmental

and aesthetically pleasing option i.e. the preferred option with alternative 3 being the least preferred layout plan.

| Coordinates of all the proposed activities on the property or properties (sites): | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec.) | | |
|---|---------------------------------|-----|--------|-----------------------------------|-----|--------|
| | 33° | 51' | 13.55" | 18° | 48' | 35.96" |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |

Note: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.

- 5.2 Provide a description of the area where the aquatic or ocean-based activity(ies) is/are to be undertaken and the location of the activity(ies) and alternative sites (if applicable).

Rehabilitation and restoration of the watercourse on the proposed site.

| Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable): | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec) | | |
|---|---------------------------------|-----|--------|----------------------------------|-----|--------|
| | 33° | 51' | 13.55" | 18° | 48' | 35.96" |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |

- 5.3 For a linear development proposal, please provide a description and coordinates of the corridor in which the proposed development will be undertaken (if applicable).

N/A

| For linear activities: | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec) | | |
|----------------------------------|---------------------------------|---|---|----------------------------------|---|---|
| • Starting point of the activity | ° | ' | " | ° | ' | " |
| • Middle point of the activity | ° | ' | " | ° | ' | " |
| • End point of the activity | ° | ' | " | ° | ' | " |

Note: For linear development proposals longer than 1000m, please provide an addendum with co-ordinates taken every 250m along the route. All important waypoints must be indicated and the GIS shape file provided digitally.

- 5.4 Provide a location map (see below) as **Appendix A** to this report that shows the location of the proposed development and associated structures and infrastructure on the property; as well as a detailed site development plan / site map (see below) as **Appendix B** to this report; and if applicable, all alternative properties and locations. The GIS shape files (.shp) for maps / site development plans must be included in the electronic copy of the report submitted to the competent authority.

| | |
|---------------|---|
| Locality Map: | <p>The scale of the locality map must be at least 1:50 000. For linear development proposals 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 map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; • a linear scale; • the prevailing wind direction (during November to April and during May to October); and • GPS co-ordinates (to 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 degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection). <p>For an ocean-based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.</p> <p>Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.</p> |
|---------------|---|

Site Plan:

| | |
|--|---|
| | <p>Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:</p> <ul style="list-style-type: none"> • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan. • The position of each element of the application as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development <u>must</u> be indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> ◦ Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland; ◦ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); ◦ Ridges; ◦ Cultural and historical features; ◦ Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow <p>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.</p> <p>The GIS shape file for the site development plan(s) must be submitted digitally.</p> |
|--|---|

6. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached as **Appendix C** to this report. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

SECTION B: DESCRIPTION OF THE RECEIVING ENVIRONMENT

Site/Area Description

For linear development proposals (pipelines, etc.) as well as development proposals that cover very large sites, it may be necessary to complete copies of this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area that is covered by each copy on the Site Plan.

1. GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

| | | | |
|------|-------------------|------------|------------------|
| Flat | Flatter than 1:10 | 1:10 – 1:4 | Steeper than 1:4 |
|------|-------------------|------------|------------------|

2. LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box(es)).

| | | | | | | | | |
|-----------|---------|-------------------------------|---------------|-------------|-------|----------------------------|------|-----------|
| Ridgeline | Plateau | Side slope of hill / mountain | Closed valley | Open valley | Plain | Undulating plain/low hills | Dune | Sea-front |
|-----------|---------|-------------------------------|---------------|-------------|-------|----------------------------|------|-----------|

(b) Provide a description of the location in the landscape.

The proposed site is visible within the larger open landscape as a dense Eucalyptus plantation bound to the north by farm lands/vineyards, to the west by the higher-lying R304 regional road and wide road reserve and bound to the east by grassland, scattered smaller trees (not as dense as the plantation) and a little further away, a northeast/southwest watercourse which is a tributary to the Plankenburg River.

The proposed site to be developed slopes gently towards the south west and south east but is generally flat within an open landscape.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

| | | | |
|---|-------|-----|---------|
| Shallow water table (less than 1.5m deep) | YES | NO✓ | UNSURE |
| Seasonally wet soils (often close to water bodies) | YES | NO | UNSURE✓ |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO✓ | UNSURE |
| Dispersive soils (soils that dissolve in water) | YES | NO | UNSURE✓ |
| Soils with high clay content | YES | NO | UNSURE✓ |
| Any other unstable soil or geological feature | YES | NO | UNSURE✓ |
| An area sensitive to erosion | YES | NO | UNSURE✓ |
| An area adjacent to or above an aquifer. | YES✓ | NO | UNSURE |
| An area within 100m of a source of surface water | YES✓ | NO | UNSURE |
| An area within 500m of a wetland | YES✓ | NO | UNSURE |
| An area within the 1:50 year flood zone | YES✓* | NO | UNSURE |
| A water source subject to tidal influence | YES | NO✓ | UNSURE |

* The small watercourse to the west of the proposed site and the extreme edge on the east of the site close to the Plankenburg River tributary falls within the 1:50 year flood line of a river

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department.
(Information in respect of the above will often be available at the planning sections of local authorities. The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Indicate the type of geological formation underlying the site.

| Granite | Shale | Sandstone | Quartzite | Dolomite | Dolorite | Other (describe) |
|--|-------|-----------|-----------|----------|----------|------------------|
| Provide a description. | | | | | | |
| <p>The regional geology consists of:</p> <ul style="list-style-type: none"> Loam and Sandy Loam, Quaternary, overlying Greywacke, phyllite and quartzitic sandstone with interbedded lava and tuff of the Tygerberg Formation, Malmesbury Group. Granite Plutons comprising mainly coarse grained porphyritic with porphyritic biotite, fine grained leucocratic, hybridic and medium grained tourmaline-bearing variants outcrop towards the east of the site. | | | | | | |

4. SURFACE WATER

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

| | | | |
|---------------------|------|-----|--------|
| Perennial River | YES | NO✓ | UNSURE |
| Non-Perennial River | YES✓ | NO | UNSURE |
| Permanent Wetland | YES✓ | NO | UNSURE |
| Seasonal Wetland | YES✓ | NO | UNSURE |

| | | | |
|--------------------|-----|------|----------|
| Artificial Wetland | YES | NO | UNSURE ✓ |
| Estuarine / Lagoon | YES | NO ✓ | UNSURE |

(b) Provide a description.

According to the freshwater assessment:

The seasonal watercourse on the western portion of the proposed site were severely degraded mainly due to the dense forests of *Acacia saligna* and *Eucalyptus spp.* along with dense stands of alien grasses, particularly *Lolium perenne*.

Wetlands on site were found to be cryptic, exhibiting sparse wetland vegetation and wetland soil features that were difficult to discern given the level of disturbance and diverse colouration of the terrestrial baseline soils within the property, particularly where wildfires fires had taken place.

The only clear distinguishing soil feature present in every wetland was the surface organic layer discussed at length in the DWAF (2005, updated 2008) delineation manual and in the Job (2009) application thereof. Limited areas were found where substantial wetland hydrology was present.

Given the cryptic, disturbed nature of the wetlands it is possible that wetland areas presently exist that exhibit no wetland vegetation at present and where the surface organic layer was not easily discernible from the dark surface layer cause by repeated fires. It is therefore possible that wetlands are present that have not been delineated.

It is the specialist's opinion that the wetlands were likely much more extensive before the presence of the alien invasive forests that dominate the site. It is also likely that the original wetland hydrology will return once the alien trees have been removed. This area will be estimated by the specialist in the final freshwater assessment report by analysis of historical aerial photographs.

The drainage line indicated by the National Geospatial Information Service was found to be largely present and although wetlands were found within the northern parts thereof, it was found largely to be a true ephemeral drainage line dominated by alluvial soils without hydromorphic soil features present. The drainage line was found to have been subjected to substantial erosion related to the presence of invasive species and may in the past have had more substantial riparian zones and may have provided water wetlands on its banks.

The proposed development will likely result in a net positive change from the current land-use (or lack thereof) in terms of freshwater impact, so long as the wetlands and drainage lines, with buffers, are incorporated within the parkland and rehabilitated – refer to the Freshwater Rehabilitation, Maintenance and Management Plan (FRMMP) outline, attached as Appendix G5.

The entire development takes place within the NWA 500m regulated zone, so a risk assessment must be undertaken. If the risk-rating is high or medium, then a Water Use Licence (WUL) will be required. If, however, the risk rating is low, then registration under a General Authorisation will be required.

The Department of Water and Sanitation who administer the NWA apply a policy of 'no net loss' to wetlands. Therefore, since the development will result in construction or infilling within some portions of wetland, resulting in wetland loss, then a wetland offset is required.

It is proposed that the full FRMMP (based on the outline attached as Appendix G5) for any structures in or crossing the ephemeral stream (such as gabions, bridges, or grass block 'drifts') be included as a condition of the environmental authorisation.

It is further proposed that the full/final FRMMP be submitted to the DEA&DP two weeks (10 working days) prior to commencement of construction of the development that the approved final/full FRMMP be appended to the on-site EMP, as part of the construction and operational working documents of the proposed development.

The FRMMP forms part of the Water Use Licence Application (WULA) process which is not yet finalised and as indicated in Appendix G5, addresses the following environmental issues:

- Combatting unnatural channel and bank erosion;
- Improvement of hydrological volumes and function;
- Re-establishment of natural stream habitat.

These issues will be addressed through the following mechanisms:

- Alien clearing;
- Reshaping of the bed and banks of the stream;
- Re-establishment of natural riparian, instream and terrestrial buffer vegetation.

The rehabilitation activities will be undertaken in such a way that negative impacts to downstream water users during the initial rehabilitation phase are avoided where possible or minimised, and rehabilitation, maintenance and management will be undertaken in such a way that maximum long-term benefit in terms of water volume and quality is derived by on site and downstream water users from the rehabilitation activities.

It should be noted that the proposed development's layout plans have not been finalised as yet either. This impacts the WULA submission to DWS, as well as the final FRMMP, necessitating the above proposal regarding the FRMMP.

5. THE SEAFRONT / SEA

(a) Is the site(s) located within any of the following areas? (highlight the appropriate boxes).

If the site or alternative site is closer than 100m to such an area, please provide the approximate distance in (m).

| AREA | YES | NO | UNSURE | If "YES": Distance to nearest area (m) |
|---|-----|------|--------|--|
| An area within 100m of the high water mark of the sea | YES | NO ✓ | UNSURE | |
| An area within 100m of the high water mark of an estuary/lagoon | YES | NO ✓ | UNSURE | |
| An area within the littoral active zone | YES | NO ✓ | UNSURE | |
| An area in the coastal public property | YES | NO ✓ | UNSURE | |
| Major anthropogenic structures | YES | NO ✓ | UNSURE | |
| An area within a Coastal Protection Zone | YES | NO ✓ | UNSURE | |
| An area seaward of the coastal management line | YES | NO ✓ | UNSURE | |
| An area within the high risk zone (20 years) | YES | NO ✓ | UNSURE | |
| An area within the medium risk zone (50 years) | YES | NO ✓ | UNSURE | |
| An area within the low risk zone (100 years) | YES | NO ✓ | UNSURE | |
| An area below the 5m contour | YES | NO ✓ | UNSURE | |
| An area within 1km from the high water mark of the sea | YES | NO ✓ | UNSURE | |
| A rocky beach | YES | NO ✓ | UNSURE | |
| A sandy beach | YES | NO ✓ | UNSURE | |

- (b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

6. BIODIVERSITY

Note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed development. To assist with the identification of the biodiversity occurring on site and the ecosystem status, consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc ("cd") from the Biodiversity-GIS Unit, Tel.: (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) must be provided as an overlay map on the property/site plan as **Appendix D** to this report.

- (a) Highlight the applicable biodiversity planning categories of all areas on preferred and alternative sites and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category. Also describe the prevailing level of protection of the Critical Biodiversity Area ("CBA") and Ecological Support Area ("ESA") (how many hectares / what percentages are formally protected).

| Systematic Biodiversity Planning Category | CBA✓ | ESA✓ | Other Natural Area ("ONA") | No Natural Area Remaining ("NNR") |
|--|---|------|----------------------------|-----------------------------------|
| If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan and the conservation management objectives | According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations). Refer to Appendix D for Biodiversity sensitivity maps | | | |
| Describe the site's CBA/ESA quantitative values (hectares/percentage) in relation to the prevailing level of protection of CBA and ESA (how many hectares / what percentages are formally protected locally and in the province) | A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree <i>Eucalyptus</i> , but with <i>Acacia saligna</i> also prominent (Also refer to Appendix C - Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary. The initial, preliminary study of three of the originally evaluated proposed regional cemetery and memorial park sites by the biodiversity specialist, makes reference to the proportion of area of the proposed site that should be protected due to its potential CBA status (refer to Figure 9 in Appendix G-1) | | | |

- (b) Highlight and describe the habitat condition on site.

| Habitat Condition | Percentage of habitat condition class (adding up to 100%) and area of each in square metre (m ²) | | Description and additional comments and observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes, etc.) |
|---|--|----------------|---|
| Natural | % | m ² | |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | % | m ² | |

| | | | |
|---|------|----------------|---|
| Degraded (includes areas heavily invaded by alien plants) | 95 % | m ² | To be confirmed. The biodiversity specialist made mention of the following comment from Cape Nature in the initial, preliminary study of three of the originally evaluated proposed sites (as per Appendix G-1): "This site does seem heavily infested with aliens from the road and would need ground-truthing to check if there is any natural vegetation in the understory." |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc.) | 5% | m ² | To be confirmed. Hardened vehicle tracks were evident throughout the site. |

- (c) Complete the table to indicate:
- (i) the type of vegetation present on the site, including its ecosystem status; and
 - (ii) whether an aquatic ecosystem is present on/or adjacent to the site.

| Terrestrial Ecosystems | | Description of Ecosystem, Vegetation Type, Original Extent, Threshold (ha, %), Ecosystem Status |
|---|------------------|--|
| Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) | Critically | |
| | Endangered | |
| | Vulnerable | |
| | Least Threatened | Area comprises 95% dense forests of <i>Acacia saligna</i> and <i>Eucalyptus spp.</i> along with dense stands of alien grasses, particularly <i>Lolium perenne</i> . CBA 2– degraded areas but with potential for rehabilitation. Refer to Appendix D for Biodiversity sensitivity maps |

| Aquatic Ecosystems | | | | | | |
|---|----|--------|---------|------|-----------|------|
| Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| YES ✓ | NO | UNSURE | YES | NO ✓ | YES | NO ✓ |

- (d) Provide a description of the vegetation type and/or aquatic ecosystem present on the site, including any important biodiversity features/information identified on the site (e.g. threatened species and special habitats). Clearly describe the biodiversity targets and management objectives in this regard.

ESA 2 – ecological support areas (associated with watercourses or plantations).
Refer to Appendix D for Biodiversity sensitivity maps

7. LAND USE OF THE SITE

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 development.

| | | | | |
|--------------------|--------------------------|--|------------------------------|----------------------------------|
| Untransformed area | Low density residential | Medium density residential | High density residential | Informal residential |
| Retail | Commercial & warehousing | Light industrial | Medium industrial | Heavy industrial |
| Power station | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Tourism and Hospitality facility |

| | | | | |
|----------------------------------|---|-----------------------------|-------------------------------|--------------------------|
| Open cast mine | Underground mine | Spoil heap or slimes dam | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical centre | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant | Train station or shunting yard | Railway line | Major road (4 lanes and more) | Airport |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site | Plantation | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | The Stellenbosch Heritage Survey and Management Plan (2018) has graded the southern tip of the proposed development's site as the IIIb. | | | |

(a) Provide a description.

According to the heritage impact assessment report (Appendix G-5), the potential impact of the proposed cemetery and memorial park site on the old outspan area is significant in that it is a wholesale change of land use from woodlot to cemetery.

However, the draft concept plan has sensitively, if not, fortuitously, allowed for the conservation of the southern outspan site and surrounds in its overall framework. It would now be placed in the buffer informal parkland zone.

8. LAND USE CHARACTER OF THE SURROUNDING AREA

(a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

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 development.

| | | | | |
|----------------------------------|--------------------------------|--|-------------------------------|----------------------------------|
| Untransformed area | Low density residential | Medium density residential | High density residential | Informal residential |
| Retail | Commercial & warehousing | Light industrial | Medium industrial | Heavy industrial |
| Power station | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Tourism and Hospitality facility |
| Open cast mine | Underground mine | Spoil heap or slimes dam | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical centre | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant | Train station or shunting yard | Railway line | Major road (4 lanes and more) | Airport |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site | Plantation | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | | | | |

(b) Provide a description, including the distance and direction to the nearest residential area, industrial area, agri-industrial area.

Approximately 500m to the north, east and south of the proposed development site, lie agricultural land which (to the north and south contain wetland and a tributary of the Plankenburg River, respectively). To the south west and west of the site and within 500m, are a light industrial and associated quarry (across the R304 road). It should be noted that to the north-east and just over 500m from the proposed development site, lies Stellenbosch University's Elsenburg Agricultural Training Institute.

9. SOCIO-ECONOMIC ASPECTS

- a) Describe the existing social and economic characteristics of the community in the vicinity of the proposed site, in order to provide baseline information (for example, population characteristics/demographics, level of education, the level of employment and unemployment in the area, available work force, seasonal migration patterns, major economic activities in the local municipality, gender aspects that might be of relevance to this project, etc.).

The socio economic cost and benefits are outlined below and listed as a general cost or benefit, followed by specifics for the proposed memorial site and concluded with management directives. Burial alternatives, although provided, are not assessed.

| Anticipated & Predicted Impacts | Calcutta | Management directives |
|---|---|--|
| Population Characteristics/ Human capital | | |
| Job and skills levels increase: A 30ha memorial park will require landscaping, manicuring and maintaining. Sustainable employment opportunities will be created by the park. | Five to ten (5 – 10) full time permanent jobs are required to landscape, maintain and manicure the memorial park. | Employees should be selected and appointed from within Stellenbosch Municipal Area. Those employed to do so and who may not have appropriate qualifications/ skills should be afforded the opportunity to obtain the qualification/ skills. |
| Social health of community/ youth As a memorial park is a place to celebrate life, it represents a social space reflecting the value a community attach to the memories of their family, friends and colleagues. A memorial park will become such a social space. | Entrance control of the site and control of allowable activities will enhance the celebration of life. The park should be managed as a park and visual links should be created to the outspan site and historical oak trees south of the Calcutta. The trek path should be celebrated and replaced as a recreational route. | Entrance to the cemetery should be controlled during the day and the cemetery should be locked at night. Voluntary manicure and maintenance programmes should be managed involving educational institutions. Linking the site to a network of recreation routes i.e. walking or cycling will expand the celebration of life. |
| Crime/ Neglect Safety of visitors are key and controlled access and activity are but some of the aspects to ensure security of burial sites and safety of visitors. | The memorial park will be a significant improvement as the Eucalyptus and Acacia woodlot on site is used as a dumping site and is by no means inviting for people to perceive it as a social space or amenity. | The memorial park will be managed similarly to the cemetery at Jamestown; entrance control should be stricter. |

| Community & Institutional Arrangements | | |
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| The lack of cemetery space may disrupt social networks which will bring about changes in social ethos of community. | The MP will provide the required cemetery space and celebrate the lives of the deceased and honour the dead. Community homogeneity and cohesion could be reduced as community members will be forced to bury elsewhere outside Stellenbosch. This may bring the Stellenbosch community in conflict with receiving neighbouring communities. | Provide a MP in each of the major municipal areas i.e. north and south Regulate the use of burial space and rent out space for a specific period i.e. 25 years or less. |
| Equality and Exclusivity: A memorial park provides for all income groups, all cultures and all religions: The MP and its design and use should not exacerbate class equalities or cultural exclusivity. The MP should make allowance to accommodate dissimilarities in social practices i.e. social standards (burial options), religion and values. | MP to provide for all income groups and all religions. | Develop a MP policy or by-law to address access to resources i.e. burial space. Allow for limited economic opportunity i.e. flower sellers and a nursery. Economic opportunity to be ceased by vulnerable members of the community. |
| Employment equity of vulnerable groups: Of the people employed, women and youth should be afforded the opportunity to join the workforce. | The employment opportunities at the MP will enable a few families to benefit from the employment opportunities associated with MP development. | As women and youth have to compete with more appropriately qualified applicants from Stellenbosch Municipal area, skills development and improvement of educational qualification should be a strong project component. |
| Political & Social Resources | | |
| Use of social amenities: The MP will provide for the need for burial space within the Stellenbosch community but may cause an increased demand from neighbouring municipalities for burial space. | The demand for basic services i.e. water, electricity and sewerage will be limited and not compete with the requirements for human settlements within the Stellenbosch Municipal area. | Regulate burial space to benefit the community of Stellenbosch. Alternative energy use should be promoted. Water should be sources on the property. Sewerage should be managed on site. |

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| | As far as possible the MP services have to be sourced and generated on site. Water sources should be protected from possible impacts. | A resource management plan should be compiled and implemented as part of the maintenance and management of the site. |
| Increased use of municipal & authority services will be required but merely to regulate and guide traffic . | The slow moving traffic of funeral processions will disrupt daily traffic which is fast moving and will impact on cyclists using the R304. Processions should not be allowed on provincial roads. Encourage users of the MP to hold services on site. | Regulate traffic and abandon processions. Develop an amenity information brochure marketing the facility and the different components thereof i.e. the chapel that is interdenominational. |
| Individual & Family Changes: Burial practices are often linked to religious practices. Family burial practises may change over time. | Provide for alternative burial options in the MP. | Families have to be encouraged to consider different burial options which are less land dependant. Develop a burial alternative awareness campaign. |
| Community Resources | | |
| Dust & Noise levels: Sporadic dust & increased noise levels may occur as the park is established, graves are prepared and burial ceremonies are taking place. It is anticipated that all of the above will happen but within acceptable levels. | Keep dust suppression measures accessible on site. The necessary equipment and procedures have to be supplied and be in place. | Regulate noise on site and compile standard operational procedures. Budget and provide for dust suppression measures and equipment on site. |
| Sense of Place: The change of sense of place will impact on people's relationship to environment and surroundings. | Visual and scenic issues, and thus sense of place, relate to the likely impact of this memorial park development on the Grade IIIb agricultural landscape. As the site is covered by an immature gum and Acacia plantation and has an untidy, overgrown atmosphere the change in use will enhance the Landscape Character of the site. The site is surrounded by vineyards and rolling pastures and a scatter of | Design and compile a landscape plan to ensure the conservation of the landscape. |

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| | European Oak trees down to the river. The high visual absorption capacity of the site and the low absorption capacity of its surroundings and its visibility versus the proposed activity will enhance the impact to be positive. Cemetery activities on site could easily be hidden behind decent landscaping, where structures are low with the exception of a central chapel facility. | |
| Social History: The social history relates to patterns that were valued, but fallen into disuse (outspans), and which is part of the social history of an area will be enhanced. | <p>Heritage Grading</p> <p>There are no structures on the site to grade but the area landscape has already been graded IIIb in the SHS&MP (2018), as has the outspan site on the southern portion been graded IIIb. Calcutta Bos has high significance as an historic outspan site but a low significance as a woodlot in its current condition. Its rural setting makes it well-suited to the purposes of a memorial park. Being one of only seven or eight outspans it is quite prominent in the Stellenbosch District. Changing its use to a memorial park where the deceased are laid to rest at the end of their life's journey and being jointly a recreational park should enhance Calcutta outspan's collective heritage.</p> | <p>Should any heritage resources be discovered during the clearing of the site, the appropriate procedure required by HWC should be followed to secure and conserve such resources.</p> <p>The potential scientific significance of the site lies in the possibility of uncovering any significant archaeological remains. This will not be known until such time as excavation or development occurs but it is unlikely that anything would be recovered until such time as it is densely covered and transformed by, at the very least, gum plantation. It could have been ploughed prior to gum planting.</p> |
| Access to leisure opportunities: MPs as commissioned by Stellenbosch Municipality are simultaneously designed to enhance recreation and | The MP will enhance access to leisure opportunities. | Encourage leisure and recreational activities i.e. compile and market a park calendar. |

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| leisure opportunities: hiking & biking trails etc. | | |
| Access to natural resources: The MP has no impact on people's access to natural resources i.e. wood, water and medicinal plants | The MP should enhance to use of natural resources and should not compete with the community's access i.e. use of on-site sources to provide water, manage sewerage and generate alternative energy. | Compile a resource management plan. |
| Sales & GGP: Sales related to the land will contribute to the economy of the municipality. | Burial space will have to be leased for limited periods of time i.e. 25 years or even shorter. | Regulate use of burial space. Provide for subsidies for vulnerable communities. |

10. HISTORICAL AND CULTURAL ASPECTS

- (a) Please be advised that if section 38 of the NHRA is applicable to your proposed development, you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation process. Heritage Western Cape must be given an opportunity, together with the rest of the I&APs, to comment on any Pre-application BAR, a Draft BAR, and Revised BAR.

Section 38 of the NHRA states the following:

"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, power line, 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 000m² 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 000m² 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".

- (b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the NHRA, must also be investigated, assessed and evaluated. Section 3(2) states the following: "3(2) Without limiting the generality of subsection (1), the national estate may include—
- (a) places, buildings, structures and equipment of cultural significance;
 - (b) places to which oral traditions are attached or which are associated with living heritage;
 - (c) historical settlements and townscapes;
 - (d) landscapes and natural features of cultural significance;
 - (e) geological sites of scientific or cultural importance;
 - (f) archaeological and palaeontological sites;
 - (g) graves and burial grounds, including—
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
 - (h) sites of significance relating to the history of slavery in South Africa;
 - (i) movable objects, including—
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;

(v) objects of decorative or fine art;
 (vi) objects of scientific or technological interest; and
 (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)".

| | | | | |
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| Is Section 38 of the NHRA applicable to the proposed development? | | YES✓ | NO | UNCERTAIN |
| If YES or UNCERTAIN, explain: | <p>Section 38 of the National Heritage Resources Act, 1999, is applicable since the proposed public cemetery and memorial park is more than 5000m² and will change the character of the site; The site will be rezoned and exceeds 10 000 m².</p> <p>At the time of this report, no submissions were made to HWC. Although, a Heritage Screening as prepared by CTS Heritage (Appendix G-5a) in March 2018 was submitted to HWC.</p> <p>HWC responded to the public participation process (as per Appendix E) with a reference number and request to complete a NID.</p> | | | |
| Will the development impact on any national estate referred to in Section 3(2) of the NHRA? | | YES✓ | NO | UNCERTAIN |
| If YES or UNCERTAIN, explain: | <p>Due to the Outspan heritage site as highlighted in Appendix G-5 (Heritage Impact Assessment), the proposed site appears to be a national estate. However, both the archaeological and paleontological assessments indicated that the proposed site is not a sensitive landscape.</p> <p>In addition, the proposed development actual will result in a very positive impact of the Outspan heritage site since it will restore the area and cater for the preservation of the Outspan region through the memorial park aspect of the development.</p> | | | |
| Will any building or structure older than 60 years be affected in any way? | | YES | NO✓ | UNCERTAIN |
| If YES or UNCERTAIN, explain: | | | | |
| Are there any signs of culturally or historically significant elements, as defined in section 2 of the NHRA, including Archaeological or paleontological sites, on or close (within 20m) to the site? | | YES | NO✓ | UNCERTAIN |
| If YES or UNCERTAIN, explain: | | | | |

Note: If uncertain, the Department may request that specialist input be provided **and** Heritage Western Cape must provide comment on this aspect of the proposal. (Please note that a copy of the comments obtained from the Heritage Resources Authority must be appended to this report as Appendix E1).

11. APPLICABLE LEGISLATION, POLICIES, CIRCULARS AND/OR GUIDELINES

- (a) Identify all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to the development proposal and associated listed activity(ies) being applied for and that have been considered in the preparation of the BAR.

| LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS | ADMINISTERING AUTHORITY and how it is relevant to this application | TYPE Permit/license/authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, etc.) | DATE (if already obtained): |
|--|---|--|---|
| National Environmental Management Act, No. 107 of 1998 and associate EIA Regulations 2014 | Department of Environmental Affairs and Development Planning (DEA&DP) | Environmental Authorisation | Basic Assessment process is currently underway. |
| National Water Act, No. 36 of 1998 | Department of Water Affairs | Water Use Licence (WUL) or General Authorisation | WUL Application to be submitted |
| Stellenbosch Land Use Planning By-law, 2015 | Stellenbosch Municipality | Rezoning | Application to be submitted |
| National Heritage Resources Act, No 25 of 1999 | Heritage Western Cape (HWC) | Authorisation | NID to be submitted |
| | | | |

- (b) Describe how the proposed development **complies with and responds** to the legislation and policy context, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.

| LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS | Describe how the proposed development complies with and responds: |
|--|--|
| DEA&DP Guidelines on: Public Participation; EIA Regulations; Need and Desirability; Alternatives | A voluntary pre-application round of public participation to register I&APs was undertaken. Guideline documents were consulted. |
| National Environmental Management Act, No. 107 of 1998 | This application is being undertaken according to the NEMA. |
| National Heritage Resources Act, No. 25 of 1999 | A Heritage Screener was submitted to HWC (as per Appendix G-5a). Submission of the Notice of Intent to Develop is pending and will be submitted shortly. Refer to Appendix E (communication from HWC). |

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| National Water Act, No. 36 of 1998 (NWA) | Process to authorise Section 21 activities under the NWA to be undertaken. |
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Note: Copies of any comments, permit(s) or licences received from any other Organ of State must be attached to this report as **Appendix E**.

Section C: PUBLIC PARTICIPATION

The PPP must fulfil the requirements outlined in the NEMA, the EIA Regulations, 2014 (as amended) and if applicable, the NEM: WA and/or the NEM: AQA. This Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must also be taken into account.

- Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was an exemption applied for.

| | | | |
|---|-------|-----------|-------|
| In terms of Regulation 41 of the EIA Regulations, 2014 (as amended) - | | | |
| (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of - | | | |
| (i) the site where the activity to which the application relates, is or is to be undertaken; and | YES ✓ | EXEMPTION | |
| (ii) any alternative site | YES | EXEMPTION | N/A ✓ |
| (b) giving written notice, in any manner provided for in Section 47D of the NEMA, to - | | | |
| (i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | YES ✓ | EXEMPTION | N/A |
| (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | YES ✓ | EXEMPTION | |
| (iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; | YES | EXEMPTION | |
| (iv) the municipality (Local and District Municipality) which has jurisdiction in the area; | YES ✓ | EXEMPTION | |
| (v) any organ of state having jurisdiction in respect of any aspect of the activity; and | YES ✓ | EXEMPTION | |
| (vi) any other party as required by the Department; | YES ✓ | EXEMPTION | N/A |
| (c) placing an advertisement in - | | | |
| (i) one local newspaper; or | YES ✓ | EXEMPTION | |
| (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations; | YES | EXEMPTION | N/A ✓ |
| (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken | YES | EXEMPTION | N/A ✓ |
| (e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy; (ii) disability; or (iii) any other disadvantage. | YES | EXEMPTION | N/A ✓ |
| If you have indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be appended to this report. | | | |
| Please note that for the NEM: WA and NEM: AQA, a notice must be placed in at least two newspapers circulating in the area where the activity applied for is proposed. | | | |
| If applicable, has/will an advertisement be placed in at least two newspapers? | N/A | YES | NO |
| If "NO", then proof of the exemption decision must be appended to this report. | | | |

- Provide a list of all the State Departments and Organs of State that were consulted:

Refer to I&AP Lists attached as Appendix H and Appendices F to F2

| State Department / Organ of State | Date request was sent: | Date comment received: | Support / not in support |
|-----------------------------------|------------------------|------------------------|--------------------------|
| | | | |

3. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated, or the reasons for not including them.
(The detailed outcomes of this process, including copies of the supporting documents and inputs must be included in a Comments and Response Report to be attached to the BAR (see note below) as **Appendix F**).

Please refer the Comment and Response Trail Reports (with supporting documents) attached as Appendix F.

4. Provide a summary of any conditional aspects identified / highlighted by any Organs of State, which have jurisdiction in respect of any aspect of the relevant activity.

Please refer the Comment and Response Trail Reports (with supporting documents) attached as Appendix F.

Note:

Even if pre-application public participation is undertaken as allowed for by Regulation 40(3), it must be undertaken in accordance with the requirements set out in Regulations 3(3), 3(4), 3(8), 7(2), 7(5), 19, 40, 41, 42, 43 and 44.

If the "exemption" option is selected above and no proof of the exemption decision is attached to this BAR, the application will be refused.

A list of all the potential I&APs, including the Organs of State, notified and a list of all the registered I&APs must be submitted with the BAR. The list of registered I&APs must be opened, maintained and made available to any person requesting access to the register in writing.

The BAR must be submitted to the Department when being made available to I&APs, including the relevant Organs of State and State Departments which have jurisdiction with regard to any aspect of the activity, for a commenting period of at least 30 days. Unless agreement to the contrary has been reached between the Competent Authority and the EAP, the EAP will be responsible for the consultation with the relevant State Departments in terms of Section 24O and Regulation 7(2) – which consultation must happen simultaneously with the consultation with the I&APs and other Organs of State.

All the comments received from I&APs on the BAR must be recorded, responded to and included in the Comments and Responses Report included as **Appendix F** of the BAR. If necessary, any amendments made in response to comments received must be effected in the BAR itself. The Comments and Responses Report must also include a description of the PPP followed.

The minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded, must also be submitted as part of the public participation information to be attached to the final BAR as **Appendix F**.

Proof of all the notices given as indicated, as well as notice to I&APs of the availability of the Pre-Application BAR (if applicable), Draft BAR, and Revised BAR (if applicable) must be submitted as part of the public participation information to be attached to the BAR as **Appendix F**. In terms of the required "proof" the following must be submitted to the Department:

- a site map showing where the site notice was displayed, a dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
 - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
 - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
 - if a facsimile was sent, a copy of the facsimile report;
 - if an electronic mail was sent, a copy of the electronic mail sent; and
 - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION D: NEED AND DESIRABILITY

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and

guidelines available on the Department's website: <http://www.westerncape.gov.za/eadp>). In this regard, it must be noted that the *Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010* published by the national Department of Environmental Affairs on 20 October 2014 (GN No. 891 on Government Gazette No. 38108 refers) (available at: http://www.gov.za/sites/www.gov.za/files/38108__891.pdf) also applied to EIAs in terms of the EIA Regulations, 2014 (as amended).

| | | | |
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| 1. Is the development permitted in terms of the property's existing land use rights? | YES | NO ✓ | Please explain |
| The land, remainder of Calcutta Farm No. 29 is currently zoned for Agricultural 1. A rezoning application was submitted to the Stellenbosch Municipality on 26 March 2019 by Rumboll and Associates (Pty) Ltd, as per Appendix J (Rezoning information). | | | |
| 2. Will the development be in line with the following? | | | |
| (a) Provincial Spatial Development Framework ("PSDF"). | YES ✓ | NO | Please explain |
| The Western Cape PSDF aims to establish a coherent framework for the Province's urban and rural areas that "serves as a basis for coordinating, integrating and aligning 'on the ground' delivery of National and Provincial departmental programmes". | | | |
| (b) Urban edge / edge of built environment for the area. | YES ✓ | NO | Please explain |
| According to the socio-economic statement attached as Appendix G10, the proposed site is in a rural setting which is well suited for the development of a cemetery and memorial park. | | | |
| (c) Integrated Development Plan and Spatial Development Framework of the Local Municipality (e.g., would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF ?). | YES | NO ✓ | Please explain |
| The mandate to investigate and pursue the development of a regional cemetery and memorial park was given by Stellenbosch Municipality at several Council meetings since 2015. Municipal endorsement for the proposed development site was obtained in August 2017 (partial minutes attached as Appendix K). | | | |
| (d) An Environmental Management Framework (" EMF ") adopted by this Department. (e.g., Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?) | YES | NO ✓ | Please explain |
| Approval of this application would promote the preservation of heritage resources and the conservation of ESA and CBA areas on the site. It also meets the very real need for burial space within the Municipal region – providing the public with a much-needed socio-economic amenity. Therefore, it promotes and is justified in terms of sustainability considerations. | | | |
| (e) Any other Plans (e.g., Integrated Waste Management Plan (for waste management activities), etc.)). | YES ✓ | NO | Please explain |
| The removal of alien invasive trees/plantation would be in conjunction with the Municipality's annual operational plan for alien plant removal. | | | |
| 3. Is the land use (associated with the project being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)? | YES | NO | Please explain |
| Unknown – the land use was Agricultural 1 (Plantation) and the plantation forms part of the Municipality Annual Plan of Operations for alien tree removal and control. The development proposes to remove the current alien plant/tree infestation and conserve any indigenous species of note (as identified by a botanical specialist) and restore and protect biodiversity as well as freshwater/wetland and heritage aspects of the development site. | | | |

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| 4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time? | YES | NO ✓ | Please explain |
| The proposed development of a cemetery and memorial park is well suited for this rural setting. It is proposed that the development be 'stand-alone' and as much 'off-grid' as possible, in terms of utility supply i.e. electricity and water | | | |
| 5. Does the community/area need the project and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g., development is a National Priority, but within a specific local context it could be inappropriate.) | YES ✓ | NO | Please explain |
| There is a need for public cemeteries and memorial parks since most of the cemeteries in the Municipal area are at or near capacity. This amenity is needed by the community in terms of accessibility to the facility, as well as job provision. | | | |
| 6. Are the necessary services available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project? (Confirmation by the relevant municipality in this regard must be attached to the BAR as Appendix E.) | YES ✓ | NO | Please explain |
| The Applicant is the Municipality. Refer to Appendix E5 (Comments from Stellenbosch Municipality) regarding availability and capacity to provide required services. The proposed development of a cemetery and memorial park is well suited for this rural setting. It is proposed that the development be 'stand-alone' and as much 'off-grid' as possible, in terms of utility supply i.e. electricity and water | | | |
| 7. Is this project provided for in the infrastructure planning of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant municipality in this regard must be attached to the BAR as Appendix E.) | YES ✓ | NO | Please explain |
| Please refer to communication with Municipality in Appendix E5 regarding availability and capacity to provides required services Refer to Appendix G11 (Final Traffic Study) regarding a 2012 Arterial Management Plan which address accessibility issues off/from the region road to the proposed development site | | | |
| 8. Is this project part of a national programme to address an issue of national concern or importance? | YES | NO | Please explain |
| Unknown - The shortage of suitable land for the development of cemeteries has long been one of the major challenges facing many South African municipalities. Public cemeteries in the Stellenbosch Municipal area are nearing maximum occupation. Despite the availability of various alternatives, conventional burial and funeral practises are still the most common and preferred, thus, funeral and burial services offered by local municipalities cannot be decontextualised from the cultural and religious customs that communities follow. | | | |
| 9. Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.) | YES ✓ | NO | Please explain |

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| Due to the current neglected and degraded state of the proposed development site, as well as the high potential for positive impact in terms of heritage and environmental resources, it appears that locations factors favour this land use on this property. | | | |
| 10. Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)? | YES ✓ | NO | Please explain |
| Yes. However, the impact on freshwater, biodiversity and cultural/heritage aspects will be positive. There may be a negative impact on groundwater resources. | | | |
| 11. Will the development impact on people's health and well-being (e.g., in terms of noise, odours, visual character and 'sense of place', etc.)? | YES | NO | Please explain |
| <p>There will probably be minimal traffic noise associated with the occasional motorcade is expected along the R304. The impact is expected to be low.</p> <p>The activity will not create any emissions or odours that are not typical of a cemetery. Please note that no crematorium is proposed on the site</p> <p>The activity will impact on the visual character of the area as the site is located on higher ground above most of the town. However, the site is adjacent to an existing cemetery.</p> | | | |
| 12. Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs? | YES | NO ✓ | Please explain |
| Although the development will result in the loss of vacant land, the site has been earmarked for cemetery expansion by the municipality. | | | |
| 13. What will the cumulative impacts (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be? | | | |
| Negative impacts include the potential risk of leachate from the cemetery polluting the groundwater or surface water down gradient of the cemetery. | | | |
| 14. Is the development the best practicable environmental option for this land/site? | YES ✓ | NO | Please explain |
| The proposed development will result in the rehabilitation and restoration of ESA and CBA areas as well as the removal of alien tree infestation, whilst promoting heritage preservation and sustainable conservation. It will also provide socio-economic upliftment through job provision and meeting the need for a contextualised public cemetery and memorial park. | | | |
| 15. What will the benefits be to society in general and to the local communities? | Please explain | | |
| The proposed development will result in the rehabilitation and restoration of ESA and CBA areas as well as the removal of alien tree infestation, whilst promoting heritage preservation and sustainable conservation. It will also provide socio-economic upliftment through job provision and meeting the need for a contextualised public cemetery and memorial park. The facility will be easily accessible to communities in the Northern Stellenbosch region. | | | |
| 16. Any other need and desirability considerations related to the proposed development? | Please explain | | |
| The need to change the mindset of the public to choose less land hungry burial options will be gently introduced through the use of the memorial garden, columbarium and memorial walls in an aesthetically please 'park' setting. | | | |
| 17. Describe how the general objectives of Integrated Environmental Management as set out in Section 23 of the NEMA have been taken into account: | | | |

The general objectives of Integrated Environmental Management have been taken into account through the following:

- The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management – *please refer to Section F below.*
- The effects of the activity on the environment have been considered before actions taken in connection with them – *alternatives have been considered but there are no feasible or viable alternatives due to the nature of the activity and the location of the activity.*
- Adequate and appropriate opportunity for public participation was ensured through the public participation process – *please refer to Appendix F for the public participation information, including the list of identified Interested and Affected parties, as well as the methods for identifying and informing I&APs of the application and proposed activity.*

The environmental attributes have been considered in the management and decision-making of the activity – *an EMP has been included (Appendix O) with the proposed activity and must adhere to the requirements of all applicable state authorities.*

18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:

The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:

- People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – *the proposed activity will have a beneficial impact on people, as it will provide much needed additional burial space opportunities.*
- Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. - *Although the activity is expected to have a medium to low botanical impact, these impacts have been considered, and mitigation measures have been put in place. This is dealt with in the EMP (Appendix O).*
- Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of the EMP.
- The use of non-renewable natural resources is responsible and equitable – *no exploitation of non-renewable natural resources occurs with the proposed activity.*
- The negative impacts on the environment and on people's environmental rights have been anticipated and prevented, and where they cannot be prevented, are minimised and remedied - *refer to Section F below.*
- The interests, needs and values of all interested and affected parties have been taken into account in any decisions through the Public Participation Process – *please refer to Appendix F for the public participation information.*
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits as per Appendix G10.
-

The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option – *the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described under Section O and in the EMP are implemented.*

SECTION E: DETAILS OF ALL THE ALTERNATIVES CONSIDERED

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website <http://www.westerncape.gov.za/eadp>.

The EIA Regulations, 2014 (as amended) defines "alternatives" as "*in relation to a proposed activity, means different means of fulfilling the general purpose and requirements of the activity, which may include alternatives to the—*

(a) *property on which or location where the activity is proposed to be undertaken;*

(b) *type of activity to be undertaken;*

(c) *design or layout of the activity;*

(d) *technology to be used in the activity; or*

(e) *operational aspects of the activity;*

(f) *and includes the option of not implementing the activity;"*

The NEMA (section 24(4)(a) and (b) of the NEMA, refers) prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, with respect to every application for environmental authorisation –

- ensure that the general objectives of integrated environmental management laid down in the NEMA and the National Environmental Management Principles set out in the NEMA are taken into account; and
- include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.

The general objective of integrated environmental management (section 23 of NEMA, refers) is, *inter alia*, to "*identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management*" set out in the NEMA.

The identification, evaluation, consideration and comparative assessment of alternatives directly relate to the management of impacts. Related to every identified impact, alternatives, modifications or changes to the activity must be identified, evaluated, considered and comparatively considered to:

- in terms of negative impacts, firstly avoid a negative impact altogether, or if avoidance is not possible alternatives to better mitigate, manage and remediate a negative impact and to compensate for/offset any impacts that remain after mitigation and remediation; and
- in terms of positive impacts, maximise impacts.

1. DETAILS OF THE IDENTIFIED AND CONSIDERED ALTERNATIVES AND INDICATE THOSE ALTERNATIVES THAT WERE FOUND TO BE FEASIBLE AND REASONABLE

Note: A full description of the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exists.

- (a) Property and **location/site** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

The design and layout of the cemetery avoids potential negative visual impacts.
No alternative sites exist for this project. Please see mention in the Executive Summary and point 2(b) above, as well as in Appendices L and M.

- (b) **Activity** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

None that are known.

- (c) **Design or layout** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

The design and layout of the cemetery avoids potential negative visual impacts. Four alternatives in terms of layout exist for this project:

Alternative 1 (preferred alternative) – refer to Appendix B1:

This layout plan accommodates the wetland buffer zones (25m to 30m setback regions) and provides ample memorial park/garden space to the west of the site.

The proposed peripheral/boundary security/fence road does involve an additional crossing of the ephemeral stream to the south but it is proposed that this crossing be a low water grass block 'drift' which, if placed immediately adjacent to the south-eastern security fence crossing the stream, also provide a means of access control during times when the watercourse is dry. In addition, the proposed peripheral road does not traverse wetland G to the north-west of the property.

Additional environmental benefits of this layout alternative, are that the conservancy tank/sewer treatment plant is not positioned close to, or in, the wetland buffer zone and the stormwater management network includes two polishing plants as well as a stormwater retention/detention pond adjacent to the delineated wetland buffer zone, to manage possible stormwater input into the ephemeral watercourse.

Schematic layout plans for the sewage/effluent treatment and stormwater polishing plant are included in Appendix B4.

Alternative 2 (not preferred alternative) – refer to Appendix B2:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this is minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 2 does not accommodate).

This alternative's development footprint places structures (maintenance nursery and buildings), as well as cultivated park areas (indicated as 'orchards' in Appendix B2) directly in the wetland areas which it is proposed are rehabilitated and maintained as part of the park aspect of this project.

While a widening of the ephemeral stream is indicated in the region where the conservancy tank is located (see Appendix B2a) there is no indication or accommodation of any effluent water treatment/polishing plant or retention pond. In addition, the conservancy tank is located very close to the watercourse within the buffer area.

Although this alternative provides the largest allocation of burial and interment space, it does not accommodate the proposed need for establishing adequate indigenous 'park' areas.

Alternative 3 (concept plan 1 – least preferred layout option) – refer to Appendix B3:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this is minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 3 does not accommodate).

This alternative's development footprint places structures (maintenance and nursery buildings), as well as cultivated park/picnic areas (indicated along the western boundary in Appendix B3) directly in wetland area G which it is proposed are to be rehabilitated and maintained as part of the indigenous park aspect of this project.

The access route for Alternative 3 also does not speak to the final road traffic survey (Appendix G 12).

This alternative was the initial concept plan for the project and is included in this post application BAR since it was submitted in the first pre-application (draft) BAR. However, once more detailed specialist studies were conducted, it is apparent that this is the least feasible and environmentally favourable layout plan.

No-go alternative – (least preferred alternative):

This alternative does not meet the urgent need to provide public burial space for the region. It is the least preferred alternative.

Appendices L and M indicate that there is no significant reason for there to be a no-go for this proposed site.

- (d) **Technology** alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

The proposed green options for water reuse and possible off-grid electricity supply are the same for Alternatives 1 to 3 - Besides the use of non-potable water for effluent management and recycled/grey water for irrigation or the gardens/memorial park areas, the use of solar panels or wind turbines for the provision of electricity where possible, will be implemented.

Refer to the services report, attached as Appendix G13, for a detailed description of proposed and possible technology alternatives.

Schematic layout plans for the sewage/effluent treatment and stormwater polishing plant are included in Appendix B4.

- (e) **Operational** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

The use of a garden of remembrance where people begin to green the proposed site with indigenous trees which they purchase to bury the ashes of a loved one at or near the base, also will be used to promote the idea of alternative burial methods. The idea is that once the initial purchase of a 'family tree' is made, subsequent burial of ashes of loved ones in allocated points around the tree (so as not to affect tree growth/health).

A review and possible amendment to local by-law/s may also need to be made to accommodate multiple interments in a single burial space, after sufficient time has past between each interment.

- (f) The option of **not implementing** the activity (the 'No-Go' Option):

The Municipality will face a crisis situation in terms of burial ground availability since the interim relief measure of expanding certain cemeteries (which were able to expand), will also rapidly be diminished.

- (g) **Other** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Please refer to Appendices L and M to indicate why no site alternatives exist.

Four alternatives in terms of layout exist for this project:

Alternative 1 (preferred alternative) – refer to Appendix B1:

This layout plan accommodates the wetland buffer zones (25m to 30m setback regions) and provides ample memorial park/garden space to the west of the site.

The proposed peripheral/boundary security/fence road does involve an additional crossing of the ephemeral stream to the south but it is proposed that this crossing be a low water grass block 'drift' which, if placed immediately adjacent to the south-eastern security fence crossing the stream, also provide a means of access control during times when the watercourse is dry. In addition, the proposed peripheral road does not traverse wetland G to the north-west of the property.

Additional environmental benefits of this layout alternative, are that the conservancy tank/sewer treatment plant is not positioned close to, or in, the wetland buffer zone and the stormwater management network includes two polishing plants as well as a stormwater retention/detention pond adjacent to the delineated wetland buffer zone, to manage possible stormwater input into the ephemeral watercourse.

Schematic layout plans for the sewage/effluent treatment and stormwater polishing plant are included in Appendix B4.

Alternative 2 (not preferred alternative) – refer to Appendix B2:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this is minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 2 does not accommodate).

This alternative's development footprint places structures (maintenance nursery and buildings), as well as cultivated park areas (indicated as 'orchards' in Appendix B2) directly in the wetland areas which it is proposed are rehabilitated and maintained as part of the park aspect of this project.

While a widening of the ephemeral stream is indicated in the region where the conservancy tank is located (see Appendix B2a) there is no indication or accommodation of any effluent water treatment/polishing plant or retention pond. In addition, the conservancy tank is located very close to the watercourse within the buffer area.

Although this alternative provides the largest allocation of burial and internment space, it does not accommodate the proposed need for establishing adequate indigenous 'park' areas.

Alternative 3 (concept plan 1 – least preferred layout option) – refer to Appendix B3:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this is minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 3 does not accommodate).

This alternative's development footprint places structures (maintenance and nursery buildings), as well as cultivated park/picnic areas (indicated along the western boundary in Appendix B3) directly in wetland area G which it is proposed are to be rehabilitated and maintained as part of the indigenous park aspect of this project.

The access route for Alternative 3 also does not speak to the final road traffic survey (Appendix G 12).

This Alternative was the initial concept plan for the project and is included in this post application BAR since it was submitted in earlier pre-application draft BARs. However, once more detailed specialist studies were conducted, it is apparent that this is the least feasible and environmentally favourable layout plan.

No-go alternative – (least preferred alternative):

This alternative does not meet the urgent need to provide public burial space for the region. It is the least preferred alternative.

(h) Provide a **summary** of all alternatives investigated and the outcome of each investigation:

Four alternatives in terms of layout exist for this project:

Alternative 1 (preferred alternative) – refer to Appendix B1:

This layout plan accommodates the wetland buffer zones (25m to 30m setback regions) and provides ample memorial park/garden space to the west of the site.

The proposed peripheral/boundary security/fence road does involve an additional crossing of the ephemeral stream to the south but it is proposed that this crossing be a low water grass block 'drift' which, if placed immediately adjacent to the south-eastern security fence crossing the stream, also provides a means of access control during times when the watercourse is dry. In addition, the proposed peripheral road does not traverse wetland G to the north-west of the property.

Additional environmental benefits of this layout alternative, are that the conservancy tank/sewer treatment plant is not positioned close to, or in, the wetland buffer zone and the stormwater management network includes two polishing plants as well as a stormwater retention/detention pond adjacent to the delineated wetland buffer zone, to manage possible stormwater input into the ephemeral watercourse.

Schematic layout plans for the sewage/effluent treatment and stormwater polishing plant are included in Appendix B4.

Alternative 2 (not preferred alternative) – refer to Appendix B2:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 2 does not accommodate).

This alternative's development footprint places structures (maintenance nursery and buildings), as well as cultivated park areas (indicated as 'orchards' in Appendix B2) directly in the wetland areas which it is proposed are rehabilitated and maintained as part of the park aspect of this project.

While a widening of the ephemeral stream is indicated in the region where the conservancy tank is located (see Appendix B2a) there is no indication or accommodation of any effluent water treatment/polishing plant or retention pond. In addition, the conservancy tank is located very close to the watercourse within the buffer area.

Although this alternative provides the largest allocation of burial and interment space, it does not accommodate the proposed need for establishing adequate indigenous 'park' areas.

Alternative 3 (concept plan 1 – least preferred layout option) – refer to Appendix B3:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 3 does not accommodate).

This alternative's development footprint places structures (maintenance and nursery buildings), as well as cultivated park/picnic areas (indicated along the western boundary in Appendix B3) directly in wetland area G which it is proposed are to be rehabilitated and maintained as part of the indigenous park aspect of this project.

The access route for Alternative 3 also does not speak to the final road traffic survey (Appendix G 12).

This Alternative was the initial concept plan for the project and is included in this post application BAR since it was submitted in earlier pre-application draft BARs. However, once more detailed specialist studies were conducted, it is apparent that this is the least feasible and environmentally favourable layout plan.

No-go alternative – (least preferred alternative):

This alternative does not meet the urgent need to provide public burial space for the region. It is the least preferred alternative.

- (i) Provide a detailed **motivation for not further considering** the alternatives that were found not feasible and reasonable, including a description and proof of the investigation of those alternatives:

See page 55 below.

Alternatives in terms of layout exist for this project:

Alternative 1 (preferred alternative) – refer to Appendix B1:

This layout plan accommodates the wetland buffer zones (25m to 30m setback regions) and provides ample memorial park/garden space to the west of the site.

The proposed peripheral/boundary security/fence road does involve an additional crossing of the ephemeral stream to the south but it is proposed that this crossing be a low water grass block 'drift' which, if placed immediately adjacent to the south-eastern security fence crossing the stream, also provides a means of access control during times when the watercourse is dry. In addition, the proposed peripheral road does not traverse wetland G to the north-west of the property.

Additional environmental benefits of this layout alternative, are that the conservancy tank/sewer treatment plant is not positioned close to, or in, the wetland buffer zone and the stormwater management network includes two polishing plants as well as a stormwater retention/detention pond adjacent to the delineated wetland buffer zone, to manage possible stormwater input into the ephemeral watercourse.

Schematic layout plans for the sewage/effluent treatment and stormwater polishing plant are included in Appendix B4.

Alternative 2 (not preferred alternative) – refer to Appendix B2:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 2 does not accommodate).

This alternative's development footprint places structures (maintenance nursery and buildings), as well as cultivated park areas (indicated as 'orchards' in Appendix B2) directly in the wetland areas which it is proposed are rehabilitated and maintained as part of the park aspect of this project.

While a widening of the ephemeral stream is indicated in the region where the conservancy tank is located (see Appendix B2a) there is no indication or accommodation of any effluent water treatment/polishing plant or retention pond. In addition, the conservancy tank is located very close to the watercourse within the buffer area.

Although this alternative provides the largest allocation of burial and interment space, it does not accommodate the proposed need for establishing adequate indigenous 'park' areas.

Alternative 3 (concept plan 1 – least preferred layout option) – refer to Appendix B3:

This layout plan does not take adequate cognisance of the wetland delineation (minimal buffer zones are indicated i.e. 10m to 15m). While this minimal setback is mentioned in the freshwater assessment and management plan reports (Appendix G3 to G5), Figure 2 of the freshwater impact report indicates the proposed 25m to 30m setback (which Alternative 3 does not accommodate).

This alternative's development footprint places structures (maintenance and nursery buildings), as well as cultivated park/picnic areas (indicated along the western boundary in Appendix B3) directly in wetland area G which it is proposed are to be rehabilitated and maintained as part of the indigenous park aspect of this project.

The access route for Alternative 3 also does not speak to the final road traffic survey (Appendix G 12).

This Alternative was the initial concept plan for the project and is included in this post application BAR since it was submitted in earlier pre-application draft BARs. However, once more detailed specialist studies were conducted, it is apparent that this is the least feasible and environmentally favourable layout plan.

No-go alternative – (least preferred alternative):

This alternative does not meet the urgent need to provide public burial space for the region. It is the least preferred alternative.

2. PREFERRED ALTERNATIVE

- (a) Provide a **concluding statement** indicating the preferred alternative(s), including preferred location, site, activity and technology for the development.

The preferred alternative for the proposed Calcutta Public Cemetery and Memorial Park is Alternative 1 on Farm Calcutta No. 29, Stellenbosch Municipality, as indicated in this post-application BAR.

SECTION F: ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE ALTERNATIVES

Note: The information in this section must be DUPLICATED for all the feasible and reasonable ALTERNATIVES.

1. DESCRIBE THE ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT AND ITS ALTERNATIVES, FOCUSING ON THE FOLLOWING:

- (a) Geographical, geological and physical aspects:

Please refer to Appendix I attached.

- (b) Ecological aspects:

| | | |
|--|------|----|
| Will the proposed development and its alternatives have an impact on CBAs or ESAs? If yes, please explain: Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map. | YES | NO |
| <p>According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations).</p> <p>Refer to Appendix D for Biodiversity sensitivity maps.</p> <p>A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree <i>Eucalyptus</i>, but with <i>Acacia saligna</i> also prominent (Also refer to Appendix C -Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary.</p> | | |
| Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)? If yes, please explain: | YES✓ | NO |
| <p>According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations).</p> <p>Refer to Appendix D for Biodiversity sensitivity maps.</p> <p>A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree <i>Eucalyptus</i>, but with <i>Acacia saligna</i> also prominent (Also refer to Appendix C -Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary.</p> | | |

| | | |
|---|-----|-----|
| Will the proposed development and its alternatives have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species? If yes, please explain: | YES | NO✓ |
| N/A | | |
| Describe the manner in which any other biological aspects will be impacted: | | |
| It is not anticipated that other biological aspects, other than those mentioned in specialist reports and this report, will be impacted. | | |
| Will the proposed development also trigger section 63 of the NEM: ICMA? | YES | NO✓ |
| If yes, describe the following: (i) the extent to which the applicant has in the past complied with similar authorisations; (ii) whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development proposal or listed activity is consistent with the purpose for establishing and protecting those areas; (iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area; (iv) the likely socio-economic impact if the listed activity is authorised or is not authorised; (v) the likely impact of coastal environmental processes on the proposed development; (vi) whether the development proposal or listed activity— (a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations; (b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA; (c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA; (d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated; (e) is likely to be significantly damaged or prejudiced by dynamic coastal processes; (f) would substantially prejudice the achievement of any coastal management objective; or (g) would be contrary to the interests of the whole community; (vii) whether the very nature of the proposed activity or development requires it to be located within coastal public property, the coastal protection zone or coastal access land; (viii) whether the proposed development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area; and (ix) the objects of NEM: ICMA, where applicable. | | |
| N/A | | |

(c) Social and Economic aspects:

| | |
|--|---------------------------|
| What is the expected capital value of the project on completion? | R25 000 000 |
| What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project? | R8 700 000 |
| Will the project contribute to service infrastructure? | YES NO |
| Is the project a public amenity? | YES NO |
| How many new employment opportunities will be created during the development phase? | Approx. 25 for 6-8 months |
| What is the expected value of the employment opportunities during the development phase? | R4 750 000 |
| What percentage of this will accrue to previously disadvantaged individuals? | 80% |
| How will this be ensured and monitored (please explain): | |

| | |
|--|-------------|
| Stellenbosch Municipality's Preferential Procurement Policy shall be applied to source and appoint contractor. | |
| How many permanent new employment opportunities will be created during the operational phase of the project? | Approx. 10 |
| What is the expected current value of the employment opportunities during the first 10 years? | R 9 500 000 |
| What percentage of this will accrue to previously disadvantaged individuals? | 95% |
| How will this be ensured and monitored (please explain): | |
| Stellenbosch Municipality's is an equal opportunity employer and selection of staff will be done accordingly. Stellenbosch Municipality will be required to secure some 60% of the job opportunities for youth and females and to make skills development/ educational qualifications accessible. | |
| Any other information related to the manner in which the socio-economic aspects will be impacted: | |
| Please refer to Socio-economic statement as per Appendix G-6 | |

(d) Heritage and Cultural aspects:

| |
|--|
| Please refer to Heritage Impact Assessment as per Appendix G5 and Socio-economic statement as per Appendix G-6 |
|--|

2. WASTE AND EMISSIONS

(a) Waste (including effluent) management

| | | |
|--|----------------|----|
| Will the development proposal produce waste (including rubble) during the development phase? | YES✓ | NO |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type? | m ³ | |
| The only solid waste anticipated from the activity during construction and operation will be domestic waste which will be removed to the nearest registered Municipal landfill site. | | |

| | | |
|---|----------------|----|
| Will the development proposal produce waste during its operational phase? | YES✓ | NO |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type? | m ³ | |
| Domestic waste (paper, plastic, organic/garden refuse) | | |

| | | |
|--|--------------------------------------|-----|
| Will the development proposal require waste to be treated / disposed of on site? | YES | NO✓ |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | m ³ | |
| | | |
| If no, where and how will the waste be treated / disposed of? Please explain. Indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | 6 to 12m ³ domestic waste | |
| The only solid waste anticipated from the activity during construction and operation will be domestic waste which will be removed to the nearest registered Municipal landfill site. | | |
| Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? If yes, provide written confirmation from the municipality or relevant authority. | YES | NO✓ |

| | | |
|---|-----------------|-----|
| Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream? | YES | NO✓ |
| If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? Provide written confirmation from the facility. N/A | YES | NO |
| Does the facility have an operating license? (If yes, please attach a copy of the licence.) N/A | YES | NO |
| Facility name: | | |
| Contact person: | | |
| Cell: | Postal address: | |
| Telephone: | Postal code: | |
| Fax: | E-mail: | |
| Describe the measures that will be taken to reduce, reuse or recycle waste: | | |
| Recycling bins will be provided to separate waste produced at source. | | |

(b) Emissions into the atmosphere

| | | |
|--|------|----------------|
| Will the development proposal produce emissions that will be released into the atmosphere? | YES✓ | NO |
| If yes, does this require approval in terms of relevant legislation? | YES | NO✓ |
| If yes, what is the approximate volume(s) of emissions released into the atmosphere? | | m ³ |
| Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated: | | |
| Fugitive particulate emissions/dust during initial site preparation/grading. Smaller amounts of fugitive particulate emissions when graves are excavated. Vehicle emissions from during construction and normal operation of facility. | | |

3. WATER USE

(a) Indicate the source(s) of water for the development proposal by highlighting the appropriate box(es).

| | | | | | |
|-----------|-------------|-------------|----------------------------|-------|--------------------------------|
| Municipal | Water board | Groundwater | River, Stream, Dam or Lake | Other | The project will not use water |
|-----------|-------------|-------------|----------------------------|-------|--------------------------------|

Note: Provide proof of assurance of water supply (e.g. Letter of confirmation from the municipality / water user associations, yield of borehole)

Refer to Appendix E5 – Email from Stellenbosch Municipality. There is currently a municipal line supplying potable water to the region. A single point tie in will be made to this line. Non-potable water for irrigation of garden areas and the sewer network may be provided either from boreholes, or trucked-in by the Local Municipality.

| | | |
|--|---------|----------------|
| (b) If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: | Unknown | m ³ |
| (c) Does the development proposal require a water use permit / license from DWS? | YES✓ | NO |
| If yes, please submit the necessary application to the DWS and attach proof thereof to this application as an Appendix. The possibility of using groundwater from the northern or north western part of the site exists but will need to be further investigated and would then trigger an additional water use under the National Water Act, No. 36 of 1998 (NWA). Any water use permit / license application (including the will be undertaken by an appropriate freshwater specialist. | | |
| (d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water: | | |
| Non-potable water will be used for ablutions and watering saplings and water-wise garden areas. | | |

4. POWER SUPPLY

- (a) Describe the source of power e.g. municipality / Eskom / renewable energy source.

Power will be supplied from Eskom but it is also proposed that the development be off-grid as much as possible with the potentially small electricity requirement for possible entrance gate lighting, provided by a renewable energy means (e.g. solar panels). Refer to services report in Appendix G13.

- (b) If power supply is not available, where will power be sourced?

Power will be supplied from Eskom but it is also proposed that the development be off-grid as much as possible with the potentially small electricity requirement for possible entrance gate lighting, provided by a renewable energy means (e.g. solar panels). Refer to services report in Appendix G13.

5. ENERGY EFFICIENCY

- (a) Describe the design measures, if any, that have been taken to ensure that the development proposal will be energy efficient:

Power will be supplied from Eskom but it is also proposed that the development be off-grid as much as possible with the potentially small electricity requirement for possible entrance gate lighting, provided by a renewable energy means (e.g. solar panels). Energy efficient light bulbs and timer controls will also be utilised where possible. Refer to services report in Appendix G13.

- (b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

Power will be supplied from Eskom but it is also proposed that the development be off-grid as much as possible with the potentially small electricity requirement for possible entrance gate lighting, provided by a renewable energy means (e.g. solar panels). Energy efficient light bulbs and timer controls will also be utilised where possible. Refer to services report in Appendix G13.

6. TRANSPORT, TRAFFIC AND ACCESS

Describe the impacts in terms of transport, traffic and access.

Access to the proposed development site will be from a dedicated, two-way intersection as per the diagram provided in Appendix G11 of the BAR (*Final Traffic Study*) and Appendix G12 of the BAR (*Road Access Possibilities*). According to the Final Traffic Study, a 2012 Arterial Management Plan (AMP) indicated that an intersection off the R304 at \pm km50.58 will be required. The Final Traffic Study proposes that this intersection be relocated to km50.37, allowing for a municipal street to be constructed along the northern boundary of the development site which would provide access to the cemetery.

The proposed access road off the R304 (MR174) should be a Class 3 municipal street which would also serve possible future developments to the east. The distance from the edge of the R304 shoulder to the proposed development's western boundary is approximately 28m. The proposed actual main entrance to the cemetery and memorial park is approximately 460m from the R304. This would ensure that any queuing that may occur at the entrance to the cemetery would not impact the two-way intersection of the access road on MR174. The access road (from and to) the R304 will be stop controlled.

The 2012 AMP further concluded the section of road in which the intersection will occur will require additional through lanes, i.e. two lanes per direction within the next 10 to 15 years and will operate acceptably for the next 30 years under moderate growth scenarios. However, with higher growth, a third through lane per direction will be required in the next 25 to 30 years."

It is not anticipated that the signalisation of the intersection on the R304 (MR174) will be required before the dualling of the R304 takes place. The proposed location for the access will still ensure sufficient access spacing to the adjacent accesses/intersections.

Page four of Appendix G12 of the BAR also states that:

- Posted Speed Limit on MR174 (or R304) is 100km/h
- Access only from MR174 (R304) according to AMP
- Shoulder Sight Distance required: 220m (Passenger Vehicle, 15m road width)
- Stopping Sight Distance: 155m (UTG1)
- AADT: $\pm 12\,900$ vpd (15 January 2016)
- Will require right turn lane
- WCG Design Dwg: WCS/11/2/D3
- Access will need to comply with access spacing (MR174 AMP)

Access control to the proposed development will most likely be facilitated via fencing/palisade fencing and a lockable gate with a security guard on duty. This also provides a local employment opportunity.

7. NUISANCE FACTOR (NOISE, ODOUR, etc.)

Describe the potential nuisance factor or impacts in terms of noise and odours.

Due to the rural locality of the proposed development site, nuisance factors will probably be negligible since no immediately adjacent residential/small business neighbours exist.

Note: Include impacts that the surrounding environment will have on the proposed development.

8. OTHER

Sewage during construction will be managed via a portable toilet contract.

Sewage during operation will be managed via an on-site sewage/effluent treatment plant.

SECTION G: IMPACT ASSESSMENT, IMPACT AVOIDANCE, MANAGEMENT, MITIGATION AND MONITORING MEASURES

1. METHODOLOGY USED IN DETERMINING AND RANKING ENVIRONMENTAL IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

- (a) Describe the **methodology** used in determining and ranking the nature, significance consequences, extent, duration and probability of potential environmental impacts and risks associated with the proposed development and alternatives.

Refer to Project Impact Assessment, Significance and Mitigation Measures Summary attached as Appendix I.

- (b) Please describe any gaps in knowledge.

Refer to Project Impact Assessment, Significance and Mitigation Measures Summary attached as Appendix I.

- (c) Please describe the underlying assumptions.

Refer to Project Impact Assessment, Significance and Mitigation Measures Summary attached as Appendix I.

- (d) Please describe the uncertainties.

Refer to Project Impact Assessment, Significance and Mitigation Measures Summary attached as Appendix I.

- (e) Describe adequacy of the assessment methods used.

Refer to Project Impact Assessment, Significance and Mitigation Measures Summary attached as Appendix I.

2. IDENTIFICATION, ASSESSMENT AND RANKING OF IMPACTS TO REACH THE PROPOSED ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE WITHIN THE SITE

Note: In this section the focus is on the identified issues, impacts and risks that influenced the identification of the alternatives. This includes how aspects of the receiving environment have influenced the selection.

Refer to Appendix I for Impact and Risk Assessment which remains the same for all the alternatives since only one site is proposed and minimum setbacks are adhered to for all layout alternatives.

However, for completeness an attempt was also made to use the rating system guide as provided:

- (a) List the identified impacts and risks for each alternative.

| | |
|--------------------|--|
| Alternative 1: | for example, choose from: geology / geohydrological / ecological / socio-economic / heritage and cultural-historical / noise / visual / etc. |
| Alternative 2: | for example, choose from: geology / geohydrological / ecological / socio-economic / heritage and cultural-historical / noise / visual / etc. |
| Alternative x: | for example, choose from: geology / geohydrological / ecological / socio-economic / heritage and cultural-historical / noise / visual / etc. |
| No-go Alternative: | |

- (b) Describe the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. (The EAP has to select the relevant impacts identified in blue in the table below for each alternative and repeat the table for each impact and risk).

Refer to Appendix I for Impact and Risk Assessment. However, for completeness an attempt was also made to use the rating system guide as provided:

Impacts that may result from the planning, design and construction 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 planning, design and construction phase.

| | |
|--|--|
| Potential impacts on geographical and physical aspects: | |
| Nature of impact: | Change in landscape/slope of property/site. |
| Extent and duration of impact: | Entire site, during construction |
| Probability of occurrence: | Unlikely – site is relatively flat |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Negligible |
| Cumulative impact prior to mitigation: | Negligible |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |
| Degree to which the impact can be mitigated: | Negligible |
| Proposed mitigation: | <ul style="list-style-type: none"> Landscaping to be done |
| Cumulative impact post mitigation: | Negligible |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |

| | |
|--|--|
| Potential impact on biological aspects: | |
| Nature of impact: | Loss of indigenous vegetation due to construction and operational activities |
| Extent and duration of impact: | Entire site, during construction (but site is infested with alien vegetation) |
| Probability of occurrence: | Unlikely – not much indigenous vegetation on site |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Negligible |
| Cumulative impact prior to mitigation: | Negligible |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |
| Degree to which the impact can be mitigated: | Negligible |
| Proposed mitigation: | <ul style="list-style-type: none"> Landscaping to be done with locally indigenous “water-wise” vegetation |
| Cumulative impact post mitigation: | Negligible |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |

| | |
|--|--|
| Potential impacts on socio-economic aspects: | |
| Nature of impact: | A number of job opportunities are expected to be created during the construction phase. |
| Extent and duration of impact: | Local. During the construction phase of the activity |
| Probability of occurrence: | Definite |
| Degree to which the impact can be reversed: | NA |
| Degree to which the impact may cause irreplaceable loss of resources: | NA |
| Cumulative impact prior to mitigation: | Low - positive |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - positive |
| Degree to which the impact can be mitigated: | Medium |
| Proposed mitigation: | No mitigation measures required. Temporary jobs will be created during the construction phase. |
| Cumulative impact post mitigation: | Low - positive |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - positive |

| | |
|--|--|
| Potential impacts on cultural-historical aspects: | |
| Nature of impact: | The loss of cultural or historic aspects during construction |
| Extent and duration of impact: | Local, during construction phase |
| Probability of occurrence: | Unlikely, no cultural or historic aspects of significance were identified on site. |
| Degree to which the impact can be reversed: | High |
| Degree to which the impact may cause irreplaceable loss of resources: | Very Low - negative |
| Cumulative impact prior to mitigation: | Very Low – negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - Negative |
| Degree to which the impact can be mitigated: | Medium |
| Proposed mitigation: | <ul style="list-style-type: none"> If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to HWC and must not be disturbed further until the necessary approval has been obtained from HWC. Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency and Heritage Western Cape. The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer |
| Cumulative impact post mitigation: | Negligible |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |

| | |
|---|---|
| Potential noise impacts: | |
| Nature of impact: | Noise impact from machinery and plant during construction. |
| Extent and duration of impact: | Local. Duration of construction phase |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Probable |
| Degree to which the impact may cause irreplaceable loss of resources: | Negligible |

| | |
|--|--|
| Cumulative impact prior to mitigation: | Low - Negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - Negative |
| Degree to which the impact can be mitigated: | Medium |
| Proposed mitigation: | <p>Noise mitigation measures will be dealt with in the EMP. The following measures will be implemented amongst others:</p> <ul style="list-style-type: none"> Working hours will be restricted to daily normal working hours. All noise and sounds generated by plant or machinery must adhere to SABS 0103 specifications for the maximum permissible noise levels for residential areas. Construction activities are only to occur within the permitted construction hours. The Contractor shall ensure that noise levels are kept to a minimum and that they do not to exceed the permissible noise level of 85dB All plant and machinery are to be fitted with adequate silencers. No sound amplification equipment such as sirens, loud hailer or hooters may be used on site, after normal working hours, except in emergencies. |
| Cumulative impact post mitigation: | Very low - negative |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Very low - negative |

| | |
|--|--|
| Potential visual impacts: | |
| Nature of impact: | Unightly views due to construction site. |
| Extent and duration of impact: | Local, during duration of construction |
| Probability of occurrence: | Definite |
| Degree to which the impact can be reversed: | Probable |
| Degree to which the impact may cause irreplaceable loss of resources: | N/A |
| Cumulative impact prior to mitigation: | Medium - negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium - negative |
| Degree to which the impact can be mitigated: | Probable |
| Proposed mitigation: | <p>Visual impact mitigation measures will be dealt with in the EMP The EMP must be enforced and monitored by the ECO. The site must be clean and tidy at all times. No stockpiles may exceed 2m in height. Appropriate hoarding to be erected between the site and the surrounding residential properties.</p> |
| Cumulative impact post mitigation: | Low - negative |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - negative |

Impacts that may result from the operational 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 operational phase.

| | |
|--|--|
| Potential impacts on the geographical and physical aspects: | The activity is expected to have an impact on the groundwater quality |
| Nature of impact: | Leachate from the cemetery polluting the groundwater |
| Extent and duration of impact: | Local, during the operational phase of the cemetery |
| Probability of occurrence: | Likely |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Low - negative |
| Cumulative impact prior to mitigation: | Low - negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low |
| Degree to which the impact can be mitigated: | Low |

| | |
|---|--|
| Proposed mitigation: | Two or more boreholes situated along each boundary of the envisaged development for ground water monitoring. It is recommended that this one bore hole be monitored at least twice a year, once in summer and once in winter, for the parameters as indicated in Table 1, page 13 of Appendix G3. The results are to be submitted to the DWA as soon as they become available, as well as to interested and affected parties. |
| Cumulative impact post mitigation: | Low - negative |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - negative |

| | |
|--|--|
| Potential impact biological aspects: | No negative impact on biological aspects are expected since alien removal and potential conservation through periodic search and rescue of possible endangered/threatened indigenous plant species is proposed. |
| Nature of impact: | Local. During entire operational phase of the development |
| Extent and duration of impact: | Alien plant removal -definite. |
| Probability of occurrence: | NA |
| Degree to which the impact can be reversed: | NA |
| Degree to which the impact may cause irreplaceable loss of resources: | Low - positive |
| Cumulative impact prior to mitigation: | Low - positive |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | NA |
| Degree to which the impact can be mitigated: | No mitigation measures required. This is a positive impact |
| Proposed mitigation: | Low - positive |
| Cumulative impact post mitigation: | Low - positive |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Local. During entire operational phase of the development |

| | |
|--|--|
| Potential impacts on the socio-economic aspects: | |
| Nature of impact: | Additional burial opportunities will be provided. |
| Extent and duration of impact: | Local. During entire operational phase of the development |
| Probability of occurrence: | Definite |
| Degree to which the impact can be reversed: | NA |
| Degree to which the impact may cause irreplaceable loss of resources: | NA |
| Cumulative impact prior to mitigation: | Low - positive |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - positive |
| Degree to which the impact can be mitigated: | NA |
| Proposed mitigation: | No mitigation measures required. This is a positive impact |
| Cumulative impact post mitigation: | Low - positive |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - positive |

| | |
|---|--|
| Potential impacts on the cultural-historical aspects: | |
| Nature of impact: | The loss of cultural or historic aspects during operational phase |
| Extent and duration of impact: | Local, during construction phase |
| Probability of occurrence: | Unlikely, no cultural or historic aspects of significance were identified on site. |
| Degree to which the impact can be reversed: | High |
| Degree to which the impact may cause irreplaceable loss of resources: | Very Low - negative |
| Cumulative impact prior to mitigation: | Very Low – negative |

| | |
|--|--|
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - Negative |
| Degree to which the impact can be mitigated: | Medium |
| Proposed mitigation: | <ul style="list-style-type: none"> If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to HWC and must not be disturbed further until the necessary approval has been obtained from HWC. Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency and Heritage Western Cape. The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer |
| Cumulative impact post mitigation: | Negligible |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Negligible |

| | |
|--|--|
| Potential noise impacts: | |
| Nature of impact: | <ul style="list-style-type: none"> Normal traffic noise associated with motorcades to the cemetery will result. Minimal noise during burial ceremonies is expected |
| Extent and duration of impact: | Local, duration of operational phase |
| Probability of occurrence: | Probable |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | NA |
| Cumulative impact prior to mitigation: | Medium-low - negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium-low - negative |
| Degree to which the impact can be mitigated: | Very limited |
| Proposed mitigation: | <ul style="list-style-type: none"> - Landscaped buffer along the perimeter of the cemetery |
| Cumulative impact post mitigation: | Low – negative |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low – negative |

| | |
|--|---|
| Potential visual impacts: | |
| Nature of impact: | <ul style="list-style-type: none"> Normal visual impact associated with a cemetery will result. No other detrimental visual impacts are envisaged with a development of this nature and size. |
| Extent and duration of impact: | Local, permanent |
| Probability of occurrence: | Possible |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Low - negative |
| Cumulative impact prior to mitigation: | Low - negative |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium - negative |
| Degree to which the impact can be mitigated: | Medium |
| Proposed mitigation: | <ul style="list-style-type: none"> - Landscaped buffer along the perimeter of the cemetery - The proposed site is layout and landscaping shields the development from visual impacting on the surrounds |
| Cumulative impact post mitigation: | Low - negative |

| | |
|--|----------------|
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low - negative |
|--|----------------|

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.

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof have not been rated.

Note: The EAP may decide to include this section as Appendix J I to the BAR.

(c) Provide a summary of the site selection matrix.

Refer to Appendices L & M attached

(d) Outcome of the site selection matrix.

Refer to Appendices L & M attached

3. SPECIALIST INPUTS/STUDIES, FINDINGS AND RECOMMENDATIONS

Note: Specialist inputs/studies must be attached to this report as **Appendix G** and must comply with the content requirements set out in Appendix 6 of the EIA Regulations, 2014 (as amended). Also take into account the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014, any subsequent Circulars, and guidelines available on the Department's website (<http://www.westerncape.gov.za/eadp>).

Provide a summary of the findings and impact management measures identified in any specialist report and an indication of how these findings and recommendations have been included in the BAR.

To be extracted from specialist reports as appended in Appendix G.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.

Conclusion

Based on the specialist reports in Appendix G, the proposed Calcutta Public Cemetery and Memorial Park will provide a much-needed service to the regional community whilst also facilitating the rehabilitation and protection of the property in terms of biodiversity and existing water courses.

In addition, the cultural/heritage aspects of the property which have been somewhat neglected and lost, will be rehabilitated and preserved through the proposed development.

The aesthetic impact of the proposed public cemetery and memorial park will improve since the current property is infested with alien plants and is often used as a dumping ground.

Each specialist assessment further highlights the environmental benefits of the proposed development, as indicated below:

- i. **Biodiversity** – the site currently has a low biodiversity significance but can be rehabilitated provided the requirements as detailed in the botanical statement/scan reports (attached as Appendices G1 and G2) are taken into account.
- ii. **Freshwater** – the proposed development will likely result in a net positive change from the current land-use (or lack thereof) in terms of freshwater impact, as long as the wetlands and drainage lines, with buffers, are incorporated within the parkland and rehabilitated and the freshwater rehabilitation, maintenance and management plan (FRMMP) attached as Appendix G5, are adhered to.
- iii. **Geohydrology** – the majority of the site is classified as having a 'low/medium' groundwater vulnerability rating. The southern portion of the site has been classified as 'medium', grading into a 'very high' vulnerability classification.
- iv. **Geotechnical** – provided the cemetery is sited as recommended in the geotechnical report, the site is considered satisfactory for development of a cemetery.
- v. **Heritage** – The potential impact of the proposed cemetery site on the old outspan is significant in that it is a wholesale change of land use from woodlot to cemetery. However, the draft concept plan has sensitively, if not, fortuitously, allowed for the conservation of the southern outspan site and surrounds in its overall framework. It would now be placed in the buffer informal parkland zone. Were the outspan site and surrounds carefully conserved and landscaped, this would retain a memory of its core purpose and allow for local associations to be retained of the site's outspan purpose and character thus mitigating associative impact and retaining landmark value.
 - a. **Archaeology** – Archaeological visibility is extremely low due to dense vegetation cover, but indications are that the receiving environment is not a sensitive archaeological landscape.
 - b. **Palaeontological** – No fossil remains were recorded on Farm Calcutta RE/29 during the short palaeontological site visit. It is concluded that the palaeontological sensitivity of the Memorial Park study area is very low.
 - c. **Visual** – The proposed development will have a moderate impact on the landscape causing some change to the visual environment. The development's visual impact has site-

related to local extent, long term duration, medium intensity, definite probability, and medium significance on the landscape.

- vi. **Socio-economic** – socio-economic costs and benefits were listed in section five of the report. Eleven potentially positive impacts (job and skill levels increase; the creation of a social space; continuation of social networks; equality and exclusivity; employment equity of vulnerable groups; use of social amenities; positive change in the sense of place; preservation of social history; access to leisure opportunities; access to natural resources; sales and GGP) versus three (crime/neglect; individual and family changes; dust and noise levels) potentially negative impacts were listed related to the proposed development.

According to the Western Cape Biodiversity Spatial Plan, most of the area proposed for the development are within potential critical biodiversity or ecological support areas viz. CBA 2– degraded areas but with potential for rehabilitation and ESA 2 – ecological support areas (associated with watercourses or plantations).

Refer to Appendix D for Biodiversity sensitivity maps.

A physical site inspection by the biodiversity specialist showed that it appears that 100% of the property has been degraded as a result of dense stands of the alien tree *Eucalyptus*, but with *Acacia saligna* also prominent (Also refer to Appendix C -Site photographs). Very few remaining natural plant species were observed by the specialist even though a small watercourse crosses the property from north to south along its western boundary.

The proposed development will positively impact and improve the ESA, CBA condition, as well as eliminate the dense infestation of alien trees on the property.

In addition to preserving and promoting the introduction of indigenous vegetation in the area, the proposed public cemetery and memorial park will preserve the cultural heritage of the regions Outspan site and provide employment for local individuals, while meeting the need for the essential service of a contextualised public cemetery and memorial park.

Considering all the information, it is not envisaged that this will have a significant overall negative impact on the environment.

It is therefore recommended that this application be authorised with the necessary conditions of approval as described throughout this BAR.

| | | |
|---|----------|----|
| (ii) Has a map of appropriate scale been provided, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers? | YES ✓ | NO |
| (iii) A summary of the positive and negative impacts that the proposed development and alternatives will cause in the environment and community. | | |

See Appendix I attached

5. IMPACT MANAGEMENT, MITIGATION AND MONITORING MEASURES

- (a) Based on the assessment, describe the impact management, mitigation and monitoring measures as well as the impact management objectives and impact management outcomes included in the EMPr. The EMPr must be attached to this report as Appendix O.

- i. **Biodiversity** – The site and its immediate surroundings are considered transformed with no natural veld remaining. Only a few hardy indigenous species remain. However implementing the following recommendations can ensure a potential positive environmental impact:
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase.
 - All alien plants and all waste must be removed from the site and its immediate surroundings.
 - The small seasonal stream must be demarcated with a suitable buffer zone
 - The buffer zone (ecological support area) should be replanted with suitable indigenous vegetation (riparian vegetation).
 - The seasonal stream and its buffer zone should be incorporated as a feature within the lay-out of the memorial park.
 - Only indigenous plants should be used for any landscaping within the memorial park.
 - All areas impacted as a result of construction must be rehabilitated on completion of the project.
 - Once alien plantation on the proposed site is removed, a Spring (August/September) botanical scan must be undertaken to confirm that there are no indigenous flora which may need to be search out and rescued (to be relocated into the development's indigenous garden areas).
- ii. **Freshwater** – It is proposed that it be made a condition of any approval granted based on the findings of the freshwater assessment attached as Appendix G-3 of the BAR, that the site be revisited for verification of the wetland delineation during the wet season (Jul/August) after site clearing is completed, so that reports can be updated and plans adjusted to accommodate post clearing wetland boundaries. The proposed layout must avoid infilling of wetlands A and D as indicated in the Freshwater Assessment (Appendix G-3 of the BAR), along with a 15m buffer for each, then the project would represent a significant net positive impact over present conditions.
The Freshwater Rehabilitation, Maintenance and Management Plan, attached as Appendix 13.3 of this EMPr (Appendix G-5 of the BAR), must be implemented as specified to ensure successful rehabilitation of the watercourses/wetlands on site.
- iii. **Geohydrology** – The majority of the site is classified as having a “low/medium” groundwater vulnerability rating. The southern portion of the site has been classified as “medium” grading into a “very high” vulnerability classification.
- The likelihood of groundwater contamination is low in the area and is based on the following:
- the nine test pits, the deepest being 3.40m below ground level (bgl), did not intersect groundwater;

- permeability evaluations indicate that majority of the site had semi- to impervious layers with the exception of TP7 which had a porous layer at 0.2m (not a real concern for groundwater);
- the closest neighbours' borehole is located approximately 140m north of the northern boundary. However, the water bearing fractures were reported to be located a depth of 120m to 125m bgl. With a thick clay layer above the granite bedrock it can be assumed that the aquifer is semi-confined in nature. The likelihood of migration to the lower fractured aquifer is low due the clay layer.

However, since the site is in close proximity to a number of groundwater users that depend on groundwater as a source, it is recommended that three to four monitoring boreholes (110 OD/100 ID mm) be drilled to a depth of at least 12m. If the water table is intersected before 12m, then drilling must continue for 1m past the water table intersect - this should account for season fluctuations.

iv. **Geotechnical** – Sidewall collapse was not observed in any of the trial pits put down and it is therefore assumed that grave excavations will stay open for a reasonable length of time. It must be noted that when the soils are wet by precipitation or otherwise, sidewall collapse is possible. Provided the grave excavation is stable when formed and no groundwater is present, the stand-up time for the sidewalls should be taken as maximum 24 hours, however this would need to be monitored over this period by the grave diggers in the event that rainfall could saturate the soils and cause collapse.

Allowance must always be made for the subsidence of the grave backfill and subsequent releveling before any memorial structure or tombstone is constructed over the grave.

v. **Heritage:**

a. Archaeology – With regard to the proposed Calcutta Municipal Cemetery on Farm No. 29 near

Stellenbosch, the following recommendations are made:

- No mitigation is required prior to construction activities commencing.
- As a precaution, the site should be scanned for artefactual remains dating from the time of the Calcutta Bos Outspan, once vegetation has been cleared and removed from the site.

b. Palaeontological – It is recommended that, pending the exposure of significant new fossils (e.g. mammalian bones and teeth) during construction, exemption from further specialist palaeontological studies and mitigation be granted for this development.

If fossil material is discovered during construction, this should be safeguarded, preferably *in situ*, and the ECO should alert Heritage Western Cape (Tel: 086-142 142. Fax: 021-483 9842. Email: hwc@pgwc.gov.za), so that appropriate mitigation (i.e. recording, sampling or collection) can be taken by a professional palaeontologist. The tabulated 'Chance Fossil Finds Protocol' and associated recommendations, appended to the Heritage Impact Assessment report (Appendix G-8 of the BAR) must be implemented.

- c. Visual – Implementation of a sound visual management and monitoring plan, as per Section 6 of the Visual Impact Assessment (VIA) report attached as Appendix G8 of the BAR, is required.

A summary of the type and frequency of monitoring is further summarised in terms of inspection, observation and review, in Figure 5 (Visual Monitoring Plan, under section 6.3.3. of the VIA.

- (b) Describe any provisions for the adherence to requirements that are prescribed in a Specific Environmental Management Act relevant to the listed activity or specified activity in question.

per EMPr detailed regarding possible botanical search and rescue and heritage which will be appended as Appendix O.

- (c) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The Applicant, Stellenbosch Municipality, will have a dedicated team from the Community Services Department to service and maintain the proposed development. In addition, Stellenbosch Municipality already has various plans in place e.g. annual alien plant removal planned operation which will complement the proposed developments objectives.

- (d) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

N/A

- (e) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

N/A

- (f) Describe any assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures proposed.

Unknown

SECTION H: RECOMMENDATIONS OF THE EAP AND SPECIALISTS

| | | |
|---|-------|----|
| (a) In my view as the appointed EAP, the information contained in this BAR and the documentation attached hereto is sufficient to make a decision in respect of the listed activity(ies) applied for. | YES ✓ | NO |
|---|-------|----|

| | | |
|--|-------|----|
| (b) If the documentation attached hereto is sufficient to make a decision, please indicate below whether, in your opinion, the listed activity(ies) should or should not be authorised: | | |
| Listed activity(ies) should be authorised: | YES ✓ | NO |
| Provide reasons for your opinion | | |
| <p>Preliminary geohydrological assessments indicate that <u>attenuation</u> of any biological pathogens or contaminants before groundwater is reached is very likely - Fractured aquifer lies at a depth greater than the minimum depth required for attenuation of contaminants.</p> <p>The positive impacts on biodiversity, heritage, aesthetics and job-creation are likely to be realised (although the management of the site by the Municipality once the development is established is uncertain).</p> | | |

| | | |
|---|--|--|
| (c) Provide a description of any aspects that were conditional to the findings of the assessment by the EAP and Specialists which are to be included as conditions of authorisation. | | |
| <p>Wetland assessment to take place once alien trees/Eucalyptus have been removed from site to verify delineation.</p> <p>Archaeological assessment required during construction when dense tree growth has been removed.</p> <p>Memorial garden/park aspect which involves the indigenous forest/tree planting area must be established in conjunction with the alien tree removal programme for the region so that the planned removal of alien vegetation is systematically replaced with indigenous trees/flora. Botanical survey to be taken once alien trees/Eucalyptus have been removed from site to verify if there are any indigenous species requiring search and rescue (to the memorial park landscaped areas).</p> <p>Perimeter wall structure (not just a fence must be erected on the northern boundary of the actual public cemetery and memorial park).</p> | | |

| | | |
|--|--|--|
| (d) If you are of the opinion that the activity should be authorised, please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an environmental authorisation. | | |
| Due to I&APs concerns and beliefs regarding residing near a cemetery, it was requested and is recommended that a <u>walled</u> boundary (even a pre-fab/'vibacrete' type wall) be erected instead of a perimeter fence on the northern boundary of the development site. | | |

| | | |
|--|--|--|
| (e) Please indicate the recommended periods in terms of the following periods that should be specified in the environmental authorisation: | | |
| i. | the period within which commencement must occur; | 5 years from date of issue |
| ii. | the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects; | Development boundary and subsurface infrastructural establishment: 5-10 years from date of issue. (Due to the nature of the amenity, the development 'grows' over the projected lifespan to eventually occupy the total footprint applied for. Development takes place in 'precincts' which are established approximately every 3 to 5 years within the proposed site boundary). |
| iii. | the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and | Within the main boundary of the development, precincts will be established in 3 to 5 year phases over the expected 30 year lifespan |
| iv. | the period for which the portion of the environmental authorisation that deals with operational aspects is granted. | 30 years |

SECTION I: APPENDICES

The following appendices must be attached to this report:

| APPENDIX | | Confirm that Appendix is attached |
|-------------|---|---|
| Appendix A: | Locality map | Yes |
| Appendix B: | Site development plan(s) | Yes |
| | A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas; | Yes |
| Appendix C: | Photographs | Yes |
| Appendix D: | Biodiversity overlay map | Yes |
| Appendix E: | Permit(s) / license(s) from any other Organ of State, including service letters from the municipality. | No (Email) |
| | Appendix E3: Copy of comment from HWC. | No – just initial email with reference number |
| Appendix F: | Public participation information: including a copy of the register of I&APs, the comments and responses report, proof of notices, advertisements and any other public participation information as is required in Section C above. | Yes |
| Appendix G: | Specialist Report(s) | Yes |
| Appendix H: | I&AP Lists | Yes |
| | Additional information related to listed waste management activities (if applicable) | N/A |
| Appendix I: | If applicable, description of the impact assessment process followed to reach the proposed preferred alternative within the site. | Yes – as Appendix I |
| Appendix J: | Rezoning information | Yes |
| Appendix K: | Minutes of Stellenbosch Municipality Council Meeting (partial) | Yes |
| Appendix L: | First Report, Final October 2016: Identification and Acquisition of Authorisations and Approvals for the Establishment of One or More Regional Cemeteries for Stellenbosch Municipality | Yes |
| Appendix M: | Motivation to obtain Stellenbosch Council's endorsement of Regional Cemetery Sites in fulfilment of tender B/SM No. 17/16: Acquisition of Authorisations and Approvals for the establishment of one or more regional cemeteries for Stellenbosch Municipality | Yes |
| Appendix N: | Cemetery Feasibility Study, October 2006 | Yes |
| Appendix O: | Environmental Management Plan/Programme (EMPr) | Yes |

SECTION J: DECLARATIONS

THE APPLICANT

Note: Duplicate this section where there is more than one applicant.

I, in my personal capacity or duly authorised thereto, hereby declare/affirm all the information submitted as part of this Report is true and correct, and that I –

- am aware of and understand the content of this report;
- am fully aware of my responsibilities in terms of the NEMA, the EIA Regulations in terms of the NEMA (Government Notice No. R. 982, refers) (as amended) and any relevant specific environmental management Act and that failure to fulfil these requirements may constitute an offence in terms of relevant environmental legislation;
- have provided the EAP and Specialist, Review EAP (if applicable), and Review Specialist (if applicable), and the Competent Authority with access to all information at my disposal that is relevant to the application;
- will be responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority;
- will be responsible for the costs incurred in complying with the conditions that may be attached to any decision(s) issued by the Competent Authority;

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the Applicant:

Name of Organisation:

Date:

THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, as the appointed EAP hereby declare/affirm:

- the correctness of the information provided as part of this Report;
- that all the comments and inputs from stakeholders and I&APs have been included in this Report;
- that all the inputs and recommendations from the specialist reports, if specialist reports were produced, have been included in this Report;
- any information provided by me to I&APs and any responses by me to the comments or inputs made by I&APs;
- that I have maintained my independence throughout this EIA process, or if not independent, that the review EAP has reviewed my work (Note: a declaration by the review EAP must be submitted);
- that I have throughout this EIA process met all of the general requirements of EAPs as set out in Regulation 13;
- I have throughout this EIA process disclosed to the applicant, the specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application;
- have ensured that information containing all relevant facts in respect of the application was distributed or was made available to I&APs and that participation by I&APs was facilitated in such a manner that all I&APs were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all I&APs were considered, recorded and submitted to the Department in respect of the application;
- have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, if specialist inputs and recommendations were produced;
- have kept a register of all I&APs that participated during the PPP; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the EAP: _____

Name of Company: _____

Date: _____

THE REVIEW ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, as the appointed Review EAP hereby declare/affirm:

- that I have reviewed all the work produced by the EAP;
- the correctness of the information provided as part of this Report;
- that I have, throughout this EIA process met all of the general requirements of EAPs as set out in Regulation 13;
- I have, throughout this EIA process disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the
Review EAP:

Name of Company:

Date:

THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I :

- in terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the Specialist:

Name of Company:

Date:

THE REVIEW SPECIALIST

I, as the appointed Review Specialist hereby declare/affirm:

- that I have reviewed all the work produced by the Specialist(s);
- the correctness of the specialist information provided as part of this Report;
- that I have, throughout this EIA process met all of the general requirements of specialists as set out in Regulation 13;
- I have, throughout this EIA process disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of Review Specialist: _____

Name of Company: _____

Date: _____