

Botanical Impact Assessment

Proposed development of a school & hospital on Farm Vaalevalley 219, Mossel Bay

11 December 2025



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Citation of report

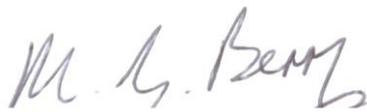
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Declaration of Independence

I Mark Gerald Berry, 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:

MB Botanical Surveys

Date:

11 December 2025

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1. Introduction

Proposed development and area assessed

The applicant wishes to develop a school and hospital on Farm Vaalevalley 219, Mossel Bay. The site is located on a gentle southeast facing slope between Hartenbos and Klein Brak River (**Figure 1-1**). One layout option is proposed for the development comprising a hospital, secondary school, school hostel, sport facilities, tertiary education centre, student accommodation, parking areas and roads (**Figure 1-2**). The development footprint is estimated at 28.5 ha. The site currently comprises a wheatfield, with a few farm dams and farm roads. It is located close to the Hartland Estate development.



Figure 1-1: Location of the site north of Hartenbos, Mossel Bay area.

According to the Screening Report, generated by the EAP (Sharples Environmental Services) on 4 June 2025, the site has been mapped as Medium sensitive in the plant species theme. With regards to the terrestrial biodiversity theme, it has been mapped as Very High sensitive. The Very High sensitivity is ascribed to the possible presence of a threatened ecosystem and the encroachment of the site on the Western Cape biodiversity (CBA) network. As a result, MB Botanical Surveys was contracted to undertake a botanical survey of the site.



Figure 1-2: Proposed development layout.

Terms of Reference

The terms of reference agreed upon for this botanical study include:

- Adhere to the EAP's terms of reference for the study;
- Identify and describe biodiversity patterns at a community and ecosystem level (main vegetation type, plant communities & threatened ecosystems), at species level (Species of Conservation Concern & protected species) and in terms of significant landscape features;
- Describe the sensitivity of the site and its immediate surroundings;
- Map or describe the presence of invasive alien plants;
- Review the relevant biodiversity plans compiled in terms of the National Environmental Management Biodiversity Act (Act 10 of 2004);
- Make recommendations with regards to the protection/management of biodiversity; and
- Adhere to the NEMA and CapeNature protocols for biodiversity assessments.

Limitations and Assumptions

The following limitations and assumptions apply to the study:

- Fieldwork was carried out in the winter season, considered to be a reasonable time for many flowering species in the Southern Cape. However, plants that only flower at other times of the year (e.g. spring to summer), such as certain bulbs (Iridaceae & Orchidaceae), may have been missed. The overall confidence in the completeness and accuracy of the botanical findings is however considered to be good. Given the transformed state of the site, no further surveys are deemed necessary.

Disclaimer of Liability & Use of this Report

Any person using or referring to this report, do so at their own risk. The author will not accept liability for any loss or damage arising from this report or its content. This report reflects the professional judgment of its author. The information and recommendations presented in this report are specific to the project and site at hand and do not extend to future developments or neighbouring sites. Use of this report is therefore restricted.

2. Site Sensitivity Verification

The Department of Environmental Affairs online Environmental Screening Tool indicates that the plant species theme is of Medium sensitivity for the site (see Screening Tool Report, generated by the EAP on 4 June 2025). **Annexure 1** lists the threatened species and their sensitivity from the Screening Report. Ten of the threatened species are regarded as sensitive and which names are withheld. The Screening Tool Report further indicates that the terrestrial biodiversity theme is of Very High sensitivity for the site. This rating is ascribed to the possible presence of a terrestrial critical biodiversity area (CBA), a

degraded critical biodiversity area (CBA2) and a threatened vegetation type (Mossel Bay Shale Renosterveld).

In circumstances where the *status quo* assessment proves the contrary to the above (i.e. where the site is deemed to be of Low sensitivity in respect of both themes, the GN320 of 2020 requires that a Terrestrial Biodiversity Compliance Statement is submitted as set out by the National Environmental Management Act (NEMA) (Act No. 107 of 1998) Regulations of 2020 (as amended). If the above is confirmed, then a biodiversity assessment will be required.

3. Methodology

The methodology used in this terrestrial biodiversity assessment, including a desktop background assessment and one site visit, is outlined in the subsections below.

Desktop assessment

A brief review of online (e.g. Google Earth, iNaturalist.org, posa.sanbi.org & CapeFarmMapper) and desktop resources (available literature & reports) was undertaken to determine the nature of the site, the expected vegetation type(s), the presence of natural vegetation remnants and species of conservation concern (SCC), hydrological features, and the significance of the site in terms of biodiversity planning.

Site survey

Botanical surveys of the site were undertaken on 19/20 August 2024 and 18 July 2025 by the author. A qualitative assessment of the type and condition of affected vegetation on site, disturbances and presence of alien species, SCC and protected tree species was carried out. The path walked during the last survey is shown on **Figure 3-1**. Plant species not identified in the field, were collected and/or photographed and identified at the office and Compton (Kirstenbosch) Herbarium. A few of the identifications were confirmed on iNaturalist. The 2018 South African Vegetation Map and the latest floristic taxonomic literature and reference books were used for the purpose of this specialist study. Any plants classified as rare or threatened in the Red List of South African Plants online database¹ are highlighted. The assessment follows the relevant national guidelines/protocols for biodiversity assessments as listed in the Government Gazette No. 43110 on 20 March 2020.

The following information was recorded during the site visit:

1. The condition of the vegetation. Is the vegetation either disturbed or degraded? A

¹ [Threatened Species Programme | SANBI Red List of South African Plants](#)

disturbed or degraded area could range from agricultural fields (fallow land), or areas previously disturbed by mining activities, to an area that has been severely eroded or degraded as a result of bad land management or alien infestation.

2. Species diversity (alpha diversity). This refers to the numbers of different indigenous plant species occurring on site.
3. Species of Conservation Concern (SCC), endemics, as well as protected tree species occurring on site. This would include near threatened, rare, vulnerable, endangered or critically endangered species. SCC and protected tree species were mapped using GPS Tracks Pro v4.9.5 software on an iPhone 16 Pro. Accuracy is given as ± 5 m.
4. Identification of the vegetation type(s) and communities (if discernible) on the site. This would include trying to establish the distribution of a vegetation type and whether or not it is vulnerable, endangered or critically endangered.
5. Connectivity with (or isolation from) nearby natural vegetation.



Figure 3-1: Satellite photo showing the survey track on the site.

Data analysis

Due to the transformed state of the site, it was not deemed necessary to determine the site ecological importance (SEI) of the affected area (see the criteria described in SANBI's Species Environmental Assessment Guideline). The impact assessment methodology is described in **Annexure 2**.

4. Literature Study

A desktop literature review was undertaken during the biodiversity assessment using both online resources and existing maps and reports. A summary of the most relevant information to this assessment is presented below. Some of the information was ground truthed during the site surveys.

Location, topography & land use

The site is located on a gentle southeast facing slope (10-60 masl), ± 2 km north of Hartenbos (**Figure 4-1**). There are no notable topographical features on or around the site. The site comprises a wheatfield, a few farm dams and farm roads. The wheatfield extends outside the site towards the northwest, while the R102 forms its south-eastern boundary. The latter links Hartenbos with Klein Brak River. The Hartland Estate development is located close by on the eastern side of bypassing R102 and N2.

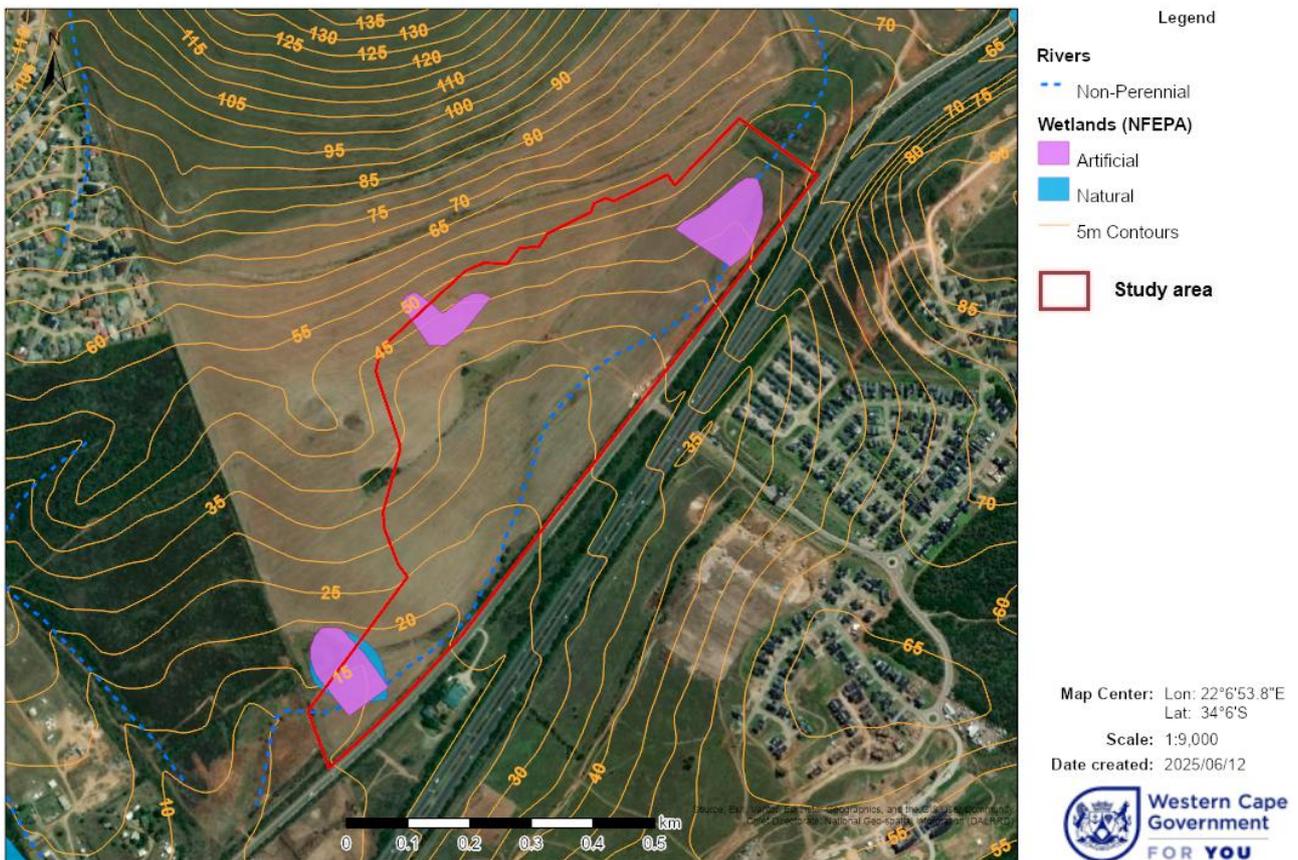


Figure 4-1: Combined topography and hydrology map.

Hydrology

According to CapeFarmMapper, one non-perennial watercourse crosses the site (**Figure 4-1**). There are also three artificial and one natural NFEPA (National Freshwater Ecosystem Priority Area) wetlands present on the site (their positions are misaligned on map). These are all associated with farm dams or impoundments (**Figure 4-2**). The non-perennial

watercourse drains towards the Hartenbos Estuary, located 0.5 km away to the south.



Figure 4-2: Grass-covered impoundment in the south-western corner of site.

Climate

The mean annual rainfall for the site is 340 mm (as per CapeFarmMapper climatic data for 1950 to 2000). The peak rainfall periods are the months of March (autumn) and October (spring), while the driest periods are the winter and summer months, i.e. bimodal rainfall regime. The study area lies in the transition zone between the winter and summer rainfall regions. Mean monthly maximum and minimum temperatures are 23.8°C and 9.9°C for January/February and July, respectively (as per CapeFarmMapper data). The Köppen-Geiger climate classification for the site is split between BSh (arid, steppe, hot) and BSk (arid, steppe, cold).

Geology

According to the 3422 AA Mossel Bay 1:50 000 geological map, the site is underlain by a mixture of Uitenhage Group (Hartenbos Formation) and Bredasdorp Group (Klein Brak Formation) sediments, and non-shelly sand. The Hartenbos Formation (sand, silt & clay) is of Cretaceous age, while the younger Klein Brak Formation (consolidated to unconsolidated calcareous sand & gravel with shell fragments) and non-shelly sand are of Quaternary age. The Hartenbos Formation typically supports shale renosterveld in the area. This unit is well exposed in road cutting south of the Hartenbos River (Viljoen, 1993).

Biodiversity Planning Context

According to the 2018 Vegetation Map of South Africa, the site is located inside Mossel Bay Shale Renosterveld (**Figure 4-3**). The latter occurs on the coastal plains (undulating hills) and valleys from the Kruisrivier near Riversdale to Klein Brak River, centred on the Gouritz River (Mucina, 2006). The renosterveld is described as a medium dense, medium tall cupressoid-leaved shrubland dominated by renosterbos (*Dicerotheramnus rhinocerotis*) (Mucina, 2006). Thicket patches and thicket elements are also common inside the unit. Apart from a few pioneer renosterveld species recorded in the regrowth (secondary vegetation) on site, a few thicket elements were also noted.

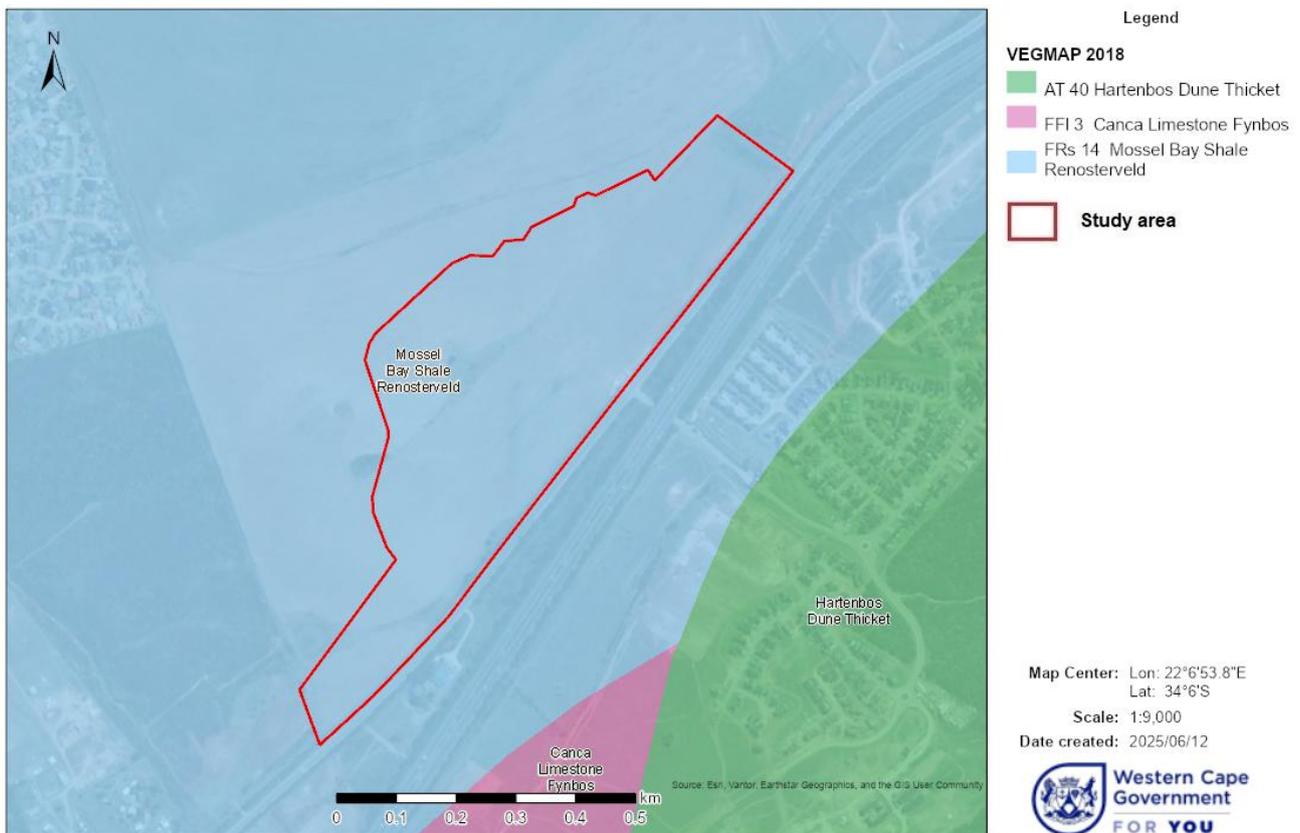


Figure 4-3: Extract of the 2018 SA Vegetation map.

Due to its transformed state, Mossel Bay Shale Renosterveld is currently listed as Critically Endangered in the Revised National List of Threatened Ecosystems (DEA, 2022). Only about 38% of Mossel Bay Shale Renosterveld is still left, while 0.2% is currently protected². A large percentage of it has been transformed in the past for pastures and croplands (Mucina, 2006). The ecosystem is also degraded by erosion and overgrazing (Mucina, 2006). The unit is narrowly distributed with high rates of habitat loss in the past 30 years, placing it at risk of collapse³. Being part of the Fynbos Biome, Mossel Bay Shale Renosterveld is

² [Ecosystem Detail - Biodiversity BGIS \(sanbi.org\)](https://sanbi.org/)

³ [Ecosystem Detail - Biodiversity BGIS \(sanbi.org\)](https://sanbi.org/)

maintained by a regular fire regime. Unfortunately, landscape fragmentation is disrupting this 'maintenance' requirement, often leading to localised species loss and bush encroachment or alien infestation (pers. obs.).

The site falls largely outside the Western Cape biodiversity network (**Figure 4-4**). There are only small encroachments on terrestrial critical biodiversity areas (CBA) and degraded critical biodiversity areas (CBA2) in the north-eastern and south-western corners of the site. These are associated with the farm dams/watercourses. Reasons for the importance of the mapped CBA's and CBA2's include the presence of a threatened vegetation type albeit the wrong one (Groot Brak Dune Strandveld), threatened vertebrate habitat (bontebok) and water resource protection (Southern Coastal Belt). The closest protected area is the Diosma Reserve, a contract nature reserve located 10 km away to the south in Heiderand.



Figure 4-4: Extract of the Western Cape biodiversity network map.

CBA's are defined as areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure (Pool-Stanvliet, 2017). These sites are selected for meeting national targets for species, habitats and ecological processes (Pool-Stanvliet, 2017). Many of these areas support known occurrences of threatened plant species, and/or may be essential elements of designated ecological corridors. Loss of designated CBA's is therefore not recommended. ESA's, on the other hand, are supporting zones required to prevent the degradation of CBA's and Protected Areas.

5. Results

In order to fulfil in the requirements of the terrestrial biodiversity and plant species protocols, this section describes the vegetation (terrestrial biodiversity) and plant species encountered in two subsections. In the plant species subsection specific reference is made, among other, to SCC and protected tree species.

Terrestrial biodiversity (vegetation)

The botanical attributes of the site are presented in **Figure 5-1**. As stated earlier, the site is covered by a wheatfield. However, narrow strips of vegetation remain along the south-eastern boundary of site (mainly outside the fence) and small patches of low-quality regrowth around the dams (**Figures 5-2 to 5-5**). The vegetation along the south-eastern boundary can be described as typical road verge vegetation, comprising a mixture of thicket and renosterveld species. Due to the modified state of substratum, it is difficult to classify it as a specific vegetation type, such as thicket or renosterveld. Common species recorded here include *Metalasia acuta*, *Dicerotheramnus rhinocerotis*, *Gymnosporia buxifolia*, *Searsia pallens*, *Polygala myrtifolia* and *Diospyros dichrophylla*. Structurally, it can be classified as a mid-high closed shrubland following Campbell's classification (Campbell, 1981). Due to the severity of past agricultural activities on the site, it is highly unlikely that it will return to natural vegetation in the medium to long term. Other disturbances noted include farm tracks, alien infestation (mostly weeds) and recent construction activities (for a pipeline) along the south-eastern boundary.

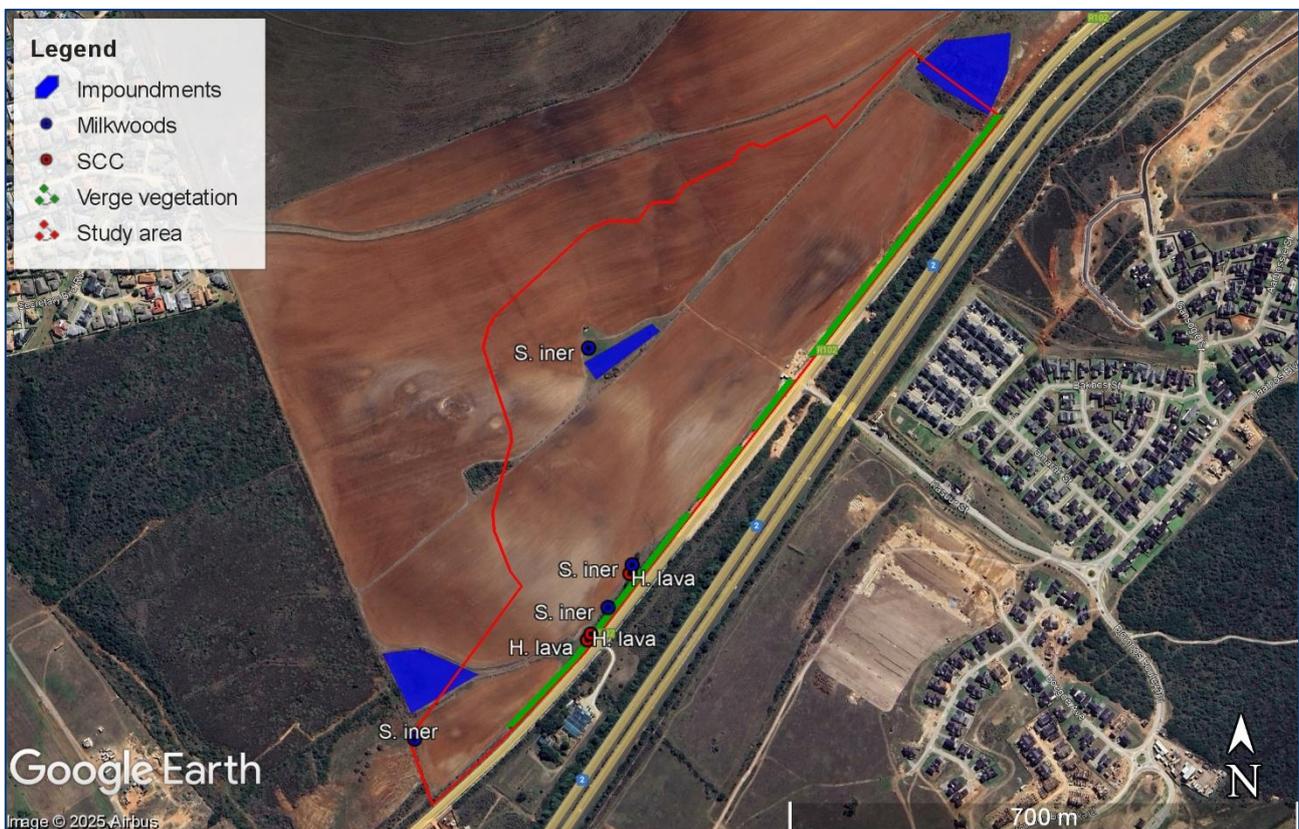


Figure 5-1: Botanical attributes of the site. The untoned area has been transformed.



Figure 5-2: Wheatfield on right-hand side with road verge vegetation next to south-eastern boundary on left. The disturbed strip marks the recently constructed pipeline route.



Figure 5-3: Strip of vegetation (regrowth) inside the fence on south-eastern boundary.



Figure 5-4: Vegetation next to south-eastern boundary with a *Ficus sur* tree.



Figure 5-5: Poor quality regrowth on dam wall in the north-eastern corner of site.

Plant species

The following indigenous shrub species were recorded (mainly along the south-eastern edge of site), namely *Metalasia acuta*, *Osteospermum moniliferum*, *Oedera genistifolia*, *Dicerotheramnus rhinocerotis*, *Helichrysum patulum*, *Berkheya heterophylla*, *Chrysocoma ciliata*, *Nidorella ivifolia*, *Senecio rosmarinifolius*, *S. deltoideus*, *Vachellia karroo*, *Lauridia tetragona*, *Gymnosporia buxifolia*, *Scolopia zeyheri*, *Sideroxylon inerme*, *Euclea undulata*, *Olea europaea*, *Searsia pallens*, *S. lucida*, *Ficus sur*, *Lycium tenue*, *L. ferocissimum*, *Solanum tomentosum*, *Diospyros dichrophylla*, *Grewia occidentalis*, *Carissa bispinosa*, *Cynanchum obtusifolium*, *C. viminale*, *Euphorbia mauritanica*, *Aloe ferox*, *Ruschia tenella*, *Drosanthemum floribundum*, *Mesembryanthemum aitonis*, *Aizoon secunda*, *Gnidia squarrosa*, *Polygala myrtifolia*, *Hermannia lavandulifolia*, *Abutilon sonneratianum*, *Chironia baccifera*, *Asparagus suaveolens*, *A. multiflorus*, *A. aethiopicus*, *A. asparagoides*, *Rhoicissus digitata*, *Exomis microphylla*, *Chaenostoma caeruleum* and *Rumex hypogaeus*. Many of these species are pioneers that typically colonise road verges. Hemicryptophytes and bulbs recorded include *Cynodon dactylon*, *Oxalis pes-caprae*, *Bulbine lagopus*, *Albuca canadensis* and *Moraea polyanthos*. The dams are populated by *Cyperus textilis*, *Typha capensis* and grasses. **Figure 5-6** shows a few of the recorded species.



Figure 5-6: A few indigenous species recorded on site, with *Euphorbia mauritanica* (top left), *Polygala myrtifolia* (top right), *Hermannia lavandulifolia* (bottom left) and a milkwood (bottom right).

Hermannia lavandulifolia (VU) was the only Species of Conservation Concern (SCC) recorded on site (inside the regrowth next to south-eastern boundary). The latter is very common in the Southern Cape region, especially around Mossel Bay. Its listing as a threatened species is therefore questionable. The other recorded species are also widespread and common in the region. Floristic association with Mossel Bay Shale Renosterveld is fairly strong with several important taxa recorded, namely *Dicerotheramnus rhinocerotis*, *Oedera genistifolia*, *Aloe ferox*, *Diospyros dichrophylla* and *Carissa bispinosa*. A few *Sideroxylon inerme* (milkwood), a protected tree species in terms of the National Forests Act (Act 84 of 1998), were also recorded on site.

Alien species/weeds are abundant throughout the site, including *Acacia cyclops* (rooikrans, category 1b), *Helminthotheca echioides* (ox tongue), *Cirsium vulgare* (spear thistle, 1b), *Erigeron bonariensis* (flax-leaf fleabane), *Datura stramonium* (thorn apple, 1b), *Lantana camara* (lantana, 1b), *Opuntia cf cespitosa* (eastern prickly-pear), *Atriplex semibaccata* (Australian saltbush), *Plantago lanceolata* (buckhorn plantain), *Erodium moschatum* (musk heron's bill), *Malva parviflora* (cheese weed), *Coleus barbatus* (woolly plectranthus), *Lysimachia loeflingii* (blue pimpernel), *Fumaria muralis* (fumitory) and *Cenchrus clandestinus* (kikuyu, category 1b in protected areas) (**Figure 5-7**). *Cenchrus clandestinus* is dominant in and around the dams.



Figure 5-7: A few alien species recorded on site, with *Coleus barbatus* (top left), *Datura stramonium* (top right), *Cirsium vulgare* (bottom left) and *Lantana camara* (bottom right).

As indicated above, several of these species are Category 1b invaders in the Western Cape. In terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004) Alien and Invasive Species List (2016), Category 1b invasive species require compulsory control as part of an invasive species control programme. The high presence of aliens on the site is indicative of past disturbances (agricultural & construction activities).

Site Ecological Importance

Due to the transformed state of the site, it was not deemed necessary to prepare a site ecological importance (SEI) map. Only a narrow strip of vegetation/regrowth on the south-eastern boundary and a few scattered milkwoods have some conservation value.

6. Potential Impacts

Terrestrial biodiversity (vegetation)

It is the author's opinion that the site is significantly transformed, with the prospect of rehabilitation unachievable. However, a narrow strip of vegetation (secondary vegetation or regrowth) on the south-eastern side may still serve as a minor ecological corridor along which fauna and flora can migrate. The strip of vegetation is shared with the road verge, with most of it confined to the road verge. It is uncertain if any of this vegetation will be affected by the development as it appears to follow a servitude that runs alongside the fence. The impact will be negligible for the rest of the site, which is transformed. The proposed development also does not encroach significantly on the biodiversity network. There are only small encroachments on terrestrial critical biodiversity areas (CBA) and degraded critical biodiversity areas (CBA2) in the north-eastern and south-western corners of the site. The development should therefore not impact on the functionality of the biodiversity network.

About 0.2 ha of vegetation will need to be cleared if the site is developed up to the fenceline on the south-eastern boundary. However, it is debatable if any NEMA listed activities with regards to vegetation clearing will be triggered due to the modified state of the vegetation and substratum. If the vegetation is regarded as a modified form of renosterveld then Activity 12 of Listing Notice 3 of the EIA regulations (as amended on 7 April 2017) will be triggered. In terms of the above regulations, the "clearance of an area of 300 m² or more of indigenous vegetation within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEMBA" is a listed activity. Environmental authorisation will be required in this instance. It is therefore recommended that the vegetation along the south-eastern boundary, which is located outside the development footprint, be protected. Some of it cannot be avoided where the access roads enter the site from the R102. In the case of the site not being developed (no-go alternative), it will remain in a transformed state with no potential for restoration. **Table 6-1** summarises the impact on terrestrial biodiversity.

Table 6-1: Impact on terrestrial biodiversity.

Phase	Construction Phase	Operational Phase
Nature of impact(s)	<ul style="list-style-type: none"> - Clearing of ±0.2 ha of modified (secondary) vegetation or regrowth. - Slight impact on the functionality of biodiversity network. - Increased opportunity for alien infestation. 	<ul style="list-style-type: none"> - Increased alien infestation.
Extent of impact	Project footprint & immediate surroundings	Project footprint & immediate surroundings
Duration	Permanent	Long term
Intensity	Medium	Low
Probability of occurrence	Medium	Medium
Degree of reversibility	Medium	High
Irreplaceability of resource	Medium-low	Medium-low
Mitigatory potential	High	High
Significance before mitigation	Medium-low	Low
Significance after mitigation	Low	Low

Plant species

The impact on plant species, including potential SCC and protected tree species, is also expected to be of medium-low significance, prior to mitigation. All the recorded species are common and widespread in the region. Only one SCC was recorded on site, namely *Hermannia lavandulifolia* (VU). It is still very common in the Mossel Bay area. A few tall milkwoods, a protected tree species, are also present on site. Some of these can possibly be accommodated in the development layout. The removal of milkwoods requires a permit from the Department of Forestry. The probability of SCC listed in the Screening Report to occur on site is indicated in **Annexure 1**. Those with a low-medium probability to occur here (i.e. *Selago ramosissima*, *S. villicaulis* & *Polygala pubiflora*) have been recorded in similar habitats elsewhere in the area.

As an indirect impact, soil disturbance caused by earthworks will provide ideal conditions for the establishment of invasive alien species. The presence of invasives, such as rooikrans, spear thistle, thorn apple, lantana and eastern prickly-pear, will exacerbate this impact. Therefore, as an operational phase maintenance concern, keep the development area (especially along the south-eastern boundary) clear of invasive aliens. As stated earlier, it is a legal requirement for the landowner to clear/control the invasive aliens on their land. **Table 6-2** summarises the impact on plant species.

Table 6-2: Impact of the project on flora, SCC & protected tree species.

Phase	Construction Phase	Operational Phase
Nature of impact(s)	- Loss of indigenous flora, SCC & protected tree species	- Alien infestation & resulting displacement of indigenous flora
Extent of impact	Project footprint & immediate surroundings	Project footprint & immediate surroundings
Duration	Permanent	Long term
Intensity	Medium	Low
Probability of occurrence	Medium	Medium
Degree of reversibility	Medium	High
Irreplaceability of resource	Medium	Medium-low
Mitigatory potential	High	High
Significance before mitigation	Medium-low	Low
Significance after mitigation	Low	Low

The **cumulative botanical impact** of the project is expected to be equivalent to the impact on terrestrial biodiversity and plant species described above. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the transformed state of the site and modified state of the remaining vegetation.

7. Recommended Mitigation Measures

The following mitigation measures are recommended to ensure that the impact on terrestrial biodiversity and plant species is minimised during the **construction phase**:

- Where possible, retain the strip of vegetation/regrowth along the south-eastern boundary of the site. Fence off the construction area where it borders on the latter. The vegetation outside the construction area must not be disturbed in any way.
- To mitigate the impact of vegetation clearing/disturbance outside the development footprint, topsoil and seedbearing plant material from the disturbed area(s) must be protected and replaced after disturbance as part of the rehabilitation process. As a duty of care measure, consideration should also be given to S&R of suitable species (e.g. bulbs & succulents). Bulbs should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area. S&R should be done at an appropriate time of the year, preferably when the soil is wet during the raining season. Please note that a CapeNature permit is needed for the relocation of indigenous plant species.
- Allow at least 24 months for the monitoring of rehabilitation success and alien infestation post construction. Keep the rehabilitation area(s) clear of invasive

aliens.

Mitigation measures recommended for the **operational phase**:

- Monitor the development area and all areas disturbed during construction for rehabilitation success and alien infestation. Where needed, rehabilitate/revegetate disturbed surfaces expediently. Erosion prevention measures may be needed on steeper slopes, such as silt fences, logs or netting, to slow down runoff and potential erosion. Mulching and seeding with indigenous thicket/renosterveld seed may also be needed.
- As a long-term maintenance requirement, continue with alien clearing on and around the development footprint, focussing on invasive species such as rooikrans, spear thistle, thorn apple, lantana and eastern prickly-pear. These species are category 1b invaders that require compulsory control as part of an invasive species control programme. Please note that it is a legal requirement for landowners to clear alien vegetation on their land.

8. Conclusion & Recommendation

This report sets out the results from a desktop study, as well as field surveys conducted on 19/20 August 2024 and 18 July 2025, to ascertain terrestrial biodiversity and plant species constraints and possible impacts associated with the development of a school and hospital on Farm Vaalevalley 219, Mossel Bay.

The proposed development site, which comprises a wheatfield, is highly transformed. However, a narrow strip of secondary vegetation or regrowth on the south-eastern side may still serve as a minor ecological corridor along which fauna and flora can migrate. The proposed development does not encroach significantly on the biodiversity network. There are only small encroachments on terrestrial CBA's and CBA2's in the north-eastern and south-western corners of the site. About 0.2 ha of vegetation will need to be cleared if the site is developed up to the fenceline on the south-eastern boundary. However, this strip appears to be located inside a servitude. The impact on plant species, including SCC and protected tree species, is also expected to be of low significance, after mitigation. All the recorded species are common and widespread in the region. Only one SCC was recorded on site, namely *Hermannia lavandulifolia* (VU). It is still very common in the Mossel Bay area. A few milkwoods, a protected tree species, are also present. Some of these can possibly be accommodated in the development layout.

Due to the highly transformed state of the site, the impact on both terrestrial biodiversity and plant species is expected to be of low significance, with mitigation. The site is highly compromised by past agricultural and construction activities, with the prospect of rehabilitation unachievable. It is therefore recommended that the proposed development be considered for approval, subject to the consideration of the proposed mitigation measures.

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Annexure 1: Threatened plant species as listed in Screening Report

Sensitivity	Feature(s)	Probability of presence on site
Medium	<i>Lampranthus diutinus</i>	Low
Medium	<i>Lampranthus fergusoniae</i>	Low
Medium	<i>Lampranthus pauciflorus</i>	Low
Medium	<i>Ruschia leptocalyx</i>	Low
Medium	<i>Argyrobium harmsianum</i>	Low
Medium	<i>Lebeckia gracilis</i>	Low
Medium	<i>Leucadendron galpinii</i>	Low
Medium	<i>Leucospermum praecox</i>	Low
Medium	<i>Wahlenbergia polyantha</i>	Low
Medium	<i>Selago ramosissima</i>	Low-medium
Medium	<i>Selago villicaulis</i>	Low-medium
Medium	<i>Erica unicolor</i> ssp. <i>mutica</i>	Low
Medium	<i>Hermannia lavandulifolia</i>	Recorded on site
Medium	Sensitive species 153	Low
Medium	Sensitive species 633	Low
Medium	Sensitive species 268	Low
Medium	<i>Thamnochortus muirii</i>	Low
Medium	<i>Marsilea schelpeana</i>	Low
Medium	<i>Duvalia immaculata</i>	Low
Medium	Sensitive species 1024	Low
Medium	<i>Relhania garnotii</i>	Low
Medium	<i>Agathosma eriantha</i>	Low
Medium	<i>Agathosma muirii</i>	Low
Medium	<i>Euchaetis albertiniana</i>	Low
Medium	<i>Muraltia knysnaensis</i>	Low
Medium	<i>Polygala pubiflora</i>	Low-medium
Medium	Sensitive species 980	Low
Medium	<i>Nanobubon hypogaeum</i>	Low
Medium	Sensitive species 516	Low
Medium	<i>Drosanthemum lavisii</i>	Low
Medium	Sensitive species 800	Low

Sensitivity	Feature(s)	Probability of presence on site
Medium	Sensitive species 500	Low
Medium	Sensitive species 654	Low
Medium	Sensitive species 763	Low
Medium	<i>Diosma passerinoides</i>	Low
Medium	<i>Agathosma microcarpa</i>	Low

Annexure 2: Impact Assessment Methodology

Each issue that is identified consists of components that on their own or in combination with each other give rise to potential impacts, either positive or negative, from the project onto the environment or from the environment onto the project. In the EIA the significance of the potential impacts is considered before and after identified mitigation is implemented, for direct, indirect, and cumulative impacts, in the short and long term.

A description of the nature of the impact, any specific legal requirements and the stage (construction/decommissioning or operation) were given. The following criteria will be used to evaluate the significance of each issue that was identified:

Nature: This is an appraisal of the type of effect the activity is likely to have on the affected environment. The description includes what is being affected and how. The nature of the impact will be classified as positive or negative, and direct or indirect.

❖ **Extent and location:** This indicates the spatial area that may be affected (**Table 1**).

Table 1: Geographical extent of impact

Rating	Extent	Description
1	Site	Impacted area is only at the site – the actual extent of the activity.
2	Local	Impacted area is limited to the site and its immediate surrounding area
3	Regional	Impacted area extends to the surrounding area, the immediate and the neighbouring properties.
4	Provincial	Impact considered of provincial importance
5	National	Impact considered of national importance – will affect entire country.

❖ **Duration:** This measures the lifetime of the impact (**Table 2**).

Table 2: Duration of Impact

Rating	Duration	Description
1	Short term	0–3 years, or length of construction period
2	Medium term	3–10 years
3	Long term	>10 years, or entire operational life of project.
4	Permanent – mitigated	Mitigation measures of natural process will reduce impact – impact will remain after operational life of project.
5	Permanent – No mitigation	No mitigation measures of natural process will reduce the impact after implementation – impact will remain after operational life of project.

❖ **Intensity/severity:** This is the degree to which the project affects or changes the environment; it includes a measure of the reversibility of impacts (**Table 3**).

Table 3: Intensity of Impact

Rating	Intensity	Description
1	Negligible	Change is slight, often not noticeable, natural functioning of environment not affected.
2	Low	Natural functioning of environment is minimally affected. Natural processes can be reversed to their original state.
3	Medium	Environment remarkably altered, still functions, if in modified way. Negative impacts cannot be fully reversed.
4	High	Natural functions and processes disturbed – potentially ceasing to function temporarily.
5	Very high	Natural functions and processes permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. Negative impacts cannot be reversed.

- ❖ **Potential for irreplaceable loss of resources:** This is the degree to which the project will cause loss of resources that are irreplaceable (**Table 4**).

Table 4: Potential for irreplaceable loss of resources.

Rating	Potential for irreplaceable loss	Description
1	Low	No irreplaceable natural resources will be impacted.
3	Medium	Natural resources can be replaced, with effort.
5	High	There is no potential for replacing a particular vulnerable resource that will be impacted.

- ❖ **Probability:** This is the likelihood or the chances that the impact will occur (**Table 5**).

Table 5: Probability of Impact

Rating	Probability	Description
1	Improbable	Under normal conditions, no impacts expected.
2	Low	The probability of the impact to occur is low due to its design or historic experience.
3	Medium	There is a distinct probability of the impact occurring.
4	High	It is most likely that the impact will occur.
5	Definite	The impact will occur regardless of any prevention measures.

- ❖ **Confidence:** This is the level of knowledge or information available, the specialist had in his/her judgement (**Table 6**).

Table 6: Confidence in level of knowledge or information

Rating	Confidence	Description
	Low	Judgement based on intuition, not knowledge/information.
	Medium	Common sense and general knowledge inform decision.
	High	Scientific/proven information informs decision.

- ❖ **Consequence:** This is calculated as extent + duration + intensity + potential impact on irreplaceable resources.
- ❖ **Significance:** The significance will be rated by combining the consequence of the impact and the probability of occurrence (i.e. consequence x probability = significance). The maximum value which can be obtained is 100 significance points (**Table 7**).

Table 7: Significance of issues (based on parameters)

Rating	Significance	Description
1-14	Very low	No action required.
15-29	Low	Impacts are within the acceptable range.
30-44	Medium-low	Impacts are within the acceptable range but should be mitigated to lower significance levels wherever possible.
45-59	Medium-high	Impacts are important and require attention; mitigation is required to reduce the negative impacts to acceptable levels.
60-80	High	Impacts are of great importance, mitigation is crucial.
81-100	Very high	Impacts are unacceptable.

- ❖ **Cumulative Impacts:** This refers to the combined, incremental effects of the impact. The possible cumulative impacts will also be considered.