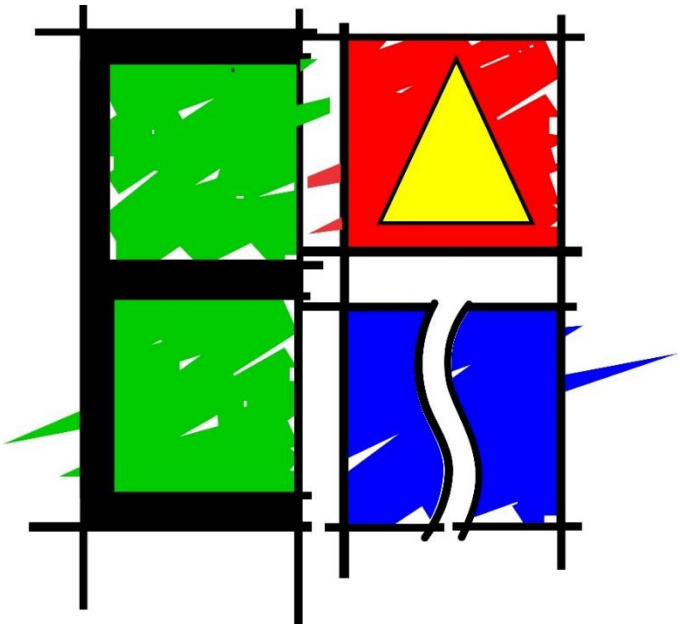
APPLICATION FOR ENVIRONMENTAL AUTHORISATION

FINAL BASIC ASSESSMENT REPORT

PROPOSED DEVELOPMENT OF ERF 2006, PARSONSVLEI, GQEBERHA, EASTERN CAPE



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Engineering Advice & Services (Pty) Ltd

Report Prepared for:

Singi Properties (Pty) Ltd

DEDEAT Ref: ECm1/C/LN1&3/M/44-2024

November 2024

PROPOSED RESIDENTIAL DEVELOPMENT OF ERF 2006, PARSONSVLEI, GQEBERHA, EASTERN CAPE

FINAL BASIC ASSESSMENT REPORT

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Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT,
ENVIRONMENTAL AFFAIRS & TOURISM

BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:	
NEAS Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014 as amended, promulgated in terms of the National Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for. This report is current as of 1 OCTOBER 2022. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority **unless indicated otherwise by the Department**.
7. No faxed or e-mailed reports will be accepted **unless indicated otherwise by the Department**.
8. The report must be compiled by an independent environmental assessment practitioner (EAP). The EAP must satisfy conditions 11 below.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
11. The Environmental Assessment Practitioner (EAP) must be registered in terms of S24H Regulations with the Registration Authority EAPASA as from 8 August 2022.

11.1 S24H (14) states that "only a person registered as an Environmental Assessment practitioner may perform tasks in connection with an application for an environmental authorisation contemplated in

a) Chapter 5 of the Act read with the Environmental impact Assessment Regulations.
b) Section 24G of the Act
c) Chapter 5 of the National Environmental Management Waste Act 2008 (Act No 59 of 2008) read with the Environmental Impact Assessment Regulations

11.2. Tasks in regulation 14 may only be conducted by an EAP that is registered

11.4. Regulations 20 of S24H indicates the offences and penalties as indicated below:

"*20. Offences and penalties*

1. *A person is guilty of an offence if that person-*
   a) *contravenes regulation 14 of the Regulations; or*
   b) *pretends to be a registered environmental assessment practitioner or registered candidate environmental assessment practitioner.*
2. *A person convicted of an offence in terms of subregulation (1) is liable to the penalties contemplated in section 49B(3) of the Act.". Section 49B(3) of the Act states:*

"A person convicted of an offence in terms of section 49A(1)(h), (l), (m), (n), (o) or (p) is liable to a fine or to imprisonment for a period not exceeding one year, or to both a fine and such imprisonment.".

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Abbreviations

ASAPA	Association of South African Professional Archaeologists
BP	Borrow Pit
CARA	Conservation of Agricultural Resources Act 43 of 1983
CBA	Critical Biodiversity Area
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs (National)
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DEMC	Desired Ecological Management Class
DMR	Department of Mineral Resources
DWAF	Department of Water Affairs and Forestry (former department name)
DWAS	Department of Water Affairs and Sanitation
EA	Environmental Authorisation
EAS	Engineering Advice and Services
ECO	Environmental Control Officer
ECDOT	Eastern Cape Department of Transport
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EIS	Ecological Importance and Sensitivity
ELO	Environmental Liaison Officer
EMC	Ecological Management Class
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
ER	Environmental Representative
ESS	Ecosystem Services
IAP's	Interested and Affected Parties
IEM	Integrated Environmental Management
LHS	Left Hand Side
LM	Local Municipality
LoM	Life of Mine
masl	meters above sea level
MIA	Mining Infrastructure Area
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act 107 of 1998

NEMBA	National Environmental Management: Biodiversity Act 10 of 2004
NFA	National Forest Act 84 of 1998
NOMR	New Order Mining Right
PEMC	Present Ecological Management Class
PES	Present Ecological State
RDL	Red Data List
RHS	Right Hand Side
RoD	Record of Decision
RoM	Run of Mine
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SARTM	South African Rural Traffic Model
SDF	Spatial Development Framework
SoER	State of the Environment Report
SSC	Species of Special Concern
TOPS	Threatened of Protected Species
ToR	Terms of Reference
+ve	Positive
-ve	Negative

Glossary

Corridors:	Have important functions as strips of a particular type of landscape differing from adjacent land on both sides. Habitat, ecosystems or undeveloped areas that physically connect habitat patches. Smaller, intervening patches of surviving habitat can also serve as "stepping stones" that link fragmented ecosystems by ensuring that certain ecological processes are maintained within and between groups of habitat fragments.
Degraded habitat/land:	Land that has been impacted upon by human activities (including introduction of invasive alien plants, light to moderate overgrazing, accelerated soil erosion, dumping of waste), but still retains a degree of its original structure and species composition (although some species loss would have occurred) and where ecological processes still occur (albeit in an altered way). Degraded land is capable of being restored to a near-natural state with appropriate ecological management.
ECO/ESO:	Environmental Control/Site Officer – person responsible for the Day-to-Day Environmental Management on-site during construction.
Ecological Processes:	Ecological processes typically only function well where natural vegetation remains, and in particular where the remaining vegetation is well-connected with other nearby patches of natural vegetation. Loss and fragmentation of natural habitat severely threatens the integrity of ecological processes. Where basic processes are intact, ecosystems are likely to recover more easily from disturbances or inappropriate actions if the actions themselves are not permanent. Conversely, the more interference there has been with basic processes, the greater the severity (and longevity) of effects. Natural processes are complex and interdependent, and it is not possible to predict all the consequences of loss of biodiversity or ecosystem integrity. When a region's natural or historic level of diversity and integrity is maintained, higher levels of system productivity are supported in the long run and the overall effects of disturbances may be dampened.
Ecosystem status:	Ecosystem status of terrestrial ecosystems is based on the degree of habitat loss that has occurred in each ecosystem, relative to two thresholds: one for maintaining healthy ecosystem functioning, and one for conserving the majority of species associated with the ecosystem. As natural habitat is lost in an ecosystem, its functioning is increasingly compromised, leading eventually to the collapse of the ecosystem and to loss of species associated with that ecosystem.
Ecosystem:	All of the organisms of a particular habitat, such as a lake or forest, together with the physical environment in which they live.
Endangered:	Endangered terrestrial ecosystems have lost significant amounts (more than **60 %** lost) of their original natural habitat, so their functioning is compromised.

Endemic:	A plant or animal species, or a vegetation type, which is naturally restricted to a particular defined region. It is often confused with indigenous, which means 'native, occurring naturally in a defined area'.
Environment:	The external circumstances, conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Impact Assessment (EIA):	A study of the environmental consequences of a proposed course of action.
Exotic:	Non-indigenous; introduced from elsewhere, may also be a *weed* or alien *invasive* species. Exotic species may be invasive or non-invasive.
Fragmentation (habitat):	Causes land transformation, an important current process in landscapes as more and more development occur.
Habitat:	The home of a plant or animal species. Generally, those features of an area inhabited by animal or plant which are essential to its survival.
Indigenous:	Native; occurring naturally in a defined area.
Indigenous Vegetation:	Refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.
Least threatened terrestrial ecosystems:	These ecosystems have lost only a small proportion (more than 80 % remains) of their original natural habitat, and are largely intact (although they may be degraded to varying degrees, for example by invasive alien species, overgrazing, or overharvesting from the wild).
Method statement (construction):	A method statement is prepared for each task on a particular site by the contractor; the group of work method statements are then packaged and included in the overall *Construction Plan.*
Off-sets:	Compensation for biodiversity loss resulting from authorized changes in land use. Can include assigning stewardship or protected area status to remaining conservation-worthy land or making a financial bequest for purposes of biodiversity conservation.
Riparian:	Pertaining to, situated on or associated with a river bank.
River corridors:	River corridors perform a number of ecological functions such as modulating stream flow, storing water, removing harmful materials from water, and providing habitat for aquatic and terrestrial plants and animals. These corridors also have vegetation and soil characteristics distinctly different from surrounding uplands and support higher levels of species diversity, species densities, and rates of biological productivity than most other landscape elements. Rivers provide for migration and exchange between inland and coastal biotas.
Scoping:	A procedure to consult with stakeholders to determine issues and concerns and for determining the extent of and approach to the EIS, used to focus the EIA.

Scoping Report	A written report describing the issues identified to date for inclusion in an EIA.
Transformation:	In ecology, transformation refers to adverse changes to biodiversity, typically habitats or ecosystems, through processes such as cultivation, forestry, drainage of wetlands, urban development or invasion by alien plants or animals. Transformation results in habitat fragmentation – the breaking up of a continuous habitat, ecosystem, or land-use type into smaller fragments.
Transformed Habitat/Land:	Land that has been significantly impacted upon by human activities (such as cultivation, urban development, mining, landscaping, severe overgrazing), and where the original structure, species composition and functioning of ecological processes have been irreversibly altered. Transformed habitats are not capable of being restored to their original states.
Tributary/ Drainage line:	A small stream or river flowing into a larger one.
Untransformed habitat/land:	Land that has not been significantly impacted upon as a result of human interferences/disturbances. These are ecosystems that are in a near-pristine condition in terms of structure, species composition and functioning of ecological processes.
Vulnerable:	Vulnerable terrestrial ecosystems have lost some (more than 60 % remains) of their original natural habitat, and their functioning will be compromised if they continue to lose natural habitat.
Weed:	An indigenous or non-indigenous plant that grows and reproduces aggressively, usually a ruderal pioneer of disturbed areas. Weeds may be unwanted because they are unsightly, or they limit the growth of other plants by blocking light or using up nutrients from the soil. They can also harbor and spread plant pathogens.
Wetlands:	A collective term used to describe lands that are sometimes or always covered by shallow water or have saturated soils, and where plants adapted for life in wet conditions usually grow.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	**YES**	NO

If YES, please complete form XX for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

1 Activity Description

Describe the activity, which is being applied for, in detail:

1.1 Introduction

Engineering Advice and Services (EAS) has been appointed by the applicant, Singi Properties (Pty) Ltd, to undertake a Basic Assessment application for the residential development of Erf 2006, Parsonsvlei located within Ward 12 in Gqeberha, Eastern Cape (Figure 1).

Erf 2006, Parsonsvlei measures approximately 3.107 Ha in extent and is zoned Special Purposes No 232 (Warehouse/Workshop). The site is currently vacant and is not currently utilised for this purpose. An application to rezone the property to General Residential purposes will be submitted by the appointed professional town planner in due course. The site for the proposed development is situated on undeveloped land west and south of the Francis Evatt Park residential suburb in Parsonvlei, Port Elizabeth. The property abutting the site to the north across the narrow-gauge railway line is vacant and is earmarked for residential development in the near future. The property to the east across Burchell Drive is residential and to the south is industrial and commercial (the NMBM Burchell Road depot and other related uses). The Curro Westbrook school is situated to the northeast on the corner of Burchell Road and Salerno Road. In general, further residential areas are situated to the northeast (Westbrook) and the northwest (Bridgemead).

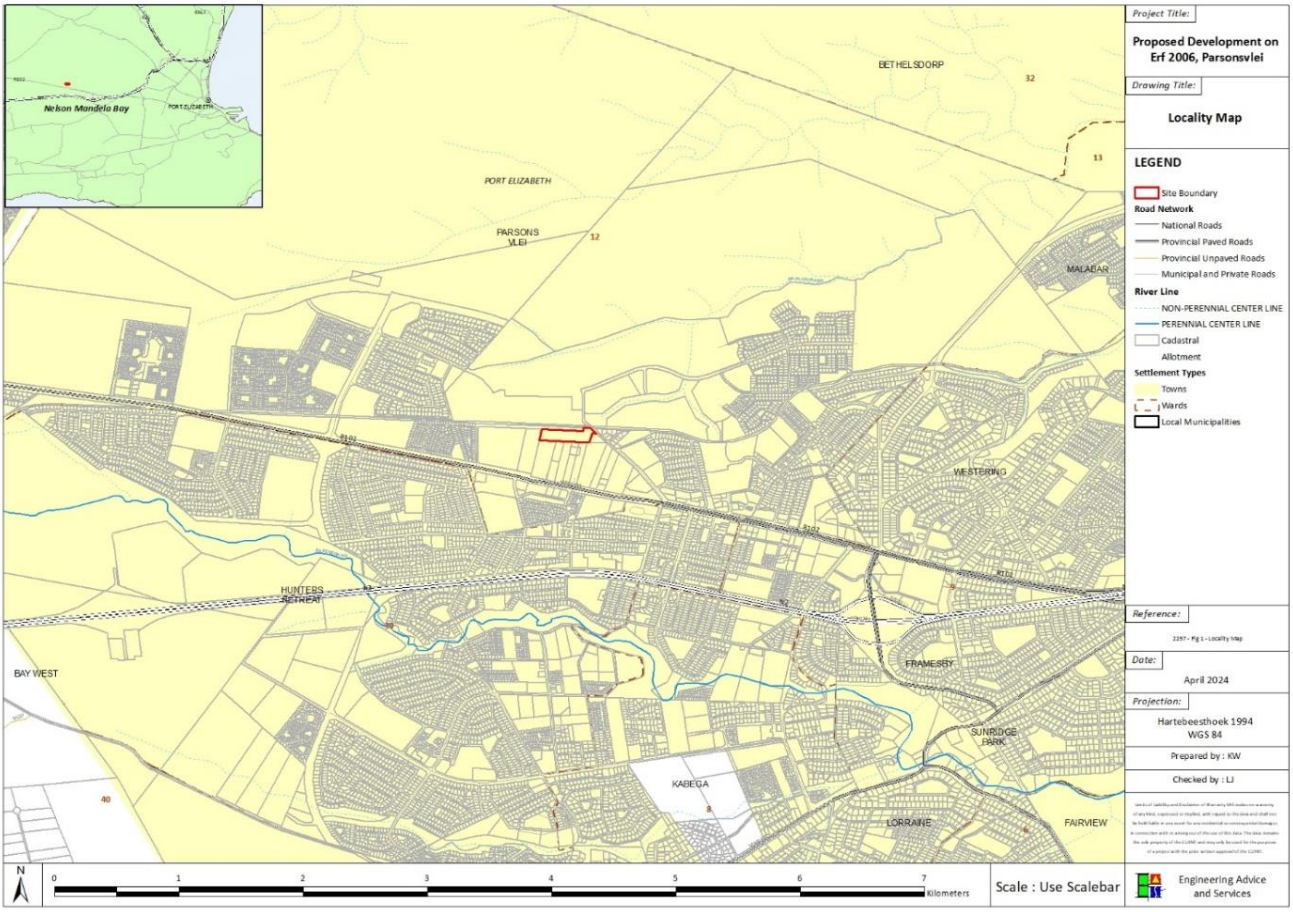

Figure 1 – Locality map of Erf 2006, Parsonsvlei

The site is currently vacant, unoccupied land with a flat topography, gradually sloping towards the northeast. Vegetation cover comprises a mixture of grasses not indicative of Algoa Sandstone Fynbos with the majority of the site infested with alien invasive vegetation (Port Jackson, Black Wattle and Blue Gums). There are no structures on the site, and disturbance is limited to the edges of the site and the vehicle track paths and footpaths with some dumping observed. Surrounding land uses include residential, vacant land, commercial, roads and infrastructure.

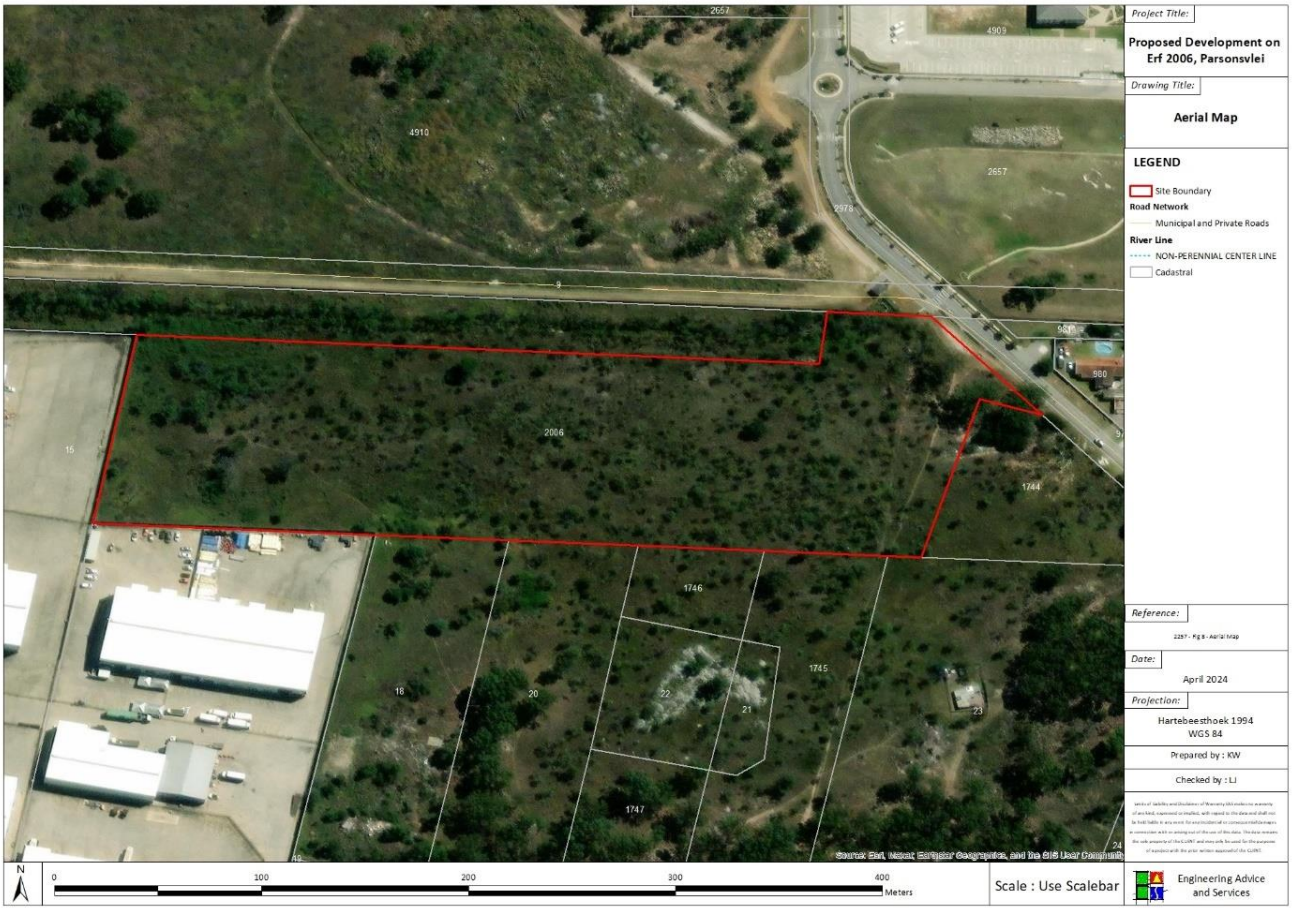

Figure 2 – Aerial map of the site

1.2 Zoning

The site is currently zoned for Special Purposes No. 232 (Warehouse/Workshop) but is not currently utilised for this purpose. The proposed site is currently vacant. An application to rezone the property to General Residential Zone 1 has been applied for.

1.3 Terrestrial Environment

The site is situated within the Algoa Sandstone Fynbos vegetation unit and is Critically Endangered (NSBA, 2018) and thus listed as a Threatened Ecosystem. Further, the site is located within a Wetland Cluster catchment of the Papenkuils River, but not within any National Freshwater Ecosystem Priority Areas (NFEPAs) or listed Internal Bird Areas. The study area is not located within any Strategic Water Resource Areas. The study area spans one vegetation type defined by Mucina and Rutherford (2007), as amended in the National Vegetation Map 2012 and 2017/18 spatial information. This vegetation unit, known as Algoa Sandstone Fynbos (FFs 29), a form of Algoa Grassy Fynbos, is listed as Critically Endangered and is therefore considered a Threatened Ecosystem (Figure 3), as per the National Environmental Management: Biodiversity Act.

The typical species associated with Algoa Sandstone Fynbos are dominated by a variety of grasses, Ericas and Proteas, and are only located within a narrow coastal belt between the Van Stadens River in the West and Summerstrand in the East,

within NMBM. A potential species checklist is included in Appendix 4 of the Biodiversity Assessment Specialist Report, however, the species observed did indicate that disturbance had taken place within the site in the past, evidenced by the high number of invasive plant species listed above, illegal solid waste / building rubble disposal and presence of old building foundations. None of the dominant Protea or Erica species were observed.

Plant species that remained, therefore included mostly grasses, and forbs, as shown in Table 1 below, with the site mostly dominated by the presence of the alien tree species in particular and are shown strong regrowth after the last fire. Figure 4 indicates finer scale mapping of the site, concerning vegetation and bioregional assessment conducted by SRK (2014) for NMBM. The associated mapping detail indicates that the site could contain Rowallan Park Grassy Fynbos and Malabar Grassy Fynbos. The latter was found to be dominated by the alien Acacia Thickets, while the former is comparable to the Algoa Sandstone Fynbos in species.

Table 1 - Important indigenous plant species observed within the study area highlighted in GREEN

Plant taxa	Conservation Status / Importance
Agathosma ovata (Thunb.) Pillans	Least Concern
Andropogon eucomus Nees	Least Concern
Brachiaria serrata (Thunb.) Stapf	Least Concern
Crassula pellucida L. ssp. marginalis (Dryand. in Aiton) Toelken	Least Concern
Cymbopogon pospischilii (K.Schum.) C.E.Hubb.	Least Concern
Cynodon dactylon (L.) Pers.	**Least Concern**
Digitaria eriantha Steud.	**Least Concern**
Ehrharta calycina Sm.	**Least Concern**
Erica etheliae L.Bolus	Least Concern / Protected under PNCO
Erica zeyheriana (Klotzsch) E.G.H.Oliv.	Least Concern
Euryops ericifolius (Bél.) B.Nord.	**Least Concern**
Eustachys paspaloides (Vahl) Lanza & Mattei	Least Concern
Helichrysum appendiculatum (L.f.) Less.	Least Concern
Helichrysum teretifolium (L.) D.Don	Least Concern
Pentameris heptameris (Nees) Steud.	Least Concern
Restio capensis (L.) H.P.Linder & C.R.Hardy	Least Concern
Tephrosia capensis (Jacq.) Pers. var. hirsuta Harv.	**Least Concern**
Thamnochortus cinereus H.P.Linder	Least Concern
Themeda triandra Forssk.	**Least Concern**
Tristachya leucothrix Trin. ex Nees	Least Concern
Syncarpha spp	Least Concern
Gazania krebsianna	Least Concern
Watsonia spp	Least Concern
Drosera aliciae	Least Concern
Pelargonium spp	**Least Concern / Protected under PNCO**
Elegia spp	Least Concern

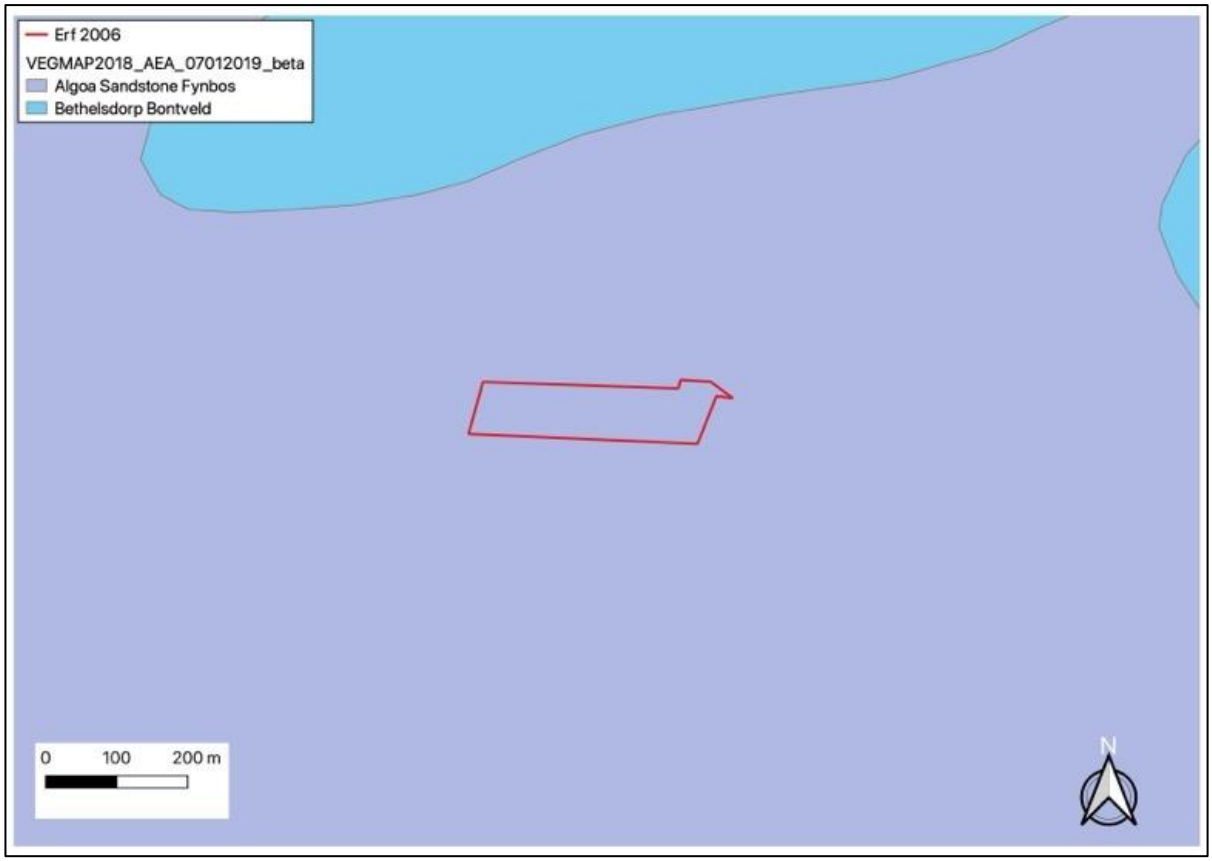

Figure 3 – Vegetation South Africa VegMap as per Mucina & Rutherford (2007) revised 2018

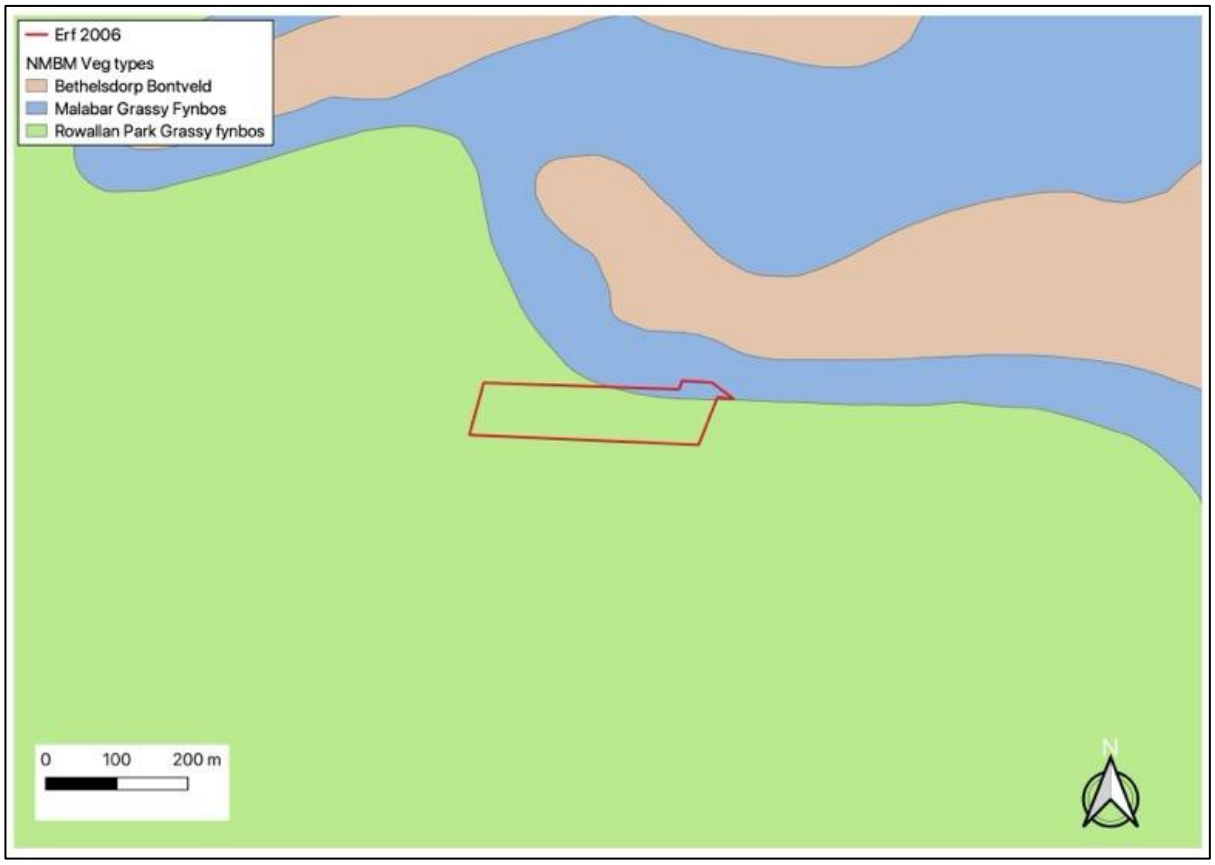

Figure 4 – NMBM Vegetation map (SRK, 2014)

1.4 Screening Tool Report

According to the screening report generated by the Online DFFE Screening Tool, the following themes' sensitivities have been identified.

Table 2 - Screening Tool Report Identified Sensitivities

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme			X	
Palaeontology Theme		X		
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

The Site Sensitivity Verification Report attached as Appendix G indicates which specialists were deemed to be required for this application and also states reasons for not including certain specialists.

1.5 Current State of Site

The site is currently vacant, unoccupied land with a flat topography, gradually sloping towards the northeast. Vegetation cover comprises a mixture of grasses not indicative of Algoa Sandstone Fynbos with the majority of the site infested with alien invasive vegetation (Port Jackson, Black Wattle, and Blue Gums). There are no structures on the site, and disturbance is limited to the edges of the site and the vehicle track paths and footpaths with some dumping observed. Surrounding land uses include residential, vacant land, commercial, roads, and infrastructure. There are no wetlands and only a small number of valley bottom systems are located in the Papenkuils River, but more than 1km from the proposed site. The remaining features near the site are man-made stormwater features such as the detention pond and the adjacent channel.

There are no Nature Reserves within 5 km of the site and no National Parks or World Heritage Sites within 10 km of the site. The nearest non-perennial drainage line is located approximately 180m northeast of the site and no wetlands are located within 500m of the site.

1.6 Proposed Activities

In total, the proposed development will consist of 155 residential apartments aimed at the middle-income residential market. The area of the site is approximately 3.107 Ha. Private open space areas of 0.32 Ha will be provided. Access to the subject site is proposed on Burchell Road. Table 3 below shows the different types of residential units that are proposed for the development.

Table 3 – Extent of the development

UNIT	AREA	TYPE
22 x 3 Bedroom Townhouse	142m²	Double storey
22 x 3 Bedroom Townhouse	114m²	Single storey
32 x 2 Bedroom Townhouse	103m²	Single storey
24 x 2 Bedroom Townhouse	54m²	2- Storey Blocks
47 x 2 Bedroom Apartments	50m²	2- Storey Blocks
8 x 1 Bedroom Apartments	35m²	2- Storey Blocks

The proposed development will entail the following activities on the site:

- Clearing of vegetation from the proposed site for the development.
- Levelling and landscaping the site for roads, units, and on-site parking,
- The construction of a boundary fence/wall spanning the property boundary,
- Construction of internal roads to provide access to buildings and on-site parking.
- Construction of walkways and related pathways,
- Construction of residential units, gatehouse, and related infrastructure,
- Installation of stormwater infrastructure,
- Installation of sewer reticulation,
- Connections to existing municipal services,
- Construction activity related to access to the site from Burchell Road, and
- Landscaping of the site to provide private open space between the buildings

1.7 Engineering Services

a) Roads

Access to the proposed residential development on Erf 2006 Parsonsvlei will be off the existing public road Burchell Road near the northeastern boundary of the site.

The structural design of the main internal roads will have to be done in accordance with the TRH4 Specifications: Structural design of inter-urban and rural road pavements. The structural layer works of the main internal roads have been preliminary

designed to accommodate the repetitive axle loads associated with post-development light vehicles and occasional heavier commercial vehicles. The private roads of Erf 2006, Parsonsvlei could also be designed as follows:

- 150mm in-situ silty sandy material compacted to 90% to 98% Modified American Association of State Highway Traffic Officials (MOD AASHTO) density.
- Depending on the insitu Californian Bearing Ratio (CBR) of the in-situ layer, a 200mm to 300mm crushed overburden material compacted to 92% MOD AASHTO density can be instructed by the Engineer.
- 150mm G5 material compacted to 95% MOD AASHTO density.
- 80mm deep Class 40/2.6 and/or 60mm deep concrete Class 30/2.0 with an 80mm high mountable kerb on each side of the road.
- 100mm high precast Barrier kerbs at bellmouths on the minimum 6.4m wide entrance road and/or parking areas as dictated by applicable safety and mobility guidelines.

In certain instances, speed humps can also be designed to act as traffic calming measures as well as mechanisms to retard and/or divert storm water overland flow.

According to Appendix 4: Roads and Wet Services Report, development should have at least two lanes in and two lanes out for a development of this magnitude to effectively regulate access/ exit of visitors as well as residents conveniently subject to security requirements. The main internal entrance road should have a minimum width of 6.0m wide. The internal ring road will vary between 6.0m and 4.5m wide. The roads will also act as shallow overland stormwater channels. Considering the flat to mild topography of the site from south-west to north-east, the roads will have to be designed to fall within the allowed minimum and maximum gradients (self-cleansing flow and maximum stormwater flow velocities) to the catch pit inlets, but also with overall fall towards the proposed stormwater ponds on and/or near the Private Open Spaces at the north-eastern part of the site.

b) Storm Water System

Where practically possible, the controlled storm water outflow from Erf 2006, Parsonsvlei will be limited to a maximum of the discharge resulting from a 1 in 5-year recurrence interval pre-development rainstorm. To accomplish the stormwater management objectives, the following major and minor stormwater control mechanisms will have to be introduced:

- Design and construct the piped stormwater system including the roads and parking on Erf 2006, Parsonsvlei to intercept and also act as stormwater channels and overland flow routes, sloping north and northeast to the stormwater attenuation ponds. The outflow from the respective ponds will be directed northeast towards the existing stormwater channel.
- The attenuation stormwater ponds A and B on Erf 2006, Parsonsvlei has been preliminary designed to retain post-development major design storm inflows up to 1 in 100-year recurrence interval with a 1 in 5-year pre-development discharge. In accordance with our calculations, the effective storage capacity of the proposed ponding system should be 0.342Ml and 0.664Ml respectively.

- The embankments to the ponding facilities should preferably be constructed at a gradient of 1 vertical to 3 horizontal (maximum 1 vertical to 2 horizontal).
- The surface areas of the ponds must be effectively grassed and maintained.
- Erosion protection measures must be implemented at inlet-, outlet- and overflow structures including overland flow routes. This can be done by the effective design and construction of semi-rigid Gabion/Reno mattress/geo-textile structures and establishment of effective ground cover.
- To limit the possibility of mosquito problems in the major pond areas, construct 600mm wide concrete "V" channels combined with grassing to act as low-flow channels from each inlet- to the outlet structure of the ponds.
- The surface run-off from minor post-development rainstorms (up to a maximum 1 in 5-year recurrence interval) has been preliminary designed to be conveyed and intercepted by the piped stormwater system.
- The stormwater pipes should mainly consist of Class 50D concrete pipes SABS 677 (Class 100D under roads) with respective diameters from 300mm up to 450mm depending on the available gradients of the road reserves as calculated during the detailed design stage, hard rock conditions and general topography of the stormwater routes. All pipes are to be laid to SANS 1200 LE standards.
- All final formation levels of the proposed development shall be shaped to fall towards the roads and stormwater system. The floor level of all buildings shall be a minimum of 255mm above the adjacent final formation level.

c) Water Supply System

The supply reservoir for the proposed development will be the Chelsea Reservoir with a top water level (TWL) of 234m above mean sea level (MSL). There is an existing NMBM 400mm diameter uPVC water main in Burchell Road near the northeastern corner of Erf 2006 Parsonsvlei. Under normal circumstances, the provision of water to the proposed development on Erf 2006, Parsonsvlei will be off the mentioned 400mm diameter NMBM reticulation main in Burchell Road for a high-density residential project subject to the conditions as dictated by NMBM.

d) Foul Sewer System

The effluent of the proposed residential development consisting of 155 units on Erf 2006 Parsonsvlei, will be treated at the Fishwater Flats Treatment Works (FWFTW). The preliminary total design Average Dry Weather Flow (ADWF) of the proposed Residential development under discussion has been calculated to be 68.60kl per day. The capacity of the existing Fishwater Flats Treatment Works is 132Ml per day. The FWFTW is currently treating less than 109Ml per day. Under the current conditions it should be possible for the existing Fishwater Flats Treatment Works to handle the additional post-development effluent of 0.070ML per day (68.60kl/day) generated by the proposed residential development.

Please refer to the Roads and Wet Services Report attached in Appendix D for more detailed information.

1.8 Roads and traffic

In order to conduct the traffic impact statement for the proposed development, the engineers made use of the guidelines set by TMH 16 Volume 1- South African Traffic Impact and Site Assessment Manual. The following access points were analysed

- Burchell Road / Cape Road

- Salerno Road / Cape Road

Cape Road is a major east-west class 2 arterial road that serves as the main mobility link between the CBD and the western suburbs of Port Elizabeth. From the Kragga Kamma Road interchange to Burchell Road, Cape Road consists of two 3,7m wide traffic lanes and a 3m wide shoulder per direction separated by a 5m kerbed median with additional right turning lanes in the median on the approaches to intersections including Burchell Road. From Burchell Road to the west, Cape Road reduces to a single lane per direction. The intersection of Burchell Road is traffic signal-controlled.

Burchell Road is a class 4b residential collector road linking Cape Road with Salerno Road and providing access to residential properties along its length. The road is kerbed and consists of a single 3.7m wide lane per direction with additional right-turn lanes approaching Cape Road and Salerno Road.

Salerno Road is a class 4b residential collector road. The road is kerbed and is surfaced and comprises of a single 3.7m lane per direction with an additional 3.4m turning lane on the approach to Burchell Road.

Access Proposals

Access to the development site is proposed from the existing public road Burchell Road near the northeastern boundary of the site.

TRH 26: South African Road Classification and Access Management Manual makes provision for access spacing of 150 to 250m on Class 4b roads. The proposed access is located 150m from Tamia and Aurora Roads and thus meets the requirement. In terms of the Geometric Design Guidelines (8) shoulder sight distance for a stop condition to accommodate a semi-trailer vehicle on a road with a posted speed limit of 60km/h is 192m. A passenger car requires 125m. The available sight distance from the proposed access exceeds 192m –and thus meets the requirements.

1.9 Security

Construction Phase

During the construction phase of Erf 2006, Parsonsvlei, several security measures are essential to ensure site safety and prevent unauthorized access. A secure perimeter fence should be erected to deter intruders and protect against theft and vandalism, supported by motion-activated security lighting to improve visibility. Additionally, a CCTV surveillance system must be installed at strategic locations, such as entry points and storage areas, with continuous monitoring to identify any suspicious activity.

The site should be manned by qualified security personnel who will patrol the area, manage access control, and monitor surveillance systems. An access control system, using key cards or biometric readers, will restrict site entry to authorized personnel only. Securing the site office with locks, alarms, and regularly monitored CCTV will protect sensitive documents and equipment from unauthorized access.

To further enhance security, valuable materials and equipment should be stored in locked containers, with CCTV monitoring and regular checks by security personnel. Clear emergency procedures for security breaches or thefts should be

communicated to all staff, and drills should be conducted regularly. Signage indicating surveillance and restricted access will act as an additional deterrent to potential intruders.

Operation Phase

During the operational phase of the Erf 2006, Parsonsvlei development, maintaining strong security is crucial for resident safety and property protection. Key measures include controlled access points with secure electronic gates that restrict entry to residents and authorized personnel. Security patrols should be conducted 24/7 throughout the property, with personnel monitoring common areas, parking lots, and sensitive zones. A comprehensive CCTV system covering entrances, exits, and communal spaces should be implemented, monitored in real-time, and recorded for investigative purposes.

Additional security enhancements include installing adequate lighting in communal areas, parking lots, and entry points, with motion-activated lights to deter unauthorized access. A visitor management system should be established, where guests check in at a security office or reception, and are issued temporary passes while being accompanied by residents or authorized personnel. Alarm systems should also be installed in key buildings to detect unauthorized access and connected to central monitoring for immediate response.

Regular maintenance and inspection of perimeter fencing, lighting, and surveillance equipment are necessary to ensure the effectiveness of the security infrastructure. Developing and updating an emergency response plan, along with conducting regular drills, will prepare both residents and security personnel for potential incidents. Promoting community engagement through safety meetings and reporting channels will further enhance vigilance and cooperation among residents, contributing to overall security.

2 Feasible and Reasonable Alternatives

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;

(b) the type of activity to be undertaken;

(c) the design or layout of the activity;

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

(e) the operational aspects of the activity; and

(f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity

(including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Paragraphs 3 – 13 below should be completed for each alternative.

2.1 Design and layout alternatives

As per GNR 982, Appendix 1(2)(b), alternatives for the proposed development are to be identified and considered. Chapter 1 of the EIA Regulations (2014, as amended) provides an interpretation of the word "*alternatives*", which is to mean -

"*in relation to a proposed activity, means different means of meeting 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 in the activity; or

e) Operational aspects of the activity.

And includes the option of not implementing the activity."

Based on the above, the following alternatives are presented for the proposed residential development. The preferred site for the proposed activity is the current site of Erf 2006, Parsonsvlei located within Ward 12 in Gqeberha, Eastern Cape. The property measures approximately 3.107 Ha in extent and is located approximately 12 kilometers northwest of the city centre. The property is neighboured by residential and industrial developments. The proposed development area can be accessed via Burchell Road. The site is currently zoned for Special Purposes No. 232 (Warehouse/Workshop) but is not currently utilised for this purpose. An application to rezone the property to General Residential Zone 1 has been applied for.

In terms of developing different layout alternatives, the EAP was presented with a proposed SDP upon appointment. It was then recommended that a Biodiversity & Aquatic Specialist be appointed in order to determine site sensitivities and any no-go areas, which would inevitably impact the SDP and likely lead to the development of layout alternatives in order to avoid the no-go areas as per the mitigation hierarchy guidelines. Once the specialist conducted his assessment of the site, it was indicated that he did not identify any specific no-go areas or areas that should be avoided. There were also no sensitive aquatic features identified on site that would require the establishment of no-go areas. It was thus concluded that the layout would be acceptable in terms of environmental impacts. Engineering and traffic would still have to be considered which then lead to the development of the preferred layout site development plan which is attached in Appendix C.

2.1.1 Layout Alternatives

The consideration and investigation of different alternatives is an integral action during the assessment process, especially alternatives considering the affected environment. During the preparation of the layout plan for the intended development, the approved zoning, local and national policy guidelines natural and manmade characteristics of the site, socio-economic status of the community, availability of municipal services, as well as traffic assessment were taken into

account to achieve the best use of the site from an economic perspective. Only one alternative development layout option has been considered throughout the planning phase of this project (Figure 5). This layout alternative is, therefore, the only site alternative that can meet the need and desirability of the Application, and as such, no alternate layouts have been investigated.

UNIT TYPE	FLOORS	BEDRMS	BATH	GARAGES	AREA	TOTAL AREA	COV	TOTAL COV	NUMBER UNITS	PARKING BAYS	TOTAL BAYS	OPEN SPACE	TOTAL SPACE	TOTAL AREA
A	DOUBLE	3	2	2	142 m2	3124	89	1958	22	1,5	33	24	528	3408 m2
B	SINGLE	3	2	2	114 m2	2508	114	2508	22	1,5	33	24	528	2508 m2
C	SINGLE	2	2	2	103 m2	3296	103	3296	32	1,5	48	24	768	3296 m2
D	WALKUPS	2	2	0	54 m2	1296	27	648	24	1,5	36	18	432	1296 m2
E	WALKUPS	2	1	0	50 m2	2350	25	1175	47	1,5	70,5	18	846	2350 m2
F	WALKUPS	1	1	0	35 m2	280	18	140	8	1,25	10	12	96	280 m2
TOTAL					498	12854	376	9725	155	8,75	230,5	120	3198	13138 m2

SITE AREA	31076 m2
NUMBER OF UNITS	155
UNIT AREA	12854 m2
GATEHOUSE	72 m2
COMMUNITY CENTRE	142 m2
TOTAL	13068 m2
COVERAGE AREA	9939 m2
COVERAGE	32% m2
PARKING NEEDED	230,5 bays
PARKING UNITS	233 bays
PARKING VISITORS	49 bays
PARKING PARAPLEGIC	5 bays
TOTLA PROVIDED	282 bays
OPEN SPACE REQUIRED	3198 m2
OPEN SPACE PROVIDED	3265 m2

Figure 5 – Preferred Alternative 1

2.1.2 Stormwater Layout Alternatives

Only one option (Figure 6) is proposed for the stormwater system and attenuation ponds based on the engineering requirements and town planning layouts. There are existing municipal sewer, stormwater, and water reticulation systems in the vicinity of the site. The proposed attenuation stormwater ponds A and B on Erf 2006 (Figure 6), Parsonsvlei has been preliminarily designed to retain post-development major design storm inflows up to 1 in 100-year recurrence interval with a 1 in 5-year pre-development discharge. Following calculations made by the engineers, the effective storage capacity of the proposed ponding system should be 0.342Ml and 0.664Ml respectively. The piped stormwater system that includes the roads and parking on Erf 2006, Parsonsvlei will intercept and also act as stormwater channels and overland flow routes, sloping north and northeast to the stormwater attenuation ponds. The outflow from the respective ponds will be directed northeast towards the existing stormwater channel.

Furthermore, it is proposed that the surface areas of the ponds will be effectively grassed and maintained. Erosion protection measures will also be implemented at the inlet, outlet, and overflow structures including overland flow routes.

The surface run-off from minor post-development rainstorms (up to a maximum 1 in 5-year recurrence interval) has been preliminary designed to be conveyed and intercepted by the piped stormwater system.

Figure 6 – Preliminary roads & stormwater layout plan

2.1.3 Water Reticulation Layout Alternatives

Only one option is proposed for the water supply system based on the environmental requirements and town planning layouts (Figure 7). This is because there is an existing Nelson Mandela Bay Municipality 400mm diameter uPVC water main in Burchell Road near the northeastern corner of Erf 2006 Parsonsvlei. The provision of water to the proposed development site will be off the mentioned 400mm diameter NMBM reticulation main in Burchell Road as confirmed with NMBM for a high-density residential project subject to the conditions as dictated by NMBM.

The supply reservoir for the proposed development will be the Chelsea Reservoir. Based on the engineer's design calculations, the Annual Average Daily Demand (AADD) for the 155 sectional title apartments and townhouses will be 86.52 kilolitres per day under post-development conditions. This is well within the supply capacity of the existing Chelsea reservoir. In addition to the above, the engineer recommended that the Developer make provision for rainwater harvesting on Erf 2006 Parsonsvlei. The said water shall be treated as advised by a specialist for drinking purposes.

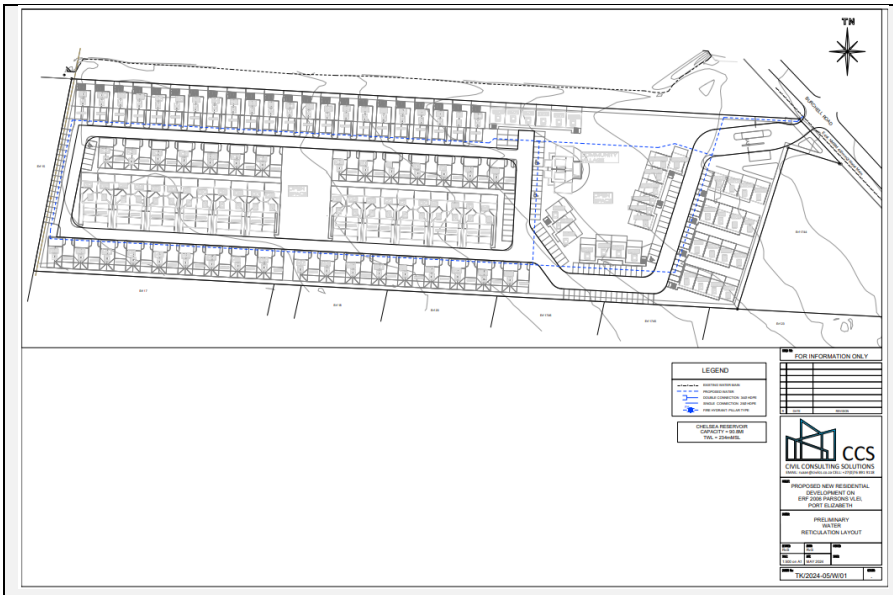

Figure 7 - Preliminary water reticulation layout plan

2.1.4 Foulsewer Layout Alternatives

Only one option is proposed for the foul sewer system based on the environmental requirements and town planning layouts (Figure 8). The effluent of the proposed residential development consisting of 155 units on Erf 2006 Parsonsvlei, will be treated at the Fishwater Flats Treatment Works (FWFTW). The preliminary total design Average Dry Weather Flow (ADWF) of the proposed residential development has been calculated to be 68.60kl per day. The capacity of the existing Fishwater Flats Treatment Works is 132Ml per day. The FWFTW is currently treating less than 109Ml per day. Under the current conditions, it is the engineer's opinion that the existing Fishwater Flats Treatment Works will be able to handle the additional post-development effluent of 0.070ML per day (68.60kl/day) generated by the proposed residential development. The existing NMBM 225mm diameter sewer line runs near the northern boundary of Erf 2006, Parsonsvlei. The foul sewer reticulation mains from the proposed development will drain to the existing NMBM sewer network via a manhole connection on the 225mm diameter NMBM sewer main.

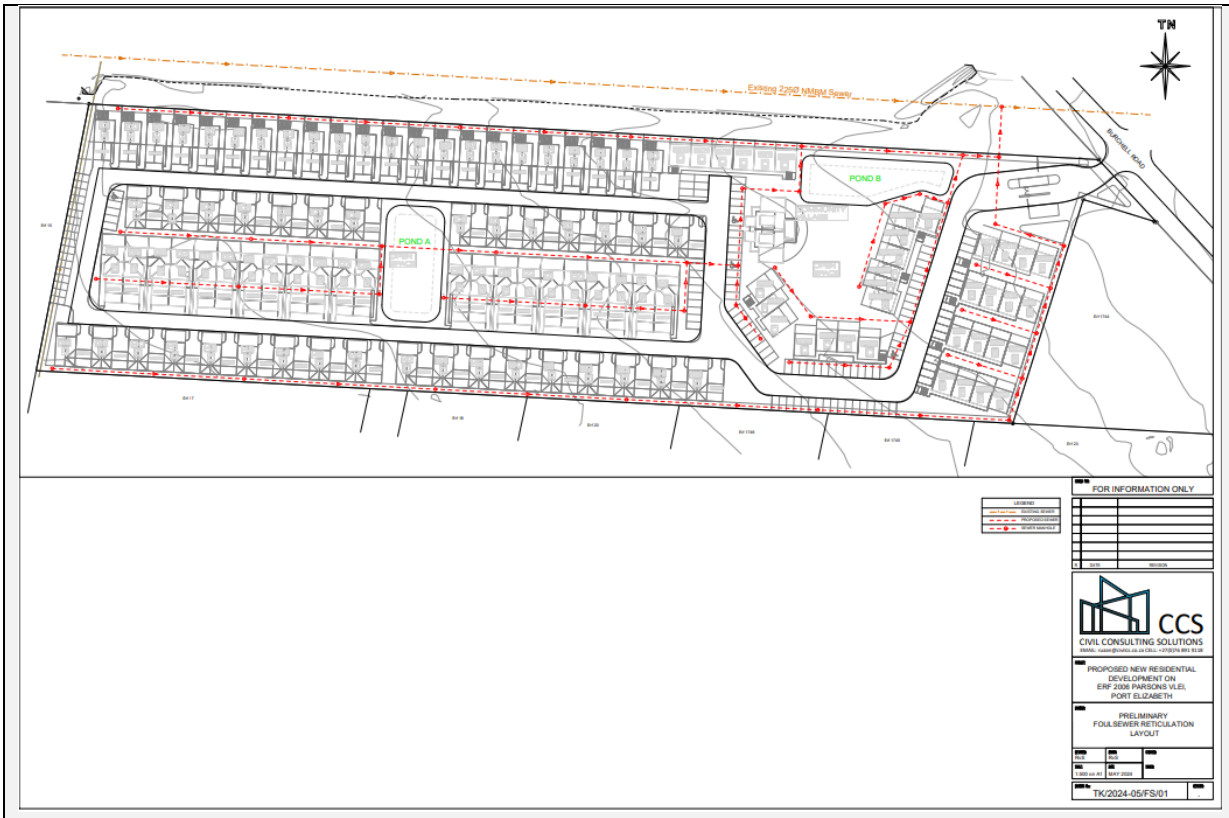

Figure 8 – Preliminary foul sewer layout plan

a) The property on which or location where it is proposed to undertake the activity

Erf 2006 Parsonsvlei is selected for the residential development as it is owned by the applicant. The preferred site for the proposed activity is the current site of Erf 2006, Parsonsvlei located within Ward 12 in Gqeberha, Eastern Cape. No other locations were considered as alternatives. The property is neighboured by residential and industrial developments. The proposed development area can be accessed via Burchell Road. The accessibility to the site as well as its location is advantageous to the specific development. The site is currently zoned for Special Purposes No. 232 (Warehouse/Workshop) but is not currently utilised for this purpose. The proposed site is currently vacant. An application to rezone the property to General Residential Zone 1 has been applied for.

The choice of Erf 2006 in Parsonsvlei for residential development is motivated by its strategic location and potential for optimized land use that is currently vacant. The site is positioned adjacent to residential areas like Westbrook and Francis Evatt Park. The proposed development integrates with the existing neighborhoods, offering convenient access to major roads such as Burchell Road and Cape Road. This accessibility enhances connectivity for future residents, facilitating easy commutes and access to amenities. The site's size (3.107 Ha) supports substantial residential development, accommodating a variety of housing types. The site has access to existing infrastructure and is conveniently located near the Curro Westbrook School, further supporting the proposed residential use. Additionally, the mixed surrounding land uses, which include industrial, commercial, and residential, suggest a balanced and diverse neighborhood, which can increase the area's appeal and functionality. The site's current vacant status and alignment with local housing demand

and growth trends highlight its potential to address pressing residential needs, create economic opportunities, and enhance community integration.

b) The design or layout of the activity

No alternative layouts were investigated for the proposed development. The design of the development depicts 155 residential units aimed at the middle-income residential market. The area of the site is approximately 3.107 Ha with 0.32 Ha being set aside as private open space. The design and layout of the proposed residential development for Erf 2006 are planned to enhance both functionality and quality of life for the residents. The development aligns closely with the Sustainable Development Plan (SDP) of the Nelson Mandela Bay Municipality (NMBM). The SDP aims to guide urban development sustainably, balancing economic growth with environmental stewardship and social equity. By addressing the city's housing demand through well-planned residential expansion, the development supports one of the SDP's key objectives of providing adequate and affordable housing options.

c) The technology to be used in the activity

The applicant is encouraged to consider energy efficiency, and sound waste management throughout the development stages. The engineer recommended that the applicant make provision for rainwater harvesting. The said water shall be treated as advised by a specialist for drinking purposes. No other specific technological alternatives have been considered to date, as it has not yet been finally determined which technologies would be required for the development.

d) The operational aspects of the activity

The site is currently zoned for Special Purposes No. 232 (Warehouse/Workshop) but is not currently utilised for this purpose. An application to rezone the property to General Residential Zone 1 has been applied for. The operational aspects of the project are directly linked to the proposed site development plan and the proposed zoning of the property.

e) No-go Alternative (not recommended)

The EIA Process is obligated to assess the status quo (i.e. the “no-go” alternative) of the development. The no-go alternative provides the assessment with a baseline against which predicted impacts resulting from the proposed development can be compared. The No-Go alternative has been evaluated and discredited. The need for the proposed development is largely based on the demand for affordable and secure housing within the Nelson Mandela Bay Municipality. With the city experiencing population expansion, there is a pressing demand for additional housing options, particularly within well-serviced residential suburbs like Parsonsvlei. This development not only aims to alleviate housing shortages but also stimulates economic activity through construction jobs and increased demand for local services. Furthermore, it presents an opportunity to improve community infrastructure, including roads and amenities, thereby enhancing overall living standards. Environmental considerations are paramount, with plans to mitigate impacts on nearby threatened ecosystems and rehabilitate disturbed areas, demonstrating a commitment to sustainable urban development

practices. Furthermore, the development shall provide job creation and skills development during the construction and operational phases.

3 Activity Position

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in 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.

List alternative sites if applicable.

	Latitude (S):		**Longitude (E):**	
Alternative:				
Alternative S1[1] (preferred or only site alternative)	33[0]	935011‘	25[0]	489014‘
Alternative S2 (if any)	o	‘	o	‘
Alternative S3 (if any)	o	‘	o	‘

In the case of linear activities:

Alternative:	**Latitude (S):**		**Longitude (E):**	
Alternative S1 (preferred or only route alternative)				
• Starting point of the activity	o	‘	o	‘
• Middle point of the activity	o	‘	o	‘
• End point of the activity	o	‘	o	‘

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

[1] “Alternative S..” refer to site alternatives.

4 Physical size of the activity

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[2] (preferred activity alternative)	3.107 Ha (32.407m^2). Approximately 0.32 Ha will be provided for private open space areas.
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

5 Site Access

Does ready access to the site exist?	**YES**	NO
If NO, what is the distance over which a new access road will be built	m	

Describe the type of access road planned:

Access Proposals

Access to the development site is proposed from the existing public road Burchell Road near the northeastern boundary of the site (Figure 9). **TRH 26: South African Road Classification and Access Management Manual** makes provision for

[2] "Alternative A.." refer to activity, process, technology or other alternatives.

access spacing of 150 to 250m on Class 4b roads. The proposed access is located 150m from Tamia and Aurora Roads and thus meets the requirement. In terms of the Geometric Design Guidelines (8) shoulder sight distance for a stop condition to accommodate a semi-trailer vehicle on a road with a posted speed limit of 60km/h is 192m. A passenger car requires 125m. The available sight distance from the proposed access exceeds 192m –and thus meets the requirements.

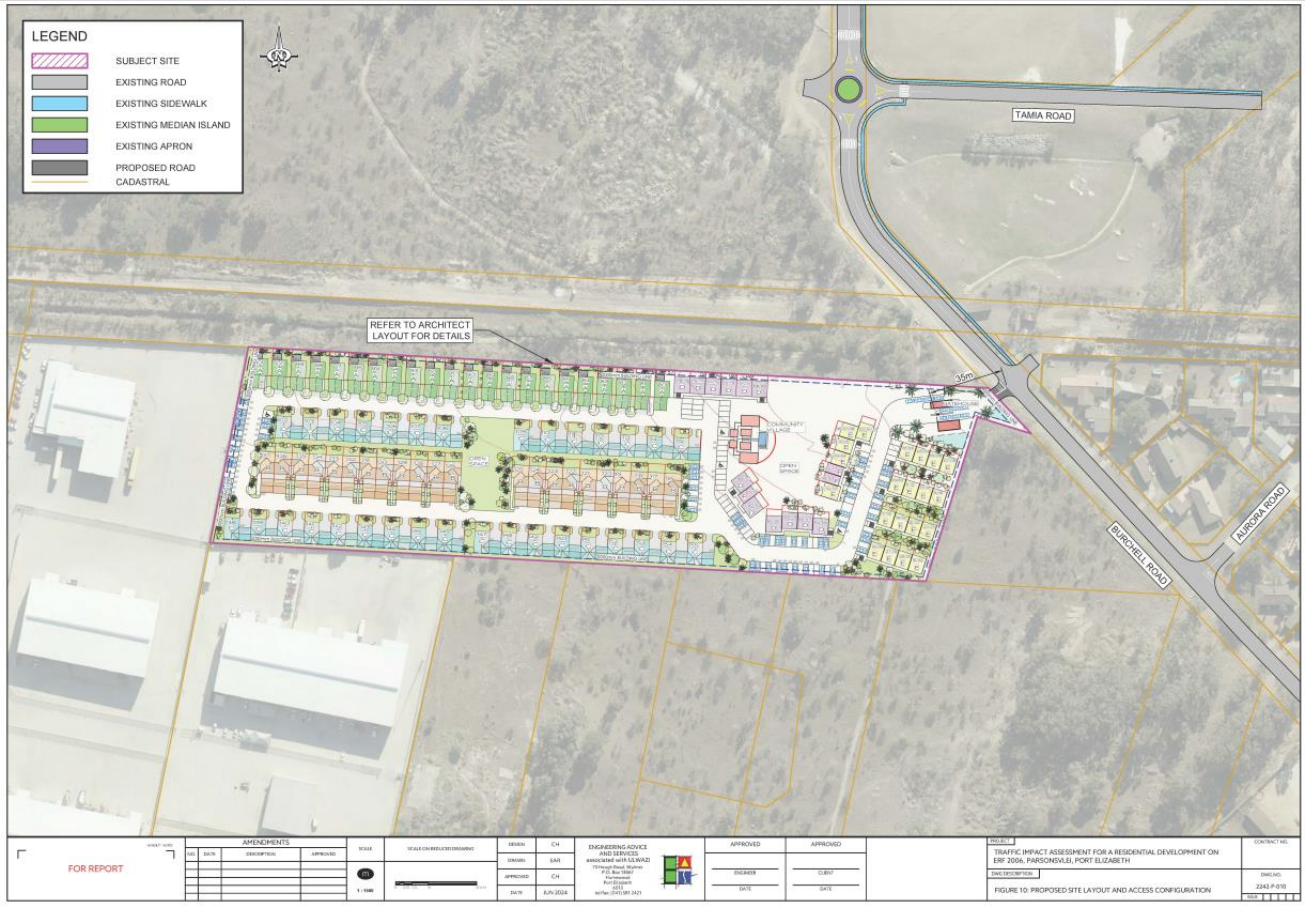

Figure 9 - Existing Road and intersection configuration

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6 Site or Route Plan

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as **Appendix A** to this document.

The site or route plans must indicate the following:

6.1 the scale of the plan which must be at least a scale of 1:500;

6.2 the property boundaries and numbers of all the properties within 50 metres of the site;

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

Refer to Land Use Map (Appendix A)

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

Refer to (Preliminary) Facility Illustrations (Appendix C)

6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;

6.6 all trees and shrubs taller than 1.8 metres;

6.7 walls and fencing including details of the height and construction material;

The site will likely be fenced with a fencing material (this is to be confirmed).

6.8 servitudes indicating the purpose of the servitude;

Refer to (Preliminary) Facility Illustrations (Appendix C)

6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):

- rivers;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or invested with alien species);

Refer to maps (Appendix A) (Appendix C)

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

6.11 the positions from where photographs of the site were taken.

7 Site Photographs

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

8 Facility Illustration

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

9 Activity Motivation

(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R160 000 000.00	
What is the expected yearly income that will be generated by or as a result of the activity?	R40 000 000.00	
Will the activity contribute to service infrastructure?	**YES**	NO
Is the activity a public amenity?	YES	**NO**
How many new employment opportunities will be created in the development phase of the activity?	250	
What is the expected value of the employment opportunities during the development phase?	R120 000 000.00	
What percentage of this will accrue to previously disadvantaged individuals?	95%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	100	
What is the expected current value of the employment opportunities during the first 10 years?	R120 000 000.00	
What percentage of this will accrue to previously disadvantaged individuals?	95%	

(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The proposed residential development of Erf 2006, Parsonsvlei in Gqeberha addresses critical local needs and aligns with broader urban growth trends. The need for the proposed development is largely based on the demand for affordable and secure housing within the Nelson Mandela Bay Municipality. With the city experiencing population expansion, there is a pressing demand for additional housing options, particularly within well-serviced residential suburbs like Parsonsvlei. This development not only aims to alleviate housing shortages but also stimulates economic activity through construction jobs and increased demand for local services. Furthermore, it presents an opportunity to improve community infrastructure, including roads and amenities, thereby enhancing overall living standards. Environmental considerations are paramount, with plans to mitigate impacts on nearby threatened ecosystems and rehabilitate disturbed areas, demonstrating a commitment to sustainable urban development practices. By fostering community integration and supporting local economic growth, the residential project seeks to contribute positively to the social and economic fabric of the area, ultimately enhancing the quality of life for residents and meeting the evolving needs of Gqeberha's expanding population.

The development aligns closely with the Sustainable Development Plan (SDP) of the Nelson Mandela Bay Municipality (NMBM). The SDP aims to guide urban development sustainably, balancing economic growth with environmental stewardship and social equity. By addressing the city's housing demand through well-planned residential expansion, the development supports one of the SDP's key objectives of providing adequate and affordable housing options. Furthermore, it contributes to economic development by creating jobs during construction and fostering local business opportunities as the community grows. The project's commitment to environmental considerations, such as rehabilitating disturbed areas and minimizing impacts on sensitive ecosystems, reflects the SDP's goal of promoting sustainable land use and environmental management. Overall, the residential development of Erf 2006, Parsonsvlei not only meets immediate housing needs but also exemplifies a sustainable approach that aligns with the long-term vision outlined in NMBM's Sustainable Development Plan.

This section on need and desirability is compiled in accordance with the requirements of the Guideline of Need & Desirability (DEA, 2017) published in terms of Section 24J of NEMA. The guidelines indicates that the following main subjects are addressed when assessing the need and desirability of a project:

- aligning the project with relevant planning and legislation policies
- ensuring ecologically sustainable development and use of natural resources
- promotion of justifiable economic and social development

As per the DEA (2017), Guideline on Need and Desirability, Department of Environmental Affairs;" In order to properly interpret the EIA Regulations' requirement to consider "need and desirability", it is necessary to turn to the principles contained in NEMA, which serve as a guide for the interpretation, administration and implementation of NEMA and the EIA

Regulations. With regard to the issue of "need", it is important to note that this "need" is not the same as the "general purpose and requirements"10 of the activity. While the "general purpose and requirements" of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for proposing the specific activity, the "need" relates to the interests and needs of the broader public. In this regard, the NEMA principles specifically inter alia require that environmental management must:

- "place people and their needs at the forefront of its concern" and equitably serve their interests;
- "be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;
- pursue environmental justice "so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person";
- ensure that decisions take "into account the interests, needs and values of all interested and affected parties"; and
- ensure that the environment is "held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage".

"SECURING ECOLOGICALLY SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES"

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

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

1.1.1 Threatened Ecosystems,

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

1.1.3 Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"),

1.1.4 Conservation targets,

1.1.5 Ecological drivers of the ecosystem,

1.1.6 Environmental Management Framework,

1.1.7 Spatial Development Framework, and

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

Ecological Integrity

The site is situated within the Algoa Sandstone Fynbos vegetation unit and is Critically Endangered (NSBA, 2018). Thus, it is listed as a Threatened ecosystem. Further, the site is located within a Wetland Cluster catchment of the Papenkuils River, but not within any National Freshwater Ecosystem Priority Areas (NFEPAs) or listed Internal Bird Areas. The site is not located within any Strategic Water Resource Areas. The study area spans one vegetation type defined by Mucina and Rutherford (2007), as amended in the National Vegetation Map 2012 and 2017/18 spatial information. This vegetation unit, known as Algoa Sandstone Fynbos (FFs 29), a form of Algoa Grassy Fynbos, is listed as Critically Endangered and is therefore considered a Threatened Ecosystem, as per the National Environmental Management: Biodiversity Act.

Clearing of vegetation, including the removal of invasive species, will result in the loss of vegetation holding the soil together and could increase soil erosion, which may affect nearby drainage systems. Site levelling and landscaping can alter natural water flow and lead to soil compaction, impacting local hydrology and soil health. Construction of roads and infrastructure may fragment habitats, hinder wildlife movement, and cause pollution from dust and debris. The installation of stormwater and sewer infrastructure poses risks to water quality and could disrupt soil and underground ecosystems. The introduction of residential units and amenities will increase human activity, potentially leading to habitat disturbance, noise, and light pollution, which can affect local wildlife. Increased waste and resource use associated with higher residential density might strain local ecosystems if not managed properly.

However, the Biodiversity Assessment Specialist Report made note that there were no sensitive habitats observed and thus it is envisaged that all of the impacts mentioned above would remain LOW (with mitigation) and that the overall residual impacts would be VERY LOW. To mitigate these impacts, it is crucial to implement comprehensive alien vegetation management, effective stormwater, and waste management systems, sustainable construction practices, and use of native plant species in landscaping.

1.2 How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?

The development of Erf 2006 in Parsonsvlei will have both disturbing and potentially beneficial effects on local ecosystems and biological diversity. Clearing of existing vegetation, including invasive species, will disrupt habitats and ecological processes, while soil compaction and erosion from construction can degrade soil health and affect plant growth. The removal of invasive species will help clear the area of undesired plants that dominate and hinder indigenous plants from growing and thriving in the area. The fragmentation caused by new roads and infrastructure may isolate wildlife populations and hinder their movement and the vegetation corridors will be affected.

To mitigate these negative impacts, the development plans include removal of invasive species, implementing erosion control measures such as silt fences. Post-construction, habitat restoration with native plants and advanced stormwater management systems will help counteract these disturbances. On the positive side, the project should aim to enhance local ecosystems

through sustainable landscaping with native species, incorporating green infrastructure like permeable pavements and rain gardens, and promoting public education on biodiversity conservation.

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

The development of Erf 2006 in Parsonsvlei poses several risks of polluting and degrading the biophysical environment through various Construction Phase and Operational Phase activities. Construction Phase activities such as clearing vegetation, excavation, dust, and noise from construction activities, and the installation of infrastructure can lead to soil erosion. Furthermore, increased impervious surfaces like roads and rooftops can exacerbate stormwater runoff, potentially carrying pollutants such as sediment, nutrients, and chemicals into nearby waterways, impacting aquatic ecosystems. Additionally, noise and air pollution from construction machinery and increased vehicle traffic during the Construction Phase can disturb local wildlife and degrade air quality in the area.

Avoidance and Minimisation Measures:

To avoid these impacts, measures such as dust suppression techniques, proper management of construction materials, and erosion control with silt fences and sediment traps could be implemented. Additionally, comprehensive waste management plans will handle construction debris and residential waste efficiently. To minimize and remedy unavoidable impacts, effective stormwater management systems, including retention ponds and filtration, will be installed to treat runoff before it reaches natural water sources. Soil rehabilitation efforts will restore and stabilize disturbed areas, while pollution response plans will address any accidental spills promptly.

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

The development of Erf 2006 in Parsonsvlei will generate several types of waste, including construction debris, packaging materials, organic waste, and household refuse.

Construction Waste

During the construction phase, construction activities such as site preparation, building construction, and infrastructure installation will produce significant amounts of construction and demolition waste, including concrete, bricks, wood, metal, packaging materials, and soil resulting from excavation. Waste from packaging materials like plastics, cardboard, and pallets is used during the transportation and storage of construction supplies. Organic waste that will be generated from landscaping activities, including plant cuttings, soil, and other organic materials.

Operation Waste

Operational waste from residential units, and communal facilities, including general waste, recyclables, and hazardous materials like batteries or electronics, and landscaping maintenance will contribute to waste generation over time. These ongoing operational activities may produce green waste and other materials.

Avoidance and Minimisation Measures:

By incorporating waste management strategies, the development will aim to minimize waste generation, promote recycling and reuse, and ensure the safe treatment and disposal of any unavoidable waste, thus reducing the overall environmental impact of the project. To mitigate the generation of waste, efforts will be made during the planning stages to explore measures aimed at waste avoidance. This includes choosing building design and material selection to minimise waste generation from the outset. Strategies such as using modular construction techniques, pre-fabricated components, and lean construction principles should be considered to reduce the amount of construction and demolition waste generated during construction. Additionally, suppliers will be encouraged to use minimal packaging and to provide materials in bulk to reduce packaging waste. This will help minimise the over-ordering of construction materials, reducing excess waste generated during the construction phase.

Minimise, reuse, and recycle on-site materials

Where waste generation cannot be entirely avoided, measures should be taken to minimise, reuse, and recycle the waste produced on-site during the construction phase. On-site segregation of waste streams, such as concrete and timber, for recycling, should be planned to divert reusable materials away from landfill. Construction waste management plans should be developed to ensure that recyclable materials are separated, processed, and reused wherever feasible within the development or redirected to appropriate recycling facilities. Reclaimed materials, such as crushed concrete for road base or landscaping, will be considered for reuse within the project to minimise the demand for virgin materials. Exploration of opportunities to reuse on-site materials, such as incorporating excavated soil for landscaping or utilising recycled materials from existing structures.

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

The site has been classified as having a low Archaeological and Cultural Heritage sensitivity theme by the DFFE online screening tool. A specialist has been appointed to undertake an Archaeological Impact Assessment. The specialist report confirmed that no archaeological sites/materials were observed within or close to the study area. In general, the area for the proposed development appears to be of low archaeological sensitivity and it is unlikely that any archaeological remains of significance will be found in situ or exposed during these activities. There are no known graves or historical buildings older

than 60 years on the proposed site. In general, the proposed areas for development appear to be of low archaeological sensitivity and the development may proceed as planned.

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

Not directly applicable to the proposed project.

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

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

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

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

Not directly applicable to the proposed project.

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

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

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

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

The site is situated within the Algoa Sandstone Fynbos vegetation unit and is Critically Endangered (NSBA, 2018). Thus, it is listed as a Threatened ecosystem. Further, the site is located within a Wetland Cluster catchment of the Papenkuils River,

but not within any National Freshwater Ecosystem Priority Areas (NFEPAs) or listed Internal Bird Areas. The site is not located within any Strategic Water Resource Areas. The study area spans one vegetation type defined by Mucina and Rutherford (2007), as amended in the National Vegetation Map 2012 and 2017/18 spatial information. In addressing these ecological impacts, a risk-averse and cautious approach will be applied throughout the planning and development process. By prioritising precautionary measures, comprehensive assessments, and adaptive management strategies, the development will aim to responsibly manage ecological risks and contribute to sustainable development practices that balance environmental protection with societal needs.

1.9 How will the ecological impacts resulting from this development impact people's environmental rights in terms following

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

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

The ecological impacts of the development of Erf 2006 in Parsonsvlei will affect people's environmental rights in various ways, encompassing both negative and positive outcomes.

Negative Impacts:

Negatively, the project could alter local water and soil resources, potentially affecting residents' access to clean water for those using groundwater. The transformation of vacant land into residential areas might reduce open space and recreational opportunities, impacting community amenity. Construction activities may degrade air and water quality, leading to potential health issues from pollution and dust, and cause noise and visual disturbances that affect quality of life, however, the site is not directly adjacent to any residential properties and should not cause any intense disturbance to neighbouring landowners. To mitigate these issues, measures include implementing dust control, managing stormwater effectively, and using noise reduction strategies during construction. Comprehensive waste management and pollution control plans are in place to handle unavoidable impacts.

Positive Impacts:

On the positive side, the development will create a new community and affordable residential places for the residents of Nelson Mandela Bay Municipality. The development will create new amenities such as open spaces and landscaped areas, which can improve residents' quality of life.

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

The impacts associated with the proposed development are addressed in the impact assessment section with recommended mitigation measures during the Construction Phase and Operational phase.

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

The development of Erf 2006 in Parsonsvlei will have a range of impacts on the ecological integrity objectives and targets of the area, both positive and negative.

Positive Impacts:

The potential use of green infrastructure, such as rain gardens, rain harvesting methods, and permeable pavements, can enhance stormwater management and reduce runoff, which aligns with NMBM's goals for sustainable urban development and water management. By incorporating green spaces and promoting sustainable living practices, the development can contribute to improved environmental awareness and quality of life for residents. This aligns with broader municipal objectives of enhancing urban living environments while fostering environmental stewardship.

Negative Impacts:

The development will result in the conversion of natural and semi-natural land into built environments, leading to habitat loss and fragmentation. Such fragmentation can disrupt ecological corridors and reduce habitat availability for native species, undermining the municipality's biodiversity targets. However, the Biodiversity Assessment Specialist Report made note that there were no sensitive habitats observed on site. Construction activities and the creation of impervious surfaces can alter natural water flow patterns, increasing runoff and potentially leading to sedimentation and pollution of local water bodies. This can negatively affect water quality and aquatic habitats, which are critical for maintaining the ecological health of the region's river systems. Dust, noise, and potential chemical contaminants from construction activities may contribute to environmental pollution. These impacts can degrade air and water quality, affecting both human health and ecological systems and may conflict with NMBM's goals for maintaining clean and healthy environmental conditions. The introduction of new residential areas will lead to greater human activity and development pressures in the area, potentially leading to increased waste production, traffic congestion, resource consumption, and further environmental disturbances.

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

No alternative options were considered for this project.

1.13 Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?

Refer to the impact assessment section.

2. "PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT"

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

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

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

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

2.1.4 Municipal Economic Development Strategy ("LED Strategy").

The socio-economic context of the area surrounding Erf 2006 in Parsonsvlei is shaped by several key considerations, including the Integrated Development Plan (IDP) of Nelson Mandela Bay Municipality (NMBM), spatial priorities, spatial characteristics, and the Municipal Economic Development Strategy (LED Strategy).

Integrated Development Plan (IDP) and Strategic Plans: The IDP for Nelson Mandela Bay Municipality outlines the vision, objectives, and strategies for sustainable development in the municipality. It identifies the need for balanced growth, economic development, and improved quality of life for residents. Key objectives include enhancing infrastructure, promoting environmental sustainability, and addressing social inequalities. The sector plans associated with the IDP address specific needs such as housing, transport, and environmental management, with indicators and targets aimed at improving living conditions and ensuring equitable access to services.

Spatial Priorities and Desired Patterns: NMBM's spatial priorities focus on integrating segregated communities and addressing the challenges posed by informal settlements. The IDP and associated spatial frameworks highlight the need for urban densification to optimize land use and reduce sprawl. There is an emphasis on upgrading informal settlements to provide better living conditions and services, and on promoting mixed-use developments that support both residential and commercial activities. These priorities aim to create more cohesive and inclusive urban environments, reducing socio-economic disparities and improving accessibility.

Spatial Characteristics: Erf 2006 is located in an area characterized by a mix of existing land uses, including residential, commercial, and industrial. The surrounding area features a residential suburb to the east, vacant land to the north, and industrial and commercial uses to the south. The site's current vacant status and its potential for development align with the municipality's goals for spatial planning and development. Cultural landscapes and historical contexts may influence the area's development, although specific cultural considerations would need to be integrated into planning processes to ensure respect for local heritage.

Municipal Economic Development Strategy (LED Strategy): The LED Strategy aims to stimulate economic growth, create job opportunities, and enhance local businesses. It focuses on supporting diverse economic activities, encouraging investment, and improving infrastructure to foster a conducive environment for business development. By promoting

residential development on Erf 2006, the strategy aligns with objectives to boost local economies through increased housing density, which can attract additional services and commercial activities. The strategy also supports sustainable development practices that can enhance the area's attractiveness for future investments.

The socio-economic context of Erf 2006 is shaped by a need for integrated urban development that addresses social and spatial inequalities while promoting economic growth. The IDP and spatial plans highlight the importance of densification, integration, and upgrading informal settlements, all of which align with the proposed development's objectives. By enhancing residential infrastructure and adhering to sustainable practices, the development supports the municipality's goals of improving living standards, fostering economic growth, and creating more cohesive and functional urban areas. The project contributes to the broader vision of equitable and sustainable development while addressing both current needs and future growth.

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

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

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

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

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

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

2.5.2 reduce the need for transport of people and goods,

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

2.5.4 compliment other uses in the area,

2.5.5 be in line with the planning for the area,

2.5.6 for urban-related development, make use of underutilised land available with the urban edge,

2.5.7 optimise the use of existing resources and infrastructure,

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

2.5.9 discourage "urban sprawl" and contributes to compaction/densification,

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

2.5.11 encourage environmentally sustainable land development practices and processes,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Positive Socio-Economic Impacts

Job Creation: The development will create jobs during the construction phase, including roles in building, landscaping, and infrastructure work. This can provide temporary employment opportunities for residents. Once completed, the residential units will require ongoing maintenance and management, potentially generating permanent job opportunities in property management, security, and maintenance services.

Economic Stimulus: The construction and eventual occupation of the residential units will stimulate the local economy. Increased demand for goods and services, such as retail, healthcare, and education, can benefit local businesses and boost economic activity.

Improved Infrastructure and Services: The development will contribute to the expansion of infrastructure, including internal roads, stormwater management systems, and utility services. This can enhance the quality of public services for both new and existing residents. The inclusion of green spaces and recreational areas provides enhanced amenities, improving the quality of life for residents and promoting healthier lifestyles.

Enhanced Residential Opportunities: The development includes various types of residential units, potentially offering middle-income housing options that may be more affordable than existing alternatives. This can address housing shortages and provide better living conditions.

Overall, the development of Erf 2006 is expected to bring significant socio-economic benefits, such as job creation, economic stimulation, and improved infrastructure. However, careful planning and management are required to mitigate potential negative impacts and ensure that the benefits are maximized for the local community.

c) Indicate any benefits that the activity will have for society in general:

The development of Erf 2006 in Parsonsvlei is poised to deliver several benefits for society in general. Here are the key advantages:

Economic Benefits

Job Creation: Direct Employment: The construction phase will generate direct employment opportunities, including roles in building, landscaping, and infrastructure development. Long-Term Jobs: Once the development is complete, there will be ongoing job opportunities in property management, maintenance, and related services.

Local Economic Stimulus: Business Opportunities: Increased residential density can stimulate local businesses by expanding the customer base for retail, healthcare, education, and other services. Increased Investment: The development can attract further investment into the area, supporting economic growth and development.

Infrastructure and Service Improvements

Upgraded Roads and Utilities: The development will contribute to improvements in local infrastructure, such as road upgrades, stormwater management systems, and utility connections. Enhanced infrastructure can lead to improved municipal services, benefiting both new and existing residents.

Green Spaces: The development includes private open spaces and landscaping, which provide recreational areas, promote community well-being, and contribute to a higher quality of life. New amenities can offer residents opportunities for leisure and social interaction, fostering a sense of community.

Social Benefits

Affordable Housing: Housing Options: The development includes a variety of residential units, potentially offering more affordable options for middle-income families, thereby addressing housing shortages and improving living conditions.

Urban Integration: Mixed-Use Development: By integrating residential units with planned infrastructure, the development supports more cohesive urban growth, contributing to the reduction of spatial segregation and fostering inclusive communities.

Improved Quality of Life: Enhanced Living Conditions: With modern housing, improved infrastructure, and green spaces, residents will experience a better quality of life, including access to safer, more comfortable living environments and community amenities.

In summary, the development of Erf 2006 offers significant benefits to society by driving economic growth, enhancing infrastructure and services, providing affordable housing, and fostering community development. By integrating sustainable practices and improving living conditions, the project aims to positively impact the broader community while addressing key socio-economic needs

d) Indicate any benefits that the activity will have for the local communities where the activity will be located:

The development of Erf 2006 in Parsonsvlei presents several benefits specifically for the local communities in the immediate vicinity.

Improved Housing Options

Diverse Housing Types: The development will provide a range of residential options, including townhouses and apartments, catering to different income levels and housing needs within the local community. Enhanced Living Conditions: New, modern housing will offer improved living conditions compared to existing options, addressing housing shortages and providing safer and more comfortable homes. Optimized Land Use: The development's higher-density

residential units help optimize land use, contributing to more efficient urban growth and potentially lowering the cost of housing in the area.

Economic Benefits

The construction phase will generate employment opportunities for local residents in various trades and services, including construction workers, landscapers, and site managers. Ongoing Employment: Post-construction, there will be job opportunities in property management, maintenance, and security, benefiting local workers. The influx of new residents will expand the customer base for local businesses, such as shops, restaurants, and service providers, boosting the local economy. Investment Opportunities: The development may attract further investment into the area, stimulating economic activity and creating additional business opportunities.

Skills Development

Training programs and apprenticeships associated with the development can enhance the skills and employability of local residents. This supports capacity building within the community and prepares individuals for future employment opportunities.

10 Applicable legislation, policies and/or guidelines

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

Title of legislation, policy or guideline:	Administering authority:	Date:
GN R.327: Listing Notice 1 (24) The development of a road— (i) 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) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road— (a) which identified and included in activity 27 in Listing Notice 2 of 2014; or (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.	Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)	07 April 2017
GNR 327: Listing Notice 1 (27) The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.		
GN R.324: Listing Notice 3 (12) The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. a. Eastern Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans		
National Heritage Resources Act 25 of 1999	South African Heritage Resources Agency	1999
National Water Act No 36 of 1998 (*21*) **Not applicable. No watercourses were identified on-site**	Department of Water and Sanitation	1998
Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974 and Provincial Nature Conservation Ordinance 19 of 1974 ***Not applicable***	Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)	1974

National Forests Act 84 of 1998 with Amendments ***Not applicable***	Department of Agriculture, Forestry and Fisheries	1998
Subdivision of Agricultural land Act, 1970 ***Not applicable***	Department of Agriculture, Forestry and Fisheries	1970
The Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA)	Nelson Mandela Bay Municipality	2013

GUIDELINES:	
Guideline for the Review of Specialist Input in the EIA process (June 2005)	This guideline was considered to assist in ensuring efficient and effective, quality specialist involvement. The guidelines assisted in creating a more efficient process, specifically considering planning, motivations, and reviewing of specialist documents.
Guideline for Environmental Management Plans (June 2005)	This guideline was consulted to ensure the Environmental Management Programme is sufficient and addresses all requirements.
Guideline on Alternatives (March 2013)	This guideline assisted in the process of considering different possible alternatives for the proposed project as well as which information would be required in order to process the outcome of the alternatives considered regarding sustainability in terms of the social, economic and ecological needs of the public.
Guideline on Generic Terms of Reference for EAPs and Project Schedules (March 2013)	This guideline was consulted during the determining of the project terms of reference and development of the project schedule as well as the correctness and accuracy thereof, ensuring as much information would be included as necessary. This assisted in ensuring that timeframes would be complied with and all necessary information would be gathered in a timely manner by applying good time management measures.
Guideline for determining the scope of specialist involvement in EIA processes (June 2005)	This guideline was also considered to assist in ensuring efficient and effective, quality specialist involvement. The guidelines assisted in creating a more efficient process, specifically considering planning, motivations, and reviewing of specialist documents.
Guideline for involving visual and aesthetic specialists in the EIA process, June 2005	This guideline was consulted in determining whether a visual and aesthetic specialist would be necessary to assess any related impacts in this field as well as considering alternatives and recommendations for this aspect.
DEA (2017), Guideline on Need and Desirability, Department of Environmental Affairs	This guideline was considered during the thought process and the compilation of the need and desirability section in the report. It assisted in maintaining methods of best practice on how to meet the conclusive requirements as set out by legislation.

11 Waste, Effluent, Emission and Noise Management

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**	NO
If yes, what estimated quantity will be produced per month?	20m^3	

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

Waste skips/bins will be provided by the appointed contractor(s) throughout the construction site. Separate skips/bins are made available for the construction debris. All waste bins/skips should be taken to the construction camp at the end of each working day and the bins should be clearly identified as the points of waste disposal. Solid waste that is unsuitable for re-use for construction will be transported and disposed of at the nearest registered landfill site.

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

The construction waste will be disposed of at the nearest registered waste disposal facility (Arlington Landfill Site).

Will the activity produce solid waste during its operational phase?	**YES**	NO
If yes, what estimated quantity will be produced per month?	10m^3	

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

It is recommended that a refuse yard be set up where all waste will be collected and stored before it is collected by a suitable service provider who will dispose of the waste at an approved and registered waste disposal facility.

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

The waste will be disposed of at the nearest approved, registered waste disposal facility at a known schedule time (Arlington Landfill Site).

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES	**NO**

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	**NO**

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

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	**NO**
If yes, what estimated quantity will be produced per month?	68.60kl per day	
Will the activity produce any effluent that will be treated and/or disposed of on-site?	YES	**NO**

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

The effluent of the proposed residential development consisting of 155 units on Erf 2006 Parsonsvlei, will be treated at the Fishwater Flats Treatment Works (FWFTW). The preliminary total design Average Dry Weather Flow (ADWF) of the proposed residential development has been calculated to be 68.60kl per day. The capacity of the existing Fishwater Flats Treatment Works is 132Ml per day. The FWFTW is currently treating less than 109Ml per day. Under the current conditions, it should be possible for the existing Fishwater Flats Treatment Works to handle the additional post-development effluent of 0.070ML per day (68.60kl/day) generated by the proposed residential development.

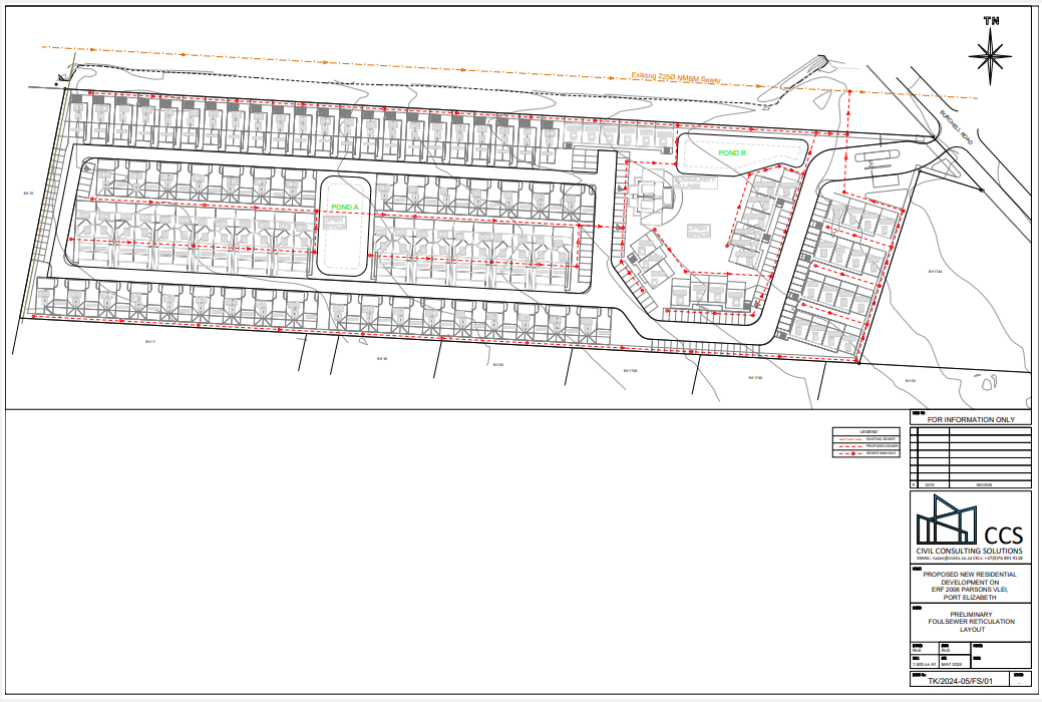

Figure 10 - Preliminary foul sewer layout plan

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

If yes, provide the particulars of the facility:

Facility name:	Fishwater Flats Treatment Works (FWFTW)

Contact person:	Matthew Hills		
Postal address:	Fishwater Ln, Deal Party, Gqeberha,		
Postal code:	6209		
Telephone:	041 506 2856	Cell:	NA
E-mail:	mhills@mandelametro.gov.za	Fax:	NA

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

No wastewater will be reused on site. However, it is recommended that the Developer make provision for rainwater harvesting on Erf 2006 Parsonsvlei. The said water shall be used for drinking purposes. The effluent of the proposed residential development will be treated at the Fishwater Flats Treatment Works. It is the engineer's opinion that the existing Fishwater Flats Treatment Works will be able to handle the additional post-development effluent generated by the proposed residential development. The existing NMBM 225mm diameter sewer line runs near the northern boundary of Erf 2006, Parsonsvlei. The foul sewer reticulation mains from the proposed development will drain to the existing NMBM sewer network via a manhole connection on the 225mm diameter NMBM sewer main.

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	**YES**	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	**NO**

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

Construction phase operations will generate emissions comprised of dust and exhaust fumes from construction vehicles. The emissions will be temporary in nature and does not necessitate the application for a Scoping & EIA.

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

An Air Quality Emissions License will not be required for this activity. The dust liberation and emissions will be limited during the construction phase. Most of the dust liberation will be due to excavations and movement of construction vehicles. Mitigation measures are provided in Section D of this report and is carried through in the EMPr.

11(d) Generation of noise

Will the activity generate noise?	**YES**	NO

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

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

Construction phase operations will generate noise. Construction working hours is limited to 07.00 – 17.00 Monday – Friday and 08.00 – 17.00 on Saturdays as per the regulated working timeframes. No works to occur on Sundays or Public Holidays. The noise generated will be temporary in nature and does not necessitate the application for a Scoping & EIA.

If no, describe the noise in terms of type and level:

The proposed activity will generate noise during the construction phase when heavy plant and machinery will be operating on site. Disturbance to neighbouring landowners will be kept as low as possible. The applicant will be required to adhere to applicable noise limits during construction. Mitigation measures for noise is provided in section D of this report and is carried through to the EMPr. Noise during the operation phase will be limited to normal road traffic noise and movement of vehicles.

12 Water Use

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water

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

N/A

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

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13 Energy Efficiency

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

It is advised that construction materials should be transported at the same time where possible and waste material collection should be done simultaneously with other activities in order to reduce fuel consumption. All SANS 10-400 XA Regulations will be adhered to therefore conforming to legislation.

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

Energy

No specific technological alternatives have been considered to date, as it has not yet been finally determined which technologies will be utilized for the development. Energy-efficiency bulbs and an effort to use solar power will likely be incorporated into the final design aspects of the units.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

   Section C Copy No. (e.g. A): **N/A**

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

YES	NO

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

14 Gradient of the Site

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

15 Location in Landscape

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

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafront

16 Groundwater, Soil and Geological stability of the site

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	**YES**	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	**NO**	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	**NO**	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	**NO**	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	**NO**	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	**NO**	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	**NO**	YES	NO	YES	NO
An area sensitive to erosion	YES	**NO**	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

17 Groundcover

Indicate the types of groundcover present on the site:

4.1 Natural veld – good condition [E]

4.2 Natural veld – scattered aliens [E]

4.3 Natural veld with heavy alien infestation [E]

4.4 Veld dominated by alien species [E]

4.5 Gardens

4.6 Sport field

4.7 Cultivated land

4.8 Paved surface

4.9 Building or other structure

4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	**Natural veld with scattered aliens[E]**	**Natural veld with heavy alien infestation[E]**	**Veld dominated by alien species[E]**	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

17.1 Terrestrial Biodiversity Assessment

*Information extracted from Specialist Report (Colloty, 2024)

The study area is not located within any Strategic Water Resource Areas. The study area spans one vegetation type defined by Mucina and Rutherford (2007), as amended in the National Vegetation Map 2012 and 2017/18 spatial information. This vegetation unit, known as Algoa Sandstone Fynbos (FFs 29), a form of Algoa Grassy Fynbos, is listed as Critically Endangered and is therefore considered a Threatened Ecosystem (Figure 11), as per the National Environmental Management: Biodiversity Act.

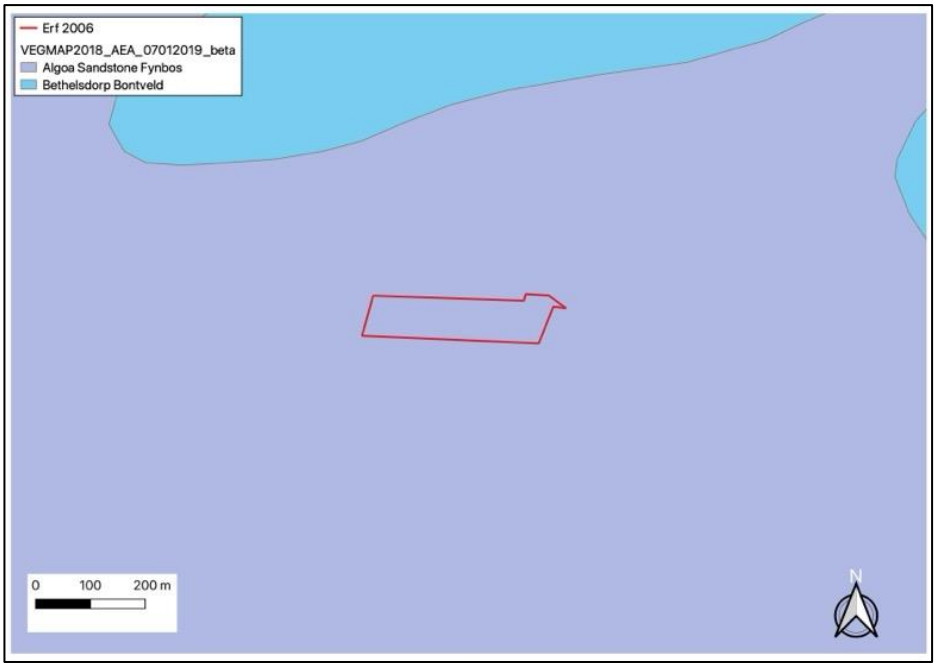

Figure 11 - Vegetation South Africa VegMap as per Mucina & Rutherford (2007) revised 2018

The species associated with Algoa Sandstone Fynbos are dominated by a variety of grasses, Ericas and Proteas, and are only located within a narrow coastal belt between the Van Stadens River in the West and Summerstrand in the East, within NMBM. A potential species checklist is included in Figure 4, however the species observed (highlighted in green), did indicate that disturbance had taken place within the site in the past, evidenced by the high number of invasive plant species (Figure 12), illegal solid waste / building rubble disposal (Figure 13) and the presence of old building foundations (Figure 14). None of the dominant Protea or Erica species were observed.

Figure 12 - A view of the central portion of the site, dominated by grass and alien Acacia stands

Figure 13 - A view of the eastern portion of the site, near Burchell Rd, with areas with building rubble and garden waste such as the Cycad leaf

Figure 14 - Row of foundation stones of an old building in the middle of the site

Plant species that remained, therefore included mostly grasses, and forbs, as shown in Table 4 below, with the site mostly dominated by the presence of the alien tree species in particular and are shown strong regrowth after the last fire. Figure 15 indicates finer scale mapping of the site, concerning vegetation and bioregional assessment conducted by SRK (2014) for NMBM. The associated mapping detail indicates that the site could contain Rowallan Park Grassy Fynbos and Malabar Grassy Fynbos. The latter was found to be dominated by the alien Acacia Thickets, while the former is comparable to the Algoa Sandstone Fynbos in species.

Table 4 - Important indigenous plant species observed within the study area (highlighted in green)

Plant taxa	Conservation Status / Importance
Agathosma ovata (Thunb.) Pillans	Least Concern
Andropogon eucomus Nees	Least Concern
Brachiaria serrata (Thunb.) Stapf	Least Concern
Crassula pellucida L. ssp. marginalis (Dryand. in Aiton) Toelken	Least Concern
Cymbopogon pospischilii (K.Schum.) C.E.Hubb.	Least Concern
Cynodon dactylon (L.) Pers.	Least Concern
Digitaria eriantha Steud.	Least Concern
Ehrharta calycina Sm.	Least Concern
Erica etheliae L.Bolus	Least Concern / Protected under PNCO
Erica zeyheriana (Klotzsch) E.G.H.Oliv.	Least Concern
Euryops ericifolius (Bél.) B.Nord.	Least Concern
Eustachys paspaloides (Vahl) Lanza & Mattei	Least Concern
Helichrysum appendiculatum (L.f.) Less.	Least Concern
Helichrysum teretifolium (L.) D.Don	Least Concern
Pentameris heptameris (Nees) Steud.	Least Concern
Restio capensis (L.) H.P.Linder & C.R.Hardy	Least Concern
Tephrosia capensis (Jacq.) Pers. var. hirsuta Harv.	Least Concern
Thamnochortus cinereus H.P.Linder	Least Concern
Themeda triandra Forssk.	Least Concern
Tristachya leucothrix Trin. ex Nees	Least Concern
Syncarpha spp	Least Concern
Gazania krebsianna	Least Concern
Watsonia spp	Least Concern
Drosera aliciae	Least Concern
Pelargonium spp	Least Concern / Protected PNCO
Elegia spp	Least Concern

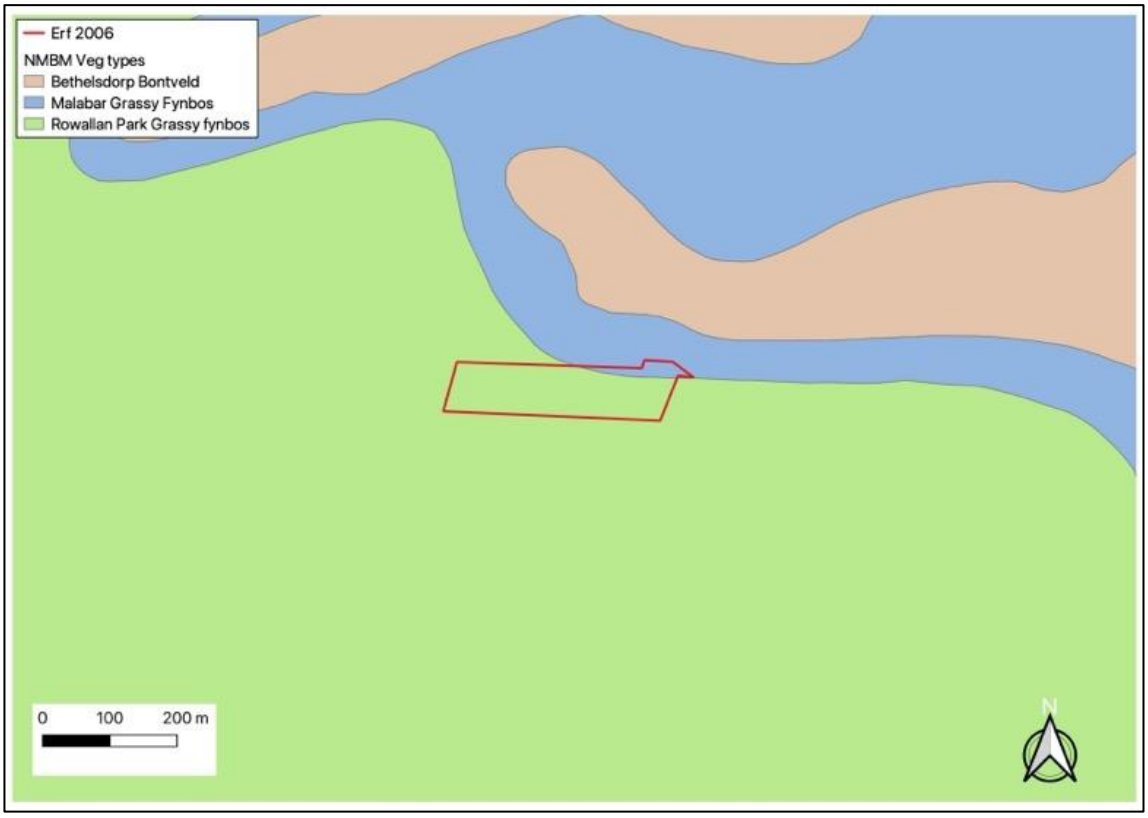

Figure 15 - NMBM Vegetation map (SRK, 2014)

Table 5 below includes species highlighted by the DFFE Screening tool, that are rated as having a Medium Sensitivity within the site. These species were actively searched for, with none of the species highlighted (in yellow) being observed. However, several small clumps, not representing more than 30 plants of the Near Threatened *Pelargonium reniforme* were observed. These plants are easily relocated and should be removed before construction and relocated to any of the local conservation areas in the area (e.g. Van der Kemps Kloof) once the correct permits have been obtained. It is therefore suggested that prior to construction a scan of the site should be conducted and then any additional species be relocated that are protected under the provincial/national legislation.

Table 5 - Sensitive plant species (Medium Sensitivity) that have the potential to occur within the site according to the DFFE Screening Tool Results

Screening Tool Plant Species*	Conservation importance	Habitat	Observed Y/N
Agathosma gonaquensis	Critically Endangered	Several known locations along the Baakens River	No
Agathosma stenopetala	Vulnerable B1ab(iii)	Tertiary sands	No
Argyrolobium crassifolium	Endangered A2c; B1ab	Grassland below 300mASL	No
Aristea nana	Least Concern	Until recently rarely been collected and has usually been confused with similarly low-growing A. pusilla. Despite their superficial similarity Aristea nana and A. pusilla are probably not related	No
Aspalathus recurvispina	Critically Endangered B1ab(iii)+2ab(iii); C2a(ii)	All six locations known through historical records are in areas now transformed into suburbs of Port Elizabeth, and it was thought extinct until a small subpopulation of ± 200 plants was found in a 1.5 ha roadside fragment of natural vegetation in Humewood. This subpopulation is likely to continue declining due to the effects of fragmentation and degradation of the habitat, as well as alien plant invasion.	No
Bobartia macrocarpa	Vulnerable A2c;	Flat open grassy patches	No
Caputia scaposa var. addoensis	Endangered B1ab(iii)	Known in the Baakens River Valley	No

Screening Tool Plant Species*	Conservation importance	Habitat	Observed Y/N
Centella tridentata var. hermanniifolia	Rare	This species has been recorded from only five sites, most of which are mountain slopes that are not threatened. It is therefore listed under the IUCN 3.1 Criteria, globally, as Least Concern but is nationally categorised as Rare.	
Corpuscularia lehmannii	Critically Endangered B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)	Two remaining subpopulations are severely fragmented and continue to decline due to ongoing habitat loss. At one of the remaining locations near Coega >60% of this species' habitat has been lost to mining in the past five years	No
Disperis woodii	Vulnerable B2ab(i,ii,iii,iv,v)	It grows in damp grassland, usually in open places with sandy soils, sometimes within grass tussocks, from sea level to 800 m.	No
Erica chloroloma	Vulnerable B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v)	Coastal dune fynbos	No
Erica zeyheriana	Vulnerable A4bc; B1ab+2ab	Remnant lowland grassy fynbos on sand.	No
Gymnosporia elliptica	Vulnerable B1ab	Coastal plains, with specimens recorded along the Baakens River in the past	No
Holothrix longicornu	Critically Endangered	Lower sandstone slopes thought to be extinct	No
Lebeckia gracilis	Endangered	Coastal fynbos in deep, sandy soil below 300 mABSL	No
Lotononis acuminata	Vulnerable B1ab	Disturbed renosterveld and grassy fynbos	No
Rapanea gilliana	Endangered B1ab	Coastal sand dunes	No
Rapanea gilliana	Endangered B1ab(ii,iii,iv,v)	Endangered B1ab(ii,iii,iv,v)	
Selago rotundifolia	Vulnerable B1ab	Forest margins or grassy flats	No
Sensitive species 1252	Vulnerable B1ab	Disturbed renosterveld and grassy fynbos	No
Sensitive species 141	Endangered B2ab	Coastal sands	No
Sensitive species 236	Vulnerable B1ab	Coastal forelands	Similar species observed but will need a flowering specimen to confirm

Screening Tool Plant Species*	Conservation importance	Habitat	Observed Y/N
Sensitive species 249	Critically Endangered B1ab	Lowland fynbos in marshy drainage lines, 300 mASL.	No
Sensitive species 264	Endangered B1ab	Flats and lower slopes in semi-arid areas	No
Sensitive species 294			
Sensitive species 448	Vulnerable B1ab	Sandy loam, clay or moderately fertile soils derived forms the Witteberg slopes, mostly confined to the coastal plain	No
Sensitive species 588			
Sensitive species 654			
Sensitive species 657			
Sensitive species 670			
Sensitive species 695	Vulnerable B1ab	Between low scrub and sand dunes on lowland flats in areas with an annual rainfall of 400-800 mm	No

*Due to the sensitivity of some of the species, the names of which are not allowed to be shown

Table 6 below, includes the faunal species observed during this assessment, none of which are considered sensitive or conservation needy. No other mammals were observed, but it assumed rats and mice may frequent the area, as well mongoose that are prevalent in NMBM. With regards to Species 8. (Mammal), *Chlorotalpa duthieae* (Mammal) listed by the DFFE Screening Tool, is unlikely to occur within the site but would disperse to the remainder of the site once construction starts. The invertebrate, *Aneuryphymus montanus* occurrence is unknown due to past and present disturbances within the site, but is a highly mobile species and could also disperse easily as it is typically migratory. Similarly, any of the birds listed as having high sensitivity, could frequent the site, but due to the state and availability of habitat would not have any permanent habitat within the site and thus the site would not be considered sensitive in this regard. The DFFE screening listed these species -*Tyto capensis, Circus ranivorus, Bradypterus sylvaticus, Circus maurus, Neotis denhami, Afrotis afra*

Table 6 - Faunal species observed within the site

Taxon	Common Name	Conservation status and habitat	Site observation
Invertebrates			
Phymateus viridipes	Green milkweed locust	Least Concern	
Reptiles			
Hemidactylus mabouia	Common Tropical House Gecko	**Least Concern** (ARRSA, 2023) Widespread	Observed in building rubble near school fence
Birds			
Euplectes capensis	Bishop, Yellow	RDB, 2015 Least Concern	Flyover

Taxon	Common Name	Conservation status and habitat	Site observation
Corvus albus	Crow, Pied	RDB, 2015 Least Concern	Flyover
Streptopelia senegalensis	Dove, Laughing	RDB, 2015 Least Concern	Feeding within site
Bostrychia hagedash	Ibis, Hadeda	RDB, 2015 Least Concern	Feeding within site
Passer melanurus	Sparrow, Cape	RDB, 2015 Least Concern	Feeding within site
Pycnonotus capensis	Cape Bulbul	RDB, 2015 Least Concern	Feeding within site
Alopochen aegyptiacus	Egyptian Goose	RDB, 2015 Least Concern	Flyover
Motacilla capensis	Cape Wagtail	RDB, 2015 Least Concern	Feeding within site

Where:

ARRSA = Atlas and Red List of the Reptiles of South Africa, Lesotho, and Swaziland. 2014. Edited by Michael F. Bates, William R. Branch, Aaron M. Bauer, Marius Burger, Johan Marais, Graham J. Alexander & Marienne S. de Villiers. SANBI, Pretoria.

RDB, 2015 = Taylor MR, Peacock F, Wanless RM (eds) 2015. The 2015 Eskom Red Data Book of Birds of South Africa, Lesotho, and Swaziland. BirdLife South Africa, Johannesburg.

18 Land use character of surrounding area

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

5.1 Natural area

5.2 Low density residential

5.3 Medium density residential

5.4 High density residential

5.5 Informal residential

5.6 Retail commercial & warehousing

5.7 Light industrial

5.8 Medium industrial [AN]

5.9 Heavy industrial [AN]

5.10 Power station

5.11 Office/consulting room

5.12 Military or police base/station/compound

5.13 Spoil heap or slimes dam[A]

5.14 Quarry, sand or borrow pit

5.15 Dam or reservoir

5.16 Hospital/medical centre

5.17 School

5.18 Tertiary education facility

5.19 Church

5.20 Old age home

5.21 Sewage treatment plant[A]

5.22 Train station or shunting yard [N]

5.23 Railway line [N]

5.24 Major Road (4 lanes or more) [N]

5.25 Airport [N]

5.26 Harbour

5.27 Sport facilities

5.28 Golf course

5.29 Polo fields

5.30 Filling station [H]

5.31 Landfill or waste treatment site

5.32 Plantation

5.33 Agriculture

5.34 River, stream or wetland

5.35 Nature conservation area

5.36 Mountain, koppie or ridge

5.37 Museum

5.38 Historical building

5.39 Protected Area

5.40 Graveyard

5.41 Archaeological site

5.42 Other land uses (describe)

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity.

Access to the proposed development is through R102 (Cape Road) and Burchell Drive. However, no direct access to R102 is available from the property and, it is unlikely that the proposed development will have any impact on the functioning of the R102. It is also not anticipated that the R102 will have any major impacts on the proposed development or the functioning activities of the proposed development.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

The existing filling station near the proposed residential development of Erf 2006, Parsonsvlei will likely see both opportunities and challenges stemming from the new residential activity. On the positive side, the development could expand the filling station's customer base, as new residents and commuters seek fuel and services. This increased number of customers has the potential to boost the station's economic viability and revenue. However, it also presents challenges such as managing increased traffic flow and potential congestion, particularly during peak times.

19 Cultural/Historical Features

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

If YES, explain: **N/A**

(ii) If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

The ECPHRA (Eastern Cape Provincial Heritage Authority) requested that a Notice of Intent (NID) and Heritage Assessment (incl. Phase 1 Archaeological Impact Assessment & Phase 1 Palaeontological Impact Assessment) be submitted for their consideration. A SAHRIS case must be registered for the development/project:

A Phase 1 Archaeological Impact Assessment by Eastern Cape Heritage Consultants

Confirmed that no archaeological sites/materials were observed within or close to the study area. In general, the area for the proposed development appears to be of low archaeological sensitivity and it is unlikely that any archaeological remains of significance will be found in situ or exposed during these activities. There are no known graves or historical buildings older than 60 years on the proposed site. In general, the proposed area for development appears to be of low archaeological sensitivity and the development may proceed as planned.

Recommendations

The main impact on possible archaeological sites/remains will be the physical disturbance of the material and its context. Should such material be exposed then work must cease in the immediate area and it must be reported to the archaeologist at the Albany Museum in Makhanda (Grahamstown) (Tel: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel.: 043 492 1370), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material (See Appendix B for a list of possible archaeological sites that maybe found in the area). The developer must finance the costs should additional investigations be required. It is further recommended that:

Mitigation

- Construction managers/foremen should also be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

- Should the remains of built structures that are older than 60 years or concentrations of historical material be uncovered after vegetation clearing or during the construction phase, a historian/heritage practitioner must be appointed to evaluate the find and to determine if a destruction permit needs to be obtained from the Eastern Cape Heritage Resources Authority (ECPHRA) in terms of Section 34 of the National Heritage Resources Act, No. 25 of 1999.

If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease in the immediate area of the finds and must be reported immediately to the archaeologist at the Albany Museum in Makhanda (Tel.: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (043 492 1370). Sufficient time should be allowed to investigate and remove/collect such material. Recommendations will follow from the investigation and may include:

- Consultation with the local communities regarding the conditions for the possible removal, storage, and reburial (in the case of human remains) of heritage material.
- If the local communities agree to the removal of human remains and heritage, an archaeologist must apply for permits from the Eastern Cape Province Heritage Resources Authority to collect and/or excavate sites/materials from archaeological sites impacted by the development.
- Consultation with the Albany Museum (repository for archaeological material in the Eastern Cape) regarding permit(s) to remove the heritage material, the storing, curating, and costs involved.
- A Phase 2 Mitigation process to systematically excavate and remove the archaeological deposits before construction of the development continues.

Refer to Appendix D for specialist reports.

Will any building or structure older than 60 years be affected in any way?	YES	**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	**NO**

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

20 Advertisement

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—

(i) the site where the activity to which the application relates is or is to be undertaken; and

(ii) any alternative site mentioned in the application;

Included in Appendix E.

(b) giving written notice to—

(i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;

(ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

(iii) owners 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;

(iv) 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;

(v) the municipality which has jurisdiction in the area;

(vi) any organ of state having jurisdiction in respect of any aspect of the activity; and

(vii) any other party as required by the competent authority;

Proof of notification of landowners and occupiers of the surrounding properties is included in Appendix E.

(c) placing an advertisement in—

(i) one local newspaper; or

(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;

A newspaper notice was placed in The Herald on 24 May 2024 (Attached in Appendix E)

(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 local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—

(i) illiteracy;

(ii) disability; or

(iii) any other disadvantage.

21 Content of Advertisements and Notices

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and

(b) state—

(i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;

(ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental

authorisation;

(iii) the nature and location of the activity to which the application relates;

(iv) where further information on the application or activity can be obtained; and

(iv) the manner in which and the person to whom representations in respect of the application may be made.

22 Placement of Advertisements and Notices

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

23 Determination of Appropriate Measures

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

24 Comments and Response Report

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

25 Authority Participation

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

List of authorities informed:

NAME	OCCUPATION/AFFILIATION	TELEPHONE NUMBER | POSTAL ADDRESS	EMAIL ADDRESS
GOVERNMENT I&AP's			
Andries Struwig (Assistant Director)	Eastern Cape Department: Economic Development, Environmental Affairs & Tourism (DEDEAT)	**041 508 5808** Private Bag X5001, Greenacres, Port Elizabeth, 6057	Andries.Struwig@dedea.gov.za
Jeff Govender (Regional Director)		**041 508 5800** Private Bag X5001, Greenacres, Port Elizabeth, 6057	dayalan.govender@dedea.gov.za
Charmaine Struwig		**083 399 7612** Cnr Athol Fugard Terrace & Castle Hill, Central, Port Elizabeth 6001	Charmaine.Mostert@dedea.gov.za
Andiswa Mhlaba		Sarah Baartman/NMB Regional Office, Port Elizabeth	Andiswa.Mhlaba@dedea.gov.za
Riyadh Casoojee		**066 486 8376** Corner Athol Fugard Terrace & Castle Hill Street Central Port Elizabeth, 6057	Riyadh.Casoojee@dedea.gov.za

NAME	OCCUPATION/AFFILIATION	TELEPHONE NUMBER | POSTAL ADDRESS	EMAIL ADDRESS
Monde Manga	EC Department of Transport	Private Bag X 0023, Bhisho, 5605, Eastern Cape	Monde.Manga@ectransport.gov.za
Mr M C Mafani	Dept of Transport (ECDoT)		mzi.mafani@ectransport.gov.za
Ayanda MaMncwabe Mama	Eastern Cape Provincial Heritage Resources Authority (ECPHRA)		amncwabe@gmail.com
Adv. Lungisa Malgas (Chief Executive Office)	South African Heritage Resources Agency (SAHRA)	**021 462 4502** P.O. Box 4637, Cape Town, 8000	lmalgas@sahra.org.za
Bahlekile Keikelame	Department of Rural Development and Land Reform (DRDLR)	**082 377 8295/ 043 700 7000**	Bahlekile.keikelame@drdlr.gov.za
Siphokazi Ndudane		**(0) 40602 5006/7** 10th Floor Dukumbana Building Independence Avenue BHISHO, 5606	Siphokazi.Ndudane@drdar.gov.za
Ms Thabile Mehlomakhulu	Eastern Cape Department: Rural Development & Land Reform	**043 700 7030** P.O. Box 1958, East London, 5200	thabile.mehlomakhulu@drdlr.gov.za
Babalwa Layini	Department:Agriculture Forestry, Fisheries & Environment (DAFFE)	**0637504427** Private Bag X12998, Centrahil, Port Elizabeth, 6006	babalwaL@dffe.gov.za
Nomantombazana Gazi		**041 407 4003** Private Bag X12998, Centrahil, Port Elizabeth, 6006	nomantombazanaG@dffe.gov.za
Mzukisi Maneli	Department: Water & Sanitation (DWS)	**041 501 0740** Private Bag X6041, Port Elizabeth 6000	manelim@dws.gov.za
Portia Makhanya: Chief Director	Department: Water & Sanitation (DWS)	**043) 604 5400** Private Bag X7485 KING WILLIAM'S TOWN 5600	MakhanyaP@dws.gov.za
Ms. Londeka Jilimane	Eastern Cape Parks and & Tourism Agency (ECPTA)		Londeka.Jilimane@ecpta.co.za
HOD Thandolwethu L. Manda	Eastern Cape Dept of Roads and Public Works (DRPW)	**060 9600 473/040 602 4244** Qhasana Building, Independence Ave 5605, Bhisho, Eastern Cape, Privare Bag X0022	Thandolwethu.Manda@ecdpw.gov.za hod.office@ecdpw.gov.za
MS. Itumeleng Felicity Ranyele	NMBM - Roads and Transport	**041 505 4420 / 082 303 5664** Room 309, 3rd Floor, Noninzi Luzipho Building, Central, Port Elizabeth, 6001	itumelengranyele@gmail.com / jsampson@mandelametro.gov.za
Mkhuseli John Jack	NMBM - Economic Development Tourism and Agriculture	**084 490 4179**	idspe@iafrica.com
John Mervyn Mitchell	NMBM - Infrastructure and Engineering	**084 742 7014**	stagmitchell@gmail.com
Buyiswa Deliwe	NMBM - Manager: Environmental Health (Air & Noise Pollution)		bhumani@mandelametro.gov.za
Joram Mkosana	NMBM - Director Environmental Management		jmkosana@mandelametro.gov.za

NAME	OCCUPATION/AFFILIATION	TELEPHONE NUMBER | POSTAL ADDRESS	EMAIL ADDRESS
Pamela Howes	NMBM - Secretary: Environmental Management	**041 506 5464** 15th Floor, Lilian Diedericks Building 196-200 Govan Mbeki Avenue, Central Port Elizabeth, 6000	phowes@mandelametro.gov.za
Andre de Ridder	NMBM - Senior Director: Fire & Emergency Services	**041 585 2311** 1st Floor, South End Fire Station South End, Port Elizabeth, 6001	aderidde@mandelametro.gov.za
Mthulisi Msimanga	NMBM – Director: Land Use and Management	**041 506 1095** 3rd Floor, Lillian Diedericks Building (Brister House), Central Port Elizabeth, 6000	mmsimanga@mandelametro.gov.za
Schalk Potgieter	NMBM - Strategic Planning		spotgiet@mandelametro.gov.za
Noxolo Nqwazi	NMBM - Chief Operating Officer - Acting City Manager	**041 506 3209** City Hall, 1st Floor, Market Square, 32 Govan Mbeki Avenue, Port Elizabeth, 6001	cm@mandelametro.gov.za
Maryka du Plessis	NMBM - Secretary to Director: Integrated Development Plan	**041 505 4530** Ground Floor, Noninzi Luzipho Building Central, Port Elizabeth, 6001	idpoffice@mandelametro.gov.za
Jill Miller	NMBM – Environmental Management		jmiller@mandelametro.gov.za
Joram Mkosana	NMBM – Environmental Management		jmkosana@mandelametro.gov.za
Nyasha Chamburuka	NMBM – Town Planning		nchamburuka@mandelametro.gov.za
Allister Jordan	NMBM – Acting Director Properties and Planning	**041 506 3498**	ajordan@mandelametro.gov.za
Vernon Nolan Boggenpoel	Ward 12 Councillor	**064 870 5454/ 041 457 2963** 19 Saliehout Street, Malabar, Port Elizabeth	ward12@mandelametro.gov.za
REGISTERED I&APS			
Asanda Siloti		**078 594 1277**	asandas9@gmail.com
Bulelwa Madlingozi		**078 6454 820**	bulelwa.madlingozi@gmail.com
Xolani Tokota		**060 9751 431**	xtokota@gmail.com
NEIGHBOURING LANDOWNERS			
Kahn Properties			admin@kahnproperties.co.za

List of authorities from whom comments have been received:

Date of comment	Received from:	Comment:	Response:	Date of Response:
19/06/2024	Ayanda Mncwabe-Mama - ECPHRA	1. ECPHRA Requires NID, Heritage Impact Assessment & Proof of Payment 2. A SAHRIS case must be registered for the development/project.	This will be done in due course.	
11/11/2024	Andiswa Mhlaba-Environmental	1. You are hereby informed that the Draft BAR has been reviewed by the Department. In this regard, one specific issue that has not been adequately	1. The site does not fall within Critical Biodiversity Area as mapped in the Nelson Mandela Bay Bioregional Plan.	14/11/2024

Date of comment	Received from:	Comment:	Response:	Date of Response:
	Officer DEDEAT	addressed in the DBAR is the fact that the entire site is located within a Critical Biodiversity Area as mapped in the Nelson Mandela Bay Bioregional Plan. 1.1 The impact that the proposed development may have on terrestrial biodiversity is not adequately and comprehensively addressed in the DBAR and the layout seems to cover most of the site. 1.2 Furthermore, it would have been appropriate to consider a biodiversity offset bearing in mind that the vegetation type found on site is critically endangered which implies that no further loss should be considered/allowed and that the land use guidelines in the NMB Bioregional Plan indicates that CBA's need to maintain their natural structure and ecosystem functioning. 2. There is also no confirmation from the NMBM that all services are available to service the proposed development. A written confirmation from the Municipality confirming that all services are available must be attached in the FBAR. 3. The Department therefore requires that this be comprehensively assessed and addressed with due consideration given to an appropriate biodiversity offset. 4. The EAP is advised to remain aware of the 90-day timeframe for submission of the Final Report as contained within the 2014 Regulations, which period will lapse on 13 January 2025. All requirements as contained in Appendix 1 of the 2014 EIA Regulations must be addressed in the FBAR. 5. The Environmental Assessment Practitioner is required to notify and inform the applicant in writing that the activity may not commence prior to an environmental authorisation being granted by the competent authority. 6. You are reminded that the Department reserves its right to request any additional information / provide further comment for consideration once the Final Basic Report has been received and reviewed. Any such requests will provide you with a deadline for submission of such information failing which the Department will make a	Please see CBA Map within Appendix A of the Draft Basic Assessment Report which will also be contained in the Final Basic Assessment Report. For ease of reference, we have also attached the map with this correspondence. 1.1 No intact patches of vegetation indicative of Algoa Sandstone Fynbos were identified by the Terrestrial Biodiversity Specialist. Thus, no part or portion of the site was identified by the specialist as High sensitivity or as No-Go areas. Therefore, the layout of the proposed development did not consider alternative options to conserve highly sensitive environments. See extract from the conclusions of the Biodiversity Assessment (Colloty, 2024) "During this assessment, no sensitive habitats were observed and thus it is envisaged that all of the impacts would remain LOW (with mitigation) and that the overall residual impacts would be VERY LOW." The Terrestrial Biodiversity Impact assessment thus covered the potential impact that the proposed development might have on terrestrial biodiversity adequately and comprehensively as per the NEMA EIA Protocol for the specialist assessment and minimum report content requirement for environmental impacts on terrestrial biodiversity. 1.2 The site is not classified as a CBA according to Nelson Mandela Bay Bioregional Plan. The site is listed as Algoa Sandstone Fynbos (Critically Endangered), however, as indicated in the specialist report and as confirmed by the specialist on 11 November 2024 via email; "During the two site visits conducted, it was clear that the site was heavily disturbed, both in the past (evidence of old homes and walls) and currently by dense alien vegetation, cattle grazing and dumping. Therefore, none of the indicator fynbos species other than a few remaining bulbs were	

Date of comment	Received from:	Comment:	Response:	Date of Response:
		decision based on the information at its disposal at the time.	observed. This coupled to the fire in 2014, and again in 2023/2024 has led to a grass dominated site, allowing the dense growth of Alien Acacias." Further the site is locally fragmented from any other natural corridors or areas that are not already developed or earmarked for development. The site does not contain any potential for conservation or rehabilitation considering the current state of the site and the future development envisaged for the vacant sites around this site. 2. There is confirmation from the NMBM that all services are available within Appendix G1 and G2 of Draft Basic Assessment Report which will also be contained in the Final Basic Assessment Report. 3. Considering the outcomes of the Biodiversity Report (Colloty, 2024), the overall residual impacts would be Very Low and therefore a biodiversity offset was not deemed applicable (according to page 28 of the National Biodiversity Offset Guideline), especially considering the site is not located within a CBA. 4. Noted, the Final Basic Assessment Report will be submitted prior to the 13th of January 2025. Upon confirmation form the department that their comments have been adequately addressed, we would like to submit the FBAR as soon as possible. 5. Noted. 6. Noted.	
26/11/2024	Andiswa Mhlaba- Environmental Officer DEDEAT	Please note that the Reponses to the comments are acknowledged, All the Responses to the comments have been adequately addressed and no additional information is required by the Department. However, comments and responses must be incorporated into the FBAR.		

26 Consultation with Other Stakeholders

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

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

Has any comment been received from stakeholders?	**YES**	NO

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

PRE-APPLICATION IAP REGISTRATION COMMENTS

*aim of the pre-application registration period is to ensure all IAP's are registered to enable all potentially affected persons to have access to the draft BAR to comment comprehensively once the draft BAR has been consulted.

Date of Comment	Received from:	Comment:	Response:	Date of Response:
09/07/2024	Bulelwa Madlingozi	Registered as IAP	Registered on the database.	09/07/2024
09/07/2024	Mr Xolani Tokota	Registered as IAP	Registered on the database.	09/07/2024
29/05/2024	Mr Asanda Siloti – Phontshi Trading	Registered as IAP – As a resident and homeowner in this area I would like to see more young people being given employment and better opportunities.	Registered on the database.	09/07/2024

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

27 Issues raised by interested and affected parties

As required by the DFFE, the Comment and Response Report is attached as Appendix E. No main issues have been raised by interested and affected parties so far. I&APs wished to be registered and were added to the I&Aps list.

List the main issues raised by interested and affected parties.

Town planning	Environmental	General disturbance	Stormwater
There is no confirmation from the NMBM that all services are available to service the proposed development.	The entire site is located within a Critical Biodiversity Area as mapped in the Nelson Mandela Bay Bioregional Plan.		
	The impact that the proposed development may have on terrestrial biodiversity is not adequately and comprehensively addressed in the DBAR and the layout seems to cover most of the site		
	It would have been appropriate to consider a biodiversity offset bearing in mind that the vegetation type found on site is critically endangered which implies that no further loss should be considered / allowed and that the land use guidelines in the NMB Bioregional Plan indicates that CBA's need to maintain their natural structure and ecosystem functioning.		

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

1. The site does not fall within Critical Biodiversity Area as mapped in the Nelson Mandela Bay Bioregional Plan. Please see CBA Map within Appendix A of the Draft Basic Assessment Report which will also be contained in the Final Basic Assessment Report. For ease of reference we have also attached the map with this correspondence.

1.1No intact patches of vegetation indicative of Algoa Sandstone Fynbos were identified by the Terrestrial Biodiversity Specialist. Thus, no part or portion of the site was identified by the specialist as High sensitivity or as No-Go areas. Therefore, the layout of the proposed development did not consider alternative options to conserve highly sensitive environments. See extract from the conclusions of the Biodiversity Assessment (Colloty, 2024) "During this assessment, no sensitive habitats were observed and thus it is envisaged that all of the impacts would remain LOW (with mitigation) and that the overall residual impacts would be VERY LOW." The Terrestrial Biodiversity Impact assessment thus covered the potential impact that the proposed development might have on terrestrial biodiversity adequately and comprehensively as per the NEMA EIA Protocol for the specialist assessment and minimum report content requirement for environmental impacts on terrestrial biodiversity.

1.2The site is not classified as a CBA according to Nelson Mandela Bay Bioregional Plan. The site is listed as Algoa Sandstone Fynbos (Critically Endangered), however, as indicated in the specialist report and as confirmed by the specialist on 11 November 2024 via email; "During the two site visits conducted, it was clear that the site was heavily disturbed, both in the past (evidence of old homes and walls) and currently by dense alien vegetation, cattle grazing and dumping. Therefore, none of the indicator fynbos species other than a few remaining bulbs were observed. This coupled to the fire in 2014, and again in 2023/2024 has led to a grass dominated site, allowing the dense growth of Alien Acacias." Further the site is locally fragmented from any other natural corridors or areas that are not already developed or earmarked for development. The site does not contain any potential for conservation or rehabilitation considering the current state of the site and the future development envisaged for the vacant sites around this site.

2. There is confirmation from the NMBM that all services are available within Appendix G1 and G2 of the Draft Basic Assessment Report which will also be contained in the Final Basic Assessment Report.

3.Considering the outcomes of the Biodiversity Report (Colloty, 2024), the overall residual impacts would be Very Low, and therefore a biodiversity offset was not deemed applicable (according to page 28 of the National Biodiversity Offset Guideline), especially considering the site is not located within a CBA.

4. Noted, the Final Basic Assessment Report will be submitted prior to the 13th of January 2025. Upon confirmation form the department that their comments have been adequately addressed, we would like to submit the FBAR as soon as possible.

5. Noted.

6. Noted.

28 Impacts that may result from the planning and design, Construction, Operational, Decommissioning, and Closure phases as well as Proposed Management of identified Impacts and Proposed Mitigation Measures

List the potential direct, indirect, and cumulative property/activity/design/technology/operational alternative-related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

All potential environmental, socio-economic, and heritage impacts are considered that could occur as a result of the proposed project activities which include all phases of the proposed project (planning, construction & operational phases – no decommissioning and/or closure is applicable). The impacts that are identified could have a positive or negative effect and are rated intrinsically. The evaluation process regarding the impacts and their ratings are done according to the following sequence:

1) is to identify all potential impacts,
2) identification and consideration of mitigation measures by implementing the use of “mitigation hierarchy” which is a framework for managing the risks and potential negative impacts of development projects when considering the potential environmental, socio-economic, and heritage impacts. Preventative measures are considered first and remediation measures are considered last. Offsets are a last resort consideration for possible remediation measures,
3) Reviewing the significance of the identified impact before as well as after the implementation of mitigative measures, and lastly
4) Consolidation of the impacts.

Resources used to identify the potential environmental, socio-economic, and heritage impacts associated with the proposed project activities include the following:

- Professional judgment and field observations,
- Desktop study,
- Spatial tools,
- Specialist studies and reports as well as open communication with specialists,
- Making use of available Biodiversity plans,
- Spatial Development Frameworks available covering the proposed project area,
- The public participation process and comments from I&AP's,
- Google Maps,
- The online DFFE Screening tool,
- Considering environmental planning guidelines,
- Screening Report,
- The study of relevant scientific and professional literature,

29 Impact Evaluation

The methodology implemented in the assessment of impacts for this project is developed to meet the requirements of the EIA Regulations (2014), as amended and Guidelines 3 to 5 which were published in support of the 2006 EIA Regulations. The EIA Guideline and Information Document Series (March, 2013) published in terms of Section 24J of NEMA by the Western Cape Department of Environmental Affairs & Development Planning are also consulted. For both, specific to this section Guideline 5 – Assessment of Alternatives and Impacts (DEAT,2006) and Part 5 – Guideline on Alternatives (DEA&DP, 2013). As per the abovementioned guidelines the following are considered:

- The **nature** of the impact. Description of the impact (positive, negative, direct, indirect, or cumulative);
- The **magnitude** of the impact (severe, moderate, low);
- The **extent** and location of the impact in terms of the area covered, volume distribution, etc. (site specific, local, regional, national);
- **Phase** during which the impact will occur (construction, operation and/or decommissioning);
- The **duration** of the impact (short term, long term, intermittent or permanent – which could be described as continuous in terms of the life of the operations of the activities);
- The extent to which the impact can be **reversed** or not (reversible, partly reversible, irreversible);
- The **probability** of the impact actually occurring (unlikely, probable, highly probable, definite).
- The **significance** of the impact (very low, low, medium, medium-high, high)

Once the impacts are identified and predicted, the identification and consideration of mitigation measures by implementing the use of "mitigation hierarchy", which is a framework for managing the risks and potential negative impacts of development

projects when considering the potential environmental, socio-economic, and heritage impacts, is implemented. Preventative measures are considered first and remediation measures considered last. Offsets are a last resort consideration for possible remediation measures.

After concluding the possible mitigation measures, the significance of the impact on a local, regional or global level is evaluated. The evaluation of the significance of impacts distinguishes between the impact rating before mitigation (significance before) is implemented/considered and the significance rating after (significance after) the recommended mitigation measures are considered.

Impacts of **very low significance** are impacts which have been identified as a framework, even though these impacts might have little to no effect on the surrounding environment, it is still important they be considered. This should indicate that due diligence was practiced during the impact assessment process.

Impacts rated as **low significance**, are impacts where the project activities will result in short-term changes to the biophysical, socio-economic, and/or cultural heritage environment. The impacts will mostly be restricted to the immediate environment of the project activities and should recover to their natural state within a shorter period of time (usually 0 – 5 years).

Impacts of **medium significance** will mostly result in a moderate short to medium-term change in the biophysical, socio-economic, and/or cultural heritage environment. The results of these impacts could reach a wider area which could be experienced at a regional level. Some minor indirect impacts could arise from the project activities and the system might be able to recover to a certain extent, but it is unlikely that recovery will be a full recovery to its natural or original state. The recovery period will take place over a longer period of time (5 – 15 years).

Impacts with a **high significance** rating are impacts where the activities will have major long-term effects on the biophysical, socio-economic, and/or cultural heritage environment and will result in effects experienced at a larger regional, national or international level (although extent does not always account for the significance rating, especially impacts with a local extent, but could still be rated high negative). Secondary, cumulative and/or indirect impacts will most likely be associated with the proposed project activities. It is possible for the system to recover over a period of longer than 15 years, but it is unlikely that the recovery will be in its natural or original state. The impacts are considered long-term and will result in changes to the lifestyle of the affected population.

The identified environmental impacts associated with the proposed service station and related facilities are described and evaluated below relative to the no-go option. Impacts are arranged by environmental themes to ensure that all aspects of the environment have undergone scrutiny and no potential impacts thus mitigation measures, are left out. For the sake of brevity, the impacts to both alternatives are not assessed as the sites are very much the same and the impacts would thus be the same. , Where no impacts have been identified for a specific theme, it is still listed. These themes include the following:

- Biodiversity
- Soil
- Surface Water & Groundwater

- Stormwater
- Geology
- Waste
- Visual
- Air Quality
- Noise
- Health& Safety
- Archaeological & Palaeontological
- Traffic Impacts
- Socio-Economic & Cultural

29.1 Construction Phase Impacts

29.1.1 Terrestrial Biodiversity

Potential impact and risk:	**Loss of vegetation and in particular species/habitats**	
Nature of impact:	**Indirect Negative Impact** The destruction of habitats that are unique or contain higher numbers of listed / protected species. While the site vegetation unit has been classified as Critically Endangered (Algoa Sandstone Fynbos). During construction, vegetation clearing for development will be required. However, the proposed site will only impact areas that are currently disturbed (grazing & fire), transformed or affected by illegal dumping. The proposed layout thus makes use of the areas, which have seen a great deal of disturbance in the past.	
	Without mitigation	**With mitigation**
Intensity	High	Medium
Extent and duration of impact:	Regional, Long-term	Local, Medium-Term
Probability of occurrence:	Probable	Possible
Significance	Very High -	Very Low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- All temporary works areas (laydowns and camps) can only be placed in previously disturbed areas within the site, and this includes any temporary access roads or storage areas. - Alien vegetation management must be initiated at the beginning of the construction period and must extend into any remaining areas into the operation phase. - It is recommended as best practice to conduct a search and rescue programme for any listed or protected plants species, although this consideration was not used to reduce the potential impact ratings. Any plants removed could easily be relocated into areas that will need rehabilitation post construction or relocated to nearby conservation areas. - The revegetation of any temporary sites as well as any previously degraded areas must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications. - Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long-term alien vegetation management plan	
Cumulative impact post mitigation:	Additional loss of sensitive vegetation / habitats related to other projects, most of which have or could result in additional clearing of thicket / grassland mosaics, is unlikely due to the nature of the project site.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	Low -	Low -

Potential impact and risk:	**Loss of habitat containing protected species or Species of Special Concern**	
Nature of impact:	**Indirect Negative Impact** During construction, vegetation clearing for development will be required. However, sensitivie species identified can be easily relocated.	
	Without mitigation	**With mitigation**

Intensity	Very Low	Medium
Extent and duration of impact:	Local, Long-term	Local, Medium-Term
Probability of occurrence:	Probable	Possible
Significance	Low	Very Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- All temporary works areas (laydowns and camps) can only be placed in previously disturbed areas within the site, and this includes any temporary access roads or storage areas. - Alien vegetation management must be initiated at the beginning of the construction period and must extend into any remaining areas into the operation phase on the Tankatara Farm. - It is recommended as best practice to conduct a search and rescue programme for any listed or protected plants species, although this consideration was not used to reduce the potential impact ratings. Any plants removed could easily be relocated into areas that will need rehabilitation post construction. - The revegetation of any temporary sites as well as any previously degraded areas must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications. - Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long-term alien vegetation management plan	
Cumulative impact post mitigation:	Additional loss of sensitive vegetation / habitats related to other projects, most of which have or could result in additional clearing of thicket / grassland mosaics, is unlikely due to the nature of the project site.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	Low -	Low -

Potential impact and risk:	**Loss of any critical corridors and connected habitats that are linked to any conservation plans or critical biodiversity spatial plans**	
Nature of impact:	**Indirect Negative Impact** The destruction of habitats that are listed form part of any ecological corridors (e.g. Aquatic ESA), or developmental setback buffer. During construction, vegetation clearing for development will be required. However no terrestrial Critical Biodiversity Areas and or Ecological Support areas will be affected	
	Without mitigation	**With mitigation**
Intensity	Medium	Medium
Extent and duration of impact:	Local, Medium-term	Local, Medium-Term
Probability of occurrence:	Possible	Possible
Significance	Very Low -	Very Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	

Degree to which impact can be mitigated	High	
Proposed mitigation:	- All temporary works areas (laydowns and camps) can only be placed in previously disturbed areas within the site, and this includes any temporary access roads or storage areas. - Alien vegetation management must be initiated at the beginning of the construction period and must extend into any remaining areas into the operation phase on Erf 2006, Parsonsvlei. - It is recommended as best practice to conduct a search and rescue programme for any listed or protected plant species, although this consideration was not used to reduce the potential impact ratings. Any plants removed could easily be relocated into areas that will need rehabilitation post-construction. - The revegetation of any temporary sites as well as any previously degraded areas must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications. - Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long-term alien vegetation management plan	
Cumulative impact post mitigation:	Additional loss of sensitive vegetation/habitats related to other projects, most of which have or could result in additional clearing of thicket/grassland mosaics, is unlikely due to the nature of the project site.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	Low -	Low -

Potential impact and risk:	**The potential spread of alien vegetation**	
Nature of impact:	**Indirect Negative Impact** Several Alien Invasive Species were found present on the site. During construction, vegetation clearing for development will be required. This disturbance then allows for the alien species to colonise the soils, if left unmanaged. Several Alien Invasive Species were found present on the site such as Acacia Thickets.	
	Without mitigation	**With mitigation**
Intensity	High	Medium
Extent and duration of impact:	Regional, Long-term	Local, Medium-Term
Probability of occurrence:	Probable	Possible
Significance	Very High -	Very Low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- All temporary work areas (laydowns and camps) can only be placed in previously disturbed areas within the site, including any temporary access roads or storage areas. - Alien vegetation management must be initiated at the beginning of the construction period and must extend into any remaining areas into the operation phase - The revegetation of any temporary sites as well as any previously degraded areas must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications. - Regeneration of alien vegetation must be monitored once all areas have been cleared, forming part of a long-term alien vegetation management plan.	

Cumulative impact post mitigation:	Additional loss of sensitive vegetation/habitats related to other projects, most of which have or could result in additional clearing of thicket/grassland mosaics, is unlikely due to the nature of the project site.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	High -	Low -

29.1.2 Soil

Potential impact and risk:	**Susceptibility of soil erosion**	
Nature of impact:	**Indirect Negative Impact.** Removal of flora species for site establishment and excavation activities leaves soil susceptible to soil erosion should high rainfall/wind occur. Uncontrolled vegetation clearance may lead to the loss of natural vegetation and habitats. Opportunistic alien and invasive vegetation encroachment may result in post degradation of native vegetation.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Local, long-term	Site specific, medium-term
Magnitude of impact or risk:	High	Low
Probability of occurrence:	Probable	Possible
Significance	High -	Very low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Minimise the clearance of vegetation and confine to the proposed footprint - Avoid stockpiling for long periods of time. - Suitable measures must be implemented in areas that are susceptible to erosion, including but not limited to gabions and runoff diversion berms (if necessary). - Bare soil areas must be vegetated and a suitable cover crop planted once construction is completed. - If establishment of development does not occur soon after preparation of the site, a suitable cover crop to be established as a temporary measure. - Stockpiled material should be covered when stockpiling will be for extended periods during the construction phase. - Barriers should be erected along the site boundaries such as a board fence or sediment fence, or similar barrier which can control air currents and windblown soil to avoid disturbance to motorists on adjacent roads.	
Cumulative impact post mitigation:	None	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	NA	NA

29.1.3 Geology

Potential impact and risk:	Geological Impacts
Nature of impact:	No impacts to the geology of the site are expected as the development will be mostly above ground except for the foundations and possible paving layers which will reach deeper than ground level.

29.1.4 Aquatic Biodiversity

Potential impact and risk:	Changes to the hydrological regime and increased potential for erosion	
Nature of impact:	**Indirect Negative Impact** As the proposed development will result in large hard engineered surfaces, this poses the potential for increase runoff volumes, concentrated in areas. Increase runoff volumes, especially with high velocities, not only increases the potential for erosion, but also changes the regional hydrology, i.e. flows are redirected. However, this site has not direct connection with water courses or drainage features so this probability of this impact is low, but the cognisance of proper stormwater managed, as well as rain capture systems for water use must be implemented.	
	Without mitigation	**With mitigation**
Intensity	Very Low	Medium
Extent and duration of impact:	Local, Medium-term	Local, Medium-Term
Probability of occurrence:	Probable	Possible
Significance	Low -	Very Low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- The preferred option is recommended as all aquatic systems have been avoided. - A construction and operational stormwater management plan must be developed post-EA, detailing the structures and actions that must be installed to prevent the increase of surface water flows directly into any natural systems. - Effective stormwater management must include measures to slow, spread, and deplete the energy of concentrated flows thorough effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas - Rain harvesting is also advocated. - Stormwater systems must be inspected on an annual basis to ensure these are functional. - Any concentrated runoff and or erosion where observed must be rectified with the appropriate stormwater management measures, e.g. gabions, reno mattresses, or energy dissipators.	
Cumulative impact post mitigation:	Additional loss of sensitive vegetation / habitats related to other projects, most of which have or could result in additional clearing of thicket / grassland mosaics, is unlikely due to the nature of the project site.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	High -	Low -

Potential impact and risk:	Changes to the water quality	
Nature of impact:	**Indirect Negative Impact** Potential impact on localised surface water quality (construction materials and fuel storage facilities) during the construction and or decommissioning of the development, although not directly as there is not connection with the site and any natural systems downstream, but will require stormwater management that will need to be discharged off site. During both preconstruction, construction and operational activities, chemical pollutants (hydrocarbons from equipment and vehicles, cleaning fluids, cement powder, wet cement, shutter-oil, etc.) associated with site-clearing machinery and construction activities, as well as maintenance activities, could be washed downslope. It is also proposed that aircraft refilling will take place, so spills during these operations or from the storage facility could also take place. However, this is improbable due to the lack of any surface water connectivity related to the impact of important downstream areas.	
	Without mitigation	**With mitigation**
Intensity	Very Low	Medium
Extent and duration of impact:	Local, Long-term	Local, Medium-Term
Probability of occurrence:	Probable	Possible
Significance	Low -	Very Low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- All construction/operational materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination. - Washing and cleaning of equipment should also be done in berms or bunds, in order to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel. - Chemical storage containers must be regularly inspected so that any leaks are detected early; - Littering and contamination of water sources during construction must be prevented by effective construction camp management; - Emergency plans must be in place in case of spillages onto road surfaces in both the construction and operational phases; - No stockpiling should take place within a watercourse, wetland, or buffers and all stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds; - The revegetation of any temporary sites as well as any previously degraded areas must begin from the onset of the project, with the involvement of a botanist to assist with the revegetation specifications - Stormwater systems must be inspected on an annual basis to ensure these are functional. - Any concentrated runoff and or erosion where observed must be rectified with the appropriate stormwater management measures, e.g. gabions, reno mattresses, or energy dissipators.	
Cumulative impact post mitigation:	Additional loss of sensitive vegetation / habitats related to other projects, most of which have or could result in additional clearing of thicket / grassland mosaics, is unlikely due to the nature of the project site (conservation).	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	High -	Low -

29.1.5 Traffic Impacts

Potential impact and risk:	**Increased traffic**	
Nature of impact:	**Indirect Negative Impact.** During the construction phase of the proposed development, construction vehicles will be utilizing the existing road network. Normal traffic flow in the area will be disturbed leading to slower traffic flow from increased construction vehicles in the area. This might result in increased pedestrian and vehicle accidents.	
	Without mitigation	**With mitigation**
Intensity	Medium	Very low
Extent and duration of impact:	Local, Long-term	Local, long-term
Magnitude of impact or risk:	High	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Medium	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Clear road signage for residents and oncoming traffic must be erected - Large construction vehicles must not be permitted to utilize public roads during peak hours. - Speed should be kept at a minimum - Flagman should be placed at the appropriate traffic nodes - Careful planning by the Contractor of the delivery of material to the site, to minimise the number of vehicles accessing the site. - Barriers should be erected along the site boundaries such as a board fence, wind fence, sediment fence, or similar barrier which can control air currents and windblown soil to avoid disturbance to motorists on adjacent roads.	
Cumulative impact post mitigation:	The increased traffic can cause damage to roads and can negatively affect the well-being of the local community.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	High -	Low -

29.1.6 Waste

Potential impact and risk:	**Accumulation of construction waste on site**	
Nature of impact:	**Indirect Negative Impact.** Waste generated during the construction phase of the project could cause pollution in surrounding areas if proper waste management is not implemented. Inappropriate handling and management of waste from the construction activities may result into littering, illegal dumping and pollution of the immediate and surrounding receiving environment and pollution of sediment from cement batching.	
	Without mitigation	**With mitigation**
Intensity	Medium	Very low
Extent and duration of impact:	Local, Long-term	Local, short-term
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Certain construction material can be re-used on site where required or disposed of at an appropriately licensed waste disposal facility. - Cleared vegetation can be chipped and incorporated into the topsoil rather than burned or disposed of. - Any waste that may be produced during the site preparation phase must be disposed of at an appropriately licensed waste disposal facility (Arlington). - A register to be maintained of waste disposed of at waste facilities. - No waste is to be stockpiled on site. - Adequate capped litter bins should be provided at the site for waste generated by labourers; these should be emptied on a regular basis and waste disposed of at an appropriately licensed waste disposal facility. - Recycling of domestic waste is encouraged. - Suitable portable sanitation facilities should be provided and maintained for the labourers during the development. - Minimise accidental hazardous substance spills such as cement by mixing in a container and covering the ground with protective material. - All hazardous substances must be stored on impervious surfaces in a designated bunded area, able to contain 110% of the total volume of materials stored. - The bunded areas should be inspected on a regular basis in order to be maintained correctly. - Storage areas should only be accessible by authorised persons.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.1.7 Visual

Potential impact and risk:	**Visual intrusion**	
Nature of impact:	**Indirect Negative Impact.** The proposed development will implement vegetation clearing which will cause changes to the character of the area. The construction site is generally not visually attractive. Additionally, the accumulation of waste on site also contributes to the visual impact. Inappropriate location and poor management of material stockpiles may result in visual impacts.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Local, Long-term	Local, short-term
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Site camp should be strategically placed. - Any lighting used on site should be downlights and only for security purposes. - Site camp should be kept neat and clean as much as possible. - Stockpiles should be kept neat and all waste should be cleared daily. - Building guidelines should be followed correctly and the site should be closed off from the public eye. - All areas outside the development footprint should be clearly marked off as no-go zones.	
Cumulative impact post mitigation:	The clearing of vegetation during construction can alter the natural landscape, temporarily changing the visual character of the area. This may be particularly noticeable if mature trees or distinctive vegetation are removed.	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	High -	Low -

29.1.8 Noise

Potential impact and risk:	**Noise disturbance**	
Nature of impact:	**Indirect Negative Impact.** The noise levels in the area might be increased because of the construction activities. Increased traffic from local motorists and construction vehicle might also increase the noise pollution in the receiving environment. These noise impacts can lead to annoyance, disturbance, and potential health effects if not adequately managed.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Local, Long-term	Local, short-term
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Ensure that construction vehicles and working machinery are serviced and are in good condition to reduce their noise levels - Construction activities should be maintained during the normal working hours (08h00-17h00) - Where works are to be carried outside the normal working hours, the affected adjacent residents must be informed and such be undertaken within the shortest time possible - Select construction machinery and equipment with lower noise emissions and utilize noise-reducing technologies, such as mufflers, sound enclosures, and vibration dampeners, to mitigate noise at the source. - Schedule noisy construction activities during periods of lower sensitivity, such as weekdays during daytime hours, and avoid or minimize noisy activities during evenings, weekends, and holidays to reduce disturbance to nearby residents. - Erect temporary noise barriers and enclosures around noisy equipment and construction areas to contain and attenuate noise propagation. Use sound-absorbing materials such as acoustic panels or barriers to reduce noise transmission.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.1.9 Air Quality

Potential impact and risk:	**Dust generation**	
Nature of impact:	**Direct Negative Impact.** Construction vehicles will be travelling within the site areas transporting materials that may lead to dust generation. Construction activities such as earthworks and construction vehicles might increase the dust particles in the area surrounding the construction site. The soil will be prone to wind erosion with the associated generation of dust and windblown sand during high wind velocities. Dust generation on construction sites is not entirely avoidable and is one of the expected negatives during the construction phase of a project, however, it is imminent to indicate that mitigation measures should be implemented as thoroughly as possible in order to avoid extensive disturbances to neighbouring residents.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Local, medium-term	Local, short-term
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Implement dust suppression measures on unpaved surfaces, construction access roads, and storage areas as required. The application of water helps to suppress airborne particles by increasing moisture content. - Develop a comprehensive dust control plan tailored to the specific conditions of the construction site. This plan should outline strategies and measures to mitigate dust emissions effectively. - Use environmentally friendly soil stabilizers to control dust by binding soil particles together. This helps to prevent soil erosion and reduce the potential for airborne dust. - Establish temporary vegetative cover, such as mulch or straw, on exposed soil areas to prevent soil erosion and reduce dust emissions. This cover can be applied in phases as construction progresses. - Install temporary windbreaks, such as silt fences or construction fabric, to reduce the impact of wind on dust dispersion. These barriers can be strategically placed to shield sensitive areas from airborne dust. - Implement and enforce speed limits for construction vehicles within the site to minimize the disturbance and dust generated by fast-moving vehicles. - Consider enclosing construction activities within temporary structures or barriers to minimize the dispersion of dust beyond the immediate construction site. - Pave construction access roads to reduce the generation of dust. This can also enhance the overall durability of the roads. - Schedule high-dust activities during periods of low wind and reduced site activity. This can help minimize the impact on nearby receptors, including residences and businesses.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

Potential impact and risk:	Impacts on air quality (air pollution)	
Nature of impact:	**Indirect Negative Impact.** Air emissions are generated during construction activities from the operation of machinery through exhaust emissions and the use of generators as well as the generating of dust during these construction activities. The emissions include CO2, NOx, and fine particulate matter.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Local, medium-term	Local, medium-term
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Very low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	Medium	
Proposed mitigation:	- Develop a comprehensive dust control plan tailored to the specific conditions of the construction site. This plan should outline strategies and measures to mitigate dust emissions effectively. - Regularly water unpaved surfaces, construction access roads, and storage areas to minimize dust generation. The application of water helps to suppress airborne particles by increasing moisture content. - Use environmentally friendly soil stabilizers to control dust by binding soil particles together. This helps to prevent soil erosion and reduce the potential for airborne dust. - Establish temporary vegetative cover, such as mulch or straw, on exposed soil areas to prevent soil erosion and reduce dust emissions. This cover can be applied in phases as construction progresses. - Install temporary windbreaks, such as silt fences or construction fabric, to reduce the impact of wind on dust dispersion. These barriers can be strategically placed to shield sensitive areas from airborne dust. - Implement and enforce speed limits for construction vehicles within the site to minimize the disturbance and dust generated by fast-moving vehicles. - Consider enclosing construction activities within temporary structures or barriers to minimize the dispersion of dust beyond the immediate construction site. - Pave construction access roads to reduce the generation of dust. This can also enhance the overall durability of the roads. - Schedule high-dust activities during periods of low wind and reduced site activity. This can help minimize the impact on nearby receptors, including residences and businesses. - Take precautions to limit the amount of dust that makes its way to surrounding roads and footways to a “reasonable level”. - Topsoil and soil stockpiles should be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation. - Cover construction material, skips and stockpiled soils if they are a source of dust. - A water cart or sufficient watering equipment should be available to wet soils during windy days if wind-blown sand and dust becomes a problem. - Heavy machinery and vehicles must not exceed a speed limit of 20 km/hr along route of construction. - Construction vehicles should be aware of neighbouring properties and reduce dust emissions as much as possible, specifically during days of increased wind speeds. - Construction plant, equipment, machinery, and vehicles should be well maintained and services regularly to minimise exhausted fumes and air pollution.	

Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.1.10 Socio Economic & Cultural

Potential impact and risk:	**Employment creation**	
Nature of impact:	**Direct Positive Impact.** Temporary employment opportunities will be created for the local residents and Small, Medium, and Micro Enterprises (SMMEs). In the process, the beneficiaries will acquire a source of income and be upskilled in construction methods. Thereby, improving the livelihoods of the inhabitants. Approximately, 350 direct employment opportunities are associated with this project. A number of indirect and induced employment opportunities are likely to follow the direct opportunities. Jobs will be created due to the provision of services and purchasing of goods from suppliers and distributors. Induced jobs lastly result from the spending and consumption by direct and indirect workers.	
	Without mitigation	**With mitigation**
Intensity	High	NA
Extent and duration of impact:	Short-term	NA
Magnitude of impact or risk:	Medium	NA
Probability of occurrence:	Certain	NA
Significance	Medium +	NA
Degree to which the impact can be reversed:	NA	
Degree to which impact may cause irreplaceable loss of resources	NA	
Degree to which impact can be mitigated	NA	
Proposed mitigation:	- Employ diverse local labour. - Small, Medium, and Micro-sized Enterprises (SMMEs) could be utilised during the development project.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

Potential impact and risk:	**Skills development and transfer**	
Nature of impact:	**Indirect Positive Impact.** The commitment by developers to recruit local labour, as far as possible, to benefit local communities in general and the unemployed in particular, is almost standard practice in South Africa when construction projects are proposed. The proposed development is no different and several direct employment opportunities stand to be created within the semiskilled category. This is likely to have a considerable socio-economic impact in the form of poverty alleviation and favorable socio-economic implications (improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.	
	Without mitigation	**With mitigation**

Intensity	High	NA
Extent and duration of impact:	Short-term, local	NA
Magnitude of impact or risk:	Medium	NA
Probability of occurrence:	Certain	NA
Significance	Medium +	NA
Degree to which the impact can be reversed:	NA	
Degree to which impact may cause irreplaceable loss of resources	NA	
Degree to which impact can be mitigated	NA	
Proposed mitigation:	- Source diverse local labour. - Small, Medium and Micro-sized Enterprises (SMMEs) could be utilized during the development project.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

Potential impact and risk:	**Enhancement of local economy**	
Nature of impact:	**Indirect Positive Impact.** Higher levels of local economic activity normally follow the demand for goods and services (and the supply thereof) and this in turn is likely to culminate into various socio-economic benefits, such as employment creation and poverty reduction. The extent of this impact is of course a factor of the size and health of the local economy in question and the subsequent ability of local service providers to meet such demands. It follows that the more limited this ability, the more leakage will take place from the local economy as developers would be compelled to source relevant goods and services elsewhere. The impact remains relevant in the context of the positive effect that the demand for goods and services will have on the local economy.	
	Without mitigation	**With mitigation**
Intensity	Medium	NA
Extent and duration of impact:	Short-term, local	NA
Magnitude of impact or risk:	Low	NA
Probability of occurrence:	Certain	NA
Significance	Low +	NA
Degree to which the impact can be reversed:	NA	
Degree to which impact may cause irreplaceable loss of resources	NA	
Degree to which impact can be mitigated	NA	
Proposed mitigation:	NA	

Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

Potential impact and risk:	**Health and safety risks**	
Nature of impact:	**Indirect Negative Impact.** Activities related to the construction phase of the project could pose potential health and safety risks. Security during construction should also be considered to ensure no unwarranted access to the site is allowed.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	Short-term, local	Short-term, local
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Possible	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	Medium	
Proposed mitigation:	- Conduct comprehensive safety training programs for all construction workers to ensure awareness of potential hazards, safe work practices, and emergency procedures. - Mandate the use of appropriate personal protective equipment, including helmets, gloves, safety glasses, and high-visibility clothing, to reduce the risk of accidents and injuries. - Clearly label and communicate potential hazards on the construction site, providing information in multiple languages if necessary. Use signage and other communication methods to ensure workers understand risks. - Develop and regularly review emergency response plans, including procedures for evacuations, medical emergencies, and coordination with local emergency services. - Implement proper traffic management plans to minimize the risk of accidents involving construction vehicles. Clearly mark pedestrian walkways and vehicle routes to enhance safety. - Implement the dust control measures mentioned earlier to protect both workers and nearby residents from potential respiratory health issues. - Conduct regular safety inspections of the construction site to identify and rectify potential hazards promptly. - Establish first aid stations on-site with trained personnel and adequate supplies to provide immediate medical assistance when needed. - Design workstations and tasks to be ergonomically sound, reducing the risk of musculoskeletal disorders among workers.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.1.11 Archaeological & Palaeontological

Potential impact and risk:	**Possible loss of non-renewable heritage resources**	
Nature of impact:	**Indirect Negative Impact.** The main impact on archaeological sites/remains (if any) will be the physical disturbance of the material and its context. The clearing of the vegetation may expose, disturb and displace archaeological sites/material. However, from the investigation it would appear that the proposed areas earmarked for development are of low archaeological sensitivity. There are no known graves or buildings older than 60 years on the area surveyed.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	long-term, local	Short-term, site specific
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	Medium	
Proposed mitigation:	- Construction managers/foremen should also be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. - Should the remains of build structures that are older than 60 years or concentrations of historical material be uncovered after vegetation clearing or during the construction phase, a historian / heritage practitioner must be appointed to evaluate the find and to determine if a destruction permit needs to be obtained from the Eastern Cape Heritage Resources Authority (ECPHRA) in terms of Section 34 of the National Heritage Resources Act, No. 25 of 1999. - If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease in the immediate area of the finds and must be reported immediately to the archaeologist at the Albany Museum in Makhanda (Tel.: 046 622 2312) or to the Eastern Cape Provincial Heritage Resources Authority (043 492 1370). Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation and may include: - Consultation with the local communities regarding the conditions for the possible removal, storage and reburial (in the case of human remains) of heritage material. - If the local communities agree to the removal of human remains and heritage, an archaeologist must apply for permits from the Eastern Cape Province Heritage Resources Authority to collect and/or excavate sites/materials from archaeological sites impacted by the development. - Consultation with the Albany Museum (repository for archaeological material in the Eastern Cape) regarding permit(s) to remove the heritage material, the storing, curating and costs involved. - A Phase 2 Mitigation process to systematically excavate and to remove the archaeological deposits before construction of the development continues. Note: All costs must be financed by the applicants. This may include: - All monitoring and mitigation expenses regarding the excavations/collecting of material, travel, accommodation and subsistence, analysis of the material, radiocarbon date(s) of the site(s) and a once-off curation/storage fee payable to the Department of Archaeology at the Albany Museum.	
Cumulative impact post mitigation:		
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.2 Operational Phase Impacts

29.2.1 Terrestrial Biodiversity

Potential impact and risk:	**Invasion of Alien Invasive Species**	
Nature of impact:	**Indirect Negative Impact.** Opportunistic alien and invasive vegetation encroachment may result in the post-degradation of indigenous vegetation. Erf 2006 is already covered with alien vegetation and with the proposed development occurring, the area left for alien vegetation to establish itself will be limited to the open space areas. The developer will have the responsibility to ensure alien vegetation is routinely removed from the retained open space.	
	Without mitigation	**With mitigation**
Intensity	Medium	Low
Extent and duration of impact:	long-term, local	Short-term, site-specific
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Possible	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	Medium	
Proposed mitigation:	- Regular and ad-hoc alien vegetation removal - Maintain all green spaces and open spaces well to promote biodiversity establishment opportunities - Alien trees must be removed from the site as per NEMBA requirements. - A suitable weed management strategy to be implemented in construction and operation phases. - After clearing is completed, an appropriate cover crop should be planted where any weeds or exotic species are removed from disturbed areas, should construction not commence immediately.	
Cumulative impact post mitigation:	NA	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.2.2 Stormwater & flooding

Potential impact and risk:	**Increased impervious area**	
Nature of impact:	**Indirect Negative Impact.** The development of the property will increase the impervious area which will increase stormwater runoff from the property. Proper stormwater management must be implemented. The Engineering Services report does thoroughly cover stormwater management options, which can be considered as the mitigation measures for this impact.	
	Without mitigation	**With mitigation**
Intensity	High	Low
Extent and duration of impact:	Short-term, local	Short-term, site specific

Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Possible	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Correct planning and maintenance for stormwater drainage and engineering of development to keep water accumulation to a minimum. - A stormwater management plan should be compiled by a professional engineer. - The stormwater management plan implemented must follow the correct stormwater infrastructure be installed and continually monitored. - Properly designed drainage systems and maintain them. Rainwater harvesting should be implemented on the site in line with Sustainable Drainage Systems (SuDS) principles. - A stormwater management plan should be compiled and the planning of stormwater infrastructure be approved by the municipality. - The stormwater management plan should be consulted during the installation of stormwater infrastructure and should be one of the first factors considered during the finalisation of the stormwater management plan.	
Cumulative impact post mitigation:	N/A	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	N/A	N/A

29.2.3 Waste

Potential impact and risk:	**Waste management**	
Nature of impact:	**Indirect Negative Impact.** Waste generated during the operational phase of the project could cause pollution to surrounding areas if proper waste management is not implemented.	
	Without mitigation	**With mitigation**
Intensity	High	Low
Extent and duration of impact:	short-term, local	Short-term, site specific
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Possible	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	

Proposed mitigation:	- Proper operational waste management systems should be in place for the operational phase of the project. - Waste should be collected weekly. - Waste must be stored in secure waste bins which must be impermeable and animal safe. - Waste recycling and sorting of recyclable materials should be encouraged. - The property should be cleaned on a regular basis and any litter or waste not in bins should be collected and be disposed of.	
Cumulative impact post mitigation:	N/A	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	N/A	N/A

29.2.4 Traffic

Potential impact and risk:	**Increased traffic and effects on road conditions**	
Nature of impact:	**Indirect Negative Impact.** More vehicles will be required to travel along Burchell Road to access Erf 2006, Parsonsvlei, to access the proposed residential area. According to the Traffic Impact Assessment, additional traffic generated by the proposed development will have little impact on the affected intersections, thus the additional traffic will not significantly reduce available intersection capacity. When considering the traffic generated by the proposed development added to escalated background traffic volumes, the affected intersections and access points all operate at acceptable Levels of Service in terms of capacity for the 2025 development horizon.	
	Without mitigation	**With mitigation**
Intensity	High	Medium
Extent and duration of impact:	permanent, local	permanent, local
Magnitude of impact or risk:	Medium	Low
Probability of occurrence:	Probable	Possible
Significance	Medium -	Low -
Degree to which the impact can be reversed:	High	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Provision for pedestrian movement must be implemented on the site to access buildings. - Access to the subject site is proposed on Burchell Road. - Install or upgrade signs to better inform drivers and manage traffic flow.	
Cumulative impact post mitigation:	None	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**

29.2.5 Visual

Potential impact and risk:	**Visual alterations to the surrounding landscape**
Nature of impact:	**Indirect Negative Impact.**

	During the operational phase, the development may introduce new structures, roads, and utilities that alter the visual character of the area. Increased activity from the new residents may introduce different types of units such as double storey, single storey and 2 storey blocks. The introduction of built structures and increased human activity may contrast with the existing natural landscape and vacant surroundings. Visual impacts may include changes to the skyline, loss of open space, and alterations to the natural vista, potentially affecting the scenic quality of the area.	
	Without mitigation	**With mitigation**
Intensity	Low	Very low
Extent and duration of impact:	permanent, local	permanent, local
Magnitude of impact or risk:	Low	Low
Probability of occurrence:	Probable	Possible
Significance	Low -	Very Low -
Degree to which the impact can be reversed:	Medium	
Degree to which impact may cause irreplaceable loss of resources	Low	
Degree to which impact can be mitigated	High	
Proposed mitigation:	- Construction should not take place outside the authorised site footprint - All construction camps are to left clean, free of litter and any other foreign objects and material relating to construction activities. - Introduce landscaping elements, such as native vegetation, trees, and green buffers, to soften the visual impact of built structures and integrate them harmoniously with the natural surroundings.	
Cumulative impact post mitigation:	None	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	N/A	N/A

29.2.6 Socio-economic & Cultural

Potential impact and risk:	**Job Creation**	
Nature of impact:	**Indirect Positive Impact.** The proposed development caters to the demand of affordable and secure housing within the Nelson Mandela Bay Municipality. With the city experiencing population expansion, there is a pressing demand for additional housing options, particularly within well-serviced residential suburbs like Parsonsvlei. Additional jobs will be generated in the local economy through increased demand for services such as hospitality, transportation, and retail.	
	Without mitigation	**With mitigation**
Intensity	Low	NA
Extent and duration of impact:	Long-term, local	NA
Magnitude of impact or risk:	Low	NA
Probability of occurrence:	Probable	NA
Significance	Low +	NA
Degree to which the impact can be reversed:	NA	

Degree to which impact may cause irreplaceable loss of resources	NA	
Degree to which impact can be mitigated	NA	
Proposed mitigation:	NA	
Cumulative impact post mitigation:	N/A	
Rating of cumulative impacts	**Without Mitigation**	**With Mitigation**
	N/A	NA

30 Impact Summary

	PREFERRED ALTERNATIVE 1	
Construction Phase Impacts		
Impact	Before mitigation	After Mitigation
Loss of vegetation and in particular species/habitats	Very High -	Very Low -
Loss of habitat containing protected species or Species of Special Concern	Low -	Very Low -
Loss of any critical corridors and connected habitats that are linked to any conservation plans or critical biodiversity spatial plans	Very Low -	Very Low -
The potential spread of alien vegetation	Very High -	Very Low -
Susceptibility of soil erosion	High -	Very Low -
Geological Impacts	NA	NA
Changes to the hydrological regime and increased potential for erosion	Low -	Very low -
Changes to the water quality	Low -	Very low -
Increased traffic	Medium -	Very low -
Accumulation of construction waste on-site	Medium -	Very low -
Visual intrusion	Medium -	Very low -
Noise disturbance	Medium -	Very Low -
Dust generation	Medium -	Very low -
Impacts on air quality (air pollution)	Medium -	Very low -
Employment creation	Medium +	NA
Skills development and transfer	Medium +	NA
Enhancement of local economy	Low +	NA
Health and safety risks	Medium -	Low -
Possible loss of non-renewable heritage resources	Medium -	Low -
Operational Phase Impacts		
Invasion of Alien Invasive Species	Medium -	Low -
Increased impervious area	Medium -	Low -
Waste management	Medium -	Low -
Increased traffic and effects on road conditions	Medium -	Low -
Visual alterations to the surrounding landscape	Low -	Very Low -
Air pollution	Medium -	Low -
Job creation	Low +	NA

31 Climate Change Assessment

Climate change issues must be considered as part of the EIA process Please consider the Climate Change guideline. EAP must determine:

a. The potential impact of climate change on society and the economy, whether the impact is negative or positive, considering that society needs to be at the centre of the proposed development;
b. The potential alternatives of the proposed development, alternatives that will have less impact on climate change (environment and generation of waste included), the society and economy;
c. whether, and to what extent, the proposed development will result in the release of greenhouse gas (GHG) emissions;
d. whether the proposed development is necessary to achieve long term decarbonisation goals;
e. the impact of the development on social, economic, natural and built environment that are crucial for climate change, adaptation and resilience;
f. the projected impact of climate change on proposed development; and surrounding environment, and implications for the development.
g. Explanation of how the impacts is likely to be exacerbated or minimised as result of climate change and what measures are likely to be implemented to accommodate and manage (adapt to) the anticipated worst scenario where applicable
h. whether, and to what extent, the impacts identified in (a) -(g) can be mitigated.

The proposed development of Erf 2006, Parsonsvlei, holds some implications for climate change, impacting both society and the economy. The potential negative impacts include increased vulnerability to extreme weather events, such as flooding and heat waves, which could lead to higher costs for property damage, infrastructure repair, and insurance. However, there are also positive aspects, such as potentially reduced heating costs due to milder winters. To mitigate these issues, alternatives such as low-impact development techniques, energy-efficient designs, and the use of sustainable materials can be considered. These alternatives aim to minimise greenhouse gas emissions, manage stormwater more effectively, and reduce the overall environmental footprint.

The development will result in some greenhouse gas emissions, primarily from construction activities and ongoing energy use in the residential units. The extent of these emissions will depend on the materials used and the energy efficiency of the buildings. Aligning the development with long-term decarbonisation goals is crucial, which involves incorporating energy-efficient designs, renewable energy sources, and sustainable practices to support regional or national targets.

The impact of climate change on the development itself could include increased flooding risks and heat stress, necessitating design adaptations such as elevated foundations, improved stormwater management systems, and cooling solutions. The development's effect on the social, economic, natural, and built environments must be carefully managed to enhance community resilience and reduce environmental impacts. Implementing green infrastructure and monitoring

climate-related risks will help mitigate negative impacts. Overall, integrating climate resilience measures and sustainability practices will ensure the development contributes positively to climate adaptation and resilience.

32 Assumptions and limitations

Data Accuracy and Reliability: This impact assessment report relies on available data and information obtained from various sources, including scientific literature, government reports, and stakeholder consultations. While efforts have been made to ensure the accuracy and reliability of the data, there may be limitations inherent in the data quality, completeness, and currency. Any inaccuracies or uncertainties in the data could affect the robustness of the assessment findings and conclusions.

Modelling and Predictive Uncertainties: The assessment involves modelling future scenarios and predicting potential impacts based on current understanding of climate change dynamics, socio-economic trends, and environmental factors. However, predictive modelling inherently involves uncertainties and assumptions about future conditions, including climate projections, technological advancements, and human behaviour. As such, the accuracy and reliability of the projected impacts are subject to inherent uncertainties and may deviate from actual outcomes.

Scope and Boundaries: The assessment's scope is limited to evaluating the anticipated impacts of the proposed development on social, economic, natural, and built environments in the context of climate change adaptation and resilience. Certain factors, such as geopolitical changes, regulatory frameworks, and market dynamics, which may influence the project's long-term impacts, are beyond the scope of this assessment.

Temporal and Spatial Scale: The assessment focuses on assessing impacts at a specific temporal and spatial scale relevant to the proposed development and surrounding environment. However, many impacts and adaptation responses operate across varying temporal and spatial scales, and localized impacts may interact with broader regional or global-scale trends. The assessment may not capture all nuances and interactions at different scales.

Assumptions and Scenarios: The assessment makes certain assumptions about future conditions, socio-economic trends, and climate change scenarios to project potential impacts. These assumptions are based on current knowledge and understanding but may not fully account for unforeseen changes, abrupt events, or tipping points that could alter the trajectory of impacts.

Stakeholder Engagement and Perspectives: While efforts have been made to incorporate stakeholder perspectives and input into the assessment process, the representation and inclusivity of stakeholder engagement may be subject to limitations. Variations in stakeholder interests, priorities, and perspectives may influence the interpretation of impacts and the identification of adaptation measures.

Regulatory and Policy Frameworks: The assessment considers existing regulatory and policy frameworks related to impact assessment, environmental management, and land use planning. However, future changes in regulations, policies, or governance structures could impact the implementation of adaptation measures and the project's overall resilience.

Human and Behavioural Factors: The assessment acknowledges the influence of human behaviour, decision-making processes, and societal dynamics on impacts and adaptation responses. However, predicting human responses to climate change, impact mitigation and development interventions involves inherent uncertainties that may not be fully captured in the assessment.

33 Environmental Impact Statement

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

Only one alternative development layout option has been considered throughout the planning phase of the residential development on Erf 2006, Parsonsvlei. This site alternative is, therefore, the only site alternative that can meet the need and desirability of the Application, and as such, no alternate sites have been investigated. During the preparation of the layout plan for the intended development, the approved zoning, local and national policy guidelines natural and manmade characteristics of the site, socio-economic status of the community, availability of municipal services, as well as traffic assessment were taken into account to achieve the best use of the site from an economic perspective. The preferred alternative will contribute to bioregional conservation considering the implementation of open spaces in order to maintain and improve the current ecological state of the property as well as its surroundings. The proposed residential development has both positive and negative environmental impacts.

Negative Impacts

The main negative impacts include short-term air quality and noise pollution during construction, and increased stormwater runoff as a result of cleared vegetation cover in the area. These impacts are significant but manageable through careful planning and execution. Implementing advanced stormwater management systems, and noise and dust control measures will mitigate these adverse effects. The likelihood of these impacts occurring is high, given the nature of construction and residential activities, but their severity can be reduced with appropriate mitigation measures.

In Appendix D, the Biodiversity Impact Assessment made mention of several impacts including the loss of vegetation and particular species/habitats, loss of habitat containing protected species or species of special concern, susceptibility to soil erosion, increased traffic, and accumulation of construction waste on-site. All of these impacts can be mitigated to low or very low should the mitigation measures be implemented correctly.

Positive Impacts

The positive impacts include enhanced local housing availability, economic growth, and improved stormwater management through the removal of invasive species. The development's long-term effects, while significant, can be minimized by incorporating sustainable practices and renewable energy solutions. Overall, with effective mitigation strategies, the proposed development is expected to balance community benefits with manageable environmental impacts, ensuring a sustainable and resilient outcome.

No-go alternative (compulsory)

In considering the no-go option, wherein the site remains undeveloped, an environmental impact assessment was conducted to evaluate the potential impacts on the environment. Despite not proceeding with development, there are still implications that need to be addressed:

Types of Impact:

Spread of Alien Invasive Species: Without active management and development activities, there is a risk of further spread of alien invasive species into the fynbos sections. This could lead to the degradation of native habitats and loss of biodiversity. However, the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA) indicate that all landowners have a responsibility and legal liability in relation to the control of invasive vegetation.

Loss of Potential Economic Benefits: By not developing the site, potential economic benefits such as employment creation, local economic stimulation, and skills development may be forgone. This could impact the socioeconomic dynamics of the area and hinder opportunities for growth and development.

Potential for Informal Settlements: The absence of development may attract informal settlers to the site, leading to unplanned and unregulated human habitation. This could result in land degradation, increased pressure on natural resources, and challenges in service provision.

Duration of Impacts:

The impacts of not developing the site could persist over the long term, potentially leading to gradual environmental degradation and missed economic opportunities.

Likelihood of Potential Impacts Occurring:

The likelihood of alien invasive species spread, loss of economic benefits, and informal settlements depends on various factors such as land management practices, socioeconomic conditions, and regulatory enforcement.

Significance of Impacts:

The significance of impacts is influenced by the extent of alien species invasion, the magnitude of economic losses, and the scale of informal settlement. While some impacts may be localized, others could have broader implications for biodiversity conservation, socioeconomic development, and land use planning.

In conclusion, while the no-go option may initially seem to avoid immediate environmental impacts associated with development, it poses its own set of challenges and risks. Active management and conservation efforts would be necessary to mitigate the spread of alien invasive species and address potential socioeconomic consequences. Additionally, proactive measures would be required to prevent informal settlements and ensure the sustainable management of the site in the absence of development.

SECTION E: RECOMMENDATIONS OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**	NO
Is an EMPr attached?	**YES**	NO

The EMPr must be attached as Appendix F.

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

N/A

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

EAP recommendations the developer to adhere to the mitigation measures outlined in the EMPr, and specialist reports compiled for the project. All mitigation measures indicated in the impact assessment section should be implemented. Below are the mitigation measures that should be adhered to both in the construction phase and operation phase:

- All relevant permits and authorisations must be in place before the commencement of construction.
- It is recommended that an Environmental Control Officer be appointed to conduct independent audits and compile monthly audit reports to ensure compliance with the EMPr, and EA during construction.
- Appropriate stormwater structures must be designed to minimise erosion and sedimentation of watercourses.
- Vegetation clearance should be minimised as far as practically possible to reduce loss of the vegetation on site.
- Maintain all green spaces well vegetation to promote biodiversity establishment opportunities
- All relevant legislation and policy must be consulted, and the proponent must ensure that the project is compliant with such legislation and policy. The operational conditions outlined in the EA, WUL, and EMP must be adhered to.
- Climate change mitigations, adaption, and resilience actions to be implemented

In terms of alternatives;

- Only one alternative development layout option has been considered throughout the planning phase of this project. This preferred alternative layout is, therefore, the only site alternative that can meet the need and desirability of the Application, and as such, no alternate sites have been investigated.

SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s) & Sensitivity Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

1. Biodiversity Impact Assessment Report
2. Palaeontological Impact Assessment
3. Phase 1 Archaeological Impact Assessment
4. Traffic Impact Assessment
5. Engineering Services Report
6. Geotechnical Report

Appendix E: Comments and Responses Report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

1. Confirmation of water capacity from municipality
2. Confirmation of sewer capacity form municipality
3. Site sensitivity verification report

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information