

Environmental Impact Assessment
Draft Basic Assessment Report



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**Baillie Park Extension 64 & 65 township establishment on
Portions 64, 572 & 1171 of the farm Vyfhoek 428 IQ
JB Marks Local Municipality
North West Province**

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GLOSSARY OF TERMS

Activity (Development) – an action either planned or existing that may result in environmental impacts through pollution or resource use.

Alien vegetation - Alien vegetation is defined as undesirable plant growth (usually of foreign origin) which includes, but is not limited to all declared category 1 and 2 listed invader species as set out in the 1983 Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien are those plant species that show the potential to occupy in number any area within the defined construction area and which are declared undesirable.

Alternative – a possible course of action, in place of another, of achieving the same desired goal of the proposed project. Alternatives can refer to any of the following but are not limited to: site alternatives, site layout alternatives, design or technology alternatives, process alternatives or a no-go alternative. All reasonable alternatives must be rigorously explored and objectively evaluated.

Applicant – the project proponent or developer responsible for submitting an environmental application to the relevant environmental authority for environmental authorisation.

Biodiversity – the diversity of animals, plants and other organisms found within and between ecosystems, habitats, and the ecological complexes.

Construction – means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

Cumulative Impacts – impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities to produce a greater impact or different impacts.

Direct impacts – impacts that are caused directly by the activity and generally occur at the same time and at the same place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally quantifiable.

Ecosystem – a dynamic system of plant, animal (including humans) and micro-organism communities and their non-living physical environment interacting as a functional unit. The basic structural unit of the biosphere, ecosystems are characterised by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space in which macro-scale conditions and interactions are relatively homogenous.

Emmissions - The release or discharge of a substance into the environment which generally refers to the release of gases or particulates into the air.

Environment – In terms of the National Environmental Management Act (NEMA) (Act No 107 of 1998) (as amended), “Environment” means the surroundings within which humans exist and that are made up of:

- a) the land, water and atmosphere of the earth;
- b) micro-organisms, plants and animal life;
- c) any part or combination of (i) of (ii) and the interrelationships among and between them; and
- d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Assessment (EA) – the generic term for all forms of environmental assessment for projects, plans, programmes or policies and includes methodologies or tools such as environmental impact assessments, strategic environmental assessments and risk assessments.

Environmental Authorisation – an authorisation issued by the competent authority in respect of a listed activity, or an activity which takes place within a sensitive environment.

Environmental Assessment Practitioner – the individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the EIA Regulations.

Environmental Impact – a change to the environment (biophysical, social and/ or economic), whether adverse or beneficial, wholly or partially, resulting from an organisation’s activities, products or services.

Environmental Impact Assessment (EIA) – the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Environmental Issue – a concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity.

Environmental Management - ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental Management Programme - A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. The EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.

Expansion - means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Fatal Flaw – issue or conflict (real or perceived) that could result in developments being rejected or stopped.

General Waste – household water, construction rubble, garden waste and certain dry industrial and commercial waste which does not pose an immediate threat to man or the environment.

Hazardous Waste – waste that may cause ill health or increase mortality in humans, flora and fauna.

Incident - An undesired event which may result in a significant environmental Impact but can be managed through internal response.

Indirect impacts – indirect or induced changes that may occur as a result of the activity. These types of impacts include all of the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Integrated Environmental Management – a philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity – at local, national and international level - that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application of appropriate tools for a particular proposal or activity. These may include environmental assessment tools (such as strategic environmental assessment and risk assessment), environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision support systems or advisory councils).

Mitigate – the implementation of practical measures designed to avoid, reduce or remedy adverse impacts or enhance beneficial impacts of an action.

No-Go Option – in this instance the proposed activity would not take place, and the resulting environmental effects from taking no action are compared with the effects of permitting the proposed activity to go forward.

Open Space – environmentally sensitive areas which are not suitable for development and consist of watercourses, buffers, floodplains, steep slopes, sensitive biodiversity and/or areas of cultural or heritage significance.

Registered Interested and Affected Party – an interested and affected party whose name is recorded in the register opened for that application.

Rehabilitation – a measure aimed at reinstating an ecosystem to its original function and state (or as close as possible to its original function and state) following activities that have disrupted those functions.

Scoping – the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Sensitive environment – any environment identified as being sensitive to the impacts of the development.

Significance – significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).

Stakeholder engagement – the process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities.

Sustainable Development – development which meets the needs of current generations without hindering future generations from meeting their own needs.

Watercourse – means:

- a) a river or spring;
- b) a natural channel or depression in which water flows regularly or intermittently;
- c) a wetland, lake or dam into which, or from which, water flows; and
- d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) and a reference to a watercourse includes, where relevant, its bed and banks.

Wetland – means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

ACRONYMS

| | |
|--------|---|
| CBA | Critical Biodiversity Areas |
| CBD | Central Business District |
| CMA | Catchment Management Agencies |
| CSIR | Council for Scientific and Industrial Research |
| DEDECT | Department of Economic Development, Environment, Conservation and Tourism |
| DMRE | Department of Mineral Resources and Energy |
| DSOE | Desired State of the Environment |
| DWS | Department of Water and Sanitation |
| ECF | Environmental Constraints Framework |
| EAP | Environmental Assessment Practitioner |
| ECA | Environment Conservation Act, 1989 (Act No. 73 of 1989) |
| EIA | Environmental Impact Assessment |
| EIS | Ecological Importance & Sensitivity |
| EMC | Environmental Management Class |
| EMP | Environmental Management Plan |
| EWR | Ecological Water Requirements |
| GIS | Geographic Information System |
| HGM | Hydrogeomorphic |
| IBA | Important Bird Area(s) |
| IDP | Integrated Development Plan |
| I&AP | Interested and/or affected parties |
| MAP | Mean Annual Precipitation |
| MASL | Metres above sea level |
| NBA | National Biodiversity Assessment |
| NEMA | National Environmental Management Act |
| NFEPA | National Freshwater Ecosystem Priority Areas |
| NHRA | National Heritage Resources Act |
| NPAES | National Protected Areas Expansion Strategy |
| NWA | National Water Act |
| PAES | Protected Areas Expansion Strategy |
| PES | Present Ecological State |
| PDA | Primary Drainage Area |
| PPP | Public participation process |
| QDA | Quaternary Drainage Area |
| REC | Recommended Ecological Category (or Class) |
| REMC | Recommended Ecological Management Category (or Class) |
| RVI | Riparian Vegetation Index |
| SAHRA | South African Heritage Resources Agency |
| SANBI | South African National Biodiversity Institute |
| SDF | Spatial Development Framework |
| SDI | Spatial Development Initiative |
| SEA | Strategic Environmental Assessment |
| SEMP | Strategic Environmental Management Plan |
| SWSA | Strategic Water areas of South Africa |
| WMA | Water Management Areas |
| WUL | Water Use Licence |
| WULA | Water Use Licence Application |

1 INTRODUCTION

Setala Environmental (Pty) Ltd has been appointed as the independent environmental assessment practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for the proposed Baillie Park Ext 64 & 65 township development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, JB Marks Local Municipality, North West Province. The site (Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ) is 14.9952 hectares in extent and is located to the south-east of Potchefstroom, east of the Baillie Park residential neighbourhood and north of the Turfvlei Agricultural Holdings. The applicant is Roelof Lodewikus Du Plessis.

Application for authorisation of the above project is to be submitted to the Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government (DEDECT), in terms of the National Environmental Management, 1998 (Act 107 of 1998), and the 2014 NEMA Environmental Impact Assessment (EIA) Regulations (as amended on 7 April 2017) promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324.

The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities that are listed in Government Notice Regulation (GN R.) No. 327, 325 and 324. Activities listed in these notices must comply with the regulatory requirements listed in GN R. 326, which prohibits such activities until written Authorisation is obtained from the Competent Authority. Such Environmental Authorisation (EA), which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations of 2017. GN R. No. 326 sets out the procedure and documentation that need to be compiled with undertaking a Basic Assessment Process.

2 THE BASIC ASSESSMENT PROCESS

In terms of Government Notice No. R. 326 of 7 April 2017, Appendix 1(1), the environmental outcomes, impacts and residual risks of the proposed activity must be set out in the basic assessment report.

In terms of Appendix 1(2) the objective of the basic assessment process is to, through a consultative process:

- Determine the policy and legislation context within which the proposed activity is located and how the activity complies with and conforms to the policy and legislative context;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Describe the need and desirability of the proposed alternatives;
- Through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on the geographical, physical, biological, social, economic, heritage and cultural sensitivity of the sites and locations within the sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
 - The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - The degree to which these impacts –
 - Can be reversed;
 - May cause irreplaceable loss of resources; and
 - Can be avoided, managed or mitigated.

- Through a ranking of the site sensitivities and possible impacts the activity and technological alternatives will impose on the sites and location identified through the life of the activity to:
 - Identify and motivate a preferred site, activity and technology alternative;
 - Identify suitable measures to avoid, manage or mitigate identified impacts; and
 - Identify residual risks that need to be managed and monitored.

In terms of Appendix 1(3) a basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include:

- Details of the EAP who prepared the report, and the expertise of the EAP, including a curriculum vitae;
- The location of the activity, including the 21 digit Surveyor General code of each cadastral land parcel, where available, the physical address and farm name (alternatively the coordinates of the boundary of the property or properties on which the activity is to be undertaken), coordinates of the activity on the property or properties and a map at an appropriate scale of the property on which the activity is to be undertaken clearly indicating the location of the activity on the property or properties;
- A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;

Or, if it is:

- A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken;
- On land where the property has not been defined, the coordinates within which the activity is to be undertaken;
- A description of the scope of the proposed activity, including:
 - All listed and specified activities triggered and being applied for, and
 - A description of the activities to be undertaken including associated structures and infrastructure.
- A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and have been considered in the preparation of the report; and how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;
- A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;
- A motivation for the preferred site, activity and technology alternative;
- A full description of the process followed to reach the proposed preferred alternative within the site including:
 - Details of all the alternatives considered;
 - Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;
 - A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;
 - The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which

- these impacts:
- Can be reversed;
 - May cause irreplaceable loss of resources;
 - Can be avoided, managed or mitigated.
- The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;
 - Description of the positive and negative impacts that the activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - The possible mitigation measures that could be applied and level of residual risk;
 - The outcome of the site selection matrix;
 - If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such, and
 - A concluding statement indicating the preferred alternatives, including preferred location of the activity.
- A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred development footprint on the approved site as contemplated in BAR through the life of the activity, including:
 - A description of all environmental issues and risks that were identified during the environmental impact assessment process; and
 - An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;
 - An assessment of each identified potentially significant impact and risk, including -
 - Cumulative impacts;
 - The nature, significance and consequences of the impact and risk;
 - The extent and duration of the impact and risk;
 - The probability of the impact and risk occurring;
 - The degree to which the impact and risk can be reversed;
 - The degree to which the impact and risk may cause irreplaceable loss of resources; and
 - The degree to which the impact and risk can be mitigated.
 - Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to the Regulations and an indication as to how these findings and recommendations have been included in the final report;
 - Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for inclusion in the EMPr;
 - Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;
 - A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;
 - A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
 - Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

- An undertaking under oath or affirmation by the EAP in relation to:
 - The correctness of the information provided in the reports;
 - The inclusion of comments and inputs from stakeholders and I&APs;
 - The inclusion of inputs and recommendations from the specialist reports where relevant; and
 - Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;
- Where applicable, details of any financial provision for the rehabilitation, closure, and Ongoing post decommissioning management of negative environmental impacts;
- Any specific information that may be required by the competent authority; and
- Any other matters required in terms of section 24(4)(a) and (b) of the Act.

The content of this report has been structured in accordance with the above referred to requirements that have been laid down for basic assessment reports in Appendix 1(3) of the 2014 EIA Regulations as amended.

3 DETAILS OF ENVIRONMENTAL SERVICE PROVIDER

3.1 Legislative requirements for environmental assessment practitioners

Section 13 of Government Notice No. R. 326 of 7 April 2017 provides the following requirements for environmental assessment practitioners (EAPs):

- An EAP must be independent;
- An EAP must have expertise in conducting environmental impact assessments or undertake specialist work as required, including knowledge of the Act, these Regulations and any guidelines that have relevance to the activity.
- An EAP must ensure compliance with these Regulations;
- An EAP must perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- An EAP must take into account, to the extent possible, the matters referred to in regulation 18 of Government Notice No. R. 326 of 7 April 2017 when preparing the application and any report, plan or document relating to the application; and
- An EAP must disclose to the proponent or applicant, registered interested and affected parties and the competent authority all material information in the possession of the EAP and, where applicable, the specialist, that reasonably has or may have the potential of influencing –
 - any decision to be taken with respect to the application by the competent authority in terms of these Regulations; or
 - the objectivity of any report, plan or document to be prepared by the EAP or specialist in terms of these Regulations for submission to the competent authority.

3.2 Details of the expertise of the relevant EAP

The members of Setala Environmental have combined expertise and a proven track record of initiating and completing major projects. We have experience of more than 15 years in EIA applications.

In order for the company to meet the emerging environmental challenges, Setala has assembled a team of professionals, consisting of a core of environmental experts with extensive experience in environmental assessments. The team includes environmentalists, various specialists, and public participation experts. A range of township development as well as linear projects including water pipelines and power lines, agricultural development, including dams have been successfully completed over the years as indicated in our Experience Record.

The team is especially proficient in assisting the Client in understanding and determining environmental responsibility, potential impacts and giving guidance as to alternative approaches or identifying unforeseen environmental impacts.

Areas of expertise:

- Environmental Impact Assessment (EIA)
- Strategic Environmental Assessments (SEA)
- Environmental Compliance (incl. ECO)
- Public participation
- Specialist studies (Fauna, Flora, Avifauna, Wetland)
- Water related expertise and services i.e. Water Use License Applications, Integrated Water and Waste Management Plans, water use, and water quality assessments.

Refer to Table 1 and *Appendix A* for EAP details and experience and *Appendix B* for Professional Registration of EAP.

TABLE 1: EAP DETAILS AND EXPERIENCE

| | |
|----------------------------|---|
| Company | Setala Environmental (Pty) Ltd |
| Contact Persons | Mientjie Coetzee |
| Postal Address | 44 Melrose Blvd Melrose Arch Johannesburg 2196 |
| Telephone | 083 253 2246 |
| Facsimile | 086 689 1515 |
| E-mail | mientjie@peopletexture.co.za |
| Qualification | Master of Science |
| Professional Registrations | EAPASA Registration number 2019/1774 IAIAsa Membership number 3359 |
| Experience | Mientjie Coetzee has 18 years' experience in the Environmental Sector and has gained experience as Environmental Assessment Practitioner and Project Manager working on a wide range of projects including residential, mixed land-use, industrial, roads and filling stations. Her primary skills include Environmental Screening Assessments, Environmental Impact Assessments (EIAs), Waste Management License Applications, Public Participation and Environmental Management Programmes (EMPrs). |

Setala Environmental (Pty) Ltd has no vested interest in the proposed development and hereby declares its independence as required by the EIA Regulations.

4 DESCRIPTION OF THE ACTIVITY

This application for Environmental Authorisation (EA) is for the construction of a proposed township, to be known as Baillie Park Ext 64 & Ext 65, and associated infrastructure.

A Township Establishment Application for the proposed Baillie Park X 64 & 65 had been submitted to the JB Marks Local Municipality by Townscape Planning Solutions. The project entails the township development consisting of the following land uses on a total footprint of 14.9952 hectares on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ.

Table 2: Proposed Land Uses

| Land use | Baillie Park X64 | | Baillie Park X65 | | Baillie Park X64 & X65 | |
|--------------------|------------------|---------------|------------------|---------------|------------------------|----------------|
| | No. erven | Area (ha.) | No. erven | Area (ha.) | No. erven | Area (ha.) |
| Residential 2 | 7 | 7.4796 | 5 | 4.4591 | 12 | 11.9387 |
| Private Open Space | 1 | 0.5220 | - | - | 1 | 0.5220 |
| Private Road | 1 | 0.1542 | - | - | 1 | 0.1542 |
| Private Road | 1 | 1.6189 | 1 | 0.5292 | 2 | 2.1481 |
| Public Road | 1 | 0.1635 | 1 | 0.689 | 2 | |
| Total | 11 | 9.9380 | 7 | 5.0572 | 18 | 14.9952 |

As indicated on the layout plan below the proposed Township will be developed in two (2) Phases. The layout plan is attached as *Appendix C* of the report.

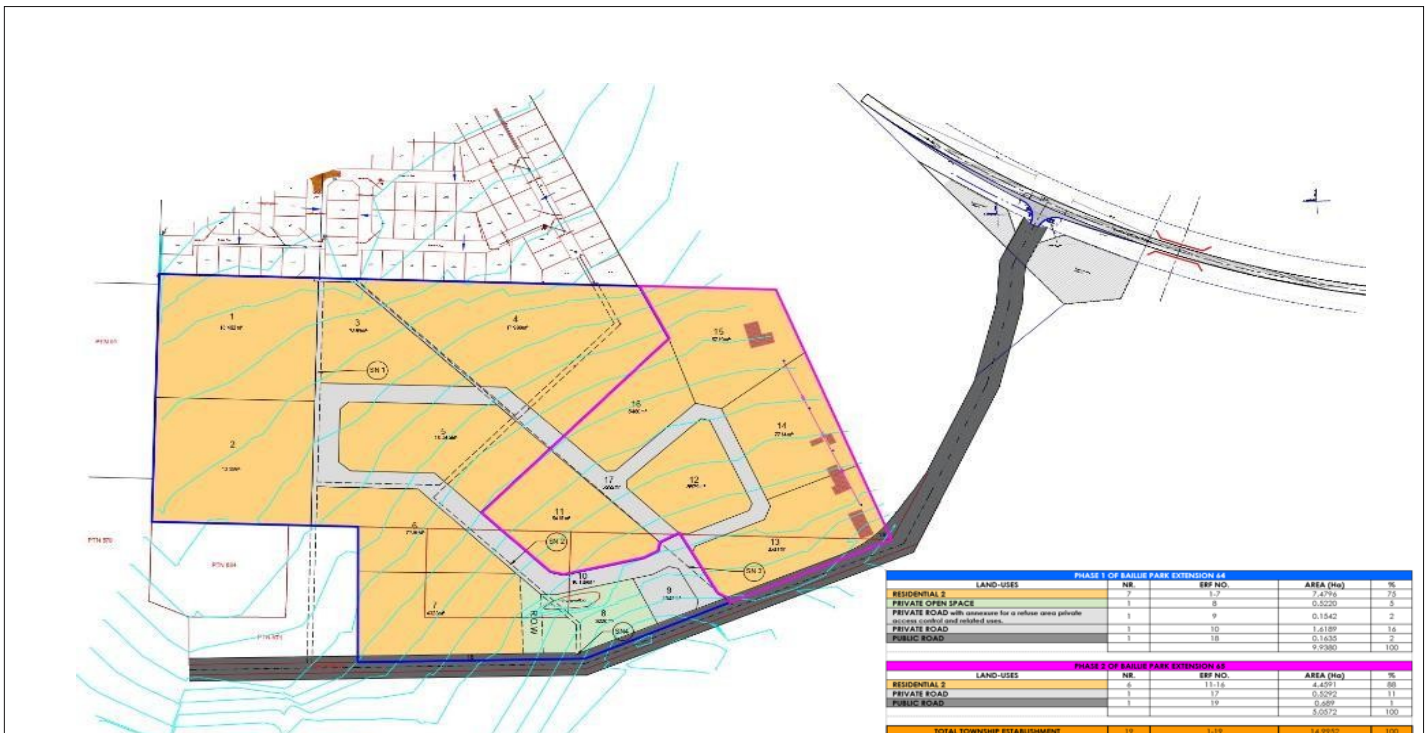


Figure 1 : Proposed Layout Plan

Engineering Services

A Civil Engineering Report was compiled by Ferrokon Civil Engineering Services. Refer to Appendix D(1) for the Civil Engineering Services Report.

The findings of the Bulk Engineering Services indicated the following:

Water

It is estimated that the development would have a household peak demand of 21.3 litre per second & a maximum daily usage of 251.3kl. Adequate bulk water, bulk water treatment and storage capacity for the proposed daily demand of the development is available. Water could be provided via the 375mm main feeder from the Vyfhoek Reservoirs. Water is currently provided to the site via a 250mm Upvc pipe from the Municipal network, located east of the site in the Modderdam road reserve. To complete the ring, the 250mm line could be extended to the south and then be connected eastwards to a 160mm Upvc pipe, located in Wynn Street.

Sewer

The current Bulk Sewerage Treatment Plant of Potchefstroom has been upgraded to accommodate future developments and currently still has 34% capacity for new developments. It is expected that the development would have a household peak effluent of 2.726 litre per second.

Sewer services are currently available at the south-eastern side of the Baillie Park Extension 36 (situated to the north-east), which is extended to accommodate the sewerage from Baillie Park Extension 54 (situated to the north), as well as overflow from the Thandi Street sewer pump station. This sewer service runs through the current development, which provides several connection points with the lowest point at a high of 1328.983m and would be of adequate capacity to accommodate the development.

In terms of the current pump station, the Botha Street pump station is currently required to pump 73% of the effluent of Potchefstroom. The upgrade of the pump station is currently in a Tender phase, which will benefit this development and future development in the area. Consequently, for the second phase of the development, a small pump station would be required to be constructed to accommodate the phase, as well as a small portion of the Baillie Park Extension 36 development.

Stormwater

The site's topography has a natural fall towards the south. Most of the storm water could be accommodated on the surface of the site and will naturally drain towards the Loopspruit and then eventually in the Mooirivier.

Furthermore, a new piped storm water drainage system will be installed over the site for the purpose of Baillie Park Extension 54 (located north of the site), which insures multiple connection points for the proposed development.

The proposed development is not affected by the 100-year flood line.

Roads & Access

Access to the site is available from the existing Wynn Street extension (to the west) to be further extended to the east to join the Modderdam road (D1208). The existing entrance of the Modderdam road could be

upgraded to the standards as specified by the North-West Road Department. Internal roads would be the responsibility of the owner.

Solid Waste Management

An average of 28.26m³ household refuse is expected by the proposed development. This additional refuse which will be caused by the development will not be of major influence on the current refuse generation in Potchefstroom and could therefore be easily spoiled at the existing JB Marks City Council dumping site. The refuse could be collected by the JB Marks City Council as a refuse removal route is available within the area and dumped at the dedicated JB Marks dumping site.

A dedicated closed off refuse area for cleaning and storage of bins will be made.

Electrical Services

An Electrical Services Report was compiled by Denobili Consulting. Refer to Appendix D(2).

The following is applicable to the site:

- The site is within the electrical supply region of the JB Marks Local Municipality.
- Estimated Maximum demand for the proposed township is 1.523 kVA.
- The proposed development falls within the supply area of the new 132/11kV CBD substation but this substation is limited in its supply area.
- The proposed development falls within the Malva SS 11kV master plan supply area.
- The masterplan is for Malva 11kV SS to supply three areas in the eastern side of Potchefstroom by way of three MV rings. The MV rings of Zone 1 and 3 have been established. This development falls within the second planned MV ring, which has not been established to date.
- No infrastructure is currently available in this area and infrastructure needs to be installed. A potential development to the east of this proposed development has also been established. This development could be critical in determining cable routes to supply this new development discussed in this report.

Proposed Bulk Supply

It is proposed that a new MV feeder (1x95mm², 3core, Al, PILC) is to be installed from Malva 11kV switching substation to supply the proposed Baillie Park X 64 & 65 and other developments and which the feeder ring will be closed in future adjacent developments.

Traffic Impact Assessment

Ferrokon Civil Engineering Services was responsible for the compilation of a Traffic Impact Statement. Refer to Appendix D(3). The proposed development of 315 units (allowable) on the surrounding road network were investigated. The traffic statement was prepared according to the requirements of the South African Traffic Impact and Site Traffic Assessment Manual.

It is expected that the proposed development will generate a total of 804 trips in the normal daily routine:

- 181 vehicles per hour is expected during the 2.5-hour peak duration.
- 408 will fall in the AM weekday peak hour & 408 in the PM weekday peak hour.
- Expected that most of the residents would travel north, towards the CBD.

These above-mentioned trips are expected to have a considerable impact on the surrounding road-network. It is essential that the new Wynn Street be constructed as a 7m paved road with kerbing on both sides to

accommodate the proposed traffic. The estimated capacity of the new Wynn Street comes to 975 vph with a road width of >6.0m at a design speed of 32km/h.

Access from the development to the new proposed Wynn Street should comply with the specification & guidelines of the JB Marks Local Municipality. The intersection of the extension of Wynn Street with the Modderdam road is to be constructed to the specifications of the North West Roads Department.

The sight distance of the development's access from the street would be at least 200m in a Northern Direction.

Bulk services to be extended as part of this development to accommodate further development in this area, in accordance with the SPLUMA master planning.

5 PROPERTY DESCRIPTION AND LOCALITY

The proposed project is located on Portions 64, 572 & 1171 of the farm Vyfhoek 428 IQ, JB Marks Local Municipality, North West Province. The site is located to the south-east of Potchefstroom, east of the Baillie Park residential neighbourhood and north of the Turfvlei Agricultural Holdings. The project is on the eastern side of the Wynne Street extension, and west of Modderdam road.

The proposed project is set out in the Location Maps below.

The Surveyor-general reference numbers for the portions are:

- TOIQ00000000042800064
- TOIQ00000000042800572
- TOIQ00000000042801171

Property co-ordinates: 26°43'15.07" South; 27°07'53.64" East.



Figure 2: Site Location



Figure 3: Site Location (Google Earth)

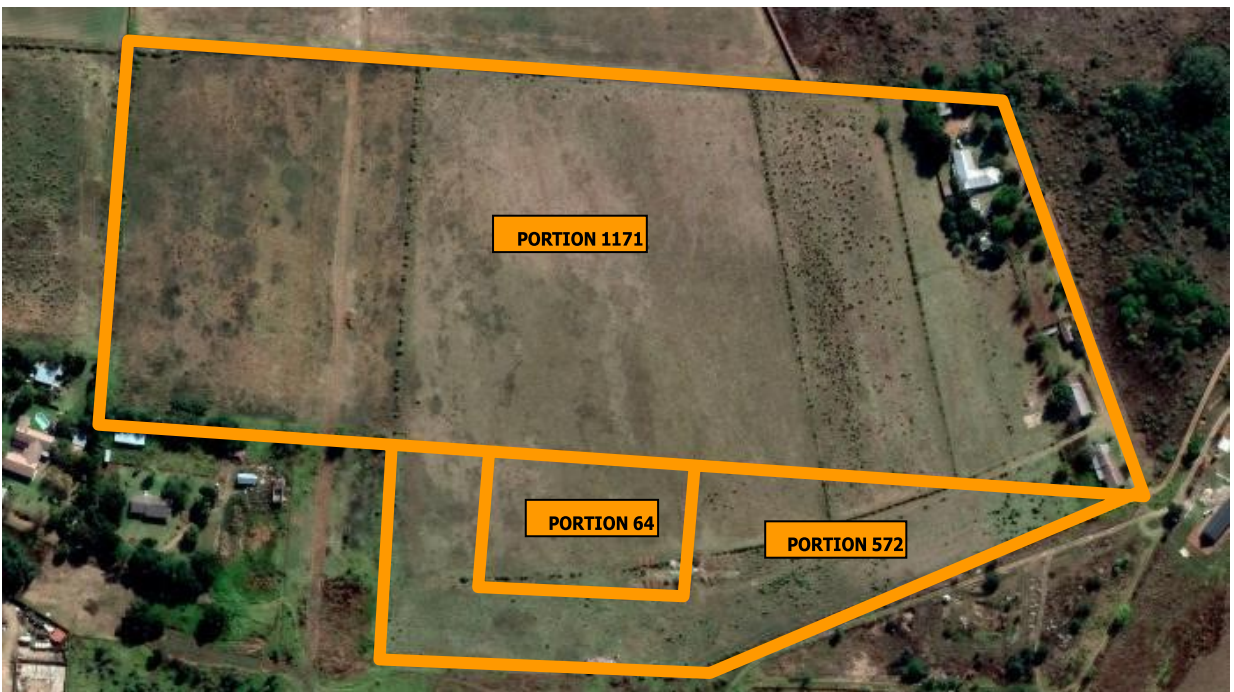


Figure 4: Illustration of the farm portions as part of the site

The property is currently zoned “Agricultural”.

There are currently existing outbuildings related to the agricultural land use and dwelling houses on the far eastern boundary of the site. The remainder of the site was previously utilised for cultivation, however the properties are no longer used as such. Currently, the site gains access via an access road which connects to the east with the Modderdam-road. *Refer to photographs of the site below.*

Photographs of the site



Photo 1: View of existing outbuildings



Photo 2: View of dwelling house



Photo 3: View to the North



Photo 4: View to the East



Photo 5: View to the South



Photo 6: View to the West

6 LEGAL AND OTHER REQUIREMENTS

6.1 Applicable Legislation, Policies and/or Guidelines

The National Environmental Management Act (Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations, of 2017

An application for authorisation of the project is submitted to the Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government (DEDECT), in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations of 2017.

The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities that are listed in Government Notice Regulation (GN R.) No. 327, 325 and 324. Activities listed in these notices must comply with the regulatory requirements listed in GN R. 326, which prohibits such activities until written Authorisation is obtained from the Competent Authority. Such Environmental Authorisation (EA), which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations of 2017. GN R. No. 326 sets out the procedure and documentation that need to be compiled with undertaking a Basic Assessment Process.

National Water Act (Act No. 36 of 1998)

The NWA provides for fundamental reformation of legislation relating to water resources and use. The preamble to the NWA recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users. In terms of the NWA, the national government, acting through the Minister of the DEA, is the public trustee of South Africa's water resources, and must ensure that water is protected, used, developed,

conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons. The Minister of the DEA is responsible to ensure that water is allocated equitably and used beneficially in the public interest, while promoting environmental values. The national government, acting through the Minister of the DEA, has the power to regulate the use, flow and control of all water in South Africa.

The most fundamental departure from the NWA is the removal of the concept of water as private property. Instead, water will be made available through user licences, which may be issued for a maximum period of forty years, subject to renewal. A priority of users has been established for the allocation of licences, with the environment near the top of the list of priorities.

Section 21 of the NWA indicates that “water use includes”:

- Taking water from a water resource;
- Storing water;
- Impeding or diverting the flow of water in a water course;
- Engaging in a stream flow reduction activity contemplated in section 36;
- Engaging in a controlled activity which has either been declared as such or is identified in section 37(1);
- Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- Disposing of waste in a manner which may detrimentally impact a water resource;
- Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
- Altering the bed, banks, course or characteristics of a water course;
- Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- Using water for recreational purposes.

Specified water uses, in section 21 of the NWA, must be licensed unless listed in Schedule 1; the continuation of an existing lawful water use; is permissible under a general authorisation issued under section 39 of the NWA, or if a responsible authority waives the need for a license.

No application required to be submitted to the Department of Water and Sanitation (DWS), for a water use authorisation in terms of the General Notice 509, Government Gazette 40229, dated 26 August 2016, “General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA)”.

The National Environmental Management Waste Act (No. 59 of 2008)

The National Environmental Management: Waste Act (No. 59 of 2008 (NEM:WA) serves to reform the law regulating waste management in order to protect human health and the environment. This is managed by providing reasonable measures for the prevention of pollution and ecological degradation. The NEM:WA aims to secure ecologically sustainable development while promoting justifiable economic and social development. The NEM:WA provides national norms and standards for regulating the management of waste by all spheres of government, for specific waste management measures and for matters incidental thereto. In terms of the NEM:WA the Minister of the DEA may publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.

Furthermore, the NEM:WA prohibits any person to commence, undertake or conduct a waste management activity except in accordance with the requirements or standards determined in terms of the NEM:WA for that activity or where a waste management licence (WML) has been issued in respect of that activity.

The Act, read together with the list of waste activities that have, or are likely to have, a detrimental effect on the environment (GN No. 921 of 29 November 2013) and the Amendments to the list of waste management activities that have, or are likely to have, a detrimental effect on the environment and determination of commencement date for the National Norms and Standards for organic waste composting (GN No. 1757 of 11 February 2022) as well as the National Norms and Standards for organic waste composting published under Government Notice No. 561 in Government Gazette 44762 of 25 June 2021, have been considered for purposes of potential relevance.

The proposed activity will not trigger any listed activities in terms of NEM:WA.

The National Environmental Management Air Quality Act (No. 39 of 2004)

The National Environmental Management: Air Quality Act (No. 39 of 2004) (NEM:AQA) allows for national, provincial and local air quality standards to be established as well as the declaration of priority areas. In addition the NEM:AQA requires that Air Quality Management Plans (AQMP) form part of the environmental implementation plan or environmental management plans to be prepared by national departments or the province as required by Chapter 3 of the NEMA. Furthermore the NEM: AQA requires municipalities to include an AQMP into its integrated development plan (IDP).

Key features of the NEM: AQA include:

- A decentralisation of air quality management responsibilities;
- The identification and quantification of significant emission sources that then need to be addressed;
- The development of ambient air quality targets as goals for driving emission reductions;
- The use of source-based (command-and-control) measures in addition to alternative measures, including market incentives and disincentives, voluntary programmes, and education and awareness;
- The promotion of cost-optimised mitigation and management measures;
- Air quality management planning by authorities, and emission reduction and management planning by sources; and
- Access to information and public consultation.

The overall objectives of the NEM:AQA include the following:

- The protection of the environment by providing reasonable measures for the protection of the quality of the air in the country;
- Protection of the environment by the prevention of air pollution and ecological degradation;
- Protecting the environment by securing ecologically sustainable development while promoting justifiable economic and social development; and
- To give effect to the constitution in order to enhance the quality of ambient air in order to secure an environment that is not harmful to the health and well-being of the people of South Africa.
- The NEM:AQA requires the Minister of the DEA to publish a list of activities which results

in atmospheric emissions which may have a detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions, ecological conditions or cultural heritage. The NEM:AQA requires that an Atmospheric Emissions Licence (AEL) be obtained for such listed activities. Such a list of activities was published in GNR 248 (31 March 2010).

The proposed activity will not trigger any listed activities in terms of NEM:AQA.

National Heritage Resources Act (Act No. 25 of 1999)

The National Heritage Resources Act (No. 25 of 1999) (NHRA) aims to protect heritage resources of national significance. The South African Heritage Resources Agency (SAHRA) was thus established in 1999 to fulfil the objectives of the NHRA. In terms of section 38 of the NHRA a heritage impact assessment (HIA) is required for any development or other activity which will change the character of the site:

- Exceeding 5 000m² in extent;
- Involving three or more existing erven or subdivisions thereof;
- Involving three or more erven or divisions thereof which have been consolidated within the past five years;
- The costs of which will exceed a sum set in terms of regulations by the SAHRA or a provincial heritage resource authority;
- The re-zoning of a site exceeding 10 000m² in extent;
- Any other category of development provided for in regulations by the SAHRA is a provincial heritage resource agency, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

During the site visit no heritage resources were identified. According to the owner, who had been staying on the property for 28 years, there are no heritage resources, tombstones or graves on the property.

National Forests Act (Act No. 84 of 1998)

The project might involve the cutting, disturbing, damaging or destroying of protected trees declared in terms of section 12 of the National Forest Act (NFA) (Act 84 of 1998), as amended.

No protected tree species are present on the study site.

6.2 National Environmental Management Act

In the South African legislative framework, the National Environmental Management Act No. 107 of 1998, as amended (NEMA) regulates development activities, which may pose a risk to the integrity of the ecological and human environment. Coupled with NEMA, listed activities are provided, which describe the types, limits, expanse and nature of developments that require a Basic Environmental Assessment Process, in application for Environmental Authorisation prior to commencement.

The following construction activities will require Environmental Authorisation:

The confined listed activities for the proposed project are the following:

Table 3: Listed Activities

| Listed Activity | Activity/Project Description |
|---|--|
| <p><u>GN R. 327/2017</u> <u>Listing Notice 1 Activity 27</u> 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—</p> <p>(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p> | <p>The project entails the township development, to be known as Baillie Park Ext 64 & Ext 65, on a total footprint of <u>14.9952 hectares</u> of Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ.</p> |
| <p><u>GN R. 327/2017</u> <u>Listing Notice 1 Activity 28</u> Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares. (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare.</p> | <p>The project entails the township development, to be known as Baillie Park Ext 64 & Ext 65, on a total footprint of 14.9952 hectares of Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ. The property was previously used for <u>agricultural purposes</u>.</p> |

7 NEED AND DESIRABILITY¹

7.1 Need

- Trends and tendencies have shown that there is a great need in Potchefstroom for additional housing. Through the establishment of the proposed township, the current housing market will be enhanced and diversified.
- The proposed site is still zoned as “Agricultural” land, but is currently surrounded by residential townships, similar to the development proposed in this application.
- According to the Tlokwe SDF (2015), it is proposed that several new residential townships be developed in the area of the application site. The owner of the properties thus identified the potential of the properties to be utilised as a residential township and specifically the need for higher density housing in a secured complex.
- The proposed development can be seen as a natural extension of the existing and planned residential area of Baillie Park. The surrounding area is transitioning to include more residential uses and farming activities have decreased significantly in the area.
- The approval of the proposed township will create employment opportunities during the construction phase of the development.
- The provision of housing on existing plots within the urban edge is encouraged as it discourages urban sprawl and better utilises existing infrastructure. The site will therefore be optimally used if converted into a residential development.

¹ Information obtained from Township Establishment Application by Townscape Planning Solutions

- The proposed development will provide the Council with a higher income from the services and property tax since more people will be making use of the services of the Council after the approval of this proposed township.

7.2 Desirability

- The development site is ideally located within the Urban Edge as it is adjacent to existing residential townships, in an area earmarked for residential development. The development will therefore act as an extension of the Baillie Park area.
- The area is well located in terms of complementary services.
- The neighbourhood is very accessible, with adequate street capacity (from the extension of Wynn Street) to accommodate the proposed development.
- The development will gain sufficient access from the extension of Wynn Street.
- The topography of the site is ideal for residential development.
- The surrounding area will not be negatively affected by the township establishment, due to the residential nature (existing and proposed) of surrounding land uses.
- Sufficient bulk infrastructure is available in the area to accommodate the proposed development.
- The proposed development complies with development guidelines contained in Local legislation i.e. Tlokwe City Council Spatial Development Framework (SDF), 2015 and Land Use Management Framework, 2010 of the Tlokwe City Council.
- The site is not regarded as ecologically sensitive.
- No cultural significance exists on site.

8 ALTERNATIVES

8.1 Introduction

“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 take place;
- (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.

The following alternatives were investigated:

a) Site alternatives

| Site Alternatives | Description |
|---------------------------------------|--|
| Alternative Site 1 (only alternative) | Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, JB Marks Local Municipality, North West Province |
| Alternative Site 2 | No site alternatives were considered as this is the only site available to the applicant |

b) Activity alternatives

| Activity Alternatives | Description |
|---------------------------------------|--|
| Alternative 1 (preferred alternative) | Establishment of a residential development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province. |
| Alternative 2 | Establishment of an industrial development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province. |

c) No-Go alternative

Should this option be implemented, the “status quo” will prevail and none of the advantages listed below will realize.

8.2 Motivation for the preferred alternative

Preferrred Alternative

Activity Alternative 1: Establishment of a residential development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province

The proposed residential development complies with development guidelines contained in Local legislation i.e. Tlokwe City Council Spatial Development Framework (SDF), 2015 and Land Use Management Framework, 2010 of the Tlokwe City Council.

The site is located within the urban edge of the Municipality and is located within an area that has been earmarked for residential development. The site is situated in an area that is transitioning to include more residential uses and farming activities have decreased significantly in the area. There is a great need in Potchefstroom for additional housing and the proposed residential development will enhance and diversify the current housing market.

The proposed development can be seen as a natural extension of the existing and planned residential area of Baillie Park. The provision of housing on existing plots within the urban edge is encouraged as it discourages urban sprawl and better utilises existing infrastructure. The site will therefore be optimally used if converted into a residential development.

The area is well located in terms of complementary services and is very accessible. Sufficient bulk infrastructure is available in the area to accommodate the proposed development.

The surrounding area will not be negatively affected by the township establishment, due to the residential

nature (existing and proposed) of surrounding land uses.

Activity Alternative 2: Establishment of an industrial development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province.

This alternative will not be acceptable as the area is located within an area that has a residential and agricultural character. The increased noise and possible emissions associated with this alternative has rendered it unfeasible and therefore it is recommended that Alternative 1 be implemented.

Alternative 3: No-Go alternative

The no-go alternative will entail that the status quo will remain.

None of the advantages associated with the proposed residential development will realize should the no-go option be implemented. The no-go option is therefore not regarded as a viable alternative.

9 DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED BY THE PROPOSED DEVELOPMENT

9.1 BIO-PHYSICAL

9.1.1 GEOLOGY AND SOIL

A Geotechnical investigation was conducted by Plancentre in accordance with the current SAIEG/ SAICE code of practice. *Refer to Appendix D(4)*. The results of the Geotechnical investigation:

- The soils encountered pose no significant geotechnical and planning problems.
- No underlying dolomite were found on the site.
- The majority of the area is characterised by a $\pm 0.5\text{m}$ brown, medium dense, silty, sandy, transported soil, which overlays orange, brown, variably lateralised, dense, slightly clayed, sand soil. This soil is well graded but have relatively **poor agricultural potential**.
- No potential soil movement are anticipated from either the transported or residual materials.
- Finally, no negative geotechnical impacts are present at the site & the site would be suitable for the proposed Residential 2 development.
- It is recommended that conventional strip foundation and servicing be utilised.

9.1.2 TOPOGRAPHY

The site is located within the basin of the Modder River at an average elevation of around 1300m. The site slope towards the southeast – towards the Loopspruit (a tributary of the Modder River). No distinct subsidiary drainage feature is present on the study area.

9.1.3 CLIMATE

The site is situated on the boundary between the medium (401 mm – 600 mm per annum) and the medium / high (601 mm – 800 mm per annum) rainfall regimes and in the Cold Interior Climatic Zone of South Africa. The site has the same climate and rainfall as that of Central Potchefstroom, which receives an average annual rainfall of around 607 mm (www.weatherbase.com). The site is within the summer rainfall region of the country where the summers are warm to hot and the winters are cold to very cold

and very dry. The winter days tend to warm up and typically have clear, blue skies. Frost is common during the winter months.

9.1.4 FAUNA AND FLORA

Refer to Biodiversity Impact Assessment Report (*Appendix D(5)*).

Vegetation

The study site is situated within the original extent of Rand Highveld Grassland, which is a threatened veldtype / ecosystem with a status of 'Vulnerable'. However, the vegetation on the site has been transformed and altered due to years of ploughing, cultivating, harvesting and mowing of open cultivated and farmland fields. These farming activities have resulted in only a few common locally indigenous grasses emerging and growing during times when the fields were left fallow. The vegetation of the study site cannot be considered that of Rand Highveld Grassland. There are also no areas or patches of pristine, or even fair condition, highveld grassland present.

Species observed included: *Cynodon dactylon*, *Digitaria monodactyla*, *Heteropogon contortus*, *Setaria spachelata*, *Themeda triandra*, *Eragrostis curvula*, *Hyparrhenia hirta*.

Alien plant species found on site included: *Argemone ochroleuca*, *Bidens pilosa*, *Conyza canadensis*, *Tagetes minuta*, and *Verbena bonariensis*.

No priority species were observed during site investigations, including red data listed (RDL) and orange data listed (ODL) species.

No protected tree species are present on the study site.

Fauna

Mammals

No large- or medium-sized mammals were observed during field investigations. Small mammals, mostly rodents, are present in the general area and study site, including common small field mice and other rodents such as rock mouse (*Aethomys namaquensis*), striped mouse (*Rhabdomys pumilio*), multimate mouse (*Mastomus natalensis*) and bushveld gerbil (*Tatera leucogaster*). Evidence was also found of scrub hare (*Lepus sacatilis*) and possibly yellow mongoose (*Cynictis penicillata*). The study site is within the distribution range of slender mongoose (*Galerella sanguinea*), however they require adequate cover which is lacking in the area and therefore will be scarce, if present.

Avifauna

The study site is not within an Important Bird Area (IBA) and there are no IBAs within a 100km radius of the study site. A number of common bird species are present in the area, but species of conservation concern (SCC) / priority species are scarce to absent. There are also no ideal habitats on the study site for the permanent nesting and breeding of most avifauna SCC.

Reptiles

The study area is not within any snake hotspot or a lizard hotspot. Lizards tend to prefer rocky habitats and there are no rocky outcrops (koppies), rocky ridges or areas of large rock sheets within the study

area. The likelihood is rare that any priority snake species or lizard species will be present in the study area.

Due to the openness of agricultural holdings and the nearby stream a number of common snake species can be expected.

Invertebrates

Invertebrates such as spiders, scorpions and butterflies are important faunal groups, but are difficult to fully assess in a short time period. During field investigations specific attention was given to priority species such as Mygalomorphae arachnids (Trapdoor and Baboon spiders) and red data butterflies.

The study area is not within any butterfly hotspot.

Watercourses

There are no watercourses on the study site. This includes perennial rivers, seasonal streams, seasonal drainage lines and wetlands. The closest river is the Loopspruit (Loop Stream), which is between 170m and 180m east and southeast of the outer boundary of the study site. The Loopspruit flows in a southwesterly direction and into the Mooi River.

The study site is very flat with a slight downward gradient towards the Loopspruit, so during periods of heavy rainfall there is surface stormwater run-off across the site. This leads to some areas of prolonged wetness on the site, but this is seen as normal stormwater run-off and is not a drainage line nor a wetland area.

Strategic water source areas (SWSA) of South Africa

The study site is not situated within any Strategic Water Source Areas of South Africa (SWSA).

Ecological Sensitivity Analysis

The ecological sensitivity of the study area is determined by combining the sensitivity analyses of both the floral and faunal components. The highest calculated sensitivity unit of the two categories is taken to represent the sensitivity of that ecological unit, whether it is floristic or faunal in nature (Table 4).

Table 4: Ecological Sensitivity Analysis

| Ecological community | Floristic sensitivity | Faunal sensitivity | Ecological sensitivity |
|----------------------|-----------------------|--------------------|------------------------|
| Farmlands | Low | Medium / Low | Medium / Low |
| Watercourses | Medium | Medium | Medium |

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

In reality the biodiversity / ecological sensitivity of the Loopspruit is only ‘medium’, as shown in the above assessment. However, watercourses are, by default, viewed and approached as sensitive, even if badly degraded or polluted. The Loopspruit should therefore be seen as having a default sensitivity of ‘high’.

Screening Tool Desktop Assessment

The Department of Forestry, Fisheries and the Environment (DFFE) (Previously DEFF and DEA) has development a desktop screening tool that is to be used as a guideline in an initial desktop screening (assessment) of a project site (www.screening.environment.gov.za). The screening tool incorporates most datasets produced by DWS, DFFE, SANBI and Provincial Conservation Plans. However, it is important

to keep in mind that the screening tool is a broad, desktop guideline that needs to be verified during site investigations (ground truthing). Depending on the levels of sensitivity shown in the screening assessment certain criteria in terms of assessments, studies, etc. can be required by relevant authorities.

According to the screening tool (accessed March 2022) the various theme sensitivities for the study site and immediate surroundings are as follows:

- Terrestrial biodiversity theme: Mostly very high with some patches of low sensitivity.
- Aquatic biodiversity theme: Very high sensitivity.

During site investigations the screening tool assessments, which is only a desktop assessment, were ground-truthed. It was found that the assessments were inaccurate and that the Aquatic and Terrestrial sensitivities for the study site an surrounding area are not 'very high' but in fact low and medium.

The area is high levels of agricultural farming and cultivating of lands, which has totally transformed and altered the area over a period of decades. Furthermore, even built up areas such as Baillie Park to the immediate west is demarcated as having terrestrial and aquatic sensitivities of 'very high' which is not the case for this completely built-up urban township area.

The sensitivities were found to be as follows for the actual study site:

- Terrestrial biodiversity theme: Low sensitivity.
- Aquatic biodiversity theme: Low sensitivity.

Priority areas

The study area does not fall within any priority areas (Figure 5).

Priority areas include formal and informal protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy (NPAES) areas.

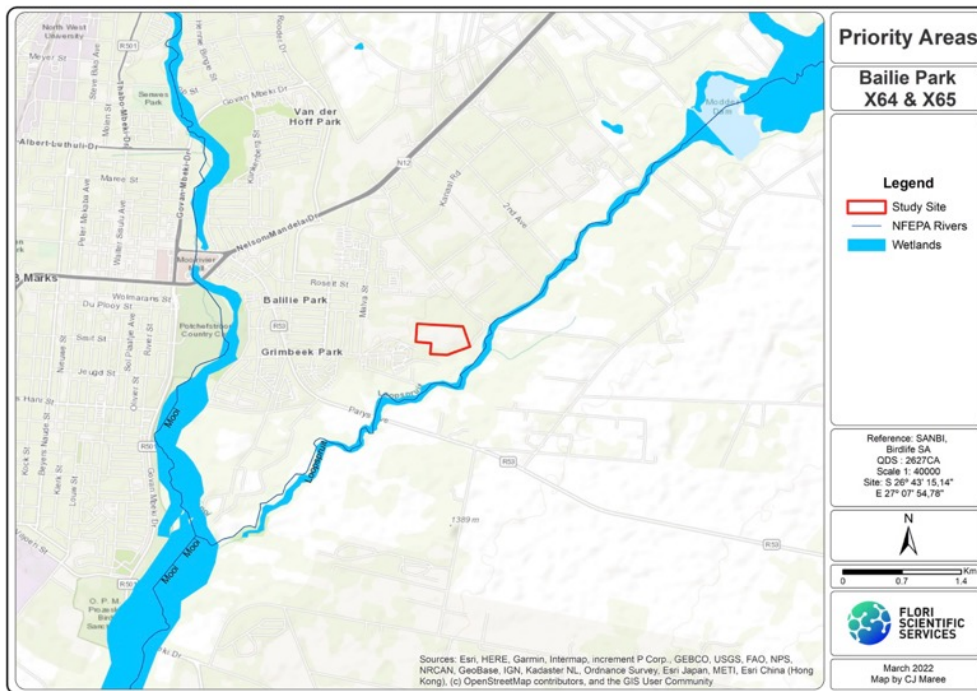


Figure 5: Priority areas

Critical Biodiversity Areas and Ecological Support Areas

According to North West Province’s Biodiversity Sector Plan (2015) the study site is not within a demarcated Critical Biodiversity Area (CBA) or an Ecological Support Area (ESA) (Figure 6, Figure 7).

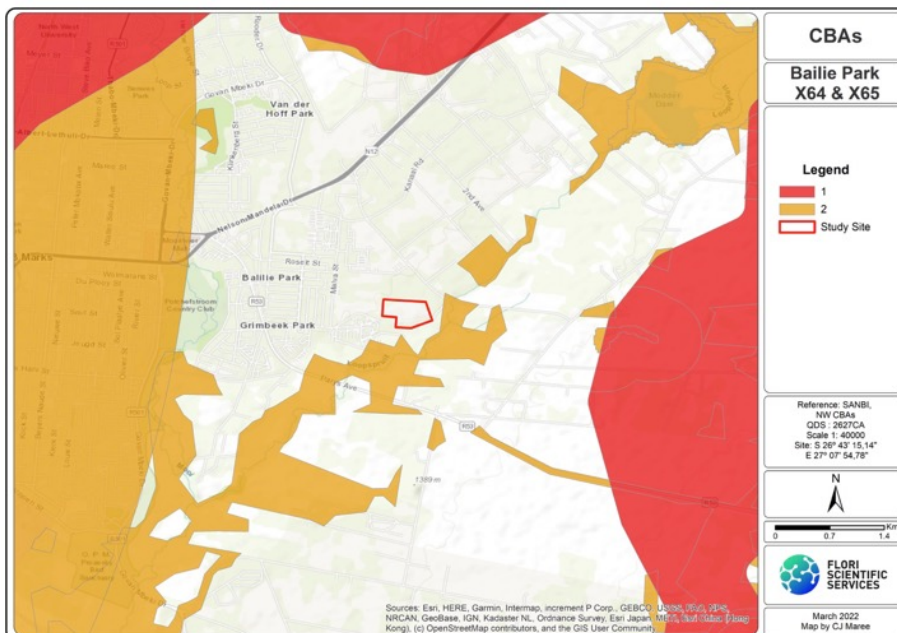


Figure 6: CBAs

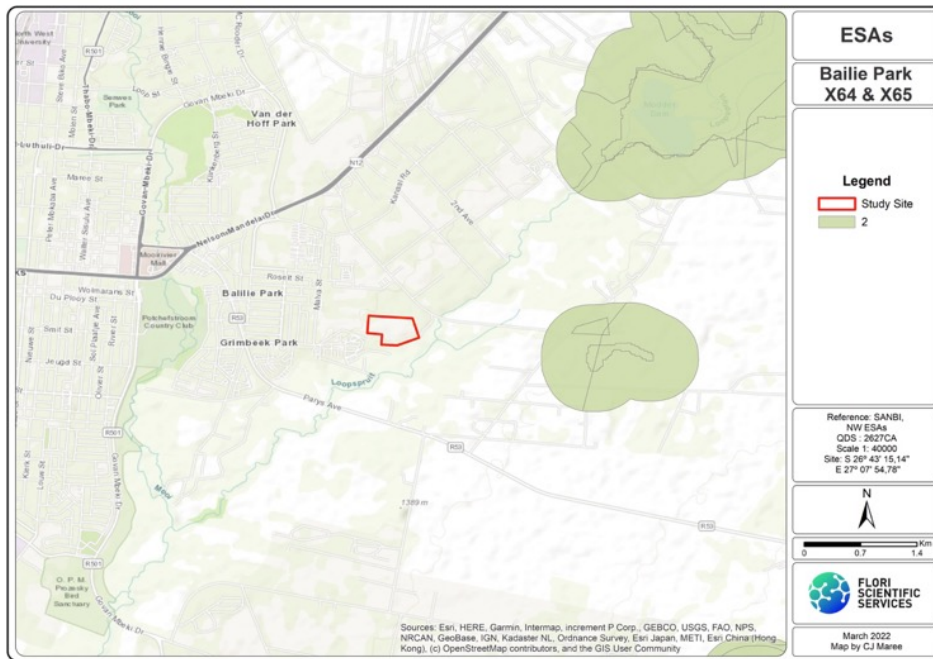


Figure 7: ESAs

Sensitive areas identified during the field investigations

No 'high' sensitive areas were identified within the study area. The nearby Loopspruit is a 'high' sensitivity area, but the proposed project will have no to little impact on this stream. Figure 8 below, shows the sensitivity map for the study site.



Figure 8: Sensitivity Map

There are no obvious fatal flaws and the project should be allowed to proceed.

Impact Assessment

Existing Impacts

The largest existing impacts on the area are the increasing levels of urbanisation, and ongoing farming practices such as cultivation and irrigation. In both instances there is extensive loss of natural vegetation and habitat.

Potential Impacts

The project and related activities are medium negative impacts on the study site and medium impacts on the larger region. Impacts include the typical and standard impacts that accompany most township developments, such as loss of natural vegetation and loss of faunal habitat along with loss of actual fauna. The impacts are seen as medium because although there will be loss of vegetation and habitat, most of these natural elements have already been lost by the historical farming activities on the study site. The site is already low in terms of natural habitats and richness of fauna and flora. If the biodiversity was higher on the study site and surrounding areas then the impacts would have been high and not medium.

Table 5: Assessment of Potential Impacts (Ecological)

| Potential Impacts arising from Project | Phase of Project | Impact Rating (Low: <30; Moderate: 31-59; High: >60) | | | | | |
|--|--|---|---------------|--------------|-------------|-------|-----------------|
| | | Total Impact of Proposed Project | | | | | |
| | | Extent | Duration | Magnitude | Probability | Total | Significance |
| | Construction Phase: Pre-mitigation | Local (2) | Long-term (4) | High (8) | High (4) | 56 | Moderate |
| | Construction Phase: Post mitigation | Site (1) | Long-term (4) | Moderate (6) | Medium (3) | 33 | Moderate |
| Mitigating Measures | 1. Impacts on the existing natural environment related to the project are ' MODERATE ' 2. Any temporary storage, lay-down areas or accommodation facilities to be setup in the study site area (property) itself. 3. Ensure a small footprint during construction phase. 4. All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment; 5. All excess materials brought onto site for construction must be removed after construction. 6. No open trenches or mounds of soils to be left. 7. A rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase of the project. This includes access roads and temporary laydown / site office areas. 8. Site specific stormwater management plan is required. 9. No water may be used from out of the Loopspruit for construction purposes. 10. Under no circumstances may building rubble be dumped in the nearby open veld – not even temporarily. All rubble to be taken to an officially registered dumpsite. | | | | | | |

| Cumulative Effect of Project on Terrestrial Ecology | After construction and during operational phase | Site (1) | Long-term (4) | Moderate (6) | Medium (3) | 33 | Moderate |
|--|--|-----------|----------------|--------------|-------------|-------|-----------------|
| Cumulative Effect of Project on Aquatic ecology | After construction and during operational phase | Site (1) | Long-term (4) | Low (4)) | Medium (3) | 27 | Low |
| Individual Impacts | | | | | | | |
| | | Extent | Duration | Magnitude | Probability | Total | Significance |
| 1. Loss of natural vegetation | Construction Phase: Pre-mitigation | Site (1) | Long-term (4) | Moderate (6) | Medium (3) | 33 | Moderate |
| | Construction Phase: Post mitigation | Site (1) | Long-term (4) | Low (4)) | Medium (3) | 27 | Low |
| Mitigating Measures | 1. There are no protected trees or other RDL plant species on site. 2. Any priority species encountered must be identified and rescue prior to any excavation or construction activities. However, it is unlikely that any are present within the study site or the road and road reserve. 3. A weed control programme should be implemented. This can form part of the routine maintenance programme for the road. 4. A site-specific rehabilitation plan is required for the project. | | | | | | |
| 2. Loss or impact on wildlife | Construction Phase: Pre-mitigation | Site (1) | Long-term (4) | Moderate (6) | Medium (3) | 33 | Moderate |
| | Construction Phase: Post mitigation | Site (1) | Long-term (4) | Minor (2) | Medium (3) | 27 | Low |
| Mitigating Measures | 1. Care must be taken not to interact directly with any wild life encountered. 2. Any bird nests encountered in the grass or trees must not be interfered with. If encountered must first be discussed with specialist as how best to proceed. This also applies to any active animal burrows encountered. 3. No snakes encountered may be killed. A specialist must be called in and/or the issue must be brought to the attention of the ECO. | | | | | | |
| 3. Impeding & Impounding waterflow | Construction Phase: Pre-mitigation | Local (2) | Short-term (2) | Low (4) | Low (2) | 16 | Low |
| | Construction Phase: Post mitigation | Site (1) | Short-term (2) | Minor (2) | Low (2) | 10 | Low |
| Mitigating Measures | 1. There are no watercourses on site. 2. Site specific stormwater management plan is required, which is a basic condition of township developments. | | | | | | |
| 4. Altering flow of a watercourse | Construction Phase: Pre-mitigation | Site (1) | Short-term (2) | Minor (2) | Low (2) | 10 | Low |

| | | | | | | | |
|---|--|-----------|----------------|--------------|------------|----|------------|
| | Construction Phase: Post mitigation | Site (1) | Short-term (2) | Minor (2) | Low (2) | 10 | Low |
| Mitigating Measures | 1. No watercourse crossings are envisioned for the construction phase or operation phase of the project. Hence, no altering of watercourses, impeding or impounding or watercourses. | | | | | | |
| 5. Siltation and erosion | Construction Phase: Pre-mitigation | Local (2) | Short-term (2) | Moderate (6) | Medium (3) | 30 | Low |
| | Construction Phase: Post mitigation | Site (1) | Short-term (2) | Minor (2) | Low (2) | 10 | Low |
| Mitigating Measures | <p>1. All mitigating measures above have reference to siltation and erosion.</p> <p>2. Careful monitoring during the construction phase is essential to locate and mitigate any erosion observed. Investigations must be conducted after every rain downpour. Any problems need to be rectified immediately to avoid the problem escalating.</p> <p>3. All work areas must be monitored at all times and maintained.</p> | | | | | | |
| 6. Fringe impacts arising from construction phase | Construction Phase: Pre-mitigation | Site (1) | Short-term (2) | Moderate (6) | Medium (3) | 27 | Low |
| | Construction Phase: Post mitigation | Site (1) | Short-term (2) | Minor (2) | Low (2) | 10 | Low |
| Mitigating Measures | <p>1. Due to the nature of the project the potential for any significant fringe impacts can be medium, but with proper mitigating measure and routine maintenance and upkeep of the site, fringe impacts will be low.</p> <p>2. Care must be taken with heavy machinery used on the project. All access roads used during construction must be monitored and maintained.</p> <p>3. Soils and stones excavated may be used on site as backfill, fixing of roads, filling of dongas, etc.</p> <p>4. Excavated soils and rocks may not be simply dumped in any open veld or even on site.</p> <p>5. All temporary access roads, laydown areas, temporary camps, site offices, etc. must be fully rehabilitated by the contractors prior to final signing off of the construction phase of the project.</p> <p>6. Care must be taken not to negatively impact on the Loopspruit (stream) south of the project area. Any fringe impacts arising during construction, such as siltation, rubble dumped in the area, etc. must be addressed immediately and may not be left to the rehabilitation stage after completion of construction.</p> | | | | | | |

Conclusions

- The study site is within the original extent of Rand Highveld Grassland. However, the study site has been cultivated and work over the years and there is no pristine or good condition highveld grassland ecosystem present on site. The vegetation is mostly altered with some areas that have been transformed.
- The veldtype / ecosystem is threatened with a status of ‘Vulnerable’.
- There are no watercourses on site, including wetlands.
- The study site is not within any priority areas, which include important birds areas (IBAs) and protected areas.

- The study site is not within any demarcated CBAs or ESAs.
- No fauna or flora species of conservation concern (SCC) were observed on the study site.
- Site investigations were conducted during the summer (wet) season of the region and the findings and availability of field data is sufficient to reached acceptable findings and outcomes from the assessment.
- There are no obvious fatal flaws in terms of the natural environment.
- Taking all findings and recommendations into account it is the reasonable opinion of the author / specialist that the activity may be authorised. The project and related activities may proceed to the next phase.

Recommendations

- Recommended mitigating measures as proposed in this study and report should be implemented if the findings of this report are to remain pertinent.
- There is no need for any buffer zones.
- A site-specific rehabilitation plan, which must include a weed control plan, must be compiled for the project.

9.2 SOCIO-ECONOMIC

9.2.1 Existing Zoning and Land Use

The site is currently zoned “Agricultural” according to the Tlokwe Town Planning Scheme, 2015. There are currently outbuildings related to the agricultural land-use & dwelling houses on the far eastern boundary of the site. The remaining part of the site was previously utilised for cultivation, however, the properties are not anymore utilised for such.

9.2.2 Surrounding Land Uses²

The site is located in an area transforming from agricultural land to residential townships, as extensions of the Baillie Park Residential Neighbourhood. Figure 9 illustrates that several recently developed residential areas could be found within a 700m-radius of the site. The following township establishments for residential purposes are found within proximity of the site (illustrated in the figure 9 below):

1. Baillie Park Extension 35 – “Gracia”.
2. A portion of Baillie Park Extension 35 – “Panorama”
3. A portion of Baillie Park Extension 47 – “Winfield Estate”.
4. Agricultural land
5. Agricultural land
6. Proposed Baillie Park Extension 35
7. Proposed Baillie Park Extension 54 – “Birchwood Country Estate”
8. A portion of Baillie Park Extension 26 – “Die Wilger”.

² Information obtained from Township Establishment Application by Townscape Planning Solutions

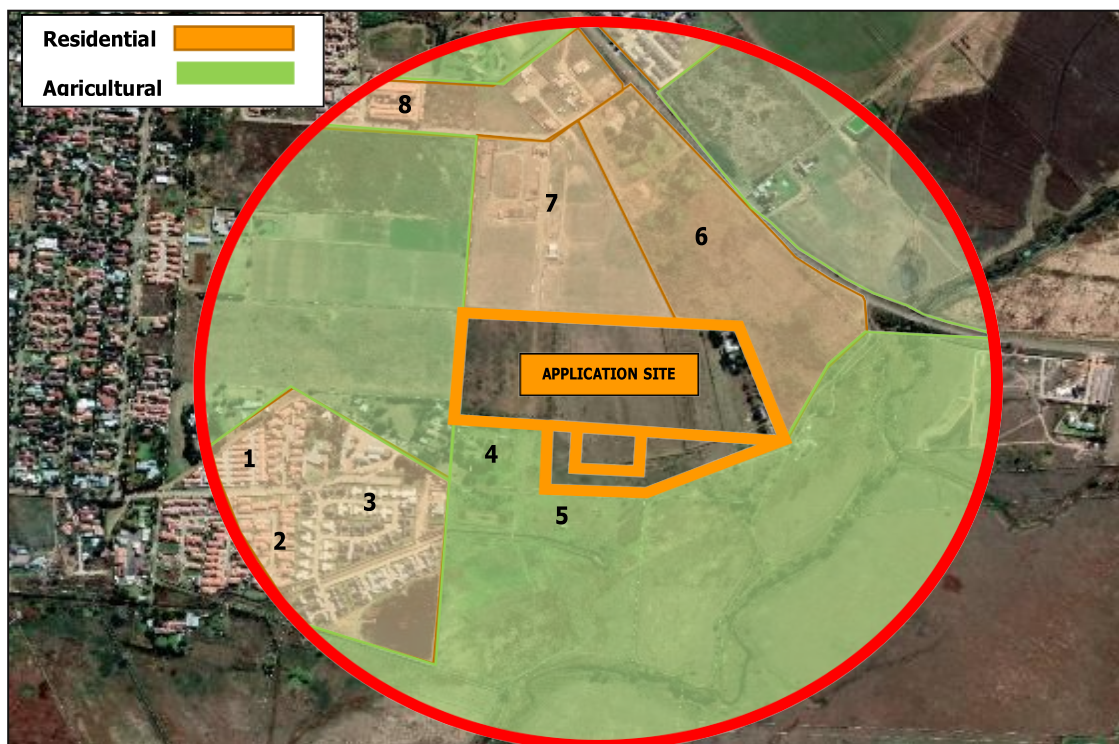


Figure 9: Surrounding Pland Uses

No cultural heritage (archaeological and/or historical) sites, features, graves/tombstones and material resources were identified in the site during the field assessment. This was confirmed by the owner who had been staying on the property for 28 years.

The area had been utilized in the past for agricultural purposes (ploughing/crop growing) and as a result has been cleared and disturbed extensively over the years. It is not envisaged that the proposed development will significantly affect the cultural characteristics of the immediate environment.

It should be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including stone-packed or unmarked graves) should also be taken into consideration. In the event of uncovering any material of archaeological or cultural significance, all further construction work must be stopped until an Archaeologist had investigated the material and has given approval for the work to be continued. No archaeological material may be removed from the site without prior approval from the Archaeologist. Should any human remains be unearthed during construction, construction must stop immediately and the South African Heritage Resources Agency (SAHRA) be notified.

10 ENVIRONMENTAL IMPACT ASSESSMENT

The potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. It is evident that the biggest impact of the project on the environment is expected to occur during the construction phase. It

is expected that with the proposed mitigation of impacts and the implementation of the Environmental Management Programme, the expected negative impact could be mitigated to acceptable measures.

SIGNIFICANCE DESCRIPTION METHODOLOGY

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

- (a) Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity.
- (b) Extent: The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale;
- (c) Duration: Indicates what the lifetime of the impact will be;
- (d) Intensity: Describes whether an impact is destructive or benign;
- (e) Probability: Describes the likelihood of an impact actually occurring; and
- (f) Cumulative: In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

TABLE 6 CRITERIA TO BE USED FOR RATING OF IMPACTS

| Criteria | Description | | | |
|---------------------------|--|--|---|---|
| Extent | National (4) The whole of South Africa | Regional (3) Provincial and parts of neighbouring provinces | Local (2) Within a radius of 2 km of the construction site | Site (1) Within the construction site |
| Duration | Permanent (4) Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient | Long-term (3) The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory | Medium-term (2) The impact will last for the period of the construction phase, where after it will be entirely negated | Short-term (1) The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase |
| Intensity | Very High (4) Natural, cultural and social functions and processes are altered to extent that they permanently cease | High (3) Natural, cultural and social functions and processes are altered to extent that they temporarily cease | Moderate (2) Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way | Low (1) Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected |
| Probability of occurrence | Definite (4) | Highly Probable (3) | Possible (2) | Improbable (1) |

| | | | | |
|--|-----------------------------|--|----------------------|--|
| | Impact will certainly occur | Most likely that the impact will occur | The impact may occur | Likelihood of the impact materialising is very low |
|--|-----------------------------|--|----------------------|--|

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

TABLE 7: CRITERIA FOR THE RATING OF CLASSIFIED IMPACTS

| | |
|---|--|
| Low impact (4 - 6 points) | A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure. |
| Medium impact (7 - 9 points) | Mitigation is possible with additional design and construction inputs. |
| High impact (10 - 12 points) | The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment. |
| Very high impact (13 - 20 points) | Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw. |
| Status | Denotes the perceived effect of the impact on the affected area. |
| Positive (+) | Beneficial impact. |
| Negative (-) | Deleterious or adverse impact. |
| Neutral (/) | Impact is neither beneficial nor adverse. |
| It is important to note that the status of an impact is assigned based on the status quo – i.e. should the project not proceed. Therefore not all negative impacts are equally significant. | |

Description and comparison of the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the planning & design, construction and operation phases for the various alternatives of the proposed development.

10.1 PLANNING AND DESIGN PHASE

| ALTERNATIVE 1 (PROPOSAL) (Residential Development) | | | |
|---|--|---|---|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation |
| <p>Impact on the Natural Habitat</p> <p><u>Layout</u> Insensitive layout can cause a negative impact on the natural habitat of not only the site itself, but also on the surrounding natural environment. The context of the development site within the macro area in terms of conservation areas also plays a major role when suitable areas for development are being</p> | <p>NEGATIVE LOW</p> | <ul style="list-style-type: none"> Any temporary storage or accommodation facilities to be setup during construction to be within the site only. | <p>NEGATIVE LOW</p> |

| | | | |
|--|----------------------------|---|----------------------------|
| <p>considered. The development site (or parts thereof) could form part of important ecological corridors and such corridors could be destroyed if the functioning thereof is not being supported by the development proposal.</p> <p><u>The development site</u> A Biodiversity Impact Assessment concluded that the sensitivity of the site is regarded as low. The study site is not within any demarcated CBAs or ESAs.</p> | | | |
| <p>Availability of Civil and Electrical Services</p> <p>Adequate bulk water is available. Sewerage capacity is available for Phase 1 but a small sewer pump station would be required to be constructed to accommodate Phase 2. No electrical infrastructure is currently available in this area and infrastructure needs to be installed.</p> | <p>NEGATIVE HIGH</p> | <ul style="list-style-type: none"> • A small sewer pump station is required to be constructed to accommodate Phase 2 of the development. • It is proposed that a new MV feeder (1x95mm², 3core, Al, PILC) is to be installed from Malva 11kV switching substation to supply the proposed Baillie Park X 64 & 65 development | <p>NEGATIVE MEDIUM</p> |
| <p>Impact of Storm water</p> <p>Storm water management and design solutions must be based on ecologically sound principles (water retention, detention, infiltration, quality, re-cycling, etc.) and not only with functional safety aspects in mind. Permission for the discharge of storm water within watercourses must be subjected to proof of adherence to such principles.</p> | <p>NEGATIVE MEDIUM</p> | <p>A site specific stormwater management plan is required.</p> | <p>NEGATIVE LOW</p> |
| <p>Visual Impact (change of character and atmosphere of the area, change in land use)</p> <p>The visibility of the study area creates the opportunity to design a development that will enhance the “Sense of Place” of the study area and the surrounding area.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • The architectural styles and finishes must blend in tastefully with the surrounding environment. • Landscaping plays a crucial factor in reducing the visual impact of a development and proper planning is therefore required. The following guidelines should apply: • The general aim with landscaping should be to integrate it with the natural environment of the site and its surrounding area. Therefore, indigenous and generous landscaping, combined with the eradication of exotic vegetation, will conserve and enhance the natural character of the site and its surrounds. • The establishment of indigenous landscaped gardens and rehabilitation of the natural areas will contribute | <p>NEGATIVE LOW</p> |

| | | | |
|--|--------------------|--|-----------------|
| | | to the biodiversity of fauna in the area, which would add to the aesthetic experience of the site. More detail with regards to landscaping principles and recommendations are stipulated in the Environmental Management Programme. | |
| <p>Light Pollution</p> <ul style="list-style-type: none"> Wrong placement, excessive brightness and careless light direction of especially security lights could cause sky glow, glare and light trespass. There is a general perception that 'more and brighter are better', and that it will provide for improved security. This perception can have a severe negative impact on the adjacent properties and surrounding area. Drivers could be severely affected should lights within the development be too bright and incorrectly directed at roads. The glare of these lights might impair drivers' vision and cause dangerous driving conditions. | NEGATIVE MEDIUM | <p>In order to minimise light pollution and light nuisance, the following design principles should be adhered to when the lighting plan is finalised:</p> <ul style="list-style-type: none"> All lighting should have a clear purpose - avoid use of lights simply to create a 'presence' at night. Unnecessary, obtrusive light will not be allowed. Mount lights below the roof height of buildings and perimeter fencing and direct light downwards, to where it is needed. Lights can also be positioned so that they are shielded by buildings and trees in order to reduce overall visibility. Avoid lights mounted on the side of buildings which shine directly out, dazzling adjacent residents as well as road users. Fittings must be shielded or hooded to minimise sky glow by controlling upward light spillage. Lights that minimise light spill are widely available and should be the only type of lights that are used. Outside lighting should be designed to minimise impacts on fauna, reducing intensity of lights for nocturnal species and avoiding attraction / disruption of arthropod populations. Avoid fluorescent and mercury vapour lighting and use sodium vapour (yellow) lights. | NEGATIVE LOW |
| INDIRECT IMPACTS | | | |
| No indirect impacts were identified during the planning and design phase. | | | |
| CUMULATIVE IMPACTS | | | |
| No cumulative impacts were identified during the planning and design phase. | | | |

| ALTERNATIVE 2 (Industrial Development) | | | |
|---|---------------------|---|---|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation |
| <p>Impact on the Natural Habitat</p> <p><u>Layout</u> Insensitive layout can cause a negative impact on the natural habitat of not only the site itself, but also on the surrounding natural environment. The context</p> | NEGATIVE LOW | <ul style="list-style-type: none"> Any temporary storage or accommodation facilities to be setup during construction to be within the site only. | NEGATIVE LOW |

| | | | |
|---|----------------------------|---|----------------------------|
| <p>of the development site within the macro area in terms of conservation areas also plays a major role when suitable areas for development are being considered. The development site (or parts thereof) could form part of important ecological corridors and such corridors could be destroyed if the functioning thereof is not being supported by the development proposal.</p> <p><u>The development site</u> A Biodiversity Impact Assessment concluded that the sensitivity of the site is regarded as low. The study site is not within any demarcated CBAs or ESAs.</p> | | | |
| <p>Impact of Storm water</p> <p>Storm water management and design solutions must be based on ecologically sound principles (water retention, detention, infiltration, quality, re-cycling, etc.) and not only with functional safety aspects in mind. Permission for the discharge of storm water within watercourses must be subjected to proof of adherence to such principles.</p> | <p>NEGATIVE MEDIUM</p> | <p>Site specific stormwater management plan is required.</p> | <p>NEGATIVE LOW</p> |
| <p>Availability of Civil and Electrical Services</p> <p>No electrical infrastructure is currently available in this area and infrastructure needs to be installed.</p> | <p>NEGATIVE HIGH</p> | <p>Infrastructure needs to be installed.</p> | <p>NEGATIVE MEDIUM</p> |
| <p>Visual Impact (change of character and atmosphere of the area, change in land use)</p> <p>An industrial development will not blend in with the surrounding environment</p> | <p>NEGATIVE HIGH</p> | <ul style="list-style-type: none"> • The architectural styles and finishes must blend in tastefully with the surrounding environment. • Landscaping plays a crucial factor in reducing the visual impact of a development and proper planning is therefore required. <p>The following guidelines should apply:</p> <ul style="list-style-type: none"> • The general aim with landscaping should be to integrate it with the natural environment of the site and its surrounding area. Therefore, indigenous and generous landscaping, combined with the eradication of exotic vegetation, will conserve and enhance the natural character of the site and its surrounds. • The establishment of indigenous landscaped gardens and rehabilitation of the natural areas will contribute | <p>NEGATIVE MEDIUM</p> |

| | | | |
|--|----------------------------|--|-------------------------|
| | | to the biodiversity of fauna in the area, which would add to the aesthetic experience of the site. More detail with regards to landscaping principles and recommendations are stipulated in the Environmental Management Programme. | |
| <p>Light Pollution</p> <ul style="list-style-type: none"> Wrong placement, excessive brightness and careless light direction of especially security lights could cause sky glow, glare and light trespass. There is a general perception that 'more and brighter are better', and that it will provide for improved security. This perception can have a severe negative impact on the adjacent properties and surrounding area. Drivers could be severely affected should lights within the development be too bright and incorrectly directed at roads. The glare of these lights might impair drivers' vision and cause dangerous driving conditions. | <p>NEGATIVE MEDIUM</p> | <p>In order to minimise light pollution and light nuisance, the following design principles should be adhered to when the lighting plan is finalised:</p> <ul style="list-style-type: none"> All lighting should have a clear purpose - avoid use of lights simply to create a 'presence' at night. Unnecessary, obtrusive light will not be allowed. Mount lights below the roof height of buildings and perimeter fencing and direct light downwards, to where it is needed. Lights can also be positioned so that they are shielded by buildings and trees in order to reduce overall visibility. Avoid lights mounted on the side of buildings which shine directly out, dazzling adjacent residents as well as road users. Fittings must be shielded or hooded to minimise sky glow by controlling upward light spillage. Lights that minimise light spill are widely available and should be the only type of lights that are used. Outside lighting should be designed to minimise impacts on fauna, reducing intensity of lights for nocturnal species and avoiding attraction / disruption of arthropod populations. Avoid fluorescent and mercury vapour lighting and use sodium vapour (yellow) lights. | <p>NEGATIVE LOW</p> |
| INDIRECT IMPACTS | | | |
| No indirect impacts were identified during the planning and design phase. | | | |
| CUMULATIVE IMPACTS | | | |
| No cumulative impacts were identified during the planning and design phase. | | | |

| | | | |
|---|---------------------|---------------------|--|
| NO GO ALTERNATIVE | | | |
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| No direct impacts were identified during the planning and design phase. | | | |
| INDIRECT IMPACTS | | | |
| No indirect impacts were identified during the planning and design phase. | | | |
| CUMULATIVE IMPACTS | | | |

| | | | |
|---|--|--|--|
| No cumulative impacts were identified during the planning and design phase. | | | |
|---|--|--|--|

10.2 CONSTRUCTION PHASE

| ALTERNATIVE 1 (PROPOSAL) (Residential Development) | | | |
|--|---------------------|---|--|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| Loss of natural vegetation | NEGATIVE MEDIUM | Detail mitigation measures are stipulated in the EMPR and include the following: <ul style="list-style-type: none"> • There are no protected trees or other RDL plant species on site. • Any priority species encountered must be identified and rescue prior to any excavation or construction activities. However, it is unlikely that any are present within the study site or the road and road reserve. • A weed control programme should be implemented. This can form part of the routine maintenance programme for the road. • A site-specific rehabilitation plan is required for the project. | NEGATIVE LOW |
| Loss of impacts Impacts on fauna | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Care must be taken not to interact directly with any wild life encountered. • Any bird nests encountered in the grass or trees must not be interfered with. If encountered must first be discussed with specialist as how best to proceed. This also applies to any active animal burrows encountered. • No snakes encountered may be killed. A specialist must be called in and/or the issue must be brought to the attention of the ECO. | NEGATIVE LOW |
| Siltation and erosion | NEGATIVE LOW | <ul style="list-style-type: none"> • Careful monitoring during the construction phase is essential to locate and mitigate any erosion observed. Investigations must be conducted after every rain downpour. Any problems need to be rectified immediately to avoid the problem escalating. • All work areas must be monitored at all times and maintained. | NEGATIVE LOW |
| Fringe impacts arising from construction phase | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Due to the nature of the project the potential for any significant fringe impacts can be medium, but with proper mitigating measure and routine maintenance and upkeep of the site, fringe impacts will be low. • Care must be taken with heavy machinery used on the project. All access roads used during construction must be monitored and maintained. • Soils and stones excavated may be used on site as backfill, fixing of roads, filling of dongas, etc. • Excavated soils and rocks may not be simply dumped in any open veld or even on site. | NEGATIVE LOW |

| | | | |
|---|----------------------------|---|-------------------------|
| | | <ul style="list-style-type: none"> • All temporary access roads, laydown areas, temporary camps, site offices, etc. must be fully rehabilitated by the contractors prior to final signing off of the construction phase of the project. • Care must be taken not to negatively impact on the Loopspruit (stream) south of the project area. Any fringe impacts arising during construction, such as siltation, rubble dumped in the area, etc. must be addressed immediately and may not be left to the rehabilitation stage after completion of construction. | |
| <p>Impact on Water Sources</p> <p>During construction, the risk of pollution of surface and groundwater can generally be related to diesel, oil and concrete spills that may result in a change in water quality with the associated negative impact on humans and the natural habitat. Groundwater pollution during the construction phase is also associated with poor construction techniques.</p> <p>Diesel, oil and lubricant spills are the main concern in respect of water pollution during construction together with organic pollution caused by inadequately managed facilities at the work sites.</p> | <p>NEGATIVE MEDIUM</p> | <p>Mitigation measures in the Environmental Management Programme include measures to ensure acceptable construction practices to minimise or avoid the risk of contamination of water sources. These include:</p> <p>Construction Site</p> <ul style="list-style-type: none"> • Encourage the construction contractor to employ local people as far as is reasonably practical and encourage the contractor to transport them daily to and from site. This would reduce solid and liquid waste production and water demand at the site camp. • During and after construction, stormwater control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. so that export of soil into any watercourse is avoided. <p>Diesel, hydraulic fluid and lubricants</p> <ul style="list-style-type: none"> • Minimise on-site storage of petroleum products; • Ensure measures to contain spills readily available on site (spill kits). • All petrochemical leaks and spills must be appropriately contained and disposed of at a licensed waste disposal site. <p>Construction Vehicles</p> <ul style="list-style-type: none"> • All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability. No repairs may be undertaken beyond the contractor laydown area. • Should any transfer of vehicle fuel take place on site, it is important to demarcate a specific area for this purpose. This area should be covered with an impermeable layer to prevent any penetration of fuel and oil spillage into the soil. The area could also be sloped towards an oil trap or sump to ease collection of spilled substances. • All construction vehicles should be serviced on a regular basis to minimise the risk of oil spillage on site. • Servicing of vehicles or equipment must take place off-site at appropriate workshop facilities. • When not in use, construction vehicles must be parked in an area provided with an impermeable layer to prevent leaks and spills from penetrating the substrate. | <p>NEGATIVE LOW</p> |

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| | | <p>Construction site domestic waste and sewage</p> <ul style="list-style-type: none"> • Minimise on-site accommodation. • Deposit solid waste in containers and dispose at municipal waste disposal sites regularly. • Dispose of liquid waste (grey water) with sewerage. • Install appropriate ablution facilities. • Preferably utilise municipal systems or chemical toilets. <p>Construction site inert waste (waste concrete, reinforcing rods, waste bags, wire, timber etc)</p> <ul style="list-style-type: none"> • Ensure compliance with stringent daily clean up requirements on site. • Dispose at municipal waste disposal sites. <p>Construction site hazardous waste</p> <ul style="list-style-type: none"> • All hazardous substances must be stored on an impervious surface in a designated bunded area, able to contain 110% of the total volume of materials stored at any given time. • Material safety data sheets (MSDSs) are to be clearly displayed for all hazardous materials. • The integrity of the impervious surface and bunded area must be inspected regularly and any maintenance work conducted must be recorded in a maintenance report. • Employees should be provided with absorbent spill kits and disposal containers to handle spillages. • Train employees and contractors on the correct handling of spillages and precautionary measures that need to be implemented to minimise potential spillages. • Employees should record and report any spillages to the responsible person. • An Emergency Preparedness and Response Plan will be developed and implemented should and incident occur. • Access to storage areas on site must be restricted to authorised employees only. • Contractors will be held liable for any environmental damages caused by spillages. | |
| <p>Geology</p> <p>Stability of structures and excavations.</p> <p><u>Development site</u> The property is not subject to dolomite related instabilities.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • The foundation recommendations supplied by the geotechnical engineer must be implemented. | <p>NEGATIVE LOW</p> |
| <p>Topographical Impacts</p> <p>Alteration of topography due to stockpiling of soil, building material and debris and waste material on site.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • All stockpiles must be restricted to designated areas and are not to exceed a height of 2 metres. • Stockpiles created during the construction phase are not to remain during the operational phase. • The contractor must be limited to clearly defined access routes to ensure that sensitive and undisturbed areas are not disturbed. | <p>NEGATIVE LOW</p> |

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| <p>Air Quality Impacts</p> <p>Dust and emissions during construction generated by debris handling and debris piles, truck transport, bulldozing, general construction.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Dust must be suppressed on the construction site and during the transportation of material during dry periods by the regular application of water. Water used for this purpose must be used in quantities that will not result in the generation of run-off. • Loads could be covered to avoid loss of material in transport, especially if material is transported off site. • Dust and mud should be controlled at vehicle exit and entry points to prevent the dispersion of dust and mud beyond the site boundary. • Facilities for the washing of vehicles should be provided at the entry and exit points. • A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas. • During the transfer of materials, drop heights should be minimised to control the dispersion of mater being transferred. • The height of all stockpiles on site should be a maximum of 2m. • Use of dust retardant road surfacing if required due to the exceedance of Air Quality Guidelines. | <p>NEGATIVE LOW</p> |
| <p>Impacts associated with construction activities such as noise, and safety</p> <p>The negative impact of noise, generally associated with construction activities, are temporary, occurring mostly during the construction phase. In terms of safety, it should be noted that the project involves deep excavations and open trenches. Excavations and open trenches can act as a trap for children (and also snakes, small mammals and lizards).</p> | <p>NEGATIVE MEDIUM</p> | <p><u>Noise mitigation measures</u></p> <ul style="list-style-type: none"> • All construction activities should be undertaken according to daylight working hours between the hours of 07:00 – 17:00 on weekdays and 7:30 –13:00 on Saturdays. • No construction activities may be undertaken on Sunday. • Provide all equipment with standard silencers. • Maintain silencer units in vehicles and equipment in good working order. • All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability. • Construction staff working in area where the 8-hour ambient noise levels exceed 60 dBA must have the appropriate Personal Protective Equipment (PPE). • All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993) | <p>NEGATIVE MEDIUM</p> |

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| | | <p>Safety mitigation measures</p> <ul style="list-style-type: none"> • The area affected by construction must be fenced prior to any activities taking place. • All excavated areas must be clearly marked and barrier tape must be placed around them for safety purposes. • A Fire Management Plan has to be identified during the pre-construction phase and must be implemented throughout the construction and operation phases of the development | |
| <p>Traffic (construction vehicles)</p> <p>The construction phase is likely to generate additional traffic in terms of construction vehicles and heavy vehicles delivering materials to the site.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • The heavy construction vehicles should avoid the local roads during peak traffic times and large deliveries should also be scheduled outside the peak traffic times. • Signs should be erected in the vicinity of the site. • Construction vehicles are to avoid main roads during peak traffic hours. • All vehicles entering the Site are to be roadworthy. • When using heavy or large vehicles / equipment, “spotters” are to be present to assist the driver with his blind spots. • Any incident or damage to a vehicle must be reported immediately. | <p>NEGATIVE MEDIUM</p> |
| <p>Traffic (road network)</p> <p>The proposed development would have a significant impact on the current road network when developed to its full potential</p> | <p>NEGATIVE MEDIUM</p> | <p>The impact of the development traffic can be mitigated by means of the following:</p> <ul style="list-style-type: none"> • The new Wynn Street to be constructed as a 7m paved road with kerbing on both sides to accommodate the proposed traffic. The estimated capacity of the new Wynn Street should have a width of >6.0m at a speed of 32km/h. • Access from the development to the new proposed Wynn Street to comply with the specification & guidelines of the JB Marks Local Municipality. • The intersection of the extension of Wynn Street with the Modderdam road to be in-line with the Northwest Roads Department’s guidelines & recommendations. • The sight distance of the development’s access from the street to be at least 200m in a Northern Direction. | <p>NEGATIVE MEDIUM</p> |
| <p>Availability of Civil and Electrical Services</p> <p>Adequate bulk water is available. Sewerage capacity is available for Phase 1 but a small pump station would be required to be constructed to accommodate Phase 2. No electrical infrastructure is currently available in this area and infrastructure needs to be installed.</p> | <p>NEGATIVE HIGH</p> | <ul style="list-style-type: none"> • A small sewer pump station is required to be constructed to accommodate Phase 2. • It is proposed that a new MV feeder (1x95mm², 3core, Al, PILC) is to be installed from Malva 11kV switching substation to supply the proposed Baillie Park X 64 & 65 development | <p>NEGATIVE MEDIUM</p> |
| <p>Impact of Labourers</p> | <p>NEGATIVE MEDIUM</p> | | <p>NEGATIVE LOW</p> |

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| <p>An uncontrolled influx of labourers with resulting increase in crime and squatting would place pressure on the natural environment (placement of snares, removal of trees for firewood, careless waste disposal, etc.). This could be severe, resulting in permanent damage to the environment if not mitigated properly.</p> | | <ul style="list-style-type: none"> • Mitigation measures to counter impact on the natural environment and limit potential for crime during the construction phase should include specifications in terms of control of construction workers (i.e. provision of toilet and cooking facilities, provision of either accommodation facilities or transport facilities, implementation of Environmental Educational Programmes, etc.). • Accommodation for labourers must either be limited to guarding personnel on the construction site (with labourers transported to and from existing neighbouring towns) or a separate fenced and controlled area where proper accommodation and relevant facilities are provided. • Part of the adjudication process for the successful contractor to undertake the civil works must be the use of casual and unskilled labour to stimulate local job creation through the use of labour intensive methods where possible. • If possible all labour should be sourced locally. • Contractors and their families may not stay on site. • No informal settlements will be allowed | |
| <p>Safety Public safety during construction.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Members of the public adjacent to the construction site should be notified of construction activities in order to limit unnecessary disturbance or interference. • Construction activities will be undertaken during daylight hours and not on Sundays. | <p>NEGATIVE LOW</p> |
| <p>Safety Construction staff safety during construction.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. • All construction staff must have the appropriate PPE. • The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. • Report and record any environmental, health and safety incidents to the responsible person. | <p>NEGATIVE MEDIUM</p> |
| <p>Impact on Cultural Heritage Resources No heritage resources were identified during the site visits. There is however always a probability that archaeological resources might be identified during excavations.</p> | <p>NEGATIVE LOW</p> | <ul style="list-style-type: none"> • The construction teams should be inducted on the significance of archaeological resources that may be encountered during subsurface construction work before they work on the area in order to ensure appropriate treatment and course of action is afforded to any chance finds. • If archaeological materials are uncovered, work should cease immediately and the SAHRA be notified and activity should not resume until appropriate management provisions are in place. • If any evidence of archaeological sites or remains (eg, remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Tel 021 462 4502) must be alerted immediately, and a | <p>NEGATIVE LOW</p> |

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| | | professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation might be necessary. | |
| Existing services and infrastructure Damage to the existing services and infrastructure during the construction phase and disruptions in services (i.e. electricity, water, damage to Telkom cables) during the construction phase. | NEGATIVE LOW | <ul style="list-style-type: none"> • Determine areas where services will be upgraded and relocated well in advance; • Discuss possible disruptions with affected parties to determine most convenient times for service disruptions and warn affected parties well in advance of dates that service disruptions will take place | NEGATIVE LOW |
| Waste Management <u>Builder's and domestic waste</u> The construction phase will create large quantities of builder's and domestic waste to be accommodated by local legal landfill sites. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Prevent unhygienic usage on site and pollution of the natural assets. • Develop a central waste temporary holding site to be used during construction. (Near the access entrance). This site should comply with the following: • Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. paint, lubricants, etc.; • Small lightweight waste items should be contained in skips with lids to prevent wind littering; • Bunded areas for containment and holding of dry building waste. • These areas shall be predetermined and located in areas that is already disturbed. • These areas shall not be in close proximity of any watercourse. | NEGATIVE LOW |
| <u>Sewage waste</u> Generation and disposal of sewage waste of temporary construction toilets. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • On-site chemical toilets will be provided for domestic purposes during construction phase. • The contractors will be responsible for the maintenance of the chemical toilets. • No temporary facilities or portable toilets to be setup within 50m of any watercourse. • No French drain systems may be installed. • Should any spills or incidents occur; the material will be cleaned up immediately and disposed off appropriately. • All incidents must be reported to the responsible site officer as soon as it occurs. | NEGATIVE LOW |
| Visual Impact Site clearing and removal of vegetation could partially alter the landscape as viewed from the surrounds of the site, with the emergence of exposed areas of bare soil. | NEGATIVE LOW | <ul style="list-style-type: none"> • Phased, rather than indiscriminate clearing of the site to be undertaken. • The architectural and landscape architectural guidelines for the proposed development will be developed to allow for a positive aesthetic influence on the surrounding environment. The guidelines will include aspects of finishes, lights pollution, colours to blend into the surrounding colours, heights of buildings, and roof finishes. Aesthetics and contextual appropriateness is to be a major aspect of | NEGATIVE LOW |

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| | | these guidelines. | |
| Agricultural Impact The proposed development will entail the transformation of 14.9952 ha of land previously used for agricultural purposes. | NEGATIVE LOW | As the site is deemed to be an uneconomical farming unit, no mitigation measures are proposed. | NEGATIVE LOW |
| Economic impacts Positive economic impacts are anticipated. The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa. | POSITIVE HIGH | Employment opportunities will be generated. <ul style="list-style-type: none"> • All labour (skilled and unskilled) and contractors should be sourced locally where possible. • A labour and recruitment policy must be developed, displayed and implemented by the contractor. • Recruitment at the construction site will not be allowed. • Where possible, labour intensive practices (as opposed to mechanised) should be practiced. • The principles of equality, BEE, gender equality and non-discrimination will be implemented. | |
| INDIRECT IMPACTS | | | |
| No indirect impacts were identified | | | |
| CUMULATIVE IMPACTS | | | |
| Cumulative Effect of Project on Terrestrial Ecology | NEGATIVE MEDIUM | | |
| Cumulative Effect of Project on Aquatic ecology | NEGATIVE LOW | | |

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| ALTERNATIVE 2 (Industrial Development) | | | |
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| Loss of natural vegetation | NEGATIVE MEDIUM | Detail mitigation measures are stipulated in the EMPr and include the following: <ul style="list-style-type: none"> • There are no protected trees or other RDL plant species on site. • Any priority species encountered must be identified and rescue prior to any excavation or construction activities. However, it is unlikely that any are present within the study site or the road and road reserve. • A weed control programme should be implemented. This can form part of the routine maintenance programme for the road. • A site-specific rehabilitation plan is required for the project. | NEGATIVE LOW |
| Loss of impacts Impacts on fauna | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Care must be taken not to interact directly with any wild life encountered. • Any bird nests encountered in the grass or trees must not be interfered with. If encountered must first be | NEGATIVE LOW |

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| | | <p>discussed with specialist as how best to proceed. This also applies to any active animal burrows encountered.</p> <ul style="list-style-type: none"> • No snakes encountered may be killed. A specialist must be called in and/or the issue must be brought to the attention of the ECO. | |
| Siltation and erosion | NEGATIVE LOW | <ul style="list-style-type: none"> • Careful monitoring during the construction phase is essential to locate and mitigate any erosion observed. Investigations must be conducted after every rain downpour. Any problems need to be rectified immediately to avoid the problem escalating. • All work areas must be monitored at all times and maintained. | NEGATIVE LOW |
| Fringe impacts arising from construction phase | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Due to the nature of the project the potential for any significant fringe impacts can be medium, but with proper mitigating measure and routine maintenance and upkeep of the site, fringe impacts will be low. • Care must be taken with heavy machinery used on the project. All access roads used during construction must be monitored and maintained. • Soils and stones excavated may be used on site as backfill, fixing of roads, filling of dongas, etc. • Excavated soils and rocks may not be simply dumped in any open veld or even on site. • All temporary access roads, laydown areas, temporary camps, site offices, etc. must be fully rehabilitated by the contractors prior to final signing off of the construction phase of the project. • Care must be taken not to negatively impact on the Loopspruit (stream) south of the project area. Any fringe impacts arising during construction, such as siltation, rubble dumped in the area, etc. must be addressed immediately and may not be left to the rehabilitation stage after completion of construction. | NEGATIVE LOW |
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| | | <p>Wynn Street should have a width of >6.0m at a speed of 32km/h.</p> <ul style="list-style-type: none"> • Access from the development to the new proposed Wynn Street to comply with the specification & guidelines of the JB Marks Local Municipality. • The intersection of the extension of Wynn Street with the Modderdam road to be in-line with the Northwest Roads Department's guidelines & recommendations. • The sight distance of the development's access from the street to be at least 200m in a Northern Direction. | |
| <p>Availability of Civil and Electrical Services</p> <p>No electrical infrastructure is currently available in this area and infrastructure needs to be installed.</p> | <p>NEGATIVE HIGH</p> | <p>Infrastructure to be installed for the proposed industrial development.</p> | <p>NEGATIVE MEDIUM</p> |
| <p>Impact of Labourers</p> <p>An uncontrolled influx of labourers with resulting increase in crime and squatting would place pressure on the natural environment (placement of snares, removal of trees for firewood, careless waste disposal, etc.). This could be severe, resulting in permanent damage to the environment if not mitigated properly.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Mitigation measures to counter impact on the natural environment and limit potential for crime during the construction phase should include specifications in terms of control of construction workers (i.e. provision of toilet and cooking facilities, provision of either accommodation facilities or transport facilities, implementation of Environmental Educational Programmes, etc.). • Accommodation for labourers must either be limited to guarding personnel on the construction site (with labourers transported to and from existing neighbouring towns) or a separate fenced and controlled area where proper accommodation and relevant facilities are provided. • Part of the adjudication process for the successful contractor to undertake the civil works must be the use of casual and unskilled labour to stimulate local job creation through the use of labour intensive methods where possible. • If possible all labour should be sourced locally. • Contractors and their families may not stay on site. • No informal settlements will be allowed | <p>NEGATIVE LOW</p> |
| <p>Safety</p> <p>Public safety during construction.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Members of the public adjacent to the construction site should be notified of construction activities in order to limit unnecessary disturbance or interference. • Construction activities will be undertaken during daylight hours and not on Sundays. | <p>NEGATIVE LOW</p> |
| <p>Safety</p> <p>Construction staff safety during construction.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. • All construction staff must have the appropriate PPE. • The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. • Report and record any environmental, health and | <p>NEGATIVE MEDIUM</p> |

| | | | |
|---|----------------------------|---|-------------------------|
| | | safety incidents to the responsible person. | |
| <p>Impact on Cultural Heritage Resources</p> <p>No heritage resources were identified during the site visits. There is however always a probability that archaeological resources might be identified during excavations.</p> | <p>NEGATIVE LOW</p> | <ul style="list-style-type: none"> • The construction teams should be inducted on the significance of archaeological resources that may be encountered during subsurface construction work before they work on the area in order to ensure appropriate treatment and course of action is afforded to any chance finds. • If archaeological materials are uncovered, work should cease immediately and the SAHRA be notified and activity should not resume until appropriate management provisions are in place. • If any evidence of archaeological sites or remains (eg, remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Tel 021 462 4502) must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation might be necessary. | <p>NEGATIVE LOW</p> |
| <p>Existing services and infrastructure</p> <p>Damage to the existing services and infrastructure during the construction phase and disruptions in services (i.e. electricity, water, damage to Telkom cables) during the construction phase.</p> | <p>NEGATIVE LOW</p> | <ul style="list-style-type: none"> • Determine areas where services will be upgraded and relocated well in advance; • Discuss possible disruptions with affected parties to determine most convenient times for service disruptions and warn affected parties well in advance of dates that service disruptions will take place | <p>NEGATIVE LOW</p> |
| <p>Waste Management</p> <p><u>Builder’s and domestic waste</u> The construction phase will create large quantities of builder’s and domestic waste to be accommodated by local legal landfill sites.</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • Prevent unhygienic usage on site and pollution of the natural assets. • Develop a central waste temporary holding site to be used during construction. (Near the access entrance). This site should comply with the following: • Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. paint, lubricants, etc.; • Small lightweight waste items should be contained in skips with lids to prevent wind littering; • Bunded areas for containment and holding of dry building waste. • These areas shall be predetermined and located in areas that is already disturbed. • These areas shall not be in close proximity of any watercourse. | <p>NEGATIVE LOW</p> |
| <p><u>Sewage waste</u> Generation and disposal of sewage waste of temporary</p> | <p>NEGATIVE MEDIUM</p> | <ul style="list-style-type: none"> • On-site chemical toilets will be provided for domestic purposes during construction phase. | <p>NEGATIVE LOW</p> |

| | | | |
|---|----------------------------|---|-------------------------|
| construction toilets. | | <ul style="list-style-type: none"> The contractors will be responsible for the maintenance of the chemical toilets. No temporary facilities or portable toilets to be setup within 50m of any watercourse. No French drain systems may be installed. Should any spills or incidents occur; the material will be cleaned up immediately and disposed off appropriately. All incidents must be reported to the responsible site officer as soon as it occurs. | |
| <p>Visual Impact</p> <p>Site clearing and removal of vegetation could partially alter the landscape as viewed from the surrounds of the site, with the emergence of exposed areas of bare soil.</p> | <p>NEGATIVE LOW</p> | <ul style="list-style-type: none"> Phased, rather than indiscriminate clearing of the site to be undertaken. The architectural and landscape architectural guidelines for the proposed development will be developed to allow for a positive aesthetic influence on the surrounding environment. The guidelines will include aspects of finishes, lights pollution, colours to blend into the surrounding colours, heights of buildings, and roof finishes. Aesthetics and contextual appropriateness is to be a major aspect of these guidelines. | <p>NEGATIVE LOW</p> |
| <p>Agricultural Impact</p> <p>The proposed development will entail the transformation of 14.9952 ha of land previously used for agricultural purposes. According to the geotechnical survey the agricultural potential of the soils is regarded as low.</p> | <p>NEGATIVE LOW</p> | <p>As the site is deemed to be an uneconomical farming unit, no mitigation measures are proposed.</p> | <p>NEGATIVE LOW</p> |
| <p>Economic impacts</p> <p>Positive economic impacts are anticipated. The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa.</p> | <p>POSITIVE HIGH</p> | <p>Employment opportunities will be generated.</p> <ul style="list-style-type: none"> All labour (skilled and unskilled) and contractors should be sourced locally where possible. A labour and recruitment policy must be developed, displayed and implemented by the contractor. Recruitment at the construction site will not be allowed. Where possible, labour intensive practices (as opposed to mechanised) should be practiced. The principles of equality, BEE, gender equality and non-discrimination will be implemented. | |
| INDIRECT IMPACTS | | | |
| No indirect impacts were identified | | | |
| CUMULATIVE IMPACTS | | | |
| Cumulative Effect of Project on Terrestrial Ecology | <p>NEGATIVE MEDIUM</p> | | |
| Cumulative Effect of Project on Aquatic ecology | <p>NEGATIVE LOW</p> | | |

| NO GO ALTERNATIVE | | | |
|--|---------------------|---------------------|--|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the environment will remain as it is currently. However, it is important to note that the benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts. | | | |
| DIRECT IMPACTS | | | |
| No indirect impacts were identified during the construction phase. | | | |
| CUMULATIVE IMPACTS | | | |
| No cumulative impacts were identified during the construction phase. | | | |

10.3 OPERATIONAL PHASE

| ALTERNATIVE 1 (PROPOSAL) (Residential Development) | | | |
|---|---------------------|--|--|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| Impact on the natural habitat Due to the present degraded state of the development site, the removal of alien invasive plants coupled with indigenous landscaping as proposed will have a positive effect on the biodiversity of not only the site itself, but also its surrounds. | POSITIVE HIGH | Landscaping guidelines as stipulated in the EMPr must be followed during the operational phase of the project. | POSITIVE HIGH |
| Impact on water resources | NEGATIVE MEDIUM | | NEGATIVE LOW |

| | | | |
|--|--------------------|---|--------------------|
| The proposed development could have a negative impact on water resources. Increased coverage of paved/hardened surfaces may increase the volume and velocity of stormwater runoff. | | Stormwater Management are addressed in the Environmental Management Programme (EMPr). | |
| Hydrogeology Impacts Leaks of untreated water from pipelines may occur and impact on the groundwater quality. | NEGATIVE LOW | Any leaks should be fixed immediately and areas rehabilitated as needed. | NEGATIVE LOW |
| Traffic impact The proposed development could have a significant impact on the current road network when developed to its full potential. | NEGATIVE MEDIUM | The impact of the development traffic can be mitigated by means of the recommended road upgradings. | NEGATIVE MEDIUM |
| Lighting pollution | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Security lighting must be carefully planned. These lights must not spill into the eyes of oncoming traffic and must not shine into adjacent properties; • Interior lighting must be subtle and in order to prevent it from lighting up the sky and from using energy, the implementation of movement switches (especially for large glassed interior areas that are highly visible) should be considered; • Exterior lighting, especially the lighting in the vicinity of the open space areas must be designed to shine downwards and the bulbs to be used should rather be “dim” than bright; • Prevent the implementation of exterior advertising signs and name boards that will flicker into the eyes of surrounding neighbours and into the eyes of oncoming traffic; • Obtain the necessary approvals for the erection of advertising and other signs. | NEGATIVE LOW |
| Agricultural Impact The proposed development will entail the transformation of 14.9952 ha of land previously used for agricultural purposes. According to the geotechnical survey the agricultural potential of the soils is regarded as low. | NEGATIVE LOW | As the site is deemed to be an uneconomical farming unit, no mitigation measures are proposed. | NEGATIVE LOW |
| Provision of housing The proposed residential development will contribute to the provision of much needed housing in Potchefstroom. | POSITIVE HIGH | | |

| | | | |
|---|-----------------|---|--------------|
| POSITIVE IMPACT | | | |
| <p>Socio-Economic Impact</p> <p>The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa.</p> <p>POSITIVE IMPACT</p> | POSITIVE LOW | | |
| <p>Noise Impact</p> <p>Noise caused by residents, movement of residents etc.</p> | NEGATIVE LOW | <ul style="list-style-type: none"> All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). | NEGATIVE LOW |
| <p>Socio-Economic Impact</p> <p>The proposed development will provide the Council with a higher income from the services and property tax since more people will be making use of the services of the Council after the approval of this proposed township.</p> <p>POSITIVE IMPACT</p> | POSITIVE MEDIUM | | |
| <p>Energy</p> <p>Energy consumption</p> | NEGATIVE MEDIUM | <ul style="list-style-type: none"> It is recommended that renewable energy options and/or alternative energy sources be used. Sustainable design principles must be implemented | NEGATIVE LOW |
| <p>Waste Impact</p> <p>Contamination of the surface and site with general waste. General waste produced on site includes:</p> <ul style="list-style-type: none"> Operational waste (clean steel, wood, glass); and General domestic waste (food, cardboards, paper, bottles, tins). | NEGATIVE MEDIUM | <ul style="list-style-type: none"> An adequate number of general waste receptacles, including bins must be arranged around the site to collect all domestic refuse, and to minimise littering. Bins must be provided on site for use by employees. Bins should be clearly marked and lined for efficient control and safe disposal of waste. Different waste bins, for different waste streams must be provided to ensure correct waste separation. A fenced area must be allocated for waste sorting and disposal on the site. Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at the municipal landfill site. Under no circumstances is waste to be burnt or buried on site. Waste bins should be cleaned out on a regular basis to prevent any windblown waste and/or visual disturbance. All general waste must be removed from the site at regular intervals and disposed of in suitable waste receptacle. | NEGATIVE LOW |
| INDIRECT IMPACTS | | | |
| No indirect impacts have been identified | | | |

| CUMULATIVE IMPACTS | | | |
|--|--------------------|---|--|
| Municipal Infrastructure The extra pressure that this development could place on the existing municipal infrastructure for waste and sewage disposal as well as water provisions could be significant when seen together with other developments within the greater municipal area. | NEGATIVE LOW | The availability of bulk water, sewer and electricity confirmed. | |
| Traffic The proposed development together with other developments in the region would have a significant impact on the current road network. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Intersections which do not have sufficient spare capacity to accommodate the existing and future background traffic should be upgraded. • The upgrading of new roads and intersections as well as the intersections upgrades required to accommodate the anticipated development traffic impact should be conducted. | |
| Noise Noise pollution from vehicles, noise associated with human habitation as well as domestic animals, dogs etc. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). | |
| Cumulative Effect of Project on Terrestrial Ecology | NEGATIVE MEDIUM | | |
| Cumulative Effect of Project on Aquatic ecology | NEGATIVE LOW | | |

| ALTERNATIVE 2 (Industrial Development) | | | |
|---|---------------------|--|--|
| DIRECT IMPACTS | | | |
| Potential Impacts | Significance Rating | Mitigation Measures | Significance rating of impacts after mitigation: |
| Impact on the natural habitat Due to the present degraded state of the development site, the removal of alien invasive plants coupled with indigenous landscaping as proposed will have a positive effect on the biodiversity of not only the site itself, but also its surrounds. | POSITIVE HIGH | Landscaping guidelines as stipulated in the EMPr must be followed during the operational phase of the project. | POSITIVE HIGH |
| Impact on water resources The proposed development could have a negative impact on water resources. Increased coverage of paved/hardened surfaces may increase the volume and velocity of stormwater runoff. | NEGATIVE MEDIUM | Stormwater Management are addressed in the Environmental Management Programme (EMPr). | NEGATIVE LOW |

| | | | |
|--|--------------------|---|--------------------|
| Hydrogeology Impacts Leaks of untreated water from pipelines may occur and impact on the groundwater quality. | NEGATIVE LOW | Any leaks should be fixed immediately and areas rehabilitated as needed. | NEGATIVE LOW |
| Traffic impact The proposed development could have a significant impact on the current road network when developed to its full potential. | NEGATIVE MEDIUM | The impact of the development traffic can be mitigated by means of the recommended road upgradings. | NEGATIVE MEDIUM |
| Lighting pollution | NEGATIVE MEDIUM | <ul style="list-style-type: none"> • Security lighting must be carefully planned. These lights must not spill into the eyes of oncoming traffic and must not shine into adjacent properties; • Interior lighting must be subtle and in order to prevent it from lighting up the sky and from using energy, the implementation of movement switches (especially for large glassed interior areas that are highly visible) should be considered; • Exterior lighting, especially the lighting in the vicinity of the open space areas must be designed to shine downwards and the bulbs to be used should rather be “dim” than bright; • Prevent the implementation of exterior advertising signs and name boards that will flicker into the eyes of surrounding neighbours and into the eyes of oncoming traffic; • Obtain the necessary approvals for the erection of advertising and other signs. | NEGATIVE LOW |
| Agricultural Impact The proposed development will entail the transformation of 14.9952 ha of land previously used for agricultural purposes. According to the geotechnical survey the agricultural potential of the soils is regarded as low. | NEGATIVE LOW | As the site is deemed to be an uneconomical farming unit, no mitigation measures are proposed. | NEGATIVE LOW |
| Socio-Economic Impact The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an achievement in South Africa. POSITIVE IMPACT | POSITIVE LOW | | |
| Noise and air pollution Additional noise and air pollution caused by an industrial | NEGATIVE HIGH | <ul style="list-style-type: none"> • All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). | NEGATIVE MEDIUM |

| | | | |
|--|--------------------|---|--------------------|
| development in a residential and agricultural area. | | | |
| Energy Energy consumption | NEGATIVE HIGH | <ul style="list-style-type: none"> It is recommended that renewable energy options and/or alternative energy sources be used. Sustainable design principles must be implemented | NEGATIVE MEDIUM |
| Waste Impact Contamination of the surface and site with general waste. General waste produced on site includes: <ul style="list-style-type: none"> Operational waste (clean steel, wood, glass); and General domestic waste (food, cardboards, paper, bottles, tins). | NEGATIVE MEDIUM | <ul style="list-style-type: none"> An adequate number of general waste receptacles, including bins must be arranged around the site to collect all domestic refuse, and to minimise littering. Bins must be provided on site for use by employees. Bins should be clearly marked and lined for efficient control and safe disposal of waste. Different waste bins, for different waste streams must be provided to ensure correct waste separation. A fenced area must be allocated for waste sorting and disposal on the site. Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at the municipal landfill site. Under no circumstances is waste to be burnt or buried on site. Waste bins should be cleaned out on a regular basis to prevent any windblown waste and/or visual disturbance. All general waste must be removed from the site at regular intervals and disposed of in suitable waste receptacle. | NEGATIVE LOW |
| INDIRECT IMPACTS | | | |
| No indirect impacts identified. | | | |
| CUMULATIVE IMPACTS | | | |
| Municipal Infrastructure The extra pressure that this development could place on the existing municipal infrastructure for waste and sewage disposal as well as water provisions could be significant when seen together with other developments within the greater municipal area. | NEGATIVE LOW | The availability of bulk water, sewer and electricity confirmed. | |
| Traffic The proposed development together with other developments in the region would have a significant impact on the current road network. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> Intersections which do not have sufficient spare capacity to accommodate the existing and future background traffic should be upgraded. The upgrading of new roads and intersections as well as the intersections upgrades required to accommodate the anticipated development traffic impact should be conducted. | |
| Noise Noise pollution from vehicles, noise associated with human habitation as well as domestic animals, dogs etc. | NEGATIVE MEDIUM | <ul style="list-style-type: none"> All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993). | |

| | | | |
|---|--------------------|--|--|
| Cumulative Effect of Project on Terrestrial Ecology | NEGATIVE MEDIUM | | |
| Cumulative Effect of Project on Aquatic ecology | NEGATIVE LOW | | |

11 PUBLIC PARTICIPATION

Setala Environmental has taken cognisance of the requirements for public participation in terms of the 2014 EIA Regulations, as amended and has ensured that the public participation principles are upheld. A successful Public Participation Programme (PPP) is one that is inclusive, actively engages the public and provides ample opportunity for the public to participate in the process. This document provides an overview of the PPP undertaken as part of the BA process for the proposed project.

The purpose of the PPP is to ensure that the issues, inputs and concerns of Interested and Affected Parties (I&APs) are taken into account during the decision-making process. This requires the identification of I&APs (including authorities and the public), communication of the process and findings to these I&APs and the facilitation of their input and comment on the process and environmental impacts, including issues and alternatives that are to be investigated. The steps taken during the execution of the PPP undertaken for this project are detailed in the section that follows.

Refer to Comments and Response Report attached as *Appendix 5 (6)*.

11.1 ADVERTISEMENT AND NOTICE

| | |
|----------------------|---------------------------------------|
| Site notice position | Notice displayed at the site entrance |
| Date placed | 07/02/2022 |
| Publication name | Potchefstroom Herald |
| Date published | 10/02/2022 |

(Refer to Appendix E(1a): Proof of site notices)

(Refer to Appendix E(1b): Proof of newspaper notice)

11.2 Public Notification

A consultation process was undertaken with the intent of informing key community stakeholders, comprising the Municipal structures and the local communities about the proposed development and the Basic Assessment process underway.

Identification of Interested and Affected Parties

The PPP for the project was initiated with the development of a comprehensive I&AP database. The list of I&APs was updated on a regular basis during the course of the project. Key stakeholders were identified at the beginning of the PPP, these included: Key stakeholders, commenting authorities and landowners/land users. Refer to Appendix 4(a): Register of Interested and Affected Parties for a complete list.

Background Information Document

- A comprehensive background information document (BID) was compiled with the main aim to identify issues, and potential impacts associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and

communication with registered Interested & Affected Parties (I&APs). BID attached as Appendix E(2a).

- On 07/02/2022 the documentation was submitted for comment to all I&APs.
- The due date for comment was 09/03/2022. This allowed for a comment period of 30 days.
- Copies of the notification to I&APs are included as Appendix E(2b).

11.3 Distribution of Draft Basic Assessment Report for comment

Notification of the availability of the Draft Basic Assessment Report (DBAR) will be submitted to all I&APs. (Proof to be included as Appendix E(2c) of the final BAR).

The DBAR will be available for comment on the Setala website using a given link. The comment period will be for 30 days.

Copies of the DBAR will also be submitted to the following key stakeholders:

- The Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government
- JB Marks Local Municipality, Environmental Management Services
- Department of Water and Sanitation, Provincial Office: Gauteng /Vaal River Catchment Management Agency

(Proof to be included as Appendix E(2c) of the final BAR).

11.4 Comments and Response Report

The Public Participation Programme allowed for informed and responsible decision-making by all interested and affected parties. A summary of I&AP comments and the consultant's responses to these comments are provided below. (The original I&AP comments are included in *Appendix E(3a)*). Refer to Comments and Response Report attached as *Appendix E(6)* for detailed information.

List of authorities from whom comments have been received:

- Eskom, North West OU Land Development

Key stakeholders from whom comments have been received:

- Fuller Development

11.5 Summary of Issues Raised by Interested and Affected Parties

| No | Date | Stakeholder | Comments | Response |
|----|------------|---------------------------------------|---|----------|
| 1 | 10-02-2022 | Eskom, North West OU Land Development | <ul style="list-style-type: none"> • No Eskom Distribution or Reticulation services are affected by the proposed development and there is no objection to the proposed development. • If any Eskom Transmission services are affected in this area, please contact Lungile Motsisi, Manager Lands&rights and Investigations for Transmission on (011) 800 5734. • The contractor in charge of the construction or maintenance work on site must at all times be in possession of the letter of approval of the service | Noted. |

| | | | | |
|---|------------|--------------------|--|---|
| | | | <p>concerned, and as well as all plans that are required and that are referred to in the correspondence, so that during an inspection the contractor can present the documentation to Eskom official(s) when requested to do so. If no approval can be presented then the Eskom official(s) can order the contractor to cease all works until such approval can be presented.</p> <ul style="list-style-type: none"> • This approval becomes automatically withdrawn without further rectification and becomes null and void if: • The applicant does not comply with any of the conditions stipulated above: and • The stated works are not started within a period of 90 days from date of this letter. | |
| 2 | 01-03-2022 | Fuller Development | <p>The following impacts of the proposed new development to be considered:</p> <ul style="list-style-type: none"> • The proposed new entry into the mentioned development relates to Wynne Street's added traffic. • The accommodation of bulk services relating to the capacity of the newly installed services | <p>The impact of the development traffic can be mitigated by means of the following:</p> <ul style="list-style-type: none"> • The new Wynn Street to be constructed as a 7m paved road with kerbing on both sides to accommodate the proposed traffic. The estimated capacity of the new Wynn Street should have a width of >6.0m at a speed of 32km/h. • Access from the development to the new proposed Wynn Street to comply with the specification & guidelines of the JB Marks Local Municipality. • The intersection of the extension of Wynn Street with the Modderdam road to be in-line with the Northwest Roads Department's guidelines & recommendations. • The sight distance of the development's access from the street to be at least 200m in a Northern Direction. |

| | | | | |
|--|--|--|--|--|
| | | | | <p>Adequate bulk water, bulk water treatment and storage capacity for the proposed daily demand of the development is available.</p> <p>Adequate sewerage capacity is available for the 1st Phase of the development. A small pump station would be required to be constructed to accommodate the 2nd phase.</p> <p>No electrical infrastructure is currently available in this area and infrastructure needs to be installed.</p> |
|--|--|--|--|--|

Comments received on the DBAR will be included in the FBAR as Appendix E(3b).

11.6 Conclusion Public Participation Programme

In short, the study approach followed by the Consultants, entailed the following steps:

| Activity | Description and Purpose |
|---|--|
| Pre-Application | |
| Preparation of a preliminary stakeholder database | A preliminary database has been compiled of authorities (local and provincial), Non-Governmental Organisations, land users and other key stakeholders (refer to Appendix E(4a)). This database of registered I&APs will be maintained and updated during the ongoing BA process. |
| Preparation and Distribution of a Background Information Document (BID) | On 07/02/2022 BIDs and registration forms were distributed via email to all I&APs on the database. See Appendix E(2b) for proof of written submissions. The BID provides an introduction to the Project and the BA process. Due date for comment was 09/03/2022. See Appendix E(2a) for the BID and Registration form. |
| Advertisement of the Project and Erection of Site Notices | The Project was advertised on 10/23/2022 in the newspaper, Potchefstroom Herald. See proof of notice in Appendix E(1b). A Site notice has been placed at the site on 07/02/2021: See proof of placement in Appendix E(2a). |
| Development of an Initial Comments and Response Report | All comments received during the initial consultation period were recorded in a Comments and Responses Report. See included in Appendix E(6). |
| BA Phase | |
| Release of draft Basic Assessment Report for Public Comment | The draft BA Report will be released for the required 30-day public comment period: 20/05/2021 to 20/06/2021. (This constitutes 30 days). Notifications will be sent to all stakeholders on the database and include details of how to engage in providing comment. The report will be submitted to all I&APs and electronic copies could be downloaded with a link from the Setala website. Proof to be attached as Appendix E(2d) in FBAR. |

| | |
|--|---|
| Development of a Comments and Response Report | All comments received will be recorded into a Comments and Response Report. See attached as Appendix E(6). |
| Public Open Day | Opportunity for engagements to replace the public meeting, to be held virtual via teams/zoom, telephone conversations, text messages etc. were provided. All comments received, along with responses to be included in the final BAR. |
| Submission of final Basic Assessment Report to Environmental Authority | Subsequently the final BAR will be submitted to DEDECT. The final BAR will include all concerns raised to the DBAR, and the responses thereto. |
| Environmental Decision | |
| Notification of Environmental Decision | I&APs will be notified of the Environmental Decision and the statutory appeal period. |

12 ENVIRONMENTAL IMPACT STATEMENT

The findings conclude that there are no environmental fatal flaws that could prevent the proposed Baillie Park X 64 & X 65 development if the recommended mitigation and management measures contained in the DBAR and EMPr (Appendix F) are implemented.

BIO-PHYSICAL ENVIRONMENT

Geology and Soil

According to the involved geotechnical engineer no negative geotechnical impacts are present at the site and the site would be suitable for the proposed development. This soil is well graded but have relatively poor agricultural potential.

It is recommended that conventional strip foundation and servicing be utilised.

Fauna and Flora

According to the Biodiversity Impact Assessment Report the ecological sensitivity of the site is low.

There are no watercourses on site, including wetlands.

The study site is not within any priority areas, which include important birds areas (IBAs) and protected areas.

The study site is not within any demarcated CBAs or ESAs.

No fauna or flora species of conservation concern (SCC) were observed on the study site.

There are no obvious fatal flaws in terms of the natural environment.

SOCIO-ECONOMICAL ENVIRONMENT

Cultural heritage sites and graves

No graves or cultural heritage sites were identified on the site. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Availability of civil and electrical services

Water: Adequate bulk water, bulk water treatment and storage capacity for the proposed daily demand of the development is available.

Sewer: Sewerage capacity is available for the 1st phase of the development but a small sewer pump station would be required to be constructed to accommodate the 2nd phase of the development.

Electricity: No infrastructure is currently available in this area and infrastructure needs to be installed. It is proposed that a new MV feeder (1x95mm², 3core, Al, PILC) is to be installed from Malva 11kV switching substation to supply the proposed Baillie Park X 64 & 65 and other developments and which the feeder ring will be closed in future adjacent developments.

Solid waste: Refuse from the proposed development can be collected by JB Marks City Council and accommodated at the existing JB Marks City Council dumping site.

Traffic Impacts

The proposed development would have an impact on the current road network. The recommended access arrangements and road upgrades must be implemented.

Need and desirability

The need and desirability for the proposed development had been confirmed. The development site is ideally located within the Urban Edge as it is adjacent to existing residential townships, in an area earmarked for residential development. The development will therefore act as an extension of the Baillie Park area.

Socio-economic

The proposed Baillie Park X 64 & 65 development will create employment opportunities during both the construction and operational phase.

The development will lead to increased rates and taxes accruing to the JB Marks Local Municipality.

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental impact assessment process.

Preferred Alternative

Activity Alternative 1: Establishment of a residential development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province

The proposed residential development complies with development guidelines contained in Local legislation i.e. Tlokwe City Council Spatial Development Framework (SDF), 2015 and Land Use Management Framework, 2010 of the Tlokwe City Council.

The site is located within the urban edge of the Municipality and is located within an area that has been earmarked for residential development. The site is situated in an area that is transitioning to include more residential uses and farming activities have decreased significantly in the area. There is a great need in Potchefstroom for additional housing and the proposed residential development will enhance and diversify

the current housing market.

The proposed development can be seen as a natural extension of the existing and planned residential area of Baillie Park. The provision of housing on existing plots within the urban edge is encouraged as it discourages urban sprawl and better utilises existing infrastructure. The site will therefore be optimally used if converted into a residential development.

The area is well located in terms of complementary services and is very accessible. Sufficient bulk infrastructure is available in the area to accommodate the proposed development.

The surrounding area will not be negatively affected by the township establishment, due to the residential nature (existing and proposed) of surrounding land uses.

Activity Alternative 2: Establishment of an industrial development and associated infrastructure on Portions 64, 572 and 1171 of the farm Vyfhoek 428 IQ, North West Province.

This alternative will not be acceptable as the area is located within an area that has a residential and agricultural character. The increased noise and possible emissions associated with this alternative has rendered it unfeasible and therefore it is recommended that Alternative 1 be implemented.

Alternative 3: No-Go alternative

The no-go alternative will entail that the status quo will remain.

None of the advantages associated with the proposed residential development will realize should the no-go option be implemented. The no-go option is therefore not regarded as a viable alternative.

It is therefore proposed that Alternative 1 is the preferred alternative.

It is the opinion of Setala Environmental that there are presently no environmental impacts emanating from the proposed activity that cannot be adequately managed. The management of the negative impacts will require the implementation of the necessary mitigatory measures detailed in the EMPr (refer to Appendix F) of this report.

13 RECOMMENDATIONS

Based on the assumption that the mitigation measures will be effectively implemented for the proposed Baillie Park X 64 & 65 development and that no fatal flaws have been identified to date, it is the opinion of the EAP that this activity should be authorised to proceed to the final stages of decision making.

In order to achieve appropriate environmental management standards and ensure that the findings of the environmental studies are implemented through practical measures, the recommendations from this DBAR are included within the EMPr (Appendix F).

The EMPr must be used to ensure compliance with environmental specifications and management measures. The implementation of this EMPr for the life cycle phases of the project is considered to be vital in achieving the appropriate environmental management standards as detailed for this project.

The applicant must appoint a suitably experienced (independent) Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations are implemented and to ensure compliance with the provisions of the EMPr.

If granted, the environmental authorisation is required for a period of 10 years.

It is envisaged that the construction period will be concluded and post construction monitoring requirements will be finalised approximately five years after commencement of the activity. At present a commencement date has not been finalised.

14 ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The assessment contained in this report as well as the recommendations made are based on the assumption that it does not replace or nullify any other spheres of legislation that may apply to any or all aspects of the proposed development.