

FINAL BASIC ASSESSMENT REPORT:

**THE DEVELOPMENT OF A
NEIGHBOURHOOD SHOPPING CENTRE
ON ERF 1051
(ZONED PUBLIC OPEN SPACE),
ROCKDALE, MIDDELBURG**

Report prepared for: Chestar Supplies (Pty) Ltd

Report dated: September 2020 (final)

Report number: BA 2020/02

DARDLEA ref: 1/3/1/16 1N-218

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PROJECT INFORMATION SUMMARY

PROJECT TITLE	The development of a neighbourhood shopping centre on Erf 1051 (zoned Public Open Space), Rockdale, Middelburg
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CLIENT	Chestar Supplies (Pty) Ltd
CONTACT DETAILS	P.O. Box 5662 Middelburg 1050

CONSULTANT	AdiEnvironmental cc
CONTACT DETAILS	P.O. Box 647 Witbank 1035 013-697 5021

DARDLEA REFERENCE NO.	1/3/1/16 1N-218
AdiE REFERENCE NO.	BA 2020/02

REPORT VERSION	Basic Assessment Report – Draft
DATE	July 2020
REPORT VERSION	Basic Assessment Report - Final
DATE	September 2020

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UNDERTAKING BY EAP


as required in terms of Section 2(j) of Appendix 2 of the Environmental Impact Assessment Regulations, 2014.

Project: The development of a neighbourhood shopping centre on Erf 1051 (zoned Public Open Space), Rockdale, Middelburg (DARDLEA Ref. no.: 1/3/1/16 1N-218; AdIE Ref no.: BA 2020/02).

I, ADRIENNE ERASMUS....., hereby confirm that:

- the information provided in this Final Basic Assessment Report is, to the best of my knowledge, correct as at the time of compilation thereof;
- comments and inputs obtained from stakeholders and interested and affected parties through the public participation process conducted to date have been included in this Final Basic Assessment Report;
- information provided to interested and affected parties (to date) has been included in this Final Basic Assessment Report;
- inputs and recommendations from the specialist reports are included in this Final Basic Assessment Report.

Signed at eMALAHLENI..... on this 21st..... day of SEPTEMBER of 2020.

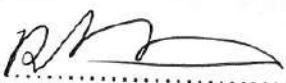
Signature: .....

Company: Adi Environmental cc.....

I, Riana Janse van Rensburg....., hereby confirm that:

- the information provided in this Final Basic Assessment Report is, to the best of my knowledge, correct as at the time of compilation thereof;
- comments and inputs obtained from stakeholders and interested and affected parties through the public participation process conducted to date have been included in this Final Basic Assessment Report;
- information provided to interested and affected parties (to date) has been included in this Final Basic Assessment Report;
- inputs and recommendations from the specialist reports are included in this Final Basic Assessment Report.

Signed at eMalahleni..... on this 21st..... day of September of 2020.

Signature: .....

Company: Adi Environmental.....

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Appendix 12:	Traffic Impact Assessment
Appendix 13:	Evaluation of Draft Basic Assessment Report



LIST OF ABBREVIATIONS

°C	Degrees Celsius
BA	Basic Assessment
BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
COGTA	Department of Co-operative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
DMR	Department of Mineral Resources
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
ESA	Ecological Support Area
ha	hectares
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
km	kilometer
kl	kiloliter
ℓ	liter
l/s	liters per second
m	meters
mamsl	meters above mean sea level
mbgl	meters below ground level
mm	millimeter
MBSP	Mpumalanga Biodiversity Sector Plan
MTPA	Mpumalanga Tourism and Parks Agency
NFEPA	National Freshwater Ecosystem Priority Areas
PIA	Palaeontological Impact Assessment
PES	Present Ecological State
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SANRAL	South African National Roads Agency Limited
SDF	Spatial Development Framework
STLM	Steve Tshwete Local Municipality
TRAC	Trans African Concession



SECTION 1: INTRODUCTION

The applicant, *Chester Supplies (Pty) Ltd*, intends to develop a neighbourhood shopping centre on Erf 1051, Rockdale, Middelburg. The property is ±2 ha in extent and located in the residential area of Rockdale, adjacent to the N11 national road (Hendrina Road). The proposed shopping centre will comprise of an anchor shop, various line shops, delivery bays and parking areas.

The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of the shopping centre.

The Minister of Environmental and Water Affairs listed in terms of Sections 24(2), 24(5), 24D and 44, read with section 47A(1)(b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), a number of activities that require an environmental impact assessment (either a Basic Assessment or a full Environmental Impact Assessment) before undertaking these activities.

The ultimate aim of an environmental impact assessment is to *"identify, predict and evaluate the actual and potential risks for and impacts on the geographical, physical, biological, social, economic and cultural aspects of the environment, in order to find the alternative and options that best avoid negative impacts altogether, or where negative impacts cannot be avoided, to minimise and manage negative impacts to acceptable levels, while optimising positive impacts, to ensure that ecological sustainable development and justifiable social and economic development outcomes are achieved."*(DEA, 2017).

The proposed activity would require a Basic Assessment process since the following listed activities (as identified in the Environmental Impact Assessment Regulations, 2014 (as amended)) are triggered:

Listing	Activity
Listing Notice 1 (GN R983 as amended) Listed Activity 27	<i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 12	<i>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 15	<i>The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.</i>

AdiEnvironmental cc. was appointed as independent environmental consultant to conduct the required Basic Assessment and compile the necessary documentation.



The objective of the Basic Assessment process is to, through a consultative process:

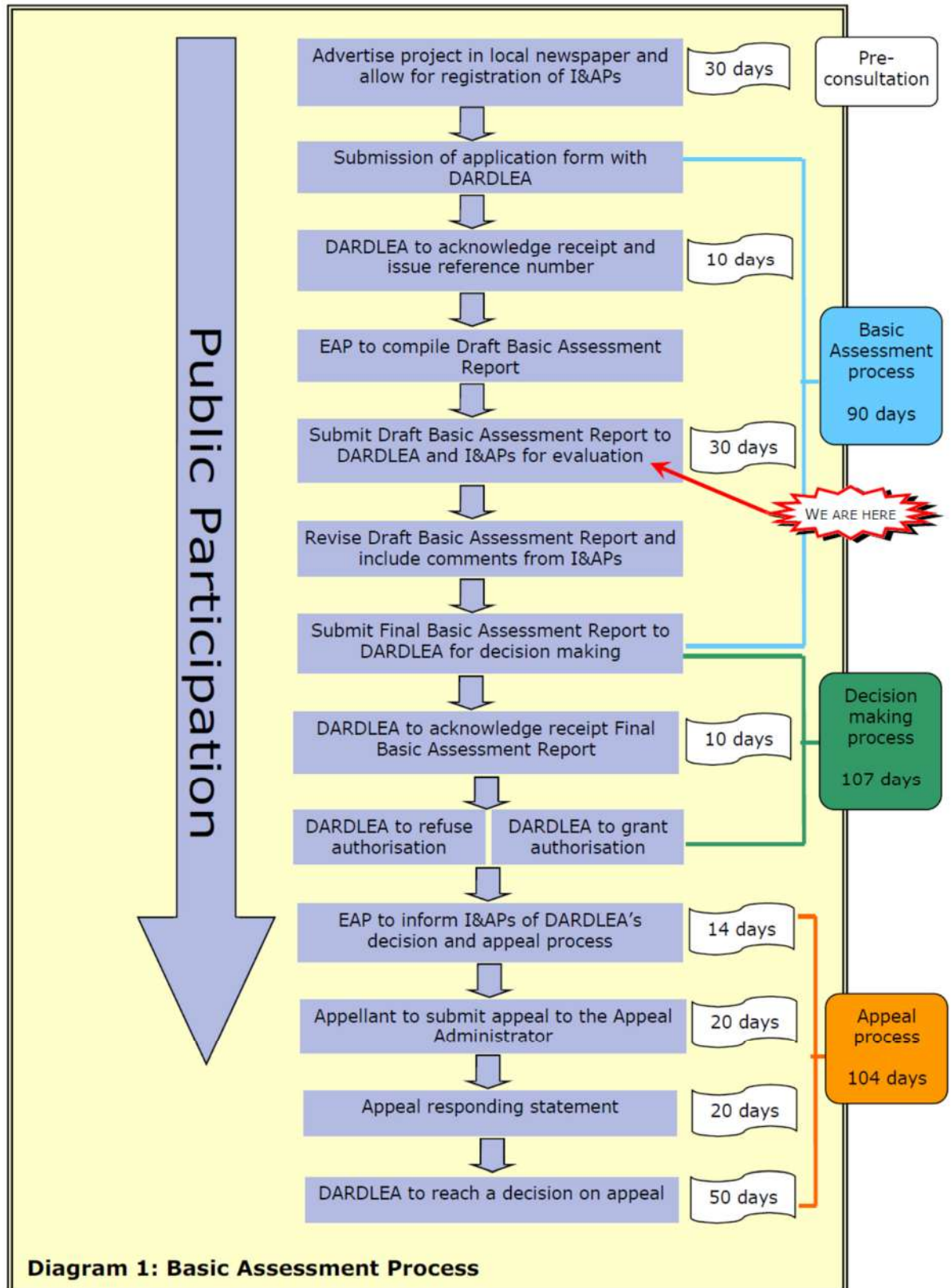
- a) *Determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;*
- b) *Identify the alternatives considered, including the activity, location, and technology alternatives;*
- c) *Describe the need and desirability of the proposed alternatives;*
- d) *Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage and cultural sensitivity of the sites and locations and the risk of impact of the proposed activity and technology alternatives on these aspects to determine: (i) the nature, significance, consequence, extent, duration and probability of the impacts occurring; and (ii) degree to which these impacts (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated.*
- e) *Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to: (i) identify and motivate a preferred site, activity and technology alternative; (ii) identify suitable measures to avoid, manage or mitigate identified impacts; and (iii) identify residual risks that need to be managed and monitored.*

The overall aim of the process is to provide the competent authority with adequate information to make an informed decision regarding the proposed activity, thereby ensuring that activities with an unacceptable degree of negative impacts are not authorized and that authorized activities are undertaken in a manner where environmental impacts are managed to acceptable levels.

The decision making authority is the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA). This Department will decide to grant or refuse the approval of the project. On approval, an Environmental Authorisation and Record of Decision will be issued in the name of the project applicant.

Diagram 1 provides a schematic description of the Basic Assessment process followed and the current status of the process.





SECTION 2: CONTACT DETAILS

As per Appendix 1 of the EIA Regulations, 2014 (as amended), this section provides the following details:

- | |
|---|
| <p>(i) the EAP who prepared the report; and</p> <p>(ii) the expertise of the EAP, including a curriculum vitae.</p> |
|---|

In addition, the contact details of the applicant and the specialists who conducted the required specialist studies are also provided.

2.1 Details of the project applicant

Name of Applicant	Chestar Supplies (Pty) Ltd
Company Registration No	2018/234274/07
Address	P.O. Box 5662 Middelburg 1050
Contact Person	Mr. DV Mndebele
Cell number	082 789 5365
E-mail	donvuvu@gmail.com and sollylatif@me.com

2.2 Details of the registered landowner

Erf 1051 is registered at the Deeds Office to the Steve Tshwete Local Municipality. It should however, be noted that the applicant, Chestar Supplies (Pty) Ltd, purchased Erf 1051 from the Steve Tshwete Local Municipality on 2 October 2019. The Municipality is currently in the process of transferring the property with the assistance of Maphanga Essa (Transferring Attorneys). A copy of the Deed of Sale is provided in Appendix 1.

Name of Applicant	Chestar Supplies (Pty) Ltd
Company Registration No	2018/234274/07
Address	P.O. Box 5662 Middelburg 1050
Contact Person	Mr. DV Mndebele
Cell number	082 789 5365
E-mail	donvuvu@gmail.com and sollylatif@me.com

2.3 Details of the Environmental Assessment Practitioner (EAP)

Chestar Supplies (Pty) Ltd appointed AdiEnvironmental cc, an independent environmental consultancy, to undertake the Basic Assessment process for the proposed development in accordance with the Environmental Impact Assessment Regulations (EIA), 2014 (as amended).

Name of company	AdiEnvironmental cc
Company registration number	CK99/036174/23
Address	P.O. Box 647 Witbank, 1035
Environmental Assessment Practitioner 1 (EAP1)	Adrienne (Adie) Erasmus <i>M.Sc</i> <i>Pr. Sci. Nat. (400078/96)</i> <i>EAP Registration No:2019/604</i>
Environmental Assessment Practitioner 2 (EAP2)	Riana Janse van Rensburg <i>M. Env. Mgt.</i> <i>EAP Registration No:2019/1341</i>
Telephone number	013-697 5021
Cell number	083 271 8260
E-mail	adie@adienvironmental.co.za riana@adienvironmental.co.za

Ms. A. Erasmus has a M.Sc with more than 25 years environmental management experience. She is a Professional Natural Scientist (Botanical and Ecological Science) registered with South African Council for Natural Scientific Professions. Ms. R. Janse van Rensburg has an M. Env. Mgt with more than 18 years environmental management experience. Both Ms. Erasmus and Ms. van Rensburg are Registered Environmental Assessment Practitioners (EAPs) with the Environmental Assessment Practitioners Association of South Africa (EAPASA) – see the website www.eapasa.org for further details.

Ms. Erasmus and Ms. Janse van Rensburg have been involved in the management and execution of numerous environmental assessments. The Curriculum Vitae of the Environmental Assessment Practitioners (EAPs) are provided in Appendix 2 together with a list of projects completed to date.

Both EAPs comply with the requirements as stipulated in Regulation 13 of the EIA Regulations, 2014 (as amended) in terms of independence, expertise, objectivity, etc. The declaration and affirmation by the EAPs is included in the front of this document.

AdiEnvironmental cc has no vested interest (other than fair remuneration) in the approval of this project, and hereby declares its independence as required by the EIA Regulations, 2014 (as amended).

2.4 Details of the specialists

Specialist studies were undertaken as part of the Basic Assessment process to address issues that required further investigation.

The following specialists were appointed by the EAP:

Specialist Study	Consultant	Qualifications
Heritage Assessment	Prof Anton van Vollenhoven	<ul style="list-style-type: none"> • BA • BA (HONS) Archaeology • MA Archaeology • Post-Graduate Diploma in Museology • Diploma Tertiary Education • DPhil Archaeology



Specialist Study	Consultant	Qualifications
		<ul style="list-style-type: none"> • MA Cultural History • Management Diploma • DPhil History <i>ASAPA Accreditation: 166</i> <i>SASCH Accreditation: CH001</i>
Palaeontological Assessment	Dr Heidi Fourie (Heidi Fourie Consulting)	<ul style="list-style-type: none"> • B.Sc Geology and Zoology • Ph.D Palaeontology <i>Member: Palaeontological Society of SA.</i>

The Curriculum Vitae and declarations of independence of the above-mentioned specialists are provided in Appendix 2.

The following specialists were appointed by the developer or as part of the townplanning process:

Specialist Study	Consultant
Townplanning Memorandum	Johan Hamman (Urban Dynamics Town & Regional Planners)
Civil Services Report	Conrad Booysen (Tirisano Consulting Engineers (Pty) Ltd.)
Wetland Delineation Report	Stephen Burton (Sivest SA (Pty) Ltd.)
Traffic Impact Assessment	Brian Roberts (Moyeni Professional Engineering)

The results of the above-mentioned studies were included in the Draft Basic Assessment.



SECTION 3: DESCRIPTION OF THE ACTIVITY

The purpose of this section is to present sufficient project information to interested and affected parties, stakeholders and government departments in terms of the design parameters applicable to the project.

This section therefore provides information on the following as per Appendix 1 of the EIA Regulations, 2014 (as amended):

- ◆ *A description of the scope of the proposed activity;*
- ◆ *A description of the activities to be undertaken including associated structures and infrastructure;*
- ◆ *A plan which locates the proposed activity as well as associated structures and infrastructure (i.e. conceptual design/layout plan).*

It should be noted that the project description details are preliminary at this early stage of the project life-cycle. It is thus possible that some of the design parameters may change during the detailed design phase. However, the project description used in this Basic Assessment Report assumes a worst-case scenario, where the maximum development footprint and all associated infrastructure are taken into account.

3.1 Description of the site, design, size and scale of the development

3.1.1 Introduction

The applicant, Chestar Supplies (Pty) Ltd, intends to develop a neighbourhood shopping centre on Erf 1051, Rockdale, Middelburg (Figure 3.1). The proposed shopping centre will comprise of an anchor shop, various line shops, delivery bays and parking areas (Figure 3.2).

The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of the shopping centre. Urban Dynamics Town and Regional Planners (hereafter referred to as Urban Dynamics, 2019) was appointed by the applicant to apply for the park closure and rezoning. A copy of the townplanning memorandum is provided in Appendix 3.

3.1.2 Location of site

The proposed shopping centre will be located on Erf 1051, Rockdale, Middelburg. The said site is located adjacent to the N11 national road (Hendrina Road) and ±800m north of the N4 national road, within the Rockdale residential area. The property is ±2ha in extent.

Figure 3.1 indicates the location of the site and Table 3.1 provides the property details.



Table 3.1: Details of the property

Township Name	Rockdale
Erf Number	Erf 1051
Title Deed Number	T11618/2010
21 Digit SG Code	T0JS01030000105100000
Registered Landowner	Steve Tshwete Local Municipality (sold to Chestar Supplies (Pty) Ltd– see Appendix 1)
Size of property	1.99 ha
Size (footprint) of site	1.99ha
Centre Co-ordinates of site	25°49'22.38"S 29°31'25.87"E
Magisterial District	Steve Tshwete Local Municipality Nkangala District Municipality
Closest Town	Middelburg

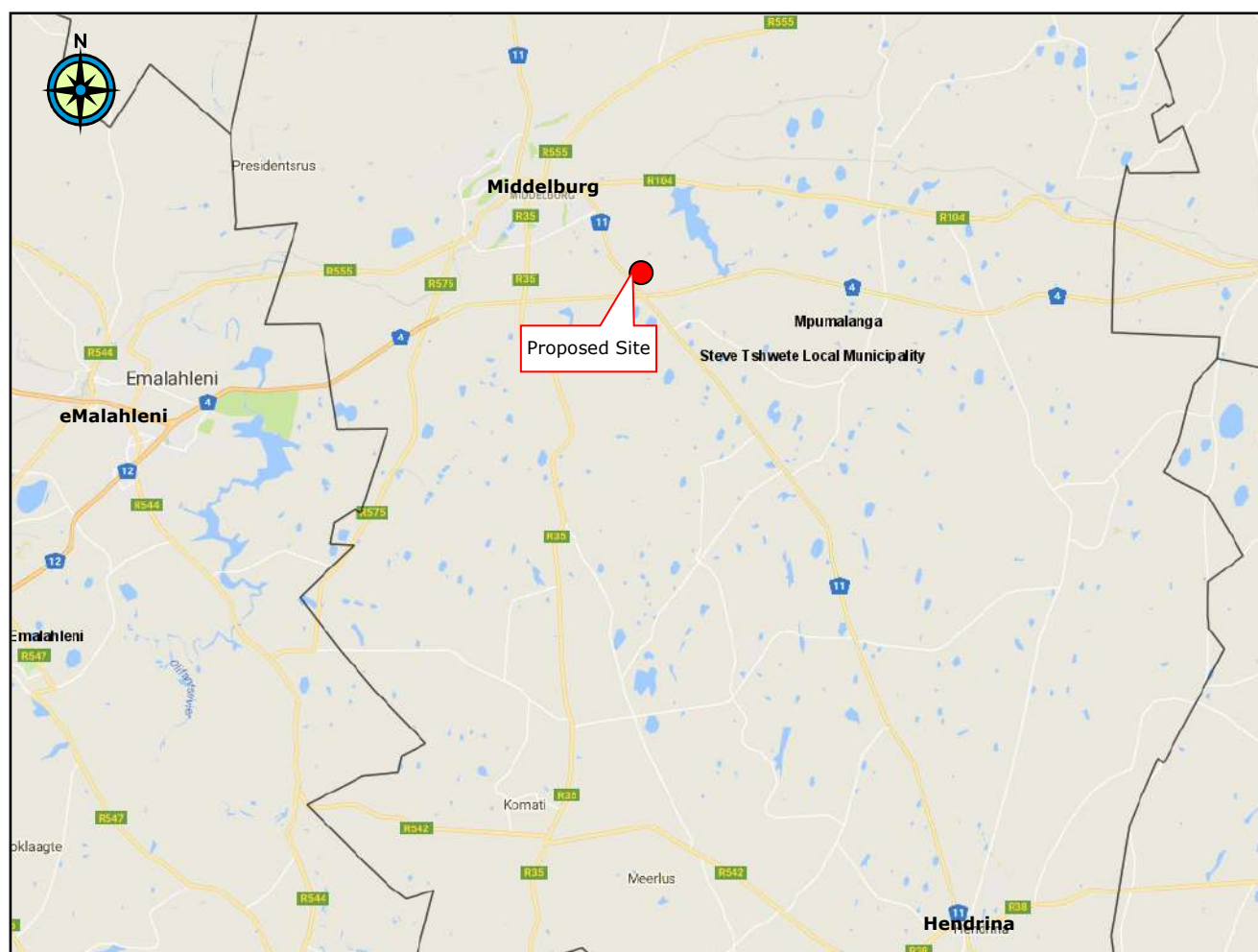


Figure 3.1: Location of proposed site in relation to the nearest towns

3.1.3 Layout plan

Figure 3.2 provides an indication of the proposed layout plan as drafted by JSV Architecture.

The proposed shopping centre will cover $\pm 4039\text{m}^2$ of the 1.99ha site and will comprise of an anchor shop and various line shops. Provision is made for possible future extensions of the anchor and line shops. The proposed height of the buildings will be restricted to two storeys. Table 3.2 provides an indication of the proposed buildings and their coverage.

Table 3.2: Proposed building coverage (taken from JSV Architecture, 2019)

Building	Area (m ²)
Anchor Shop	1655.34 m ²
Anchor Shop – Future Extensions	416.26 m ²
Covered Delivery Area – Anchor Shop	163.31 m ²
Line Shops	902.30 m ²
Future Line Shops	902.38 m ²
Total Buildings	4039.59 m²
Parking spaces	368
Erf Size	20 000 m²
Coverage	20.20 %
FAR	0.21

Delivery bays and parking areas would be provided on the remainder of the property. As indicated in Table 3.2 and Figure 3.2, a total of 368 parking bays are proposed based on a minimum parking ratio of 6 parking spaces per 100m² gross leasable area.

A 6m x 6m refuse area will be provided in the south eastern corner of the site (Figure 3.2).

As indicated in Figure 3.2, access to the site will be obtained from Ekukhanyeni Street connecting to the N11 national road. The main access to the shopping centre will be located 100m east of the N11 national road as specified by the South African National Road Agency (SANRAL). A secondary access will be provided from the northern boundary of the site via Kangaroo Street (Figure 3.2).

Separate delivery accesses will be provided further east of the main access as well as in the northern portion of the site (Figure 3.2). This is to separate traffic from the customers and deliveries. The delivery accesses will be secured by means of sliding gates.

According to Urban Dynamics (2019), the exact tenant mix has not been finalised and will depend on the market need at the point in time when all authorisations have been obtained.

It should be noted that the Floor Area Ratio (FAR), % Coverage and number of parking bays may be amended at a later stage as it would be dependent on the agreements entered into with the proposed tenants.



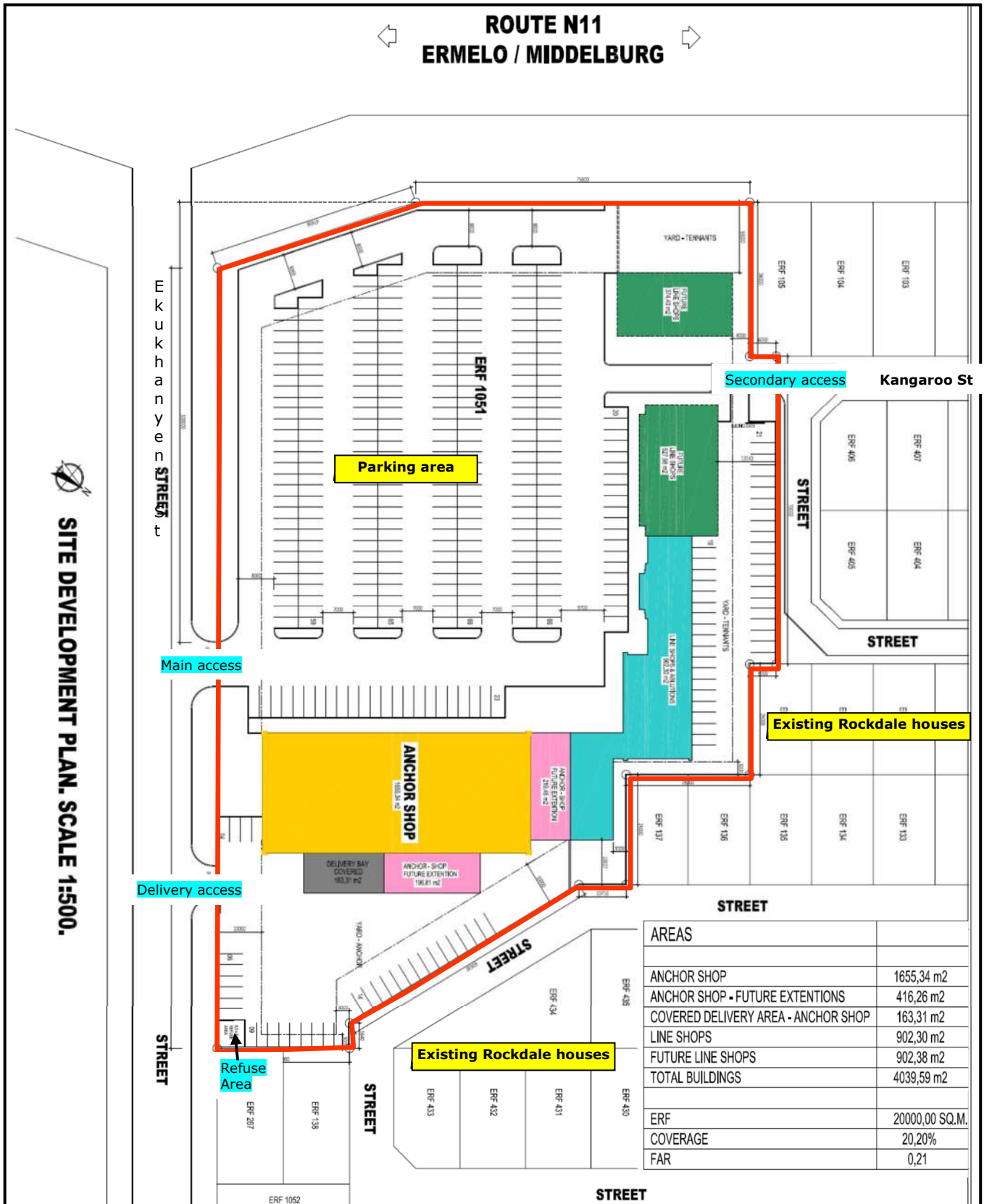


Figure 3.2: Proposed Site Development Plan (drafted by JSV Architecture, 2019)

3.2 Services required

The said site is located within the existing residential area of Rockdale, which is already serviced by the Steve Tshwete Local Municipality. Connections to existing services are thus available.

Tirisano Consulting Engineers (Pty) Ltd (hereafter referred to as Booyesen, 2019) was appointed to investigate the civil engineering services required for the proposed shopping centre. A copy of the civil services report is provided in Appendix 4.

The link services (roads and electricity) and the internal reticulation (water, sewer, electricity, streets and street lighting) of the development will be done by the developer to the satisfaction of the Steve Tshwete Local Municipality.

The applicant will be responsible for the installation of the services, whereafter the services will be handed over to the municipality.

3.2.1 Water

During the construction phase, the various contractors would have to provide potable water to the site workers.

During the operational phase, potable water will be provided by the Steve Tshwete Local Municipality (STLM), who is the Water Service Authority and the Water Services Provider, in terms of the Water Services Act (Act 108 of 1997).

According to Booyesen (2019), the proposed development will connect to the existing 110 mm diameter water line located on the corner of Ekukhanyeni and Sol Plaatjies Street, which is the largest available connection point in the area (Figure 3.3). The surrounding water reticulation lines consist mostly of 75 mm diameter Class 9 uPVC pipes.

According to Booyesen (2019), no data in terms of the water pressure is currently available and would need to be confirmed for design purposes. The peak head required for the shopping centre will determine if the available pipe networks and pressures are sufficient.

More information regarding the Steve Tshwete Local Municipality water reticulation network is provided in Section 7 (Alternatives).



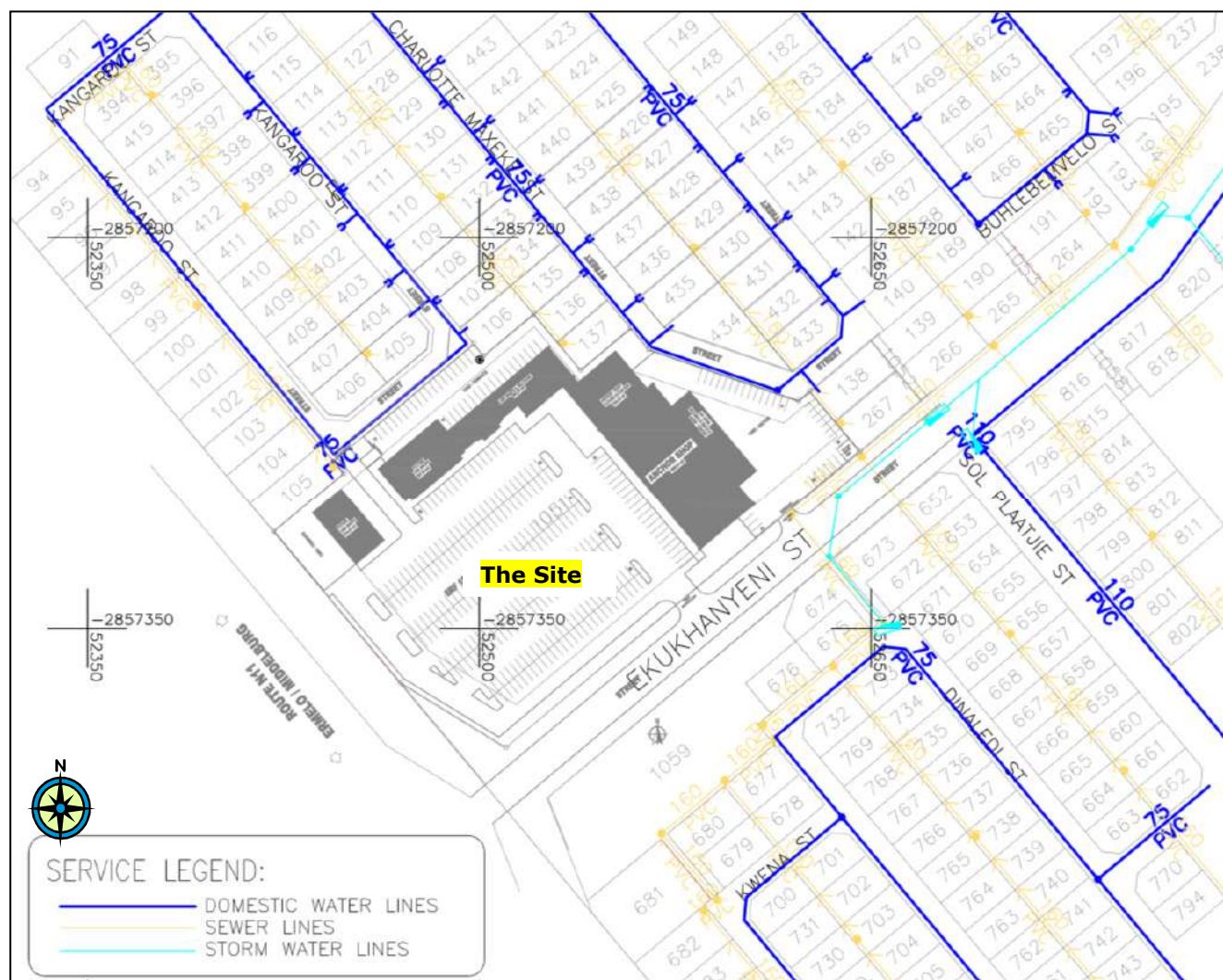


Figure 3.3: Water and sewer reticulation network (taken from Booyen, 2019)

3.2.2 Sewage

During the construction phase, the contractor would have to provide chemical toilets on site. During the operational phase, the development will connect to the existing sewer network in Rockdale.

According to Booyen (2019), the sewer reticulation network of Rockdale consists of 160 mm diameter uPVC pipes (Figure 3.3). Connection points are available on site. The peak head flows of the shopping centre must however, still be estimated to determine the optimum pipe sizes required.

More information regarding the Steve Tshwete Local Municipality sewer reticulation network is provided in Section 7 (Alternatives).

3.2.3 Electricity

LTZ Consulting Electrical Engineers (hereafter referred to as Stoltz, 2019) was appointed to investigate the availability of electrical services for the proposed development. A copy of the report is provided in Appendix 4.

The proposed development falls under the jurisdiction of the Steve Tshwete Local Municipality and would therefore connect to the existing Municipal

infrastructure. An 11kV bundle conductor overhead line is present on the western boundary of the site. Another overhead line is present on the opposite side of the N11 national road.

According to Stoltz (2019), the total estimated additional load required for the proposed development is **60 VA/m²**. This estimate will be refined when the specific store/tenant details become available. For planning purposes, an allowance was made for a maximum demand of 500 kVA.

The intention is to install a dedicated mini substation on the southern boundary of the site, which would connect to the existing 11kV network. The proposed location of the mini substation is indicated in Figure 3.4.

According to Stoltz (2019), the Steve Tshwete Local Municipality confirmed that capacity is available for the proposed development. A written confirmation can however, not be obtained at this stage since a formal application has not been submitted. The formal application can only be submitted once the rezoning application has been approved.

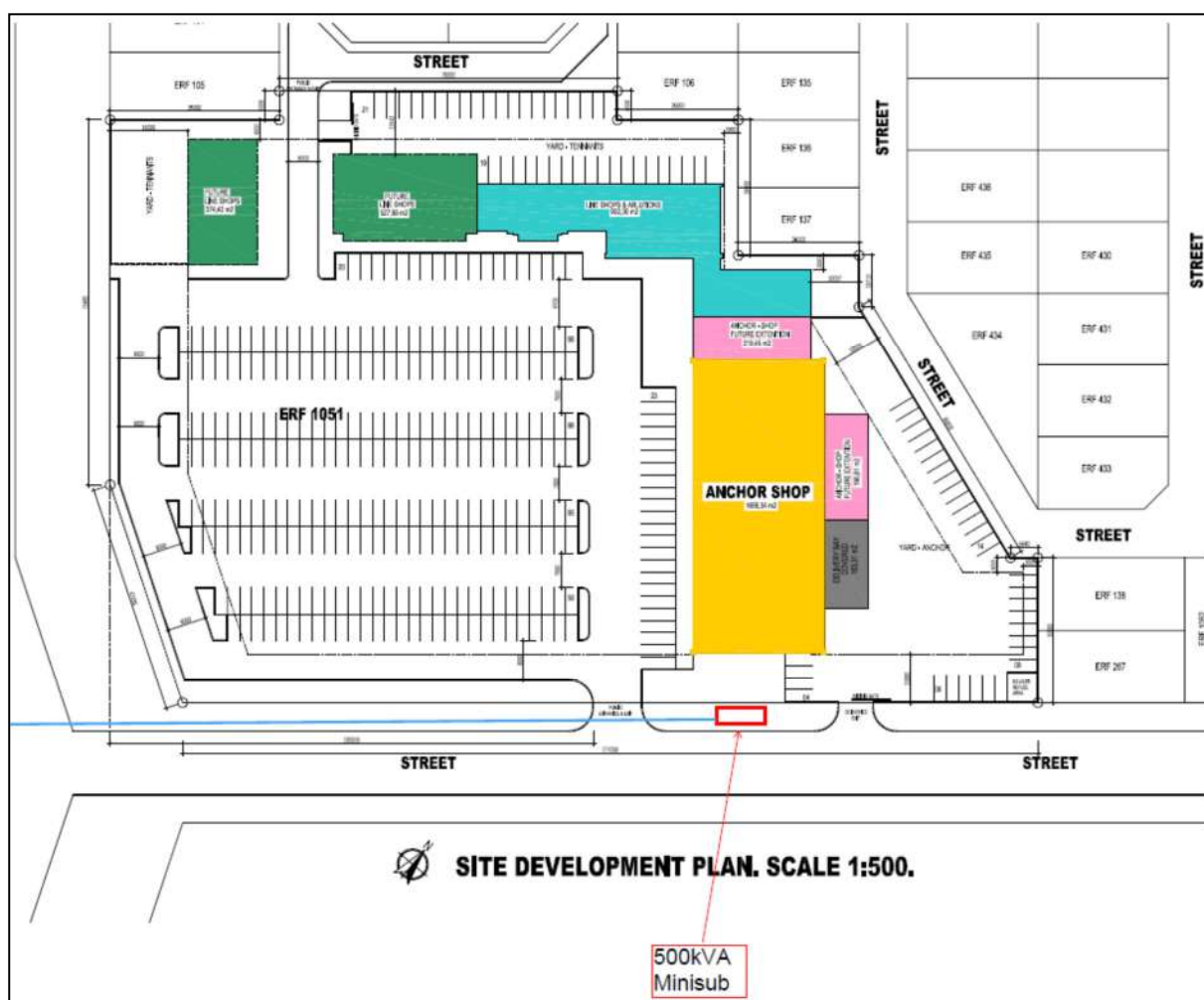


Figure 3.4: Location of proposed mini substation (taken from Stolz, 2019)

3.2.4 Waste management

During the construction phase, building rubble and a small amount of domestic waste would be generated. The contractor would have to provide adequate containers for the collection of waste. The applicant would have to ensure that the contractors remove the said building rubble and domestic waste to the registered Rietfontein Waste Disposal Site.

Any hazardous waste (e.g. soil contaminated with fuel/oil, paint tins, etc.) would have to be disposed at a Hazardous Waste Disposal Facility by a company dealing with such waste.

During the operational phase, the refuse will be collected by the Steve Tshwete Local Municipality's refuse removal unit and will be disposed of at the registered Rietfontein Waste Disposal Site.

Provision was made in the layout plan (Figure 3.2) for a 6m x 6m refuse area where the waste will be stored before being collected by the Municipality.

3.2.5 Storm water control measures

The proposed shopping centre will connect to the existing storm water management system of Rockdale. According to Booysen (2019), the closest storm water network is in Ekukhanyeni Street, in close proximity to one corner of the site.

Storm water from the site will be treated as surface runoff as far as possible, whereafter it will be diverted to the nearest kerb inlet located in Ekukhanyeni Street and into the existing storm water pipe network.

According to Booysen (2019), the existing storm water pipe sizes still need to be confirmed to determine if sufficient capacity exists to drain the additional storm water from the shopping centre.

3.2.6 Access

As indicated in Figure 3.2, access to the site will be obtained from Ekukhanyeni Street connecting to the N11 national road. The main access to the shopping centre will be located 100m east of the N11 national road as specified by the South African National Road Agency (SANRAL). A secondary access will be provided from the northern boundary of the site via Kangaroo Street (Figure 3.2).

Separate delivery accesses will be provided further east of the main access as well as in the northern portion of the site (Figure 3.2). This is to separate traffic from the customers and deliveries. The delivery accesses will be secured by means of sliding gates.

3.2.7 Fire fighting

All fire-fighting controls will be in accordance with the National Building Regulations, the SANS Code of Practice (related to Community Protection against Fire) and with "Red Book" standards.

3.3 Reason for project

The Rockdale residential area (comprising of nearly 5000 households) currently does not have a shopping centre. Residents must commute to Middelburg in order to do their shopping. The applicant plans to provide a



neighbourhood shopping centre (within walking distance) where residents can buy their day-to-day convenience items.

The townplanners, Urban Dynamics (2019), indicated the following in terms of the 'need' of the proposed shopping centre:

A Sales Agreement was concluded between Chestar Supplies (PTY) LTD and the Steve Tshwete Local Municipality to alienate the application site for the purpose of a commercial development and a Council Resolution was passed on 16 August 2019 in this regard. Therefore the municipality already confirmed the need for a commercial development for the Rockdale area that does not have any neighbourhood centre within walking distance for the nearly 5000 households already situated in the area.

According to the latest Housing Sector Plan, the Strategic Development Areas around the Rockdale area could add another 14 893 households to the area which means that it could yield close to 20 000 households in the near future. Yet, no formal recognisable business centre was established in the area that can provide the residents with the day-to-day convenience items they need in walking distance from their place of residence.

Currently Rockdale hosts one business site known as the Rockdale Supermarket situated approximately 440m north-east of the application site that only provides basic needs to the community. The other shopping opportunity for the households in Rockdale other than the primary nodes like the CBD and Middelburg Mall is the newly established "Choppies" centre in Hlalamnandi (Middelburg Ext. 22). The business centre provides a convenience supermarket store, Standard Bank, take-away establishment and a funeral business. This centre is not situated within a Secondary Node and can therefore be considered as a neighbourhood centre providing basic retail needs to the surrounding neighbourhood, similar to the application site. The centre is approximately 5.5 km from the Rockdale area which is not considered as an acceptable walking distance for residents. A neighbourhood centre should be within 1.5km or 2km walking distance from residents in a neighbourhood. Rockdale and its extension were established over a period of time and are nearly fully developed with residential units of a lower income nature or units provided by various mining companies that acquired sites for resettlement purposes. However, no formal neighbourhood centre were development as part of the drive towards integrated development although some business sites were provided as part of the township establishment process of which one site was developed with a basic supermarket.

Therefore the residents in Rockdale need to travel long distances to reach a neighbourhood centre that provides more retail opportunities than the basic supermarket already established.

The need for a formal neighbourhood centre is therefore further established when considering the Council Resolution that such a business centre should be established by means of the sale agreement concluded between the Council and the company the site was awarded to.

More information regarding the 'desirability' of the proposed shopping centre is provided in Section 7.2 of the townplanning memorandum (Appendix 3).



SECTION 4: APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

The primary legal requirement for this project stems from the need for a Basic Assessment (BA) and Environmental Authorisation (EA) in terms of National Environmental Management Act, 1998 (NEMA) (Act 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended).

The Minister of Environmental and Water Affairs listed in terms of Sections 24(2), 24(5), 24D and 44, read with section 47A(1)(b) of NEMA, 1998 (Act 107 of 1998), a number of activities that require an environmental impact assessment (either a Basic Assessment (BA) or a full Environmental Impact Assessment (EIA)) before undertaking these activities.

The proposed activity would require a Basic Assessment process since the following listed activities (as identified in the Environmental Impact Assessment Regulations, 2014 (as amended)) are triggered:

Listing	Activity
Listing Notice 1 (GN R983 as amended) Listed Activity 27	<i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 12	<i>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 15	<i>The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.</i>

Appendix 1 of the EIA Regulations, 2014 (as amended) prescribes the content of the Basic Assessment Report and supporting documentation that must be submitted to the competent authority in order to obtain an EA. Table 4.1 provides an overview of where the requirements of Appendix 1 of the EIA Regulations (2014) are addressed in this BA Report.

Table 4.1: Content of the Basic Assessment Report in accordance with Appendix 1 of the EIA Regulations, 2014 (as amended)

APPENDIX 1 OF GN 326 OF 7 APRIL 2017	SECTION IN BA REPORT
3(1) 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—	
(a) details of— (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	(i) Section 2 (ii) Section 2 and Appendix 2
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	(i) Section 5.1 (ii) Section 5.1 (iii) Section 5.1
(c) a plan which locates the proposed activity or activities applied for as well as	Figure 5.1 - Topographical



APPENDIX 1 OF GN 326 OF 7 APRIL 2017	SECTION IN BA REPORT
associated structures and infrastructure at an appropriate scale; or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	map; Figure 5.2 - Aerial view
(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	(i) Section 1.1 (ii) Section 3; Section 7
(e) a description of the policy and legislative context within which the development is proposed including— (i) 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 (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	(i) Section 4; Table 4.2 (ii) Section 4; Table 4.2
(f) 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;	Section 3; Section 7; Section 10
(g) a motivation for the preferred site, activity and technology alternative;	Section 7
h) a full description of the process followed to reach the proposed preferred alternative within the site, including— (i) details of all the alternatives considered;	(i) Section 7
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	(ii) Section 6; Section 11 and Appendices 9 - 12
(iii) 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;	(iii) Section 6; Table 6.4
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	(iv) Section 5
(v) 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— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	(v) Section 8
(vi) 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;	(vi) Section 8
(vii) positive and negative impacts that the proposed 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;	(vii) Section 8
(viii) the possible mitigation measures that could be applied and level of residual risk;	(viii) Section 9 (EMPr)
(ix) the outcome of the site selection matrix;	(ix) Section 7
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	(x) N/A
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	(xi) Section 7.6
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including— (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) 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;	Section 8
(j) an assessment of each identified potentially significant impact and risk, including— (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk;	Section 8



APPENDIX 1 OF GN 326 OF 7 APRIL 2017	SECTION IN BA REPORT
(iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section 5; Section 9 (EMPr); Section 10
(l) an environmental impact statement which contains— (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	(i) Section 10 (ii) Section 9 (EMPr) and Figure 9.1 (iii) Section 7; Section 10
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Section 9 (EMPr)
(n) 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;	Section 10
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 10
(p) 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;	Section 10
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to— (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Front of Document
(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	N/A
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A



Table 4.2 provides a summary of the key policy and legislative requirements applicable to the proposed project, including how it was considered in the preparation of the report.

Table 4.2: Applicable legislation, policies and/or guidelines

Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
Environmental Management			
The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)	To establish a Constitution with a Bill of Rights for the RSA. It sets out of a number of fundamental environmental rights (Section 24).	Throughout the Basic Assessment process.	The development will not be harmful to the health or wellbeing of surrounding landowners/users. Mitigation measures will be implemented to ensure that the environment is not polluted or degraded.
National Environmental Management Act, 1998 (Act 107 Of 1998) and amendments	To provide for the integrated management of the environment. Chapter 1 sets out the national environmental principles. Chapter 5 deals specifically with integrated management. Chapter 7 deals with compliance and enforcement with specific reference to Section 28 (duty of care)	Throughout the Basic Assessment process.	Environmental management principles and general objectives of Integrated Environmental Management taken into account throughout the Basic Assessment process.
Environmental Impact Assessment Regulations, 2014 and amendments (GN 324, 325, 326, 327)	Regulations pertaining to environmental impact assessments.	Throughout the Basic Assessment process. Listed Activity 27 of GN 327 and Listed Activities 12 and 15 of GN 324.	Basic Assessment process undertaken for the proposed development in accordance with the requirements of the Regulations.
Public Participation Guideline in terms of EIA Regulations, 2017	Guideline on the public participation process	Section 6 - Public participation	Adjacent landowner/users, relevant stakeholders and interested and affected parties were consulted to obtain input with regards to the proposed development and to resolve any queries or concerns with regards to the activity.
Guideline on Need and Desirability in terms of EIA Regulations, 2017	Guideline with regards to need and desirability of activities	Section 3 - Project description Section 7 - Alternatives Section 10 - Impact statement	The need and desirability of the proposed development was considered during the Basic Assessment process.
Biodiversity			
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) and amendments	To provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair	Section 5.7 - Vegetation Section 5.8 - Animal life	The site is highly impacted (a borrow pit is present) and no sensitive environments are present on site. General mitigation measures in terms of the protection of the natural environment are however, indicated in the EMPr (Section 9).

Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
	and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African Biodiversity Institute; and for matters connected therewith.		
National Biodiversity Framework (NBF, 2008)	To co-ordinate and align the efforts of the organisations and individuals involved in conserving and managing South Africa's biodiversity	Section 5.7 - Vegetation Section 5.8 - Animal life	The site is highly impacted (a borrow pit is present) and no sensitive environments are present on site. General mitigation measures in terms of the protection of the natural environment are however, indicated in the EMP (Section 9).
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): National List of Ecosystems that are threatened and in need of protection (9 December 2011).	The purpose of listing threatened ecosystems is primarily to reduce the rate of ecosystem and species extinction. This includes preventing further degradation and loss of structure, function and composition of threatened ecosystems. The purpose of listing protected ecosystems is primarily to preserve witness sites of exceptionally high conservation value.	Section 5.7 - Vegetation	The proposed development is not located within any threatened ecosystems listed in the NEM: Biodiversity Act.
Threatened or Protected Species Regulations (GN 152 of 23 February 2007)	To further regulate the permit system in terms of restricted activities involving threatened or protected species.	Section 5.7 - Vegetation Section 5.8 - Animal life	No threatened or protected species are present on site.
List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998)	Provides a list of protected tree species.	Section 5.7 - Vegetation	No protected tree species are present on site.
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and amendments	To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental co-operation and public consultation in matters concerning protected areas; and for matters in connection therewith.	Section 5.7 - Vegetation Section 5.8 - Animal life	The site is not located within or near any protected area listed in the NEM: Protected Areas Act.
National Protected Areas Expansion Strategy	To achieve cost-effective expansion of	Section 5.7 - Vegetation	The site is not located within or near a proposed



Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
(NPAES, 2008)	the protected area network that enhances ecological sustainability and resilience to climate change.	Section 5.8 – Animal life	expansion area.
Mpumalanga Nature Conservation Act, 1998 (Act 10 of 1998) and amendments	To control nature conservation in Mpumalanga.	Section 5.7 - Vegetation Section 5.8 - Animal life	No conservation areas, CBA's or ESA's are indicated in the Mpumalanga Biodiversity Sector Plan (MBSP, 2013) for the site.
Conservation of the Agricultural Resources Act, 1983 (Act 43 of 1989) and amendments	To provide control over the utilization of the natural resources of the Republic in order to promote the conservation of soil, the water sources and the vegetation; and for matters connected therewith.	Section 5 - Biophysical description Section 9 - EMPr	Mitigation measures (e.g. erosion control) to be implemented during construction and operation to ensure compliance with the CARA Act. Mitigation measures included in the EMPr, Section 9.
Alien and Invasive Species Regulations, 1 August 2014	Regulations regarding alien and invasive species.	Section 5.7 - Vegetation Section 5.8 - Animal life Section 9 - EMPr	Mitigation measures to be implemented during construction and operation to ensure that alien and invasive species are controlled. Mitigation measures included in the EMPr, Section 9.
Water			
National Water Act, 1998 (Act 36 of 1998) and amendments	To control water management aspects.	Section 3 - Storm water management Section 5.9 - Surface water and wetlands Section 9.5.7 - Water management	No rivers, streams or other surface water environments are present on or near the site. The closest river/stream is an unnamed tributary of the Klein Olifants River located ±560 m north east of site The proposed activity does not require a water use license.
National Freshwater Ecosystem Priority Assessment (NFEPA) of 2012 and implementation manual.	Provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting sustainable use of water resources.	Section 5.9 - Surface water and wetlands	The site is not located within a NFEPA priority area.
Best Practice Guidelines published by the Department of Water Affairs and Forestry: G1 - Storm Water Management	Provides best practice principles and guidelines in terms of water management.	Section 3 - Storm water management	Mitigation measures are included in the EMPr, Section 9.
Waste			
National Environmental Management: Waste Act, 2008 (Act 59 of 2008) and amendments	To reform the law regulating waste management in order to protect health and the environment by providing for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.	Section 3 - Project description Section 9 - Waste management	Site is located within the existing Rockdale residential area where services are provided by the STLM. During the operational phase, waste will be removed by the STLM to the licenced Rietfontein Waste Disposal Site.
Nkangala District Municipality Integrated Waste Management Strategy	A strategy dealing with waste.	Section 3.2–Services required Section 9 - Waste management	A waste management license is not required for this project.
Steve Tshwete Local Municipality Integrated Waste Management By-Laws	To regulate the management of waste within the Steve Tshwete Local	Sections 3 and Section 9- Waste management	Mitigation measures in terms of waste management are included in the EMPr, Section

Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
	Municipal area.		9.
Development Planning			
Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)	To provide a framework for spatial planning and land use management	Section 3 - Description of activity Appendix 3 - Townplanning Memorandum	The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of the shopping centre.
Integrated Development Plan for the Steve Tshwete Local Municipality	Broad spatial framework guidelines for the Steve Tshwete Local Municipality.	Appendix 3 - Townplanning Memorandum	The IDP was taken into account in the townplanning process.
Spatial Development Framework for the Steve Tshwete Local Municipality	Spatially based policy guidelines whereby changes, needs and growth in the region can be managed to benefit the whole community.	Section 5.17 - Sense of place Figure 5.29 - SDF Appendix 3 - Townplanning Memorandum	In the SDF, the site is indicated as 'future Residential development'. The SDF does however, make provision for neighbourhood shopping centres within residential areas.
Sub-division of Agricultural Land, 1970 (Act 70 of 1970)	To control the subdivision and, in connection therewith, the use of agricultural land.	Section 3 - Description of activity Appendix 3 - Townplanning Memorandum	The site is zoned Public Open Space and located within the existing Rockdale residential area. The site is not agricultural land and will not be subdivided.
National Framework for Sustainable Development (NFSD, 2008)	To enunciate South Africa's national vision for sustainable development and indicate strategic interventions to re-orientate South Africa's development path in a more sustainable direction. It proposes a national vision, principles and areas for strategic intervention that will enable and guide the development of the national strategy and action plan.	Throughout the Basic Assessment process.	Sustainable development principles taken into account throughout the Basic Assessment process.
National Development Plan 2030 (NDP, 2012)	The NDP aims to eliminate poverty and reduce inequality by 2030. These goals can be realized by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.	Section 3.3 - Reason for project Section 7 - Alternatives Section 10 - Impact statement	The proposed development will create employment opportunities during the construction and operational phases and will provide a much needed neighbourhood shopping centre within the Rockdale residential area.
Heritage Resources			
National Heritage Resources Act, 1999 (Act 25 of 1999) and amendments	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations.	Section 5.13 - Sites of archaeological/cultural interest Section 9 - EMPr	No sites of archaeological interest are expected to occur in view of the highly disturbed nature of the site. A motivation for exemption from doing a Phase I Heritage Impact Assessment (HIA) was compiled by the appointed archaeologist. A Palaeontological Impact Assessment was conducted and mitigation measures provided in Section 9.

Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
Air Quality			
National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) and amendments	To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures.	Section 5.11 - Air quality Section 9 - EMPr	The development will not produce emissions as it is a business/commercial development, which would be provided with electricity. An emissions license is not required.
Highveld Priority Area Air Quality Management Plan, 2011	To achieve and maintain compliance with the ambient air quality standards across the HPA, using the Constitutional principle of progressive realisation of air quality improvements. The AQMP for the HPA provides the framework for implementing departments and industry to include AQM in business planning to ensure effective implementation and monitoring.	Section 5.11 - Air quality	The development is located within the Highveld Priority Area. The development will however, not produce emissions as it is a business/commercial development, which would be provided with electricity.
Noise			
Noise Regulations (GN 154 of 1992)	To set out rules relative to the control of noise.	Section 5.12 - Noise Section 9 - EMPr	Site is located within the existing Rockdale residential area of the STLM. Shop owners and residents to adhere to the noise by-laws. Mitigation measures to reduce noise provided in the EMPr, Section 9.
Steve Tshwete Local Municipality by-law with regards to noise and control.	To regulate noise within the Steve Tshwete Local Municipal area.	Section 5.12 - Noise Section 9 - EMPr	
Health and Safety			
Health Act, 1977 (Act 63 of 1977) and amendments	To promote public health.	Section 9 - EMPr	Mitigation measures to reduce potential impacts on the site workers provided in the EMPr, Section 9.
Occupational Health and Safety Act, 1993 (Act 85 of 1993) and amendments	To provide for the health and safety of persons at work and for the health and safety of persons in connection with the activities of persons at work and to establish an advisory council for occupational health and safety.	Section 9 - EMPr	Mitigation measures to reduce potential impacts on the contractors and employees/site workers provided in the EMPr, Section 9.
National Building Regulations and Standards Act, 1977 (Act 103 of 1977) and amendments	To provide for the promotion of uniformity in the law relating to the erection of buildings in the areas of	Section 3 - Project description	The buildings will be constructed according to the National Building Regulations.



Legislation/policies/guidelines	Aim of legislation, policy or guideline	Where considered in BA Report	Adherence of proposed activity
	jurisdiction of local authorities; for the prescribing of building standards; and for matters connected therewith.		
National Veld and Forest Fire Act, 1998 (Act 101 of 1998) and amendments	To prevent and combat veld, forest and mountain fires throughout South Africa.	N/A	The site is located within the existing Rockdale residential area.
General			
Protection of Personal Information Act, 2013 (Act 4 of 2013)	The purpose of this act is to give effect to the constitutional right to privacy by safeguarding personal information and to regulate the manner in which personal information may be processed.	Throughout process. Basic Assessment	Throughout Basic Assessment process.
Promotion of Access to Information Act, 2000 (Act 2 of 2000) and amendments	To give effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights; and to provide for matters connected therewith.	Throughout process. Basic Assessment	Throughout Basic Assessment process.
Promotion of Administrative Justice Act, 2000 (Act 3 of 2000) and amendments	The Act aims to make the administration (e.g. Government and Parastatals) effective and accountable to people for its actions.	Throughout process. Basic Assessment	Throughout Basic Assessment process.



SECTION 5: BIOPHYSICAL DESCRIPTION

Appendix 1 of the EIA Regulations (2014, as amended) requires a description of *"the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects"*.

This section provides an overview of the environmental features of the site and surrounding area, which includes the biophysical, socio-economic and cultural/heritage aspects. The aim of this section is to provide information on the current baseline conditions of the site that will be used to identify potential impacts of the development on the environment and vice versa in Section 8 (Impact Assessment) of this report.

5.1 Location of the site

The proposed neighbourhood shopping centre will be located on Erf 1051, Rockdale, Middelburg. The said site is located adjacent to the N11 national road (Hendrina Road) and $\pm 800\text{m}$ north of the N4 national road, within the Rockdale residential area (Figure 5.1).

The co-ordinates for the centre of the site are:

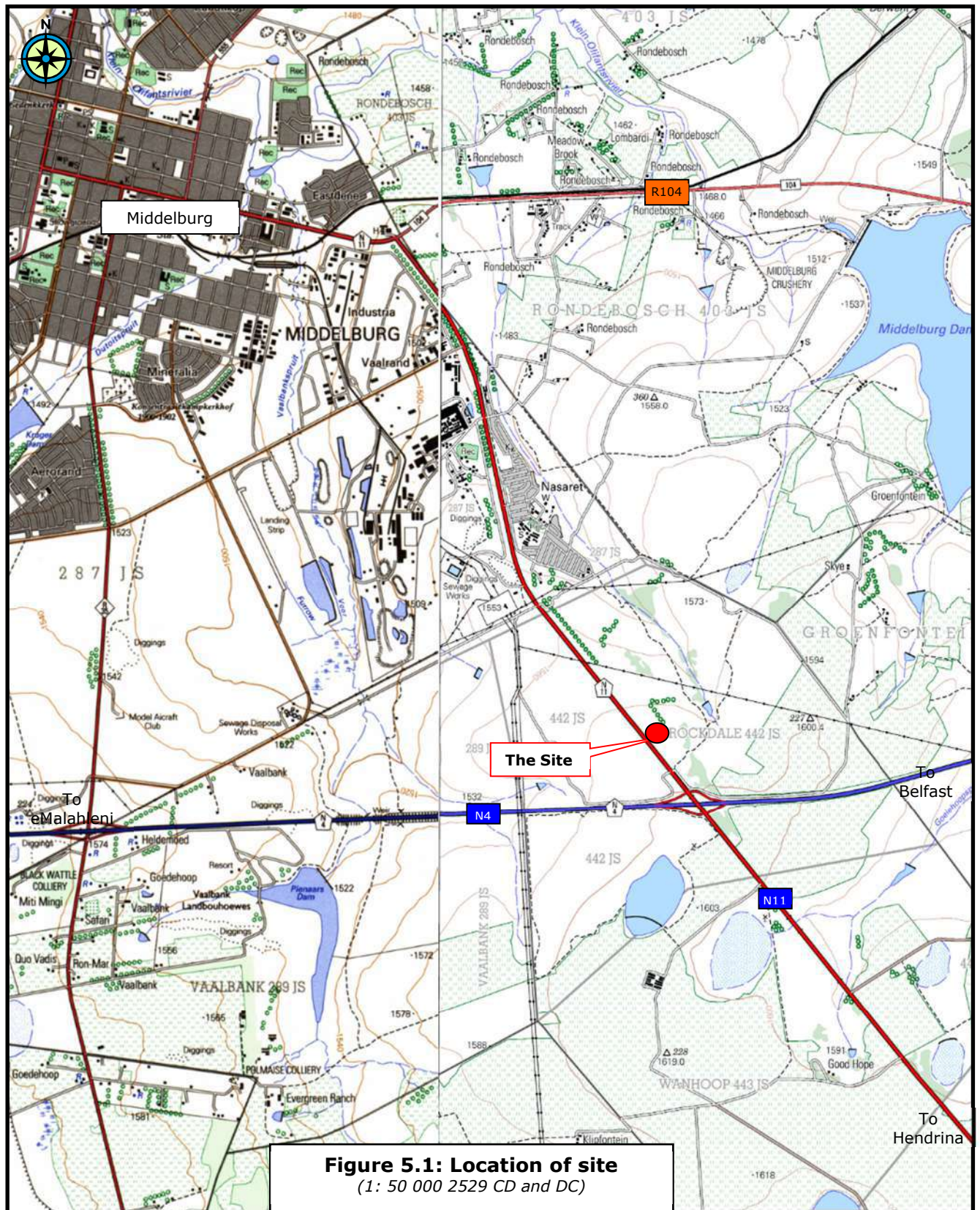
Site	Latitude (S):			Longitude (E):		
Erf 1051	25°	49'	22.38"S	29°	31'	25.87"E

The Surveyor-General 21 digit site reference number for the proposed project is:

T	O	J	S	0	1	0	3	0	0	0	0	1	0	5	1	0	0	0	0
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The said property falls under the jurisdiction of the Steve Tshwete Local Municipality (MP313) and the Nkangala District Municipality (DC31).





5.2 Climate

The South African Weather Bureau has partitioned the country into 15 climatic regions. This division is based on:

- Geographic considerations, more specifically the prominent mountain ranges (great escarpment) which constitute the main climatic divides, besides also other features such as rivers and political boundaries;
- The interior plateau - use has been made of the change from BW to BS and from BS to C climates according to the Köppen classification.
- The site falls within Climatic Region H – The Highveld.

The climate is typical of the Highveld, with warm summers and cold winters with occasional severe frosts. Rainfall typically occurs as high-intensity short duration thunderstorms. The average frost period is 111 days per annum. The mean annual temperature is 22.5°C, with recorded extremes of -11°C and 34°C.

The site occurs in Mpumalanga and falls in the summer rainfall region, which is characterised by thunderstorm activity and relatively low average rainfall. The mean annual rainfall is 735mm compared to the mean annual potential evaporation of 1500mm.

5.3 Land use

5.3.1 Land ownership

Erf 1051 is registered at the Deeds Office to the Steve Tshwete Local Municipality. It should however, be noted that the applicant, Chestar Supplies (Pty) Ltd, purchased Erf 1051 from the Steve Tshwete Local Municipality on 2 October 2019. A copy of the Deed of Sale is provided in Appendix 1.

5.3.2 Zoning of the site

The property is zoned as 'Public Open Space'. A copy of the Zoning Certificate is provided in Appendix E of Appendix 3.

5.3.3 Size of the site

The property is 1.99 ha in extent. The entire property will be used for the proposed neighbourhood shopping centre.

5.3.4 Servitudes

No servitudes are known to be present on site.

The road reserve of the N11 national road is located on the western boundary of the site (Figure 5.2). Building lines may apply. Overhead powerlines (11kV) are located within this road reserve.

5.3.5 Land use and existing infrastructure

Figure 5.2 provides an aerial view of the proposed development site.

The site forms part of the existing Rockdale residential area (Figure 5.2) and is zoned Public Open Space. The site is not developed and no formal infrastructure is present on site. The central portion of the site comprises an old borrow pit (Photo 5.1). According to Urban Dynamics (2019), this borrow pit was used during the construction of the N4 national road.





Photo 5.1: A view of the borrow pit (@ December 2019 and February 2020)

The site is currently used by the surrounding residents for the dumping of building rubble, garden and domestic waste (Photo 5.3) as well as grazing (cattle; Photo 5.2).



Photo 5.2: Cattle grazing on site



Photo 5.3: Waste dumped on site

A temporary construction camp was erected in the western portion of the site by the contractors responsible for the upgrading of the N11 national road (Photo 5.4). The south western corner of the site was cleared for a parking area (Photo 5.4). The contractors also cleared a portion of the old borrow pit for the storage of construction material (gravel) (Photo 5.5).



Photo 5.4: A view of the construction camp and parking area



Photo 5.5: Portion of borrow pit used for the storage of construction material



Figure 5.2: Aerial view of the site (Google image @October 2019)

An informal gravel road extends through the western portion of the site connecting Ekukhanyeni and Kangaroo Streets (Photo 5.6). As indicated in Figure 5.2, the site is abutted by roads, which form part of the Rockdale internal road network.



Photo 5.6: Gravel road extending through site



Photo 5.7: Road on eastern boundary of the site

5.3.6 Surrounding land uses

The proposed site is located within the existing Rockdale residential area, east of the N11 national road and north of the N4 national road (Figure 5.3). No development is currently present to the west of the proposed site (i.e. on the other side of the N11 national road, Figure 5.3). However, this property is also earmarked for residential development (proposed Rockdale West).

Other residential areas located in the area include Rockdale X2 (south of the site; Figure 5.3), Rockdale North (north east of the site; Figure 5.3), Middelburg Extension 24 (north of the site; Figure 5.3) and Nasaret Extension 1 (northwest of the site). Columbus Stainless, Middelburg Ferrochrome and an industrial area (Industria) are located towards the north north-west of the site (Figure 5.1).

The properties south of the N4 national road are used for agricultural purposes and are cultivated (Figure 5.3).

An overhead powerline is present on the western boundary of the site adjacent to the N11 national road (Figure 5.2). Other land uses in the area are generally associated with the provision of services e.g. telephone lines, roads, water and sewer pipelines, etc.

Sensitivity Assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced a High sensitivity for the Civil Aviation Theme due to the site being located within 8km of a civil aviation aerodrome.

According to Google Earth and local knowledge of the area, the closest aerodrome is located 17km north west of the site adjacent to the Botshabelo Nature Reserve. Helipads may however be present on private properties in the area.

The proposed neighbourhood shopping centre will be located within an already built up area (Figure 5.2 and 5.3). The proposed height of the buildings will be restricted to two storeys as indicated in Section 3.1.3. It is therefore not expected that the proposed neighbourhood shopping centre will impact on any aviation paths. The sensitivity rating for the Civil Aviation Theme should therefore be **Low**.



Figure 5.3: Surrounding land uses

5.4 Geology

5.4.1 Underlying geology

According to the 1: 250 000 Geological Series (number 2528 Pretoria), the site is underlain by the Vryheid Formation (sandstone, shale, gritstone, conglomerates and coal measures), Karoo Sequence – grey-green (Figure 5.4). Red porphyritic rhyolite (felsites) of the Selons River Formation, Rooiberg Group is present towards the north and east (Figure 5.4).

The said site is not subject to undermining or dolomite related instabilities. In addition, the site is not located in an area of known active seismicity.

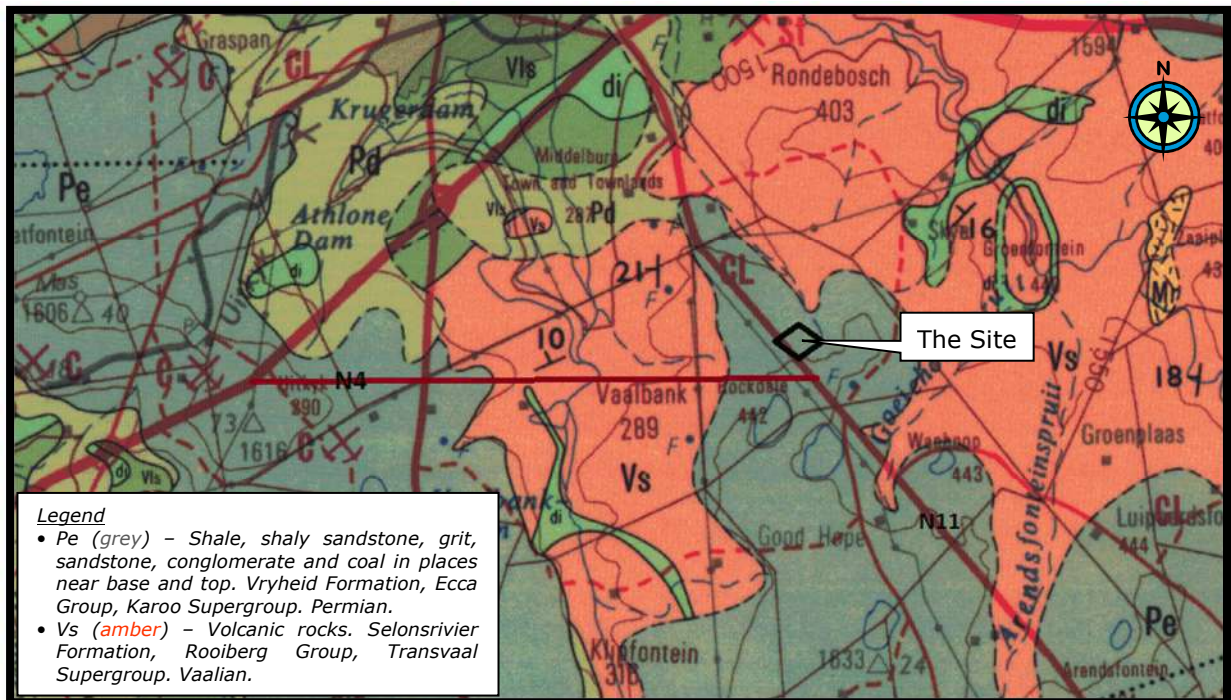


Figure 5.4: Geology of the site (1: 250 000 Geological Series, 2528 Pretoria)

5.4.2 Geotechnical zones identified

A geotechnical study was undertaken by Engeolab cc (hereafter referred to as Hansmeyer, 2005) in March 2005 to determine the suitability of the area for the existing Rockdale residential development. Erf 1051 was included in this geotechnical study as it formed part of the Rockdale residential development.

Hansmeyer (2005) classified the site as Geotechnical Zone 3a (Figure 5.5), i.e. a borrow pit where no development should take place. According to Hansmeyer (2005), the site is surrounded by Geotechnical Zone 1, which has insignificant geotechnical problems and is suitable for the construction of houses (Figure 5.5).

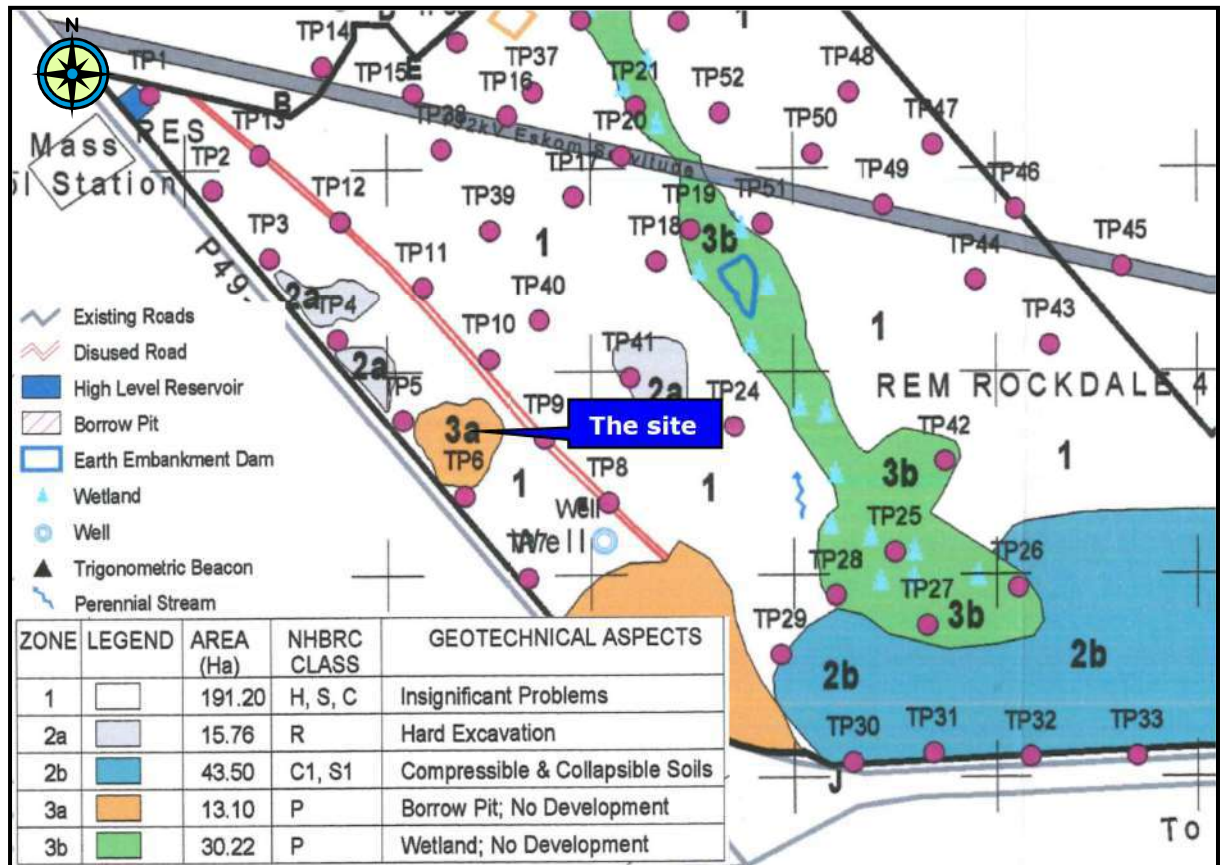


Figure 5.5: Geotechnical zones identified (taken from Hansmeyer, 2005).

The Initial Site Sensitivity Investigation conducted by AdiEnvironmental (5 December 2019, 31 January and 14 February 2020) confirmed that a large portion of the site comprises an old borrow pit, which was never rehabilitated. It is now used by the surrounding community for the dumping of building rubble, garden and domestic waste (Photo 5.8).

Figure 5.6 provides an aerial view of the site and a preliminary indication of the extent of the original borrow pit. The geology of a large portion (approximately 60%; 1.2ha) of the site was thus impacted by the excavation of the borrow pit. The geology of the remaining 40% (0.4ha) was not impacted (Figure 5.6).

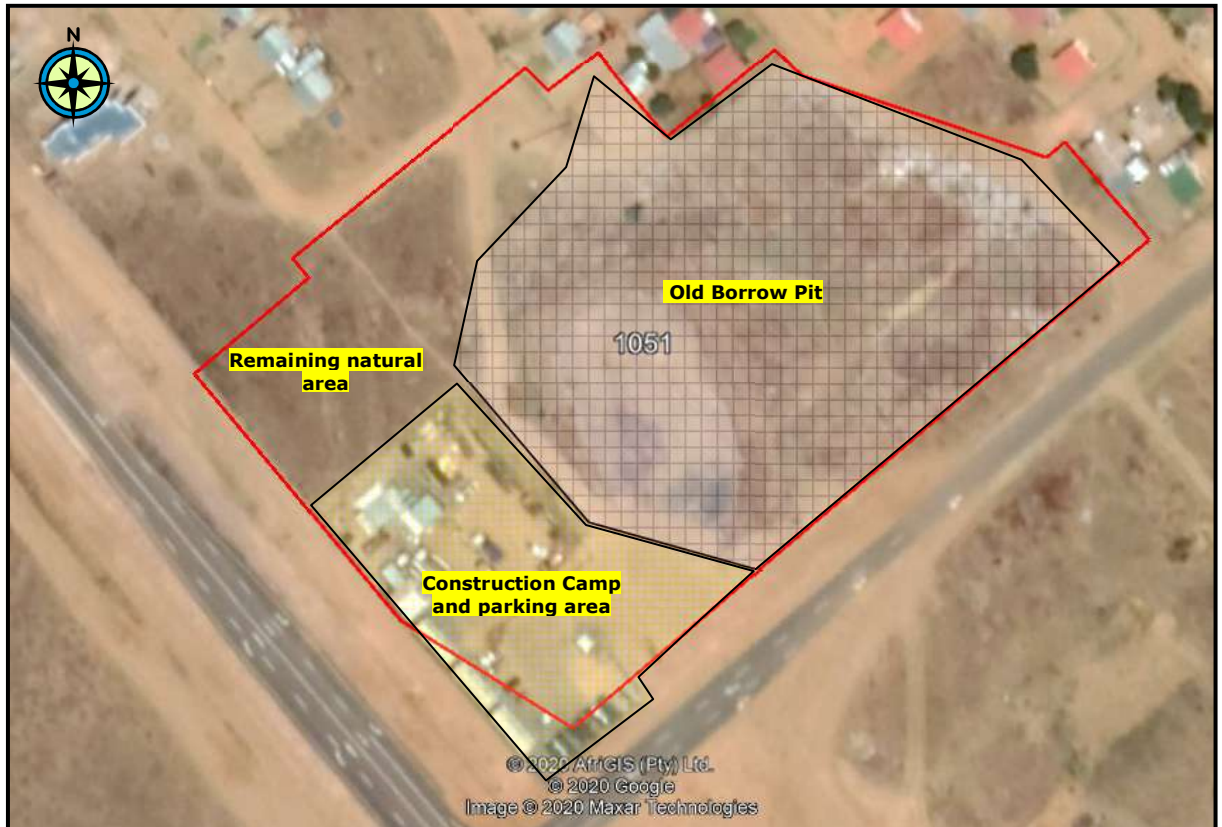


Figure 5.6: Aerial view indicating the extent of historical disturbance on site.

5.5 Topography

According to the AGIS Comprehensive Map drafted by the Department of Agriculture, Forestry and Fisheries, the terrain type of the proposed site is indicated as plains with open low hills or ridges as indicated in Figure 5.7.

The proposed site lies at approximately 1590 meters above mean sea level (mamsl). In general, the area east of the N11 national road slopes gently in a north easterly direction towards a perennial stream (Figure 5.8).

As already indicated, the site is not developed and no formal infrastructure is present on site. The central and eastern portions of the site comprises an old borrow pit (Photo 5.1). The topography of ±60% (1.2ha) of Erf 1051 was thus extensively altered from its original state as indicated in Figure 5.6. According to Urban Dynamics (2019), this borrow pit was used during the construction of the N4 national road. The 1m contour intervals of the site are indicated in Figure 5.8.

The development of the Rockdale residential area impacted on the topography of the surrounding area in terms of the construction of houses, roads and associated infrastructure.



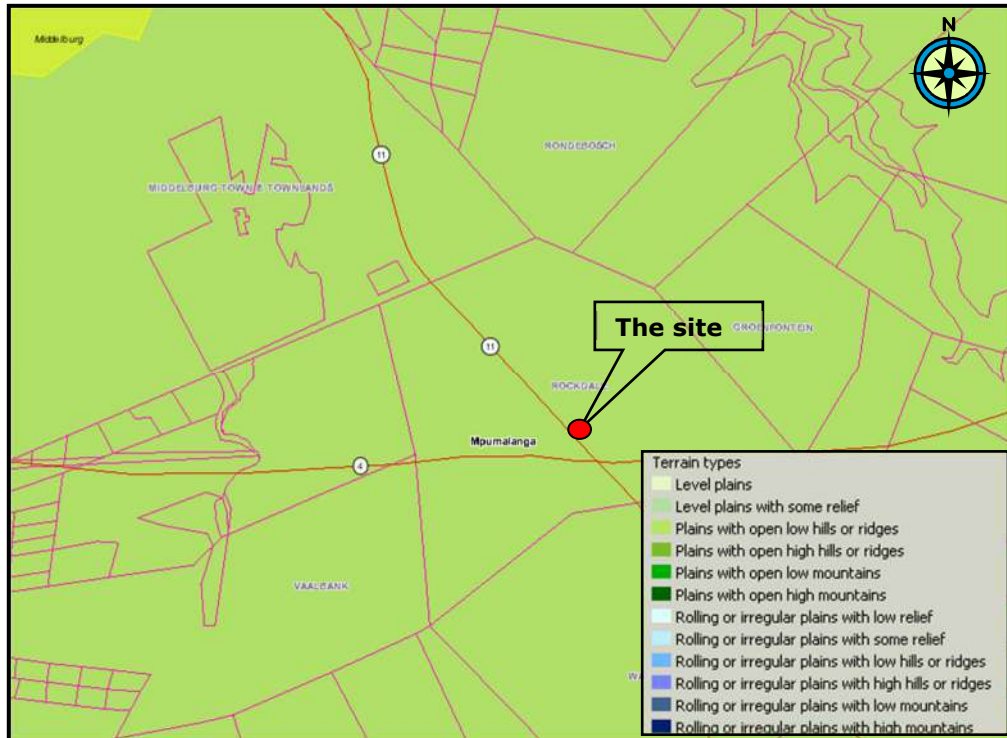


Figure 5.7: Terrain type of the proposed site (taken from Department of Agriculture, Forestry and Fisheries)

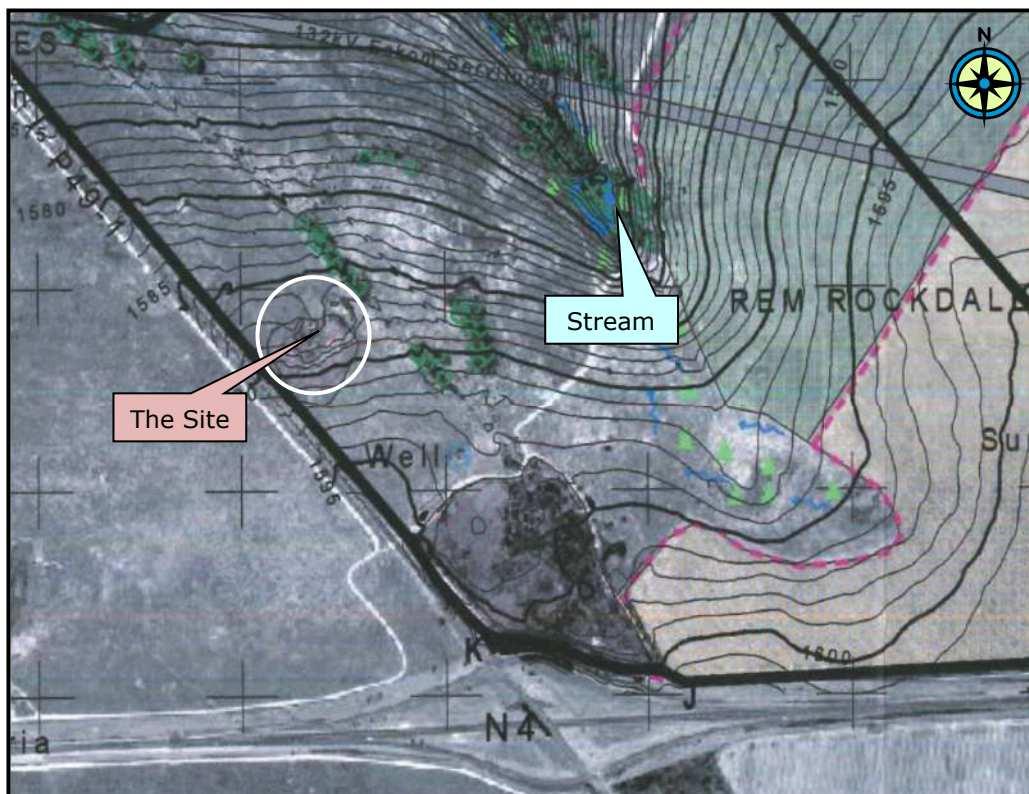


Figure 5.8: Contours of the area before the Rockdale development (taken from Hansmeyer, 2005)



5.6 Soil

5.6.1 General

According to the AGIS Comprehensive Atlas of the Department of Agriculture, Forestry and Fisheries, the soils of the area are red, yellow and/or greyish soils with low to medium base status as indicated in Figure 5.9.

A recent soil survey of the area to the west of the proposed site (i.e. area opposite the N11 national road; Figure 5.2) indicated that this area is overlain by the Westleigh soil type, which comprises of an Orthic A Horizon over a Soft Plinthic B Horizon with an effective depth of less than 300mm (Viljoen, 2017). In view of the close proximity, it is possible that the proposed site could have been historically covered by the Westleigh soil type.

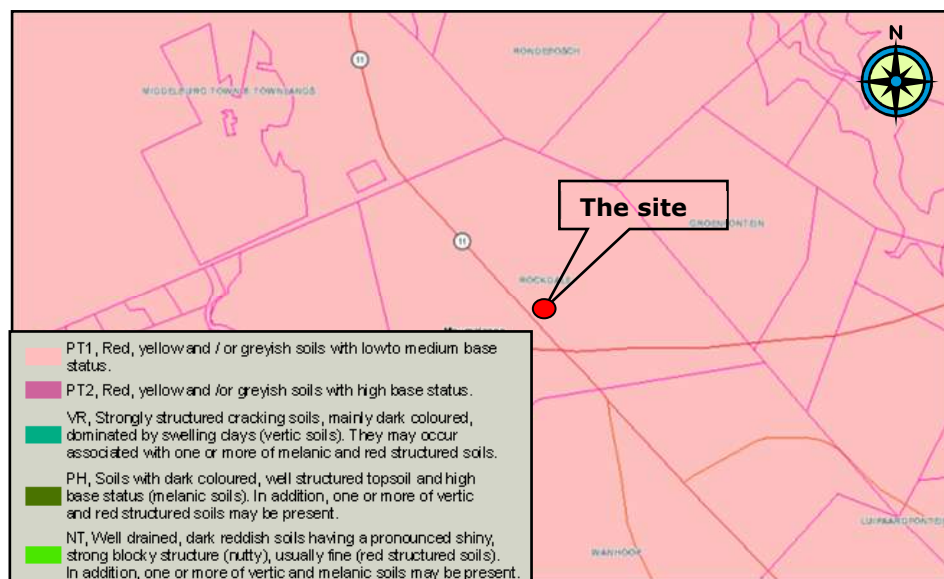


Figure 5.9: Generalized soil patterns (taken from Department of Agriculture, Forestry and Fisheries)

In terms of land capability, the proposed site is indicated as moderate potential arable land (Figure 5.10) according to the Department of Agriculture, Fisheries and Forestry.

However, Viljoen (2017) indicated the land capability of the area to the west of the proposed site (i.e. the area opposite the N11 national road, Figure 5.2) as Wilderness, i.e. effective soil depth <250mm, land which does not qualify as wetland, arable or grazing land.

In view of the close proximity, the land capability of the proposed site could have been Wilderness in view of the presence of the Westleigh soil type which is not suitable for agricultural purposes due to the effective depth being shallower than 300mm. These soils are not able to facilitate adequate root development and store enough plant available water between 33 and 1,500kPa (Viljoen, 2017).



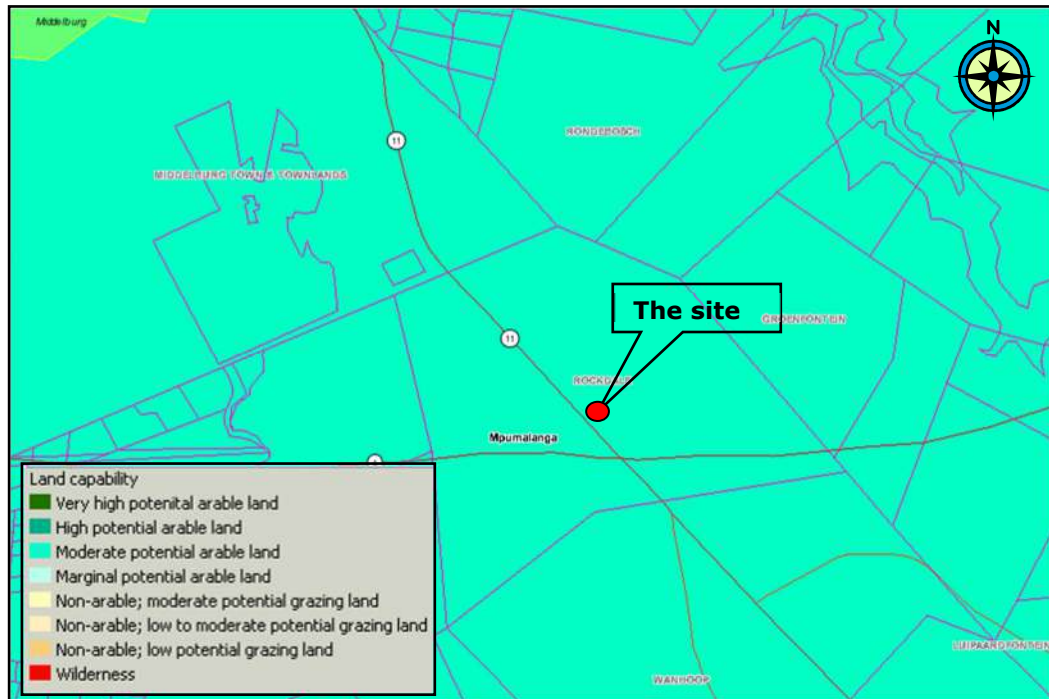


Figure 5.10: Land capability of the proposed site (taken from Department of Agriculture, Forestry and Fisheries)

Looking at grazing capacity, Figure 5.11 indicates the site as 5-7ha per Animal Unit (AU).

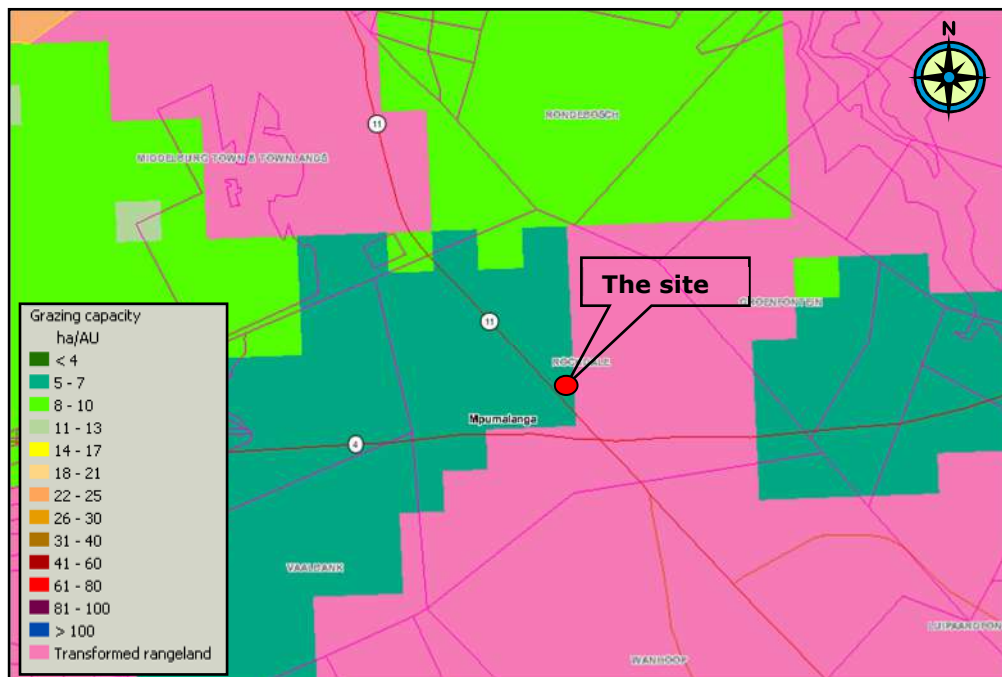


Figure 5.11: Grazing capacity of the proposed site (taken from Department of Agriculture, Forestry and Fisheries)

The Department of Agriculture, Forestry and Fisheries classified the land type of the site as Ba (Figure 5.12). The Ba land type comprises of plinthic soils (with subsurface accumulation of iron and manganese oxides due to fluctuating water table) with low to intermediate base status. Red soils are not widespread.



Upland duplex and black clay soils are rare. According to Rehab Green (2004), these soils have a Moderate to High agricultural potential.

According to a general soil and agricultural assessment conducted for the Steve Tshwete Municipal area by Rehab Green (2004), the land type of the site is more specifically Ba4.

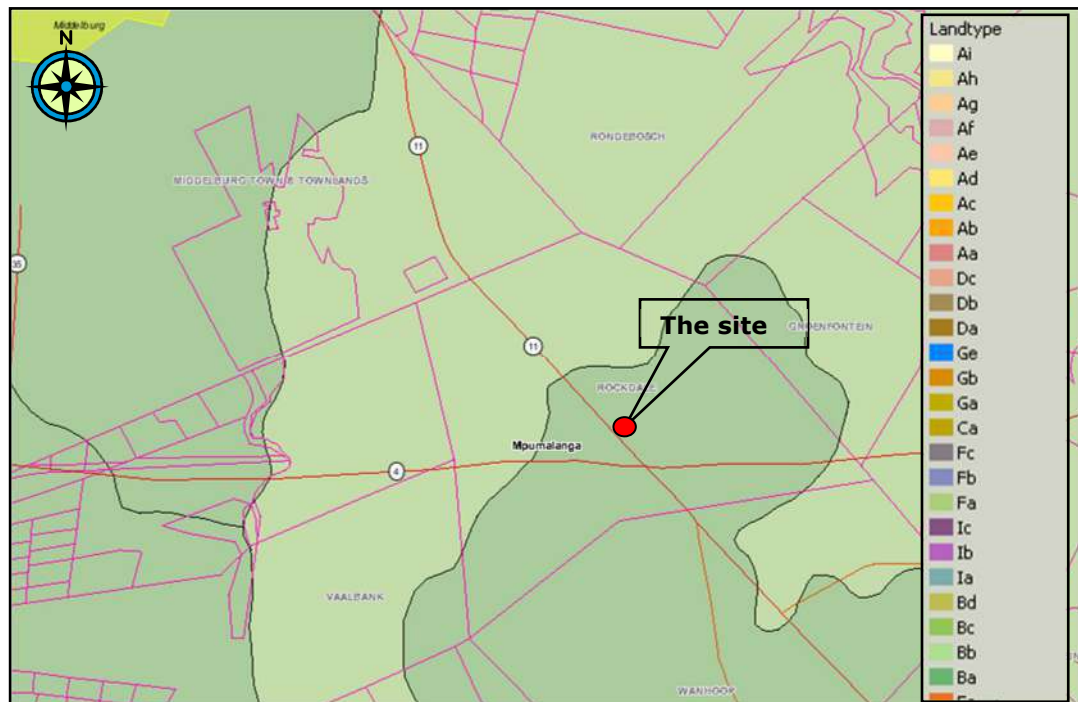


Figure 5.12: Land type of the proposed site (taken from Department of Agriculture, Forestry and Fisheries)

5.6.2 Site specific soil conditions

Figure 5.6 provides an aerial view of the proposed site. From this aerial view, it is evident that $\pm 60\%$ of the site comprises an old borrow pit.

The Initial Site Sensitivity Investigation conducted by AdiEnvironmental (5 December 2019, 31 January and 14 February 2020) confirmed that the majority of the site comprises an old borrow pit, which was never rehabilitated. It is now used by the surrounding community for the dumping of building rubble, garden and domestic waste (Photo 5.8).

Intensive soil sampling of numerous points across the site (to a depth of 500mm below surface) indicated that the site is partially covered by rubble and spoil material (Burton, 2018). Approximately 60% of the site's soils (1.2ha) have thus been severely impacted.

It is estimated that $\pm 20\%$ of the site soils (0.4ha) has been impacted in terms of compression due to the presence of the construction camp and the movement of heavy vehicles (Figure 5.6). The remaining 20% of the site (0.4ha) is still in a fairly natural state with no real impacts on the soil evident (Figure 5.6).





Photo 5.8: Illegal dumping on site within the borrow pit (taken from Burton, 2018)

Sensitivity Assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced a High sensitivity for the Agricultural Theme.

Due to the extensive disturbance (as a result of the borrow pit and dumping of waste) and the fact that the site is located within a residential area, the Agricultural Sensitivity of the site is considered to be **Low** and not High as indicated in the Screening Report.

5.7 Natural vegetation

5.7.1 Regional vegetation and conservation status

According to the 'The vegetation of South Africa, Lesotho and Swaziland', the study area falls within the Mesic Highveld Grassland Bioregion, specifically the Rand Highveld Grassland (veld type Gm11) (Mucina & Rutherford, 2006; Figure 5.13). The vegetation type was previously referred to by Low and Rebelo (1998) as Moist Sandy Highveld Grassland (38) and Rocky Highveld Grassland (34) and by Acocks (1953) as Bankenveld (61).

This grassland is found at an altitude of 1 300 metres above mean sea level (mamsl) to 1 635 mamsl in areas between rocky ridges from Pretoria to eMalahleni (Witbank). It also extends onto ridges in the Stoffberg and Roosenekal regions as well as west of Krugersdorp.

This vegetation type is species-rich and comprises wiry, sour grassland alternating with low, sour shrubland on rocky outcrops and steeper slopes. The most common grasses on the plains belong to the genera *Themeda*, *Eragrostis*, *Heteropogon* and *Elionurus*. A high diversity of herbs, many of which belong to the *Asteraceae* family, is also a typical feature. Rocky hills and ridges carry sparse woodlands with *Protea caffra* subsp. *caffra*, *Acacia caffra* and *Celtis africana*, accompanied by a rich suite of shrubs among which the genus *Rhus* is most prominent.

Almost half of the Rand Highveld Grassland has already been transformed by cultivation, urbanisation, plantations and dams. This vegetation type has been afforded the status of endangered with a conservation target of 24%. Only approximately 1% of this vegetation type is currently conserved.



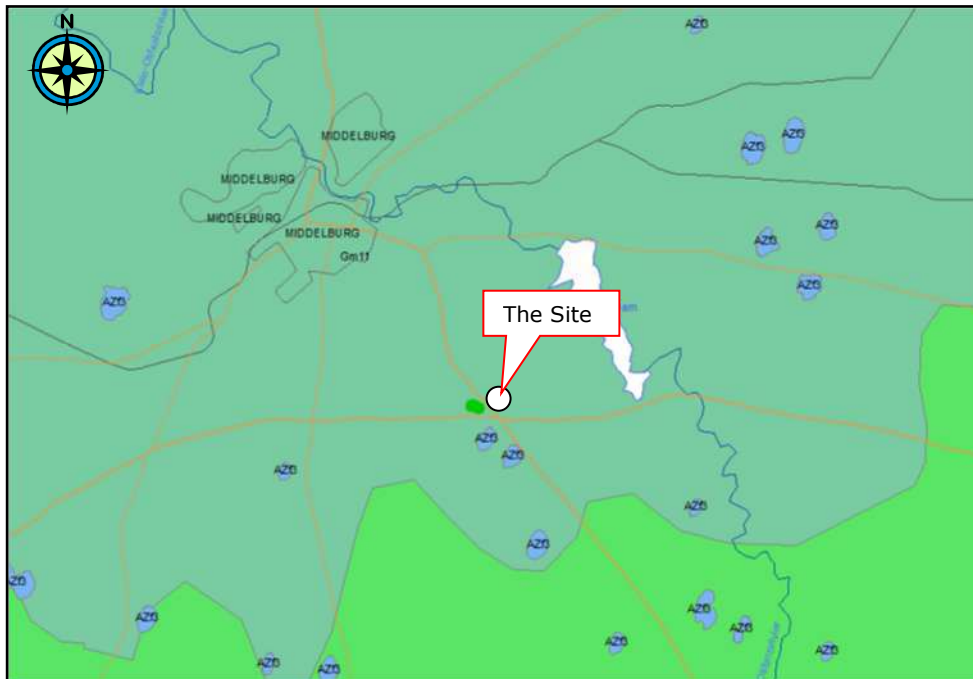


Figure 5.13: Vegetation type (taken from Mucina and Rutherford, 2006)

A recent vegetation survey of the area to the west of the proposed site (i.e. area opposite the N11 national road; Figure 5.2) indicated the presence of Rand Highveld Grassland vegetation type on shallow soil (Venter and Niemand, 2017). According to Venter and Niemand (2017), this vegetation consists of the Rocky Grassland and *Hyparrhenia hirta* vegetation units. These two units have numerous species in common. The Rocky Grassland vegetation unit however, has a higher species diversity and the dominant species is not a single species, but several grass and forb species.

The National List of Ecosystems that are Threatened and in need of protection (GN1002 of 2011), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004), lists this vegetation type as **Vulnerable**.

Vulnerable (VU) ecosystems - being ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems.

The stated purpose of listing 'threatened ecosystems' is primarily to reduce the rate of ecosystem degradation and species extinction.

The said project area does not fall within a nature reserve, conservancy or other protected area (Mpumalanga Biodiversity Sector Plan, 2013; Figure 5.15). It is also not situated within any of the South African centres of endemism recognised by Van Wyk and Smith (2001).

The site and surrounding area is indicated as '**No Natural Habitat Remaining**' (Figure 5.14) in terms of the terrestrial biodiversity assessment of the Mpumalanga Biodiversity Conservation Plan (2006).



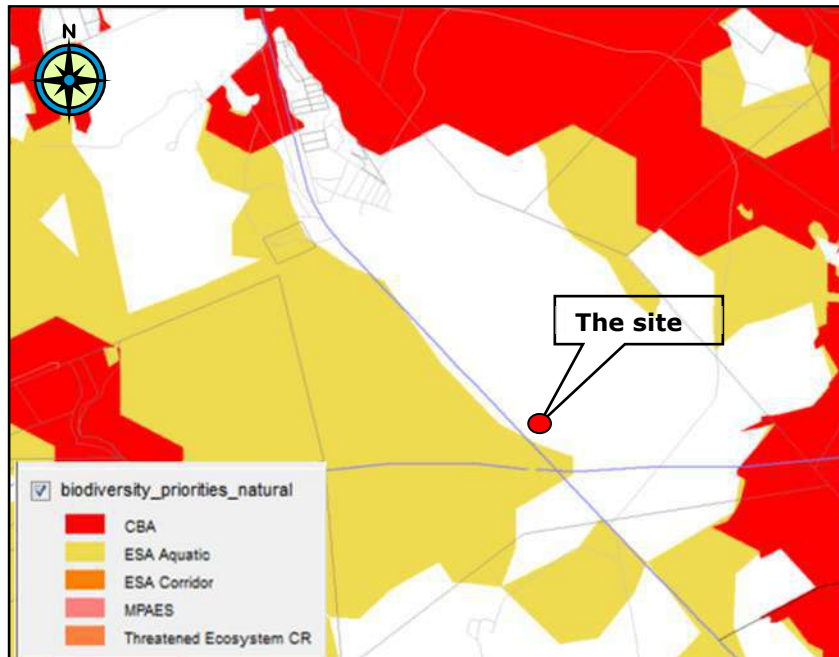


Figure 5.14: Terrestrial biodiversity assessment of the Mpumalanga Biodiversity Conservation Plan, 2006

Over the last few years (2007 – 2013), the Mpumalanga Tourism and Parks Agency reviewed and updated the Mpumalanga Biodiversity Conservation Plan (2006) in order to align the spatial data with the bioregional plan requirements of the South African National Biodiversity Institute (SANBI) and surrounding provinces.

The Mpumalanga Biodiversity Sector Plan (MBSP, 2013) was subsequently developed. The MBSP (2013) is a biodiversity planning tool that provides the most recent spatial biodiversity information to inform land-use and development planning (Lotter *et al.*, 2014). The main mapping categories used in the MBSP (in descending order of importance in terms of meeting conservation targets), are:

- Protected Areas;
- Critical Biodiversity Areas (Irreplaceable and Optimal);
- Ecological Support Areas;
- Other Natural Areas;
- Modified (Heavily Modified and Moderately Modified: old lands).

This plan is also used to determine whether or not Listing Notice 3 (GN R324) of the Environmental Impact Assessment Regulations, 2014 (as amended) is triggered.

According to the MBSP (2013), the site is classified as '**Heavily Modified**' (Figure 5.15). No Critical Biodiversity Areas, Ecological Support Areas or Ecological Corridors are present on site (Figure 5.15 and 5.17). The closest Critical Biodiversity Area (CBA: Optimal) is located to the west of the site, i.e. on the other side of the N11 national road (Figure 5.15).

The proposed project would therefore not trigger any listed activities in Listing Notice 3 of the EIA Regulations, 2014 (as amended) in terms of the systematic biodiversity plan.



Figure 5.15: Terrestrial biodiversity assessment of the Mpumalanga Biodiversity Sector Plan, 2013

5.7.2 On site vegetation

The Initial Site Sensitivity Investigation conducted by AdiEnvironmental (5 December 2019, 31 January and 14 February 2020) confirmed that the majority of the site comprises an old borrow pit ($\pm 60\%$; 1.2ha of the site; Figure 5.6), which was never rehabilitated. It is now used by the surrounding community for the dumping of building rubble, garden and domestic waste (Photo 5.8). The old borrow pit area (Figure 5.16) consists mainly of plant species indicative of disturbance (Photo 5.9) as indicated in Table 5.1. A number of weeds and alien invasive species were recorded (Table 5.1).

Burton (2018) indicated the vegetation composition to consist of pioneer species and alien invasive species. Wetland vegetation was not noted on site.



Photo 5.9: A view of the vegetation indicative of disturbance within the old borrow pit area

The vegetation over $\pm 20\%$ of the site (0.4ha) was cleared for the construction camp and parking area (Photo 5.10 and Figure 5.16). In addition, vegetation was also cleared within the borrow pit for the storage of construction material and the construction of gravel roads (Figure 5.16).





Photo 5.10: Area where vegetation was completely removed

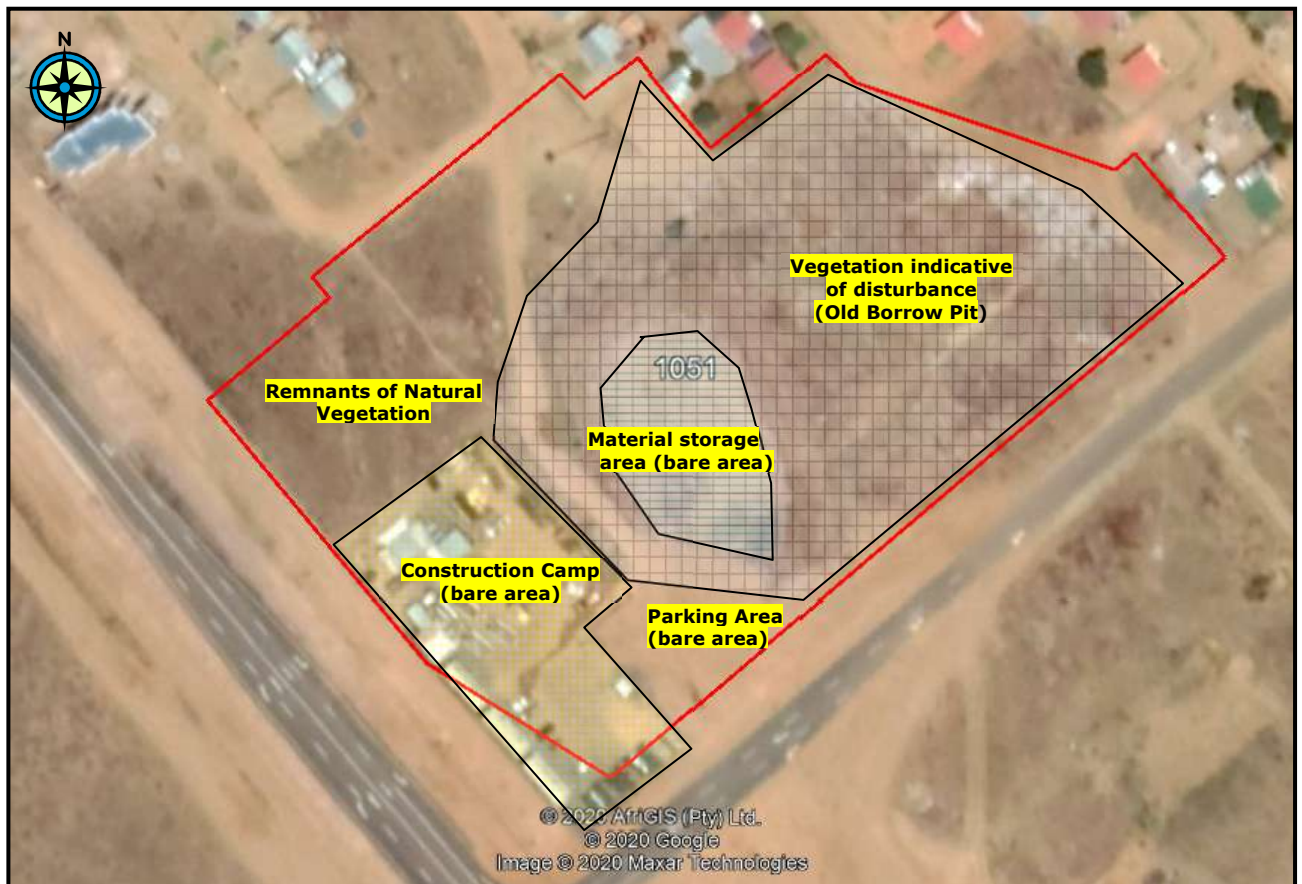


Figure 5.16: Aerial view indicating the vegetation present on site

A small piece of natural grassland vegetation comprising $\pm 20\%$ of the site (0.4ha) is present in the north western portion (Figure 5.16; Photo 5.11). This remaining natural vegetation resembles the Rand Highveld vegetation (more specifically the Rocky Grassland vegetation unit) identified by Venter and Niemand (2017) on the area to the west of the proposed site (i.e. opposite the N11 national road). In view of the close proximity, it is possible that the entire proposed site could have originally been covered by this Rocky Grassland vegetation unit.

Table 5.1 provides a list of the plant species recorded on site by AdiEnvironmental.





Photo 5.11: Remnants of Rocky grassland present in the north western corner of the site

Table 5.1: List of plant species recorded on Erf 1051

SCIENTIFIC NAME	COMMON NAME
<i>Eleusine indica</i> ^{*1}	Goose grass
<i>Eragrostis chloromelas</i> ^{*1}	Curly leaf
<i>Heteropogon contortus</i> ^{*1}	Spear grass
<i>Hypparheni hirta</i> ^{*1}	Common thatching grass
<i>Melinis repens</i> ^{*1}	Natal red top
<i>Perotis patens</i> ^{*1}	Cat's tail
<i>Setaria pallide-fusca</i> ^{*1}	Garden bristle grass
<i>Setaria verticillata</i> ^{*1}	Bur bristle grass
<i>Sporobolus africanus</i> ^{*1}	Ratstaildropseed
<i>Sporobolus fimbriatus</i> ^{*1}	Bushveld dropseed
<i>Urochloa panicoides</i> ^{*1}	Garden signal grass
<i>Aristida congesta subsp. congesta</i>	Tassle Three-awn
<i>Cymbopogon validus</i>	Giant turpentine grass
<i>Digitaria eriantha</i>	Finger grass
<i>Eragrostis gummiflua</i>	Gum grass
<i>Eragrostis racemose</i>	Narrow heart love grass
<i>Cyperus esculentus</i> ^{*1}	Yellow nutsedge
<i>Haplocarpha scaposa</i>	False Gerbera
<i>Helichrysum coriaceum</i>	Vaalteebossie
<i>Helichrysum rugulosum</i>	
<i>Pelargonium cf. luridum</i>	Starburst pelargonium
<i>Senecio sp.</i>	
<i>Verbena bonariense</i>	
<i>Wahlenbergia cf. undulata</i>	
<i>Bidens pilosa</i> ^{*2}	Blackjack
<i>Leonotis leonurus</i>	Narrow-leaved minaret flower/wilde dagga
<i>Stoebe vulgaris</i>	Bankrotbos
<i>Tagetes minuta</i> ^{*2}	Khakibos
<i>Ipomoea purpurea</i> ^{*2}	Morning glory
<i>Pennisetum clandestinum</i> ^{*2}	Kikuyu
<i>Persicaria capitata</i> ^{*2}	Knotweed
<i>Solanum sisymbriifolium</i> ^{*2}	Wild tomato
<i>Datura stramonium</i> ^{*2}	Thorn apple
<i>Verbena bonariense</i> ^{*2}	
<i>Ricinus communis</i> ^{*2}	Castor Oil Plant
<i>Acacia mearnsii</i> ^{*2}	Blackwattle

Legend: ^{*1}: plant species indicative of disturbance; ^{*2}: weeds and invasive plant species.



5.7.3 Plant Species of Conservation Concern

The term 'Species of Conservation Concern' refers to the IUCN threatened and Near Threatened categories as well as the South African Red List categories (i.e. Critically Rare, Rare and Declining).

Table 5.2 provides an indication of the Red Data plant species recorded on the PRECIS Database of the South African National Biodiversity Institute for the quarter degree squares 2529CD and 2529 DC.

Table 5.2: Red Data plant species recorded for quarter degree squares: 2529CD and 2529DC

Latin Name	Status	Habitat	Habitat on site
<i>Anacampseros subnuda lubbersii</i>	Vulnerable	Rock sheets	NO
<i>Frithia humilis</i>	Endangered	Rock sheets/very shallow soils	NO
<i>Brachycorythis conica</i> subsp. <i>transvaalensis</i>	Critically endangered	Short, open grassland or wooded grassland, on sandy gravel overlying dolomite or quartzite. Altitude of 1 000-1 705 m.	Although some grassland habitat is present, their occurrence on site is highly unlikely since the site area has been impacted upon as indicated previously.
<i>Callilepis leptophylla</i> (Wild Daisy)	Declining/Least Concern	Grassland areas	
<i>Hypoxis hemerocallidea</i> (Yellow Start)	Declining/Near Threatened	Grassland	
<i>Dioscorea sylvatica</i>	Vulnerable	Wooded and relatively mesic places. Coastal bush, moister bushveld areas and wooded mountain kloofs.	NO

None of the 'Species of Conservation Concern' (Table 5.2) were noted during the site visits.

5.7.4 Protected plant species

In addition to the IUCN categories, the following legislation affords protected status to selected indigenous plant species:

- National Forests Act (Act 84 of 1998),
- NEMA Biodiversity Act (Act 10 of 2004, as amended in 2007), and
- Mpumalanga Nature Conservation Act (No.10 of 1998).

National Forests Act (Act 84 of 1998)

The National Forests Act lists 47 tree species that may not be removed or damaged without a license from the National Department of Agriculture.

None of the 47 tree species listed in Schedule A of this Act occur on site or its immediate surroundings.

NEMA Biodiversity Act (Act 10 of 2004, as amended in 2007)

The intention of the Biodiversity Act is to protect plant species (e.g. cycads, yellow arum lily, protea, etc.) that are directly threatened in terms of their utilisation. The destruction, collection or trading of any species listed in this Act requires a permit.

No plant species listed in the NEMA Biodiversity Act were noted on site.

Mpumalanga Nature Conservation Act (No.10 of 1998)

A number of plant species are protected in the Mpumalanga Province under the Mpumalanga Nature Conservation Act, whether they are considered to be threatened or not. This includes, but is not limited to, the following common names: ferns, flame lilies, christmas bells, pineapple flowers, clivia, nerine, crinum, ground lily, fire lily, irises, all orchids. A permit has to be obtained prior to their removal.

No plant species protected under the Mpumalanga Nature Conservation Act were noted on site.

5.7.5 Invader or exotic species

A number of plant species (Table 5.3) are listed as alien invasive species in terms of the Alien Invasive Species (AIS) Regulations, as defined in the National Environmental Management Biodiversity Act (Act no. 10 of 2014). The AIS regulations place each declared alien invasive plant species into one of four categories and stipulates measures for the eradication of plants in each of the four categories (Table 5.3).

Table 5.3: Declared weeds and alien invasive plant species

SCIENTIFIC NAME	COMMON NAME	CATEGORY
<i>Ipomoea purpurea</i>	Morning glory	Category 1b
<i>Pennisetum clandestinum</i>	Kikuyu	Category 1b
<i>Persicaria capitata</i>	Knotweed	Category 1b
<i>Solanum sisymbriifolium</i>	Wild tomato	Category 1b
<i>Datura stramonium</i>	Thorn apple	Category 1b
<i>Verbena bonariense</i>		Category 1b
<i>Ricinus communis</i>	Castor Oil Plant	Category 2
<i>Acacia mearnsii</i>	Blackwattle	Category 2

- *Category 1a: Invasive species which must be combatted and eradicated. Any form of trade or planting is strictly prohibited.*
- *Category 1b: Invasive species which must be controlled and wherever possible, removed and destroyed. Any form of trade or planting is strictly prohibited.*
- *Category 2: Invasive species, or species deemed to be potentially invasive, in that a permit is required to carry out a restricted activity. Category 2 species include commercially important species such as pine, wattle and gum trees. Plants in riparian areas are Category 1b.*
- *Category 3: Invasive species which may remain in prescribed areas or provinces. Further planting, propagation or trade, is however prohibited. Plants in riparian areas are Category 1b."*



Photo 5.12: A view of the Castor Oil Plant recorded on site

5.7.6 Sensitivity Assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced the following sensitivities:



- Plant species theme: **Medium** sensitivity due to the possible presence of five species.
- Terrestrial biodiversity theme: **Very high** sensitivity
 - Vulnerable ecosystem;
 - Focus area for land-based protected areas expansion.

Plant species theme:

Due to the highly modified state of the site vegetation (most of the species present are typical of disturbed areas; Table 5.1 and 5.3) and the absence of habitat for the threatened species (Table 5.2), the site sensitivity for the Plant Species Theme is considered to be **Low** and not Medium as indicated in the Screening Report.

Terrestrial biodiversity theme:

The Very high terrestrial biodiversity sensitivity is due to the site being located within the Rand Highveld Grassland vegetation type, which is a Vulnerable vegetation type (see Section 5.7.1). As already indicated, the onsite vegetation is highly modified with only a small portion (20%) of natural vegetation remaining (Figure 5.16).

According to the screening report, the larger area was identified as a focus area for land-based protected areas expansion, which also resulted in a Very high terrestrial biodiversity sensitivity. The proposed site does not fall within a nature reserve, conservancy or other protected area (Mpumalanga Biodiversity Sector Plan, 2013; Figure 5.15). As indicated in Figure 5.3, the surrounding area is already developed (existing Rockdale residential area) and could not form part of a protected area. The site is therefore considered to be of **Low** biodiversity sensitivity.

5.8 Animal life

5.8.1 Regional conservation status

According to the MBSP (2013), the site is classified as '**Heavily Modified**' in terms of the Terrestrial Biodiversity Assessment (Figure 5.15). The site is also classified as '**Heavily Modified**' in terms of the Freshwater Biodiversity Assessment (Figure 5.17).

It should be noted that the MBSP freshwater assessment includes information obtained from the National Freshwater Ecosystem Priority Areas (NFEPA) and threatened freshwater ecosystems databases (National Biodiversity Assessment 2011).

No Critical Biodiversity Areas (CBA's) for aquatic species or Ecological Support Areas (ESA's) for fish are present on or near the site (Figure 5.17).





Figure 5.17: Freshwater biodiversity assessment of the Mpumalanga Biodiversity Sector Plan, 2013

5.8.2 Animal life found on site and surrounds

As indicated in Section 5.7, the on site vegetation (and associated animal habitats) was severely impacted as a result of the old borrow pit and other activities taking place on site.

Although the natural animal habitats were destroyed as a result of the excavation activities, the subsequent dumping of waste, building rubble, etc. could have created new habitats for reptiles, rodents, etc. It is highly probable that many rodents are present on site as a result of the dumping of waste.

Due to the excavation activities, water ponds on site during the rainy season. The temporary ponds could provide ideal habitat for amphibians.

Bird species like the Laughing Dove (*Streptopelia senegalensis*) and Red Bishops (*Euplectes orix*) were noted on site.

No larger animal species were noted on site during the site visits. It is highly unlikely that larger animal species (e.g. antelopes) would permanently inhabit the site due to the activities taking place in the area (e.g. residential activities, traffic, upgrading of N11 national road, etc.). The surrounding area is highly developed as indicated in Figure 5.2 and 5.3 and no longer provides habitat for larger animal species. In addition, the site is effectively cut off from remaining habitats west of the site by the N11 national road (Figure 5.2 and 5.3).

5.8.3 Species of Conservation Concern

No Species of Conservation Concern (e.g. Giant Bullfrog, Hedgehog, Serval, etc.) were noted on site during the site visits. It is unlikely that Species of Conservation Concern will be present due to the disturbed nature of the vegetation and the human activities taking place on site and in the surrounding area.

5.8.4 Sensitivity assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced a Medium sensitivity for the Animal Species Theme due to the possible presence of the following species:

Latin name	Description	Habitat on site
<i>Aloeides rossouwi</i> (Rossouw's Copper)	Rossouw's Copper is an Endangered butterfly and currently only known from two to five localities corresponding to 2529BB and 2529BD. It occurs on high altitude sandy grassland (also invariably interspersed with rocky gullies) in the Stoffberg mountain range.	NO
<i>Ourebia ourebi</i> (Oribi)	The Oribi is a small Endangered antelope that prefers untransformed, mixed grassland on undulating topographies. It is a selective grazer, preferring both short and tall grassland at a "climax" successional state.	NO

No habitat is present on site for the above-mentioned species. In addition, the severe transformation of the site as a result of the borrow pit and adjacent residential area (Figure 5.2 and 5.3) makes it highly unlikely that these two species would occur on site. The sensitivity of the site in terms of animal species is thus deemed to be **Low**.

5.9 Surface water

5.9.1 Catchment

The proposed site is located within the Upper Olifants Water Management Area (WMA) and more specifically the B12D quaternary catchment.

The table below provides more details regarding the B12D quaternary catchment.

Area (Ha)	Mean Annual Precipitation (mm)	Mean Annual Runoff (mm)	MAR as a % of MAP	Study area as % of the catchment
32 610	702.68	38.1	5.42	0.29

No rivers, streams or other surface water environments are present on or near the site (Figure 5.18). The closest river/stream is an unnamed tributary of the Klein Olifants River located ± 560 m northeast of site (Figure 5.1). The area between the site and the unnamed tributary is built up (Figure 5.18).

According to the MBSP Freshwater Biodiversity Assessment (2013), the proposed development site does NOT fall within an Ecological Support Area (ESA): Important subcatchment or Critical Biodiversity Area (Figure 5.17).

It should be noted that the MBSP Freshwater Biodiversity Assessment (2013) includes information obtained from the National Freshwater Ecosystem Priority Areas (NFEPA) and threatened freshwater ecosystems databases (National Biodiversity Assessment, 2011).

5.9.2 Floodline

The closest river/stream is an unnamed tributary of the Klein Olifants River located ± 560 m northeast of site (Figure 5.1). The area between the site and the unnamed tributary is built up (Figure 5.18). The site is thus not affected by the 1:50 or 1:100 year floodlines.



5.9.3 Surface water runoff

The N11 national road (western boundary of the site) is situated on a local watershed resulting in two local drainage directions namely towards the northwest and the northeast (Figure 5.18).

In general, the site and surrounding area drain in a north easterly direction towards an unnamed tributary of the Klein Olifants River (Figure 5.18).

The natural surface water runoff from the site has however, been severely impacted as a result of the old borrow pit, temporary construction camp, parking area, dumping of waste, building rubble, etc.

Surface water (rainwater) tends to pond within the old borrow pit and does not drain towards the stream (Photo 5.13). Ponding of water was also noted on the gravel road extending through the site as well as the gravel road located on the northern boundary.

Surface water from the western portion of the site (construction camp and cleared area) flows in a north easterly direction towards the gravel road and construction material storage area where it ponds (Photo 5.14).



Figure 5.18: Surface flow direction



Photo 5.13: Ponding within the old borrow pit and along the gravel road



Photo 5.14: Ponding within the construction material storage area

5.9.4 Wetlands

No NFEPA wetlands are indicated to be present on site or in close proximity of the site (Figure 5.19). The closest NFEPA wetlands/wetland clusters are present approximately 560m north east and 500m south west of the site (Figure 5.19).



Figure 5.19: NFEPA wetlands and wetland clusters located near the site (taken from MBSP, 2013)

The Mpumalanga Highveld Wetlands dataset (MBSP, 2013) indicates that a wetland is present on site (Figure 5.20). Wetlands are also indicated south east, north east and south west of the site (Figure 5.20).



Figure 5.20: Mpumalanga Highveld Wetlands (taken from MBSP, 2013)

In order to confirm the presence of a wetland on site, a wetland delineation study was undertaken by Stephen Burton of Sivest (hereafter referred to as Burton, 2018). A copy of the report is provided in Appendix 5. The said report should be consulted with regards to the methodology used in this assessment and limitations of the study.

According to Burton (2018), historical imagery of the site shows a potential depression wetland in the centre of site, which was probably fed by storm water from the N11 national road (Figure 5.21).



Figure 5.21: 2008 Aerial view indicating the possible presence of a wetland (taken from Burton, 2018)

Intensive soil sampling of numerous points across the site (to a depth of 500mm below surface) indicated that the site is partially covered by rubble and spoil material (Burton, 2018). The soils have thus been severely impacted.

Based on the findings of the soil sampling, Burton (2018) indicated no wetland soils (Photo 5.15) present on site. In addition, no wetland vegetation was recorded on site.



Photo 5.15: Soil from a depth of 40-50 cm showing no wetland indicators (taken from Burton, 2018)

According to Burton (2018), the lack of wetland soils indicated that there was either never a wetland on site, or that the illegal dumping buried the wetland soils to a depth greater than 500mm below the current surface.

Based on the findings of the survey, Burton (2018) concluded that no wetland is present on site.

The Initial Site Sensitivity Investigation conducted by AdiEnvironmental (5 December 2019, 31 January and 14 February 2020) confirmed that the site comprises an old borrow pit, which was never rehabilitated and is now used by the surrounding community for the dumping of building rubble, garden and domestic waste (Photo 5.8). No wetlands were noted on site by AdiEnvironmental during the said site visits. It was noted that rainwater ponds within the old borrow pit, construction material storage area and along the gravel roads (Photos 5.13 and 5.14).

Sensitivity assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced a **Low** sensitivity for the Aquatic Theme, which is correct in view of no rivers, streams or wetlands being present on site (Figure 5.2).

5.10 Groundwater

The site, comprising mainly of an old borrow pit, is located within the existing Rockdale residential area (Figure 5.2).

No rivers, streams or other surface water environments are present on or near the site (Figure 5.19). The closest river/stream is an unnamed tributary of the



Klein Olifants River located ± 560 m northeast of site (Figure 5.1). The area between the site and the unnamed tributary is built up (Figure 5.19).

As already indicated, no wetlands were recorded on site (Burton, 2018).

Hansmeyer (2005) classified the site as Geotechnical Zone 3a (Figure 5.5), i.e. a borrow pit where no development should take place. According to Hansmeyer (2005), the site is surrounded by Geotechnical Zone 1, which has insignificant geotechnical problems and is suitable for the construction of houses (Figure 5.5). No seepage problems on site or in the immediate surrounding area were indicated by Hansmeyer (2005). However, seasonal ponding of water does take place in the borrow pit (Photos 5.13 and 5.14).

The Initial Site Sensitivity Investigation conducted by AdiEnvironmental (5 December 2019, 31 January and 14 February 2020) recorded no boreholes, wells or fountains present on site.

5.11 Air quality

The proposed site is located in the Steve Tshwete Municipal area hot spot, which extends across the Steve Tshwete Local Municipality from its border with eMalahleni to Arnot in the east. This is an area where measured or modelled concentrations exceed, or are predicted to exceed, ambient air quality standards as identified in the Air Quality Management Plan for the Highveld Priority Area (HPA; Republic of South Africa, 2011). This Priority Area was declared in terms of Section 18(1) of the National Environmental Management: Air Quality Act 2004 (Act 39 of 2004) due to poor air quality and associated health risks.

Three main nodes of non-compliance with ambient standards occur within this hotspot. In the Middelburg node, both modelled 24-hour SO₂ and PM₁₀ standards are frequently exceeded. Ambient monitoring at Middelburg, a site influenced by industrial sources, confirms the PM₁₀ exceedances. This hot spot is mostly attributed to emissions from the metallurgical industries and residential fuel burning. The contribution of industries in the area dominates the source contributions for all pollutants considered. In terms of PM₁₀, residential fuel burning does contribute a sizeable percentage to ambient concentrations.

Ambient air quality monitoring stations

Five ambient air quality monitoring stations are operated and maintained in the Highveld Priority Area (HPA) by the South African Weather Service (SAWS). These stations are located in eMalahleni (Witbank), Middelburg, Ermelo, Secunda and Hendrina and were installed in 2008. The SAWS manages the network which includes routine maintenance, calibration, data management and reporting.

At each of the said stations the following is measured: PM₁₀, PM_{2.5}, SO₂, NO, NO₂, NO_x, O₃, CO, benzene, toluene, ethylbenzene and xylene. In addition, the following meteorological data is also measured: wind speed, wind direction, ambient temperature, relative humidity, rainfall, solar radiation, barometric pressure.



Middelburg Station

The Middelburg Station is located in the residential area of Aerorand, adjacent to the Middelburg Christian School. This site was selected to measure the impact of emissions from mining and industry especially the large industrial sources such as Columbus Stainless and Middelburg Ferrochrome.

MONITORING STATION	COORDINATES	MONITORING PERIOD	POLLUTANT SOURCES
Middelburg	S-25.79070; E29.462801	August 2008 - present	Large industrial sources (Columbus Stainless and Middelburg Ferrochrome, industries to the south and mine dumps to the north west, no local impact from domestic fuel burning.

Wind roses

Wind roses summarise the occurrence of winds at a location, representing their strength, direction and frequency. Figure 5.22 provides the wind rose for 1 January 2019 to 1 January 2020 for the Middelburg Station. As is evident from Figure 5.22, winds in the area are relatively stable with the dominant wind directions being north westerly and south easterly winds.

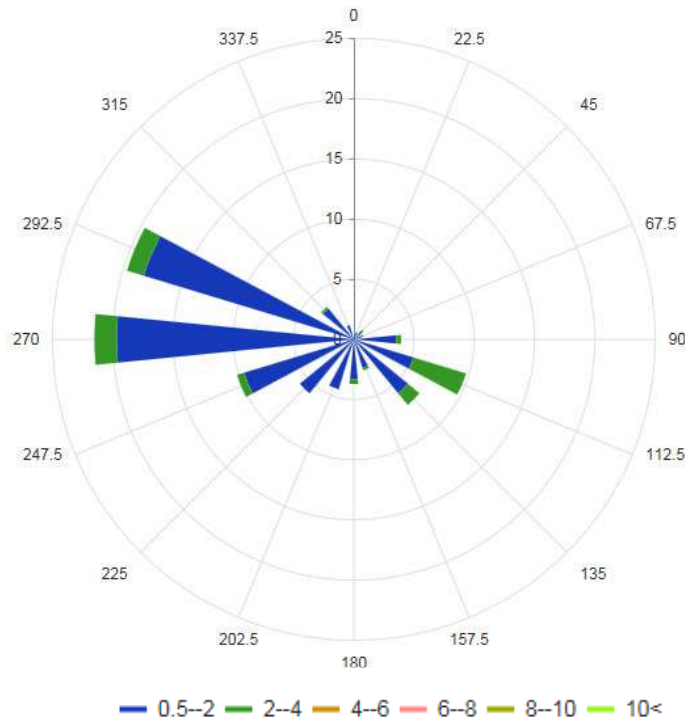


Figure 5.22 Dominant wind directions - January 2019 to January 2020 (taken from South African Air Quality Information System – SAAQIS, 2020)

Ambient air quality

According to the HPA: Air Quality Management Plan (2011), industrial sources are by far the largest contributor of SO₂ and NO_x, accounting for approximately



99.57 % of SO₂ and 95.97% of NO_x emissions. Mining is the largest contributor of PM10 emissions.

In general, it is expected that the air quality of the proposed development site is predominately governed by the various industrial and mining activities in and around Middelburg. The following could impact upon the air quality of the proposed development site:

- Various industrial activities in Middelburg (e.g. Columbus Stainless (Pty) Ltd., Middelburg Ferrochrome, Calmasil Plant, etc.).
- Various power stations and opencast mining activities in the Steve Tshwete area.
- Emissions from vehicles utilizing the surrounding roads (e.g. N11, N4, residential and gravel roads);
- Dust from traffic utilizing the surrounding gravel roads;
- Dust from construction activities in the surrounding area (e.g. upgrading of the N11 national road, construction of houses within Rockdale, etc.);
- Smoke emitted from veld fires;
- Smoke from cooking fires within the Rockdale residential area;
- Odours from garden waste, domestic waste and dead animals dumped on site.

5.12 Noise

The ambient noise of the site and surrounding area is predominantly governed by the following:

- Vehicles utilizing the N11 national road to the west of the site (Figure 5.2);
- Vehicles utilizing the tar road (Ekukhanyeni Street) adjacent to the site (Figure 5.2);
- Vehicles utilizing the gravel roads within the Rockdale residential area (Figure 5.2);
- Residential activities taking place in the Rockdale residential area (Figure 5.2);
- Construction activities associated with the upgrading of the N11 national road;
- Construction of new houses within Rockdale adjacent to the site.

5.13 Sites of archaeological and cultural interest

5.13.1 Cultural Heritage sensitivity

A Heritage Impact Assessment (HIA) is required in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999) for any development or other activity that will change the character of a site and exceeds 5 000m².

A motivation for exemption from doing a Phase I Heritage Impact Assessment (HIA) was compiled by Dr. A. van Vollenhoven of Archaetnos Culture and Cultural Resource Consultants (referred to as Van Vollenhoven, 2020). A copy of the motivation is provided in Appendix 6.

Figure 5.23 provides the track route of the site visit of 26 February 2020 during which Van Vollenhoven (2020) identified nothing of heritage importance on the proposed site.





Figure 5.23: Track route of the Heritage survey (taken from Van Vollenhoven, 2020)

In view of the entire site being highly disturbed as a result of the old borrow pit and associated activities, Van Vollenhoven (2020) recommended that the development be exempted from doing a Phase 1 Heritage Impact Assessment since the chances of finding any heritage related features are deemed extremely slim.

In addition, Van Vollenhoven (2020) indicated that the subterranean presence of historical sites, graves, objects or features may be uncovered during construction, in which case, work should cease immediately and an archaeologist contacted.

Sensitivity assessment

The screening report (as per the outcome of the National Screening Tool, 2017; Appendix 1) produced a **Medium** sensitivity for the Archaeological and Cultural Heritage Theme due to the possible presence of mountains or ridges.

No mountains or ridges are present on site as indicated under Topography (Section 5.5).

Van Vollenhoven (2020) identified nothing of heritage importance on the proposed site and indicated that the chances of finding any heritage related features as extremely slim.

The sensitivity in terms of the Archaeological and Cultural Heritage of the site is therefore **Low**.

5.13.2 Palaeontological sensitivity

According to the palaeontological map supplied by the South African Heritage Resources Agency (SAHRA, 2014), the palaeontological sensitivity of the proposed site (Figure 5.24) is indicated as follows:

Sensitivity (Figure 5.24)	Geology	Required Action
Very High (Red)	Vryheid Formation	Field assessment and protocol for finds

Dr. Heidi Fourie (Heidi Fourie Consulting) was appointed to conduct a Palaeontological Impact Assessment – Phase 1 Field Study (referred to as Fourie, 2020). A copy of the said report is provided in Appendix 7 and should be consulted with regards to the methodology used.

The aim of a Phase 1 Field Study is to ascertain if any palaeontological sensitive material is present within the proposed development site, to indicate the potential impact on the fossil heritage and state if any mitigation or conservation measures need to be implemented.

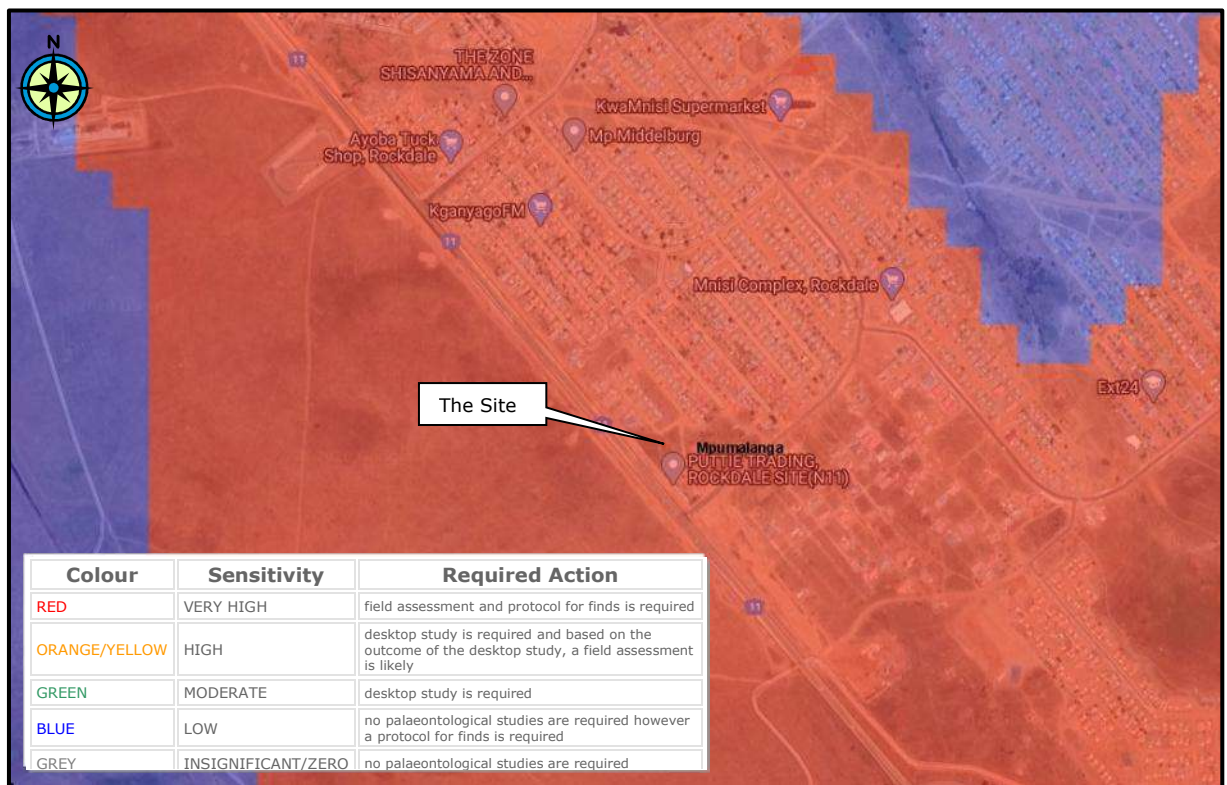


Figure 5.24: Requirement for palaeontological study (taken from SAHRA, 2020)

5.13.2.1 Outline of the geology and palaeontology

The palaeontological sensitivity of a site is closely related to the underlying geology, since fossils mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature.

According to the 1: 250 000 Geological Series (number 2528 Pretoria), the site is underlain by the Vryheid Formation of the Ecca Group, Karoo Sequence (Figure 5.4).

The Karoo Supergroup is renowned for its fossil wealth. The Vryheid Formation (Pe, Pv), Ecca Group is rich in plant fossils such as the *Glossopteris* flora represented by stumps, leaves, pollen and fructifications (Appendix 1 of Appendix 7). This formation is early to mid-Permian (Palaeozoic) in age and consists of sandstone, shaly sandstone, grit, conglomerate, coal and shale.

Coal seams are present in the Vryheid Formation within the sandstone and shale layers. Fossils are mainly present in the grey shale which is interlayered between the coal seams (Fourie, 2020).

The Ecca Group may contain fossils of diverse non-marine trace, *Glossopteris* flora, mesosaurid reptiles, palaeoniscid fish, marine invertebrates, insects, and crustaceans (Johnson, 2009).

Glossopteris trees rapidly colonised the large deltas along the northern margin of the Karoo Sea. Dead vegetation accumulated faster than it could decay, and thick accumulations of peat formed, which were ultimately converted to coal. It is only in the northern part of the Karoo Basin that the glossopterids and cordaitales, ferns, clubmosses and horsetails thrived (McCarthy and Rubidge, 2005).

The *Glossopteris* flora is thought to have been the major contributor to the coal beds of the Ecca. These are found in Karoo-age rocks across Africa, South America, Antarctica, Australia and India. This was one of the early clues to the theory of a former unified Gondwana landmass (Norman and Whitfield, 2006).

A locality close to Ermelo, also Vryheid Formation, has yielded *Scutum*, *Glossopteris* leaves, *Neoggerathiopsis* leaves, the lycopod *Cyclodendron leslii*, and various seeds and scale leaves (Prevec 2011).

Table 5.4 provides an indication of the occurrence of fossils in the Ecca Group.

Table 5.4: Occurrence of fossils in the Ecca Group (Groenewald and Groenewald, 2014).

Deltaic mudrocks and sandstones, locally coastal and fluvial deposits, with occasional coal seams (Ecca 'Coal Measures')	Rich fossil plant assemblages of the Permian Glossopteris Flora (lycopods, rare ferns and horsetails, abundant glossopterids, cordaitaleans, conifers, ginkgoaleans), rare fossil wood, diverse palynomorphs. Abundant, low diversity trace fossils, rare insects, possible conchostracans, non-marine bivalves, fish scales.	Globally important fossil floras from Middle Permian Gondwana. Seriously under-collected in recent years, despite ongoing mining for coal.
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Fossils in South Africa mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature. Therefore, if there is the presence of Karoo Supergroup strata the palaeontological sensitivity can generally be LOW to VERY HIGH, and here locally **VERY HIGH** for the Vryheid Formation (Fourie, 2020).

Potential threats of the development were identified as: earth moving equipment/machinery (for example haul trucks, front end loaders, excavators, graders, dozers) during construction, the sealing-in or destruction of fossils by development, vehicle traffic, and human disturbance.

During the survey it was confirmed that the site is directly underlain by sandstone of the Vryheid Formation and that the Selons River Formation is located towards the east (Fourie, 2020). The area is small with lush vegetation. A road, borrow pit and construction camp are present. Fourie (2020) indicated that no fossils were found during the walk through and that no fossiliferous outcrops are present.

Fourie (2020) raised no objection to the proposed development and indicated that the development may go ahead with caution. A Phase 2 Palaeontological



Impact Assessment is not required since **no surface fossils were found** during the walk through.

However, special care must be taken during the construction phase (e.g. digging, drilling, blasting, excavating of foundations, removal of overburden, etc.). A protocol for finds and management plan are provided in Appendix 2 of Appendix 7. If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped, a 30 m no-go barrier constructed and a palaeontologist should be called in to determine proper mitigation measures (Venter, 2020).

5.14 Sensitive landscapes

As indicated in the preceding sections, no sensitive landscapes are present on site or adjacent to the site.

5.15 Visual aspects

The visual aspects of the site have been impacted by the presence of the temporary construction camp, the old borrow pit and the dumping of waste.

The proposed site is highly visible from:

- the existing Rockdale residential area – north, east and south of the site (Figure 5.2);
- the N11 national road – west of the site (Figure 5.2);
- the main access road to Rockdale (Ekukhanyeni Street) and gravel roads on the periphery of the site (Figure 5.2);
- vacant property located to the west (Figure 5.2).

5.16 Traffic

A traffic impact assessment was conducted by Brian Roberts of Moyeni Professional Engineering (MPE) (hereafter referred to as Roberts, 2019) for the proposed development. A copy of the report is provided in Appendix 12. This report should be consulted for methodology used.

5.16.1 Existing road network and classification

The proposed site is located within the existing Rockdale residential area, east of the N11 national road and approximately 850m north of the N4 national road (Figure 5.2). The site can be accessed from the N11 national road via the Rockdale internal road network.

Table 5.5 provides an indication of the existing road network and classification in the area surrounding the proposed development site. Figure 5.25 provides the location of the various roads in relation to the proposed development site.



Table 5.5: Road network classification (taken from Roberts, 2019)

ROAD/STREET	LOCATION (Figure 5.28)	CLASS	CARRIAGEWAY AND NUMBER OF LANES	ROAD RESERVE WIDTH (m)	CHARACTERISTIC/ JURISDICTION
N4	South of proposed site	1	Dual (4 lanes)	90	SANRAL
N11	West of proposed site	2	Single (2 lanes)	50 – 60	SANRAL
Road A	Gravel road providing access to Rockdale x2	4	Single (2 lanes)	20	Municipal
Road B	Main access road to Rockdale	4	Single (2 lanes)	20	Municipal
Road D (Ekukhanyeni Street)	Southern boundary of site	4	Single (2 lanes)	25	Municipal

According to Roberts (2019), the N11 is a Class 2 road linking the N4 in the south (and beyond) to the R104 in the north. The route comprises a two lane single carriageway road (Table 5.5).

The N11 interchanges with the N4 national road (a high order Class 1 freeway; Table 5.5) that passes Rockdale to the south, adjacent the southern boundary, in an east-west direction (Roberts, 2019).

Roads A, B and D (Table 5.5; Figure 5.25) are Class 4 roads (i.e. district distributors) and link the N11 to the residential streets of Rockdale. These roads are typically constructed as two lane single carriageway roads with turning lanes where required (Roberts, 2019).

Access roads or Class 5 roads within the townships form the final interface between the domestic unit and the primary network.

5.16.2 Future road network

Roberts (2019) indicated that no plans are underway to construct any major roads in the area. Currently, the N11 and some of the class 4/5 roads in the area are being upgraded (e.g. resurfacing, upgrading of intersections, etc.).

5.16.3 Existing intersection controls

Table 5.6 provides an indication of the existing intersection controls in the area surrounding the proposed development site.

Table 5.6: Existing N11 intersection controls (taken from Roberts, 2019)

MAIN ROAD/STREET	CROSS STREET (Figure 5.25)	CONTROL
N4 terminals	N11	Priority on side streets
N11	Road A	Priority on the side street
N11	Road B	Priority on the side street
N11	Road D	Priority on the side street

Annexure A of Appendix 12 provides the above-mentioned intersection layouts.



5.16.4 Site access

According to Roberts (2019), three (3) access points are proposed for the proposed neighbourhood shopping centre, namely:

- Access 1: 100m from the N11 on Road D, being the main access for the public (Figure 3.2);
- Access 2: 50m east of Access 1 on Road D, being the rear/delivery access (Figure 3.2);
- Access 3: A connection between the northern car park and the existing local street, for local residents (Figure 3.2).

The proposed accesses comply with Provincial standards in that no access is applied for along the N11 frontage and Access 1 is 100m from the N11.



Figure 5.25: Location of intersections counted (taken from Roberts, 2019)



5.16.5 Traffic data

From the traffic counts undertaken, Roberts (2019) indicated the peak hours as follows:

- Weekday PM peak hour: 16h45 to 17h45;
- Saturday peak hour: 12h30 to 13h30.

According to Roberts (2019), the traffic volumes on the N11 are in general fairly low and the link traffic flow of all the roads operated at a satisfactory level. As indicated in Table 5.7, the highest one way traffic link flow was 23% of capacity, which is still satisfactory.

Table 5.7: Link traffic flows (@ September 2017) (taken from Roberts, 2019)

Road (Figure 5.28)	Direction	Peak hour		Capacity (vph)/ number of lanes required/existing	Percent (%) of capacity
		PM (16h45- 17h45)	Saturday (12h30- 13h30)		
N4 Ramps	Eastbound	169	108	1900/1/1	15
	Westbound	242	132	1900/1/1	13
N11	Northbound	369	241	1900/1/1	20
	Southbound	443	299	1900/1/1	23
Road A	Eastbound	39	25	1800/1/1	2
	Westbound	46	31	1800/1/1	3
Road B	Eastbound	57	48	1800/1/1	3
	Westbound	47	56	1800/1/1	3
Road D	Eastbound	64	49	1800/1/1	4
	Westbound	52	53	1800/1/1	3

- A new traffic count was not carried out for the proposed development due to the N11 and N4 national roads undergoing maintenance. Information from a traffic count done in September 2017 for the proposed Rockdale West development was subsequently used.
- Since Road D (Ekukhanyeni Street) was only constructed after 2017, Roberts (2019) estimated what the side flows would have been in 2017 with Road D open.
- Annexure B of Appendix 12 provides the results of the detailed traffic counts.

Roberts (2019) indicated that a growth rate of 2% per annum for the background traffic was adopted based on the future of the greater area and the total traffic along the N11.

Table 5.8 provides the modal split as derived from the said traffic counts for 2017.

Table 5.8: Modal split @ 2017 (taken from Roberts, 2019)

MODE OF TRANSPORT	FRIDAY	SATURDAY
	ALL SURVEYED HOURS	
	ALL STUDY AREA INTERSECTIONS	
	TOTAL VEHICLES	
Cars	11 533	7 541
Minibus taxis	1 260	472
Buses	157	44
Trucks	1 106	591
TOTAL	14 056	8 648
	PERCENTAGE	PERCENTAGE
Cars	82.1	87.2
Minibus taxis	9.0	5.5
Buses	1.1	0.5
Trucks	7.9	6.8
TOTAL	100.0	100.0



5.16.6 Trip generation

Table 5.9 provides the trip generation adjustment factors used by Roberts (2019) in calculating the expected trip generation rates.

Table 5.9: Trip generation adjustment factors (taken from Roberts, 2019)

LAND USE	ADJUSTMENT FACTORS (COTO TMH 17)	
	COTOLAND USE CODE	Adjustment factor
Retail: Very low/low car ownership	820	70%
Retail: Transit nodes and corridors (n11)	820	85%
Combined factor	820	0.60%

Table 5.10 provides the expected proposed township-related trips generated (post-mode choice).

Table 5.10: Expected trip generation (post adjustment) (taken from Roberts, 2019)

PEAK OUT	IN	OUT	TWO-WAY
PM	158	158	316
Saturday	210	210	420

5.16.7 Trip distribution

Table 5.11 provides the trip distribution of the expected neighbourhood shopping centre trips.

Table 5.11: Expected trip distribution (taken from Roberts, 2019)

DIRECTION	PERCENTAGE		ROUTE FOLLOWED
	Friday PM	Saturday	
From/to the south	10/10	5/4	N4/N11
From/to the south east	5/5	3/5	Road A east
From/to the south west	5/15	2/1	Road B east
From/to the north	50/20	40/30	N11
Internal (east of the N11)	30/50	50/60	Internal
Total	100/100	100/100	

5.16.8 Traffic flows

Roberts (2019) indicated that the adjusted 2017 scenario was analysed in order to obtain a base for the traffic flows in the area (see Section 5.16.5 for further details).

In terms of the traffic flow estimates and associated traffic analysis, it was decided to analyse the 2021 (the fully built year) and 2026 (5 years after the opening date) design horizon scenarios. Any associated road upgrades would need to satisfactorily accommodate these traffic flows.

The following scenarios and timeframes were thus analysed:

- 2021 expected traffic flows only;
- 2021 expected traffic flows with site trips;
- 2021 expected traffic flows with site and latent trips;



- 2026 expected traffic flows only
- 2026 expected traffic flows with site trips;
- 2026 expected traffic flows with site and latent trips

Annexure B of Appendix 12 provides the results of the traffic flow calculations undertaken with regards to the above-mentioned scenarios and timeframes.

5.16.9 Capacity analyses

The performance of intersections in urban road networks is defined by the level of service (LOS) for each approach to the intersection. During the peak hours, the road infrastructure capacity provided should ensure that the intersection approach level of service does not exceed LOS D (see Table 9 of Appendix 12) as defined in the High Capacity Manual (HCM).

Roberts (2019) indicated that the capacity analysis was undertaken for the above-mentioned existing and future scenario situations. The intersection approach performance for the intersections within the study area (see Figure 5.25) was determined using the AutoJ software programme.

Annexure A of Appendix 12 provides the intersection layouts while Annexure C of Appendix 12 provides the results of the AutoJ capacity analyses undertaken with regards to the various scenarios and timeframes.

The following tables (Table 5.12; 5.13; 5.14 and 5.15) provide a summary of the capacity analyses for the above-mentioned scenarios.

Table 5.12: Summary of capacity results (2017) (taken from Roberts, 2019)

No	Intersection description	Control	Performance Index	Result
1	N11 / S terminal	Xwe	55%	Satisfactory in both peak hours
2	N11 / N terminal	Xwe	56%	Satisfactory in both peak hours
3	N11 / Road A	Xwe	62%	Satisfactory in both peak hours
4	N11 / Road B	XX	10%	XX - Unsatisfactory in both peak hours.
		Xwe	93%	Needs to be changed to an Xwe
5	N11 / Road D	na		Did not exist
6	Road D / Access	na		Did not exist



Table 5.13: Summary of capacity results (2019) – rehabilitated road layout/upgrades included (taken from Roberts, 2019)

No	Intersection description	Control	Performance Index	Result
1	N11 / S terminal	Xwe	55%	Satisfactory in both peak hours
2	N11 / N terminal	Xwe	55%	Satisfactory in both peak hours
3	N11 / Road A	Xwe	61%	Satisfactory in both peak hours
4	N11 / Road B	Xwe	62%	Satisfactory in both peak hours (has been changed)
5	N11 / Road D	Xwe	62%	Satisfactory in both peak hours
6	Road D / Access	na		Does not exist

Legend: Xwe: West-East stop; Xns: North-South stop.

Table 5.14: Summary of capacity results (2021) without/with Site and latent traffic (taken from Roberts, 2019)

No	Intersection description	Control	Performance Index	Result
1	N11 / S terminal	Xwe	55% / 52% / 34% / 51%	Satisfactory in both peak hours except for when the latent rights are added which requires upgrading. Eastern approach fails and requires upgrading (Figure A1-2)
2	N11 / N terminal	Xwe	55% / 55% / 43% / 51%	Satisfactory in both peak hours except for when the latent rights are added which requires upgrading Western approach approaching failure (Figure A2-2)
3	N11 / Road A	Xwe	61% / 61% / 60%	Satisfactory in both peak hours
4	N11 / Road B	Xwe	62% / 61% / 60%	Satisfactory in both peak hours
5	N11 / Road D	Xwe	62% / 66% / 66%	Satisfactory in both peak hours
6	Road D / Access	Xns	- / 51% / -	Satisfactory in both peak hours (No right turn lane in Road D is required)

Legend: Xwe: West-East stop; Xns: North-South stop.



Table 5.15: Summary of capacity results (2026) without/with Site and latent traffic (taken from Roberts, 2019)

No	Intersection description	Control	Performance Index	Result
1	N11 / S terminal	Xwe	52% / 53% / 31% / 48%	Satisfactory in both peak hours except for when the latent rights are added which requires upgrading. Eastern approach fails and requires upgrading (Figure A1-2)
2	N11 / N terminal	Xwe	54% / 53% / 51% / 51%	Satisfactory in both peak hours except for when the latent rights are added which requires upgrading Western approach approaching failure (Figure A2-2)
3	N11 / Road A	Xwe	61% / 61% / 60%	Satisfactory in both peak hours
4	N11 / Road B	Xwe	62% / 61% / 60%	Satisfactory in both peak hours
5	N11 / Road D	Xwe	62% / 65% / 65%	Satisfactory in both peak hours
6	Road D / Access	Xns	/ 52% / -	Satisfactory in both peak hours (No right turn lane in Road D is required)

Legend: Xwe: West-East stop; Xns: North-South stop.

The analysis over time periods 2017 (Table 5.12), 2019 (Table 5.13), 2021 (Table 5.14) and 2024 (Table 5.15) showed that many intersections are still expected to operate at satisfactory levels of service and are not required to be upgraded.

Table 5.16 provides an indication of the road upgrades required.

Table 5.16: Required road upgrades (taken from Roberts, 2019)

INTERSECTION NO. (Figure 5.25)	DESCRIPTION	UPGRADE REQUIRED	RESPONSIBILITY
1 and 2	N4/N11 terminals	In the future, requires double right-turn lanes from the ramp terminals and 5 lanes under the bridge (4 throughs and one back-to-back right-turn lane). As per TRACs previous comments regarding the theft of traffic signals, the Traffic Signal option previously recommended in 2017, is NOT recommended and double right-turn lanes on the off-ramp	Road Authority



INTERSECTION NO. (Figure 5.25)	DESCRIPTION	UPGRADE REQUIRED	RESPONSIBILITY
		terminals are now proposed instead.	
3, 4 and 5	N11/Road A, B and C	The recent road upgrading (including 60m right-turn land and associated passing lane together with a 60m left-turn lane in the opposite direction) are adequate for all the 2026 traffic demand scenarios (background traffic, site-related traffic and latent rights-related traffic).	Currently under completion by the Road Authority

According to Roberts (2019), the Road Authority provided a high-standard Road D (Ekukhanyeni Street) intersection with the N11 as well as at Road A and Road B. The developer is therefore NOT required to provide additional road upgrades.

In addition, the main site access does not require a separate right-turn lane as it is expected to operate at satisfactory levels of service up to 2026 and beyond.

5.16.10 Non-motorised transport

Roberts (2019) indicated that paved sidewalks do not exist along the N11 and associated side roads. This is typical of national roads where, for traffic safety reasons, pedestrians are not encouraged to walk along these high speed roads.

According to Roberts (2019), pedestrian crossings are not required as pedestrians are not expected to cross the N11 except at the signalised intersections. It is expected that the bulk of the pedestrian traffic will be internal from the Rockdale area, which is in line with neighbourhood shopping centre trends. A pedestrian walkway along the site's frontage in Road D (Ekukhanyeni Street) is therefore recommended.

5.16.11 Public transport

Minibus taxis are the dominant mode of public transport in this area with between 13 and 45 minibus taxis passing along the N11 in one direction during the AM, PM and Saturday peak hours. According to Roberts (2019), between 1 and 14 busses travel along the N11 during the same period.

Roberts (2019) indicated that 11 additional minibus taxis and 1 bus per peak hour will be required in order to service the proposed neighbourhood shopping centre (i.e. when fully developed).

According to Roberts (2019), walking distances of some 500m (as set out by the Department of Transport) around the site covers a considerable local population, which is considered acceptable.

It is recommended that a standard 20m long lay bye for buses and minibus taxis be provided on both sides of Road D (Ekukhanyeni Street) at the main neighbourhood shopping centre access (Roberts, 2019).



5.16.12 Conclusion

From this Traffic Impact Assessment, Roberts (2019) concluded the following:

- The traffic situation at the proposed site remains generally low. The N11 traffic is increasing by some 2 percent per annum.
- The maximum link flows with regards to its capacity on the N11 is at 23% and is therefore satisfactory.
- The post adjustment trip generation is as follows:
 - 158 IN and 158 OUT in the Friday PM peak hour;
 - 210 IN and 210 OUT in the Saturday peak hour.
- The trip distributions are generally based on the existing traffic patterns being 40% to 50% from the north, 30% to 50% internal and the balance from and to the south.
- Most intersections are operating at satisfactory levels of services both now and into the future.
- The access points proposed on Road D (Ekukhanyeni Street) are adequate to meet the future traffic demand at satisfactory levels of service. No right-turn lane is required.
- With the main access on Road D located some 100m from the N11, no side-street queuing challenges are expected.
- Pedestrian crossings are not required. A 2m wide pedestrian walkway along the site's frontage in Road D is however, recommended.
- Eleven additional minibus taxis and 1 bus per peak hour will be required to service the neighbourhood shopping centre.
- A standard 20m long lay bye for buses and minibus taxis to be provided on both sides of Road D at the main access.

5.17 Sense of place

The proposed site is located within the existing Rockdale residential area, east of the N11 national road and north of the N4 national road (Figure 5.3). The central portion of the site ($\pm 60\%$ of the site) comprises an old borrow pit. A temporary construction camp was erected in the western portion of the site by the contractors responsible for the upgrading of the N11 national. The south western corner of the site was cleared for a parking area. The contractors also cleared a portion of the old borrow pit for the storage of construction material (gravel) (Figure 5.2). As indicated in Figure 5.2, the site is abutted by roads, which form part of the Rockdale internal road network.

As indicated in Figure 5.26, the proposed site is situated within the urban edge of the Steve Tshwete Local Municipality and falls within an area identified in the SDF (2015) for future Residential development (Figure 5.26).

The proposed site is currently zoned 'Public Open Space' and may not be used for commercial/business purposes without being rezoned by the Steve Tshwete Local Municipality.

The Steve Tshwete Local Municipality passed a Council Resolution on 16 August 2019 to alienate the proposed site (Erf 1051) for the purpose of a commercial development. Condition 7.10 of the Council Resolution (Annexure D of Appendix 3) stipulates the following: "*That the portion to be alienated be used for business purposes.*"

The applicant, Chester Supplies (Pty) Ltd., subsequently purchased the property from the Steve Tshwete Local Municipality on 2 October 2019 for the development of a neighbourhood shopping centre.

As already indicated, the applicant intends to remove the waste, rehabilitate the property and develop it to its full potential. The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of a neighbourhood shopping centre.

The Rockdale residential area (comprising of nearly 5000 households) currently does not have a shopping centre. Residents must commute to Middelburg in order to do their shopping. The applicant plans to provide a neighbourhood shopping centre (within walking distance) where residents can buy their day-to-day convenience items.

During the public participation process, the local community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.

Urban Dynamics Town and Regional Planners (hereafter referred to as Urban Dynamics, 2019) was appointed by the applicant to apply for the park closure and the rezoning of the site.

Based on the above-mentioned, the proposed neighbourhood shopping centre would not impact on the existing sense of place and should in fact, improve the current situation.



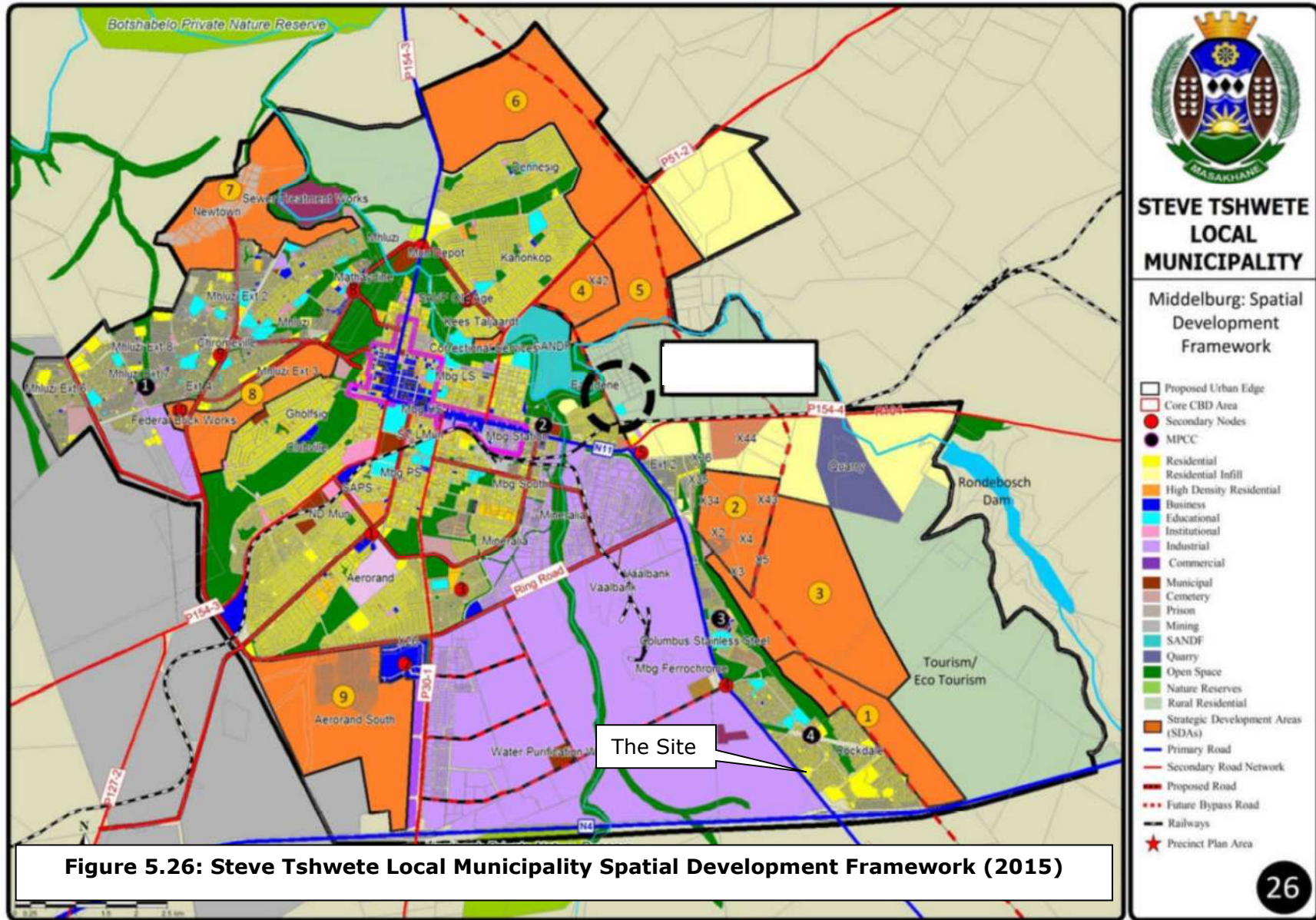


Figure 5.26: Steve Tshwete Local Municipality Spatial Development Framework (2015)

SECTION 6: DESCRIPTION OF THE PUBLIC PARTICIPATION PROCESS

The public participation process is defined in the Public Participation (PP) Guideline (2017) as *"a process by which potential interested and affected parties are given opportunity to comment on, or raise issues relevant to, the application."*

According to the PP Guideline (2017), some characteristics of a comprehensive PP process include providing role-players with clear, accurate and understandable information about the activity, allowing them to voice their support, concerns and questions regarding the project and encouraging transparency and accountability in decision-making.

Interested and affected parties/role players also have a responsibility towards ensuring a successful public participation process and must ensure that:

- a. *comments are submitted within the specified timeframes or any extension of a timeframe agreed to by the applicant or the EAP;*
- b. *comments are submitted directly to the EAP; and*
- c. *any direct business, financial, personal or other interest which the I&AP may have in the approval or refusal of the application is disclosed to the EAP.*

This section of the report provides an overview of the public participation process followed to date and represents the Comments and Response Report as required in terms of Section 44 of the EIA Regulations, 2014 (as amended) and the PP Guideline, 2017.

The public participation process was designed to satisfy the requirements of Chapter 6 and Appendix 1 of the EIA Regulations, 2014 (as amended) as well as the PP Guideline, 2017.

The following information is provided in this section of the report:

- Details regarding the advertising of the project (Section 6.1);
- Comment received in response to advertising and the distribution of the Background Information Document (Sections 6.2 to 6.4);
- A list of registered interested and affected parties, stakeholders and government departments (Section 6.3);
- A map indicating directly affected and adjacent landowners (Figure 6.2);
- A summary of the comments received from I&APs and a response from the EAP (Table 6.4).
- Supporting documentation e.g. copies of e-mails, notices, Background Information Document (BID), comment sheets, etc. (Appendices 9 to 12).

6.1 Advertising of the project

6.1.1 Press advertising

A block advert (150mm x 95mm), according to the Environmental Impact Assessment Regulations, 2014 (as amended), was placed in the local newspaper, Middelburg Observer, on Friday, 31 January 2020. A copy of the advert is provided in Appendix 8.



The Middelburg Observer is distributed in Middelburg, Belfast, Hendrina, eMalaheni, Groblersdal and surrounding areas to more than 285 distribution points with approximately 21 500 copies sold every Friday.

6.1.2 On-site advertising

Notices according to the Environmental Impact Assessment Regulations, 2014 (as amended), were displayed at the following locations:

- English and Zulu: South western corner of the site on the construction camp fence (A1; Figure 6.1 - Photo 6.1);
- English: South eastern corner of the site adjacent to Ekukhanyeni Street (A3; Figure 6.1 – Photo 6.2);
- Zulu: North eastern corner of the site (A3; Figure 6.1 - Photo 6.3);
- Zulu: Northern boundary of the site adjacent to Kangaroo Street (A3; Figure 6.1 – Photo 6.4);
- English: On the notice board at the Gerard Sekoto Public Library (A3; Photo 6.5).

A copy of the notice was also loaded onto the company website: <http://adienvironmental.co.za>.

A copy of the English and Zulu notices is provided in Appendix 8.

It should be noted that the A1 notice was 594 mm x 841 mm and the A3 notices 416mm x 295mm (A3) in size.



Figure 6.1: Aerial view of notice placements



Photo 6.5: A view of the notice displayed at the Gerard Sekoto Public Library

6.1.3 Informing I&APs via the internet

A copy of the following documentation was loaded onto the AdiEnvironmental cc. website (<http://adienvironmental.co.za>):

- ◆ Copy of the notice;
- ◆ Background Information Document (BID; Appendix 9).

This information was available on the website for the duration of the basic assessment phase.

A copy of the webpage printouts is provided in Appendix 8.

6.1.4 Feedback from the advertising process

Only two people registered as interested and affected parties in terms of the advertising of the project:

Name	Company	Correspondence	Comment
Debbie Wessels	Leads to Business	E-mail dated 5 March 2020 (Appendix 8)	Business opportunity – wanted to register as an I&AP (Table 6.4)
Morne Dazel	Roads Contractor (Batsumi Engineering)	Phone call 26 February 2020	See Section 6.2 and Table 6.4

There was thus no need for a public meeting.

6.2 Directly affected landowner/user

Chester Supplies (Pty) Ltd

The proposed development site is located on Erf 1051 (Figure 6.1), which is owned by Chester Supplies (Pty) Ltd. (the applicant for the proposed development). Chester Supplies (Pty) Ltd purchased the property from the Steve Tshwete Local Municipality on 2 October 2019. A copy of the Deed of Sale is provided in Appendix 1.

Batsumi Engineering (Contractor's Camp)

Batsumi Engineering (contractors responsible for the upgrading of the N11 national road) are temporarily using the western portion of the site as their construction camp (Figure 6.1).

A representative of Batsumi Engineering (Mr. J. Brink) was informed personally (31 January 2020) and by e-mail (dated: 13 February 2020; Appendix 11) of the proposed development.

Mr. M. Dazel subsequently contacted AdiEnvironmental (phone call received on 26 February 2020) enquiring about the estimated time schedule. Mr. Dazel indicated that they need advance notice to vacate the site, since heavy machinery would have to be relocated. He requested a proposed time schedule for the project. A Background Information Document (including a time schedule) was forwarded to Mr. Dazel (dated: 26 February 2020; Appendix 11).

6.3 Identified local authorities/government departments and stakeholders

Table 6.1 provides an indication to which local authorities/government departments and stakeholders Background Information Documents (BIDs; Appendix 9) were forwarded in order to inform them of the proposed project and to obtain their issues of concern.

Table 6.1: Identified local authorities/government departments and stakeholders who received BIDs

AUTHORITY/ STAKEHOLDER	CONTACT PERSON	CORRESPONDENCE SENT	COMMENTS
Government Departments			
Department of Agriculture, Forestry and Fisheries (DAFF)	F. Mashabela	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) - Directorate: Land Use and Soil Management – Ermelo	J. Venter	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Department of Co-operative Governance and Traditional Affairs (COGTA)	M. Loock	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Department of Mineral Resources	S. Mathavela	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	T. Mkhonto	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Department of Water and Sanitation (DWS)	T. Ndlhovu	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	Yes. See Section 6.3.1
Stakeholders			
Distriks Landbou Unie Middelburg	J.P.J. Schmahl	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Eskom Distribution (Land & Rights)	T. Ludere	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Eskom Transmission	L. Motsisi	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None

AUTHORITY/ STAKEHOLDER	CONTACT PERSON	CORRESPONDENCE SENT	COMMENTS
Middelburg Chamber of Business and Commerce	M. Hanekom	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Mpumalanga Tourism and Parks Agency (MTPA) – Land Advisory Unit	K. Narasoo	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
South African Civil Aviation Authority (SACAA)	K. Mthapo	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
South African Heritage Resources Agency (SAHRA)	J. Lavin (SAHRA website)	Loaded on SAHRA website on 13 February 2020.	Yes. See Section 6.3.2
Telkom	J. Smit	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Local Authorities			
Nkangala District Municipality	S. Links A. Thwala	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Steve Tshwete Local Municipality	M. Mahamba	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Steve Tshwete Local Municipality	Councillor J. Michelle (Ward 8)	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
Steve Tshwete Local Municipality	Councillor T. Motloung (Ward 6)	Telephonic discussion and E-mail (dated: 24 February 2020; Appendix 10) with BID forwarded.	None

6.3.1 Department of Water and Sanitation

An e-mail (dated: 13 February 2020; Appendix 10) was received from Ms. T. Ndlhovu of the Department of Water and Sanitation requesting a copy of the Basic Assessment Report.

Response from AdiEnvironmental

See Table 6.4.

6.3.2 South African Heritage Resources Agency (SAHRA)

A letter (dated: 21 February 2020; Ref: 14851; Appendix 10) was received from the South African Heritage Resources Agency (SAHRA) indicating the following:

In terms of the National Heritage Resources Act, no 25 of 1999 (NHRA), heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are generally protected. They may not be disturbed without a permit from the relevant heritage resources authority. In contexts of development applications, the developer must ensure that no heritage resources will be impacted by the proposed development, by lodging an application to SAHRA and submitting detailed development specifications as a notification of intent to develop. If the application is made in terms of S.38 (8) of the NHRA then it is incumbent on the developer to ensure that a Heritage Impact Assessment (HIA) is undertaken, as S.38(2)a does not apply. Such a study should follow the SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports and section 38(3) of the NHRA.

The HIA or an exemption letter depending on the findings, must be undertaken by a suitably qualified archaeologist and it must comply with Section 38(3) of the National Heritage Resources Act, Act 25 of 1999(NHRA). Once the report is submitted to the case for commenting, SAHRA will provide further comments on this proposed development.

In addition to the HIA report or exemption letter, SAHRA also requires an assessment of palaeontological resources by a suitably qualified palaeontologist. The HIA and the Palaeontology Impact Assessment (PIA) must be provided to SAHRA for commenting prior to the submission of the final BAR to the competent authority. All these documents will be assessed by SAHRA, and the comment issued by SAHRA must be included in the final BAR.

Another letter (dated: 25 May 2020; Ref: 14851; Appendix 10) was received from the South African Heritage Resources Agency (SAHRA) indicating the following:

A Background Information Document (BID), Desktop Palaeontological Impact Assessment by Dr Fourie and a Letter of Exemption by Prof Van Vollenhoven has been submitted to SAHRA in terms of section 38(8) of the National Heritage Resources Act, 25 of 1999 for commenting.

Van Vollenhoven, A.J. March 2020. Letter for HIA Exemption Request: Proposed Development of a Neighbourhood Shopping Centre on ERF 1051 (Zoned Public Open Space), Rockdale, Middelburg, Mpumalanga Province.

The author has assessed the area proposed for development and determines that it has been transformed by recent activities and the likelihood of significant heritage resources being disturbed or damaged by the development is negligible. The literature and historical maps do not indicate any heritage resources that may have been located on the property. Therefore, the author requests that an exemption from undertaking a field assessment is granted for this proposed development.

Fourie, H. March 2020. The Development of a Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space) Steve Tshwete Local Municipality, Palaeontological 1 Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space) Middelburg Municipality, Nkangala District Municipality within the Mpumalanga Province Erf 1050 Rockdale 442-JS.

The proposed development is underlain by sandstone rocks of the Permian Aged Vryheid Formation, Ecca Group, Karoo Supergroup, which is of Very High Palaeontological Significance. The author recommends the following:

- 1. Mitigation may be needed (Appendix 2) if fossils are found.*
- 2. No consultation with parties was necessary. The Environmental Control Officer must familiarise him- or herself with the formation present and its fossils.*
- 3. The development may go ahead.*
- 4. The EMPr already covers the conservation of heritage and palaeontological material that may be exposed during construction activities. For a chance find, the protocol is to immediately cease all construction activities, construct a 30 m no-go barrier, and contact SAHRA for further investigation. It is recommended that the EMPr be updated to include the involvement of a palaeontologist (pre-construction training of ECO).*

Interim Comment

The South African Heritage Resources Agency (SAHRA) Archaeology, Palaeontology and Meteorites (APM) Unit notes the submission of the heritage reports to this case, however, SAHRA requires that the dBAR and its appendices must be submitted to the case in order to issue an informed comment.

SAHRA awaits the submission of the dBAR and its appendices before providing further comments on the case.

Response from AdiEnvironmental

See Table 6.4.

6.4 Adjacent landowners/users and other interested and affected parties

Figure 6.2 provides an indication of the adjacent landowners who were consulted as part of the public participation process.

As indicated in Figure 6.2, the proposed site is located within the existing Rockdale residential area, east of the N11 National Road and north of the N4 national road. Rockdale is a relatively new low cost housing development, located south of Nasaret (Figure 5.1).

The stands located east and north of the proposed site have been developed and are occupied (Figure 6.2). The stands south of the site (including a large stand zoned as Public Open Space) have not been developed and are still registered to the Steve Tshwete Local Municipality.

The property located west of the N11 national road is currently vacant, but is in the process of being rezoned for residential purposes. The property is registered to a private developer.

The following strategy was employed to inform the adjacent landowners of the proposed shopping centre development:

- Background Information Documents were forwarded to the South African National Roads Agency (N11 national road), the landowner west of the site (Rockdale Industrial (Pty) Ltd.) and the Steve Tshwete Local Municipality (owner of stands south of site) (Figure 6.2).
- Flyers were distributed by hand to the houses adjacent to the proposed site, to people passing through the area and to other interested parties within Rockdale.
- A Background Information Document was forwarded to PlanAct. PlanAct is an NGO working within with the Rockdale, Extension 24 and Nasaret communities.
- The proposed development and larger Rockdale area are located in Ward 6. Whilst distributing flyers, a number of the residents requested that the councillor inform the community at large of the proposed development. The ward councillor (Mr. Thapelo Motloung) was contacted telephonically (24 February 2020) and requested (email dated: 24 February 2020; Appendix 10) to discuss the proposed development with the Rockdale community during the next community



meeting. The councillor was also requested to provide feedback to AdiEnvironmental should there be any issue of concern.

Table 6.2 provides an indication to which adjacent landowners/users Background Information Documents/flyers (Appendix 9) were provided in order to inform them of the proposed project and to obtain their issues of concern.

A copy of the Background Information Document and flyer is provided in Appendix 9.

The Background Information Document included the following information:

- Project name and reference number;
- Applicant name;
- Legal requirements and list of activities to be authorised;
- Details of the EAP;
- Description of the public participation process;
- Responsibilities of I&APs;
- Date by which I&APs must register and forward comment;
- A link to the EAP website for an electronic copy of the Background Information Document and Basic Assessment Report;
- Project and property description;
- Locality map;
- Proposed layout plan.
- Short description of the process to be followed and proposed timeline;
- Comment sheet.

Table 6.2: Identified adjacent landowners/users who received BIDs/flyers

PROPERTY (FIGURE 6.2)	LANDOWNER/ CONTACT PERSON	CORRESPONDENCE	COMMENTS
	PlanAct – R. Mosaval (NGO working within with the Rockdale, Extension 24 and Nasaret communities)	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None
N11 national road	South African National Roads Agency (SANRAL) V. Bota K. Schmid I. van der Linde	E-mail (dated: 11 February 2020; Appendix 11) with BID forwarded.	Yes. See Section 6.4.1.
N11 national road	Trans African Concessions (TRAC) C. Davis, W. Janse van Rensburg, R. Nkosi	E-mail (dated: 11 February 2020; Appendix 11) with BID forwarded.	None
RE/442	Rockdale Industrial (Pty) Ltd. M. Stead/D. Hyman	E-mail (dated: 11 February 2020; Appendix 11) with BID forwarded.	None
Erf 406	Haiyana Mongezi Panuel	BID hand delivered on 14 February 2020.	None
Erf 405	Manala Ramathabathe Emily	BID hand delivered on 14 February 2020.	None
Erf 106	Mahlangu Fuduka Martha	BID hand delivered on 14 February 2020.	None
Erf 135	Qwabe Victor Bheki	BID hand delivered on 14 February 2020.	None
Erf 136	Rakgalakane Fransinah Sehubudi	BID hand delivered on 14 February 2020.	None

PROPERTY (FIGURE 6.2)	LANDOWNER/ CONTACT PERSON	CORRESPONDENCE	COMMENTS
Erf 137	Skosana John Elias	BID hand delivered on 14 February 2020.	None
Erf 434	Phafudi Hlalaphi Jane	BID hand delivered on 14 February 2020. BID e-mailed on 17 February 2020 (Appendix 11)	None. E-mail returned.
Erf 435	Nakchungue Daizy Maria	BID hand delivered on 14 February 2020.	None
Erf 433	Phafudi Martha Bettie	BID hand delivered on 14 February 2020.	None
Erf 138	Lubisi Leeneje Linah	BID hand delivered on 14 February 2020. BID e-mailed on 17 February 2020 (Appendix 11)	Yes. See Section 6.4.2
Erf 267	Mokoena Vincent Xolane	BID hand delivered on 14 February 2020.	None
Erf 105, 652, 573, 674, 1059	Steve Tshwete Local Municipality M. Mahamba	E-mail (dated: 11 February 2020; Appendix 10) with BID forwarded.	None



Figure 6.2: Aerial view indicating adjacent landowners/users

6.4.1 South African National Roads Agency (SANRAL) (Figure 6.2)

The N11 national road, which falls under the jurisdiction of the South African National Roads Agency (SANRAL), is located on the western boundary of the site.

An e-mail (dated: 2 March 2020; Appendix 11) was received from R. Barkhuizen acknowledging receipt of the Background Information Document and indicating that SANRAL has not comment/objection to the application.

6.4.2 Erf 138–L.L. Lubisi (Figure 6.2)

A resident of Erf 138, Ms. Valencia, indicated (14 February 2020) the following:

- The proposed development will be a good thing.
- The site is currently used as a dumping site for garden waste, domestic waste and dead animals.
- The site is also used by criminals as a hiding spot.
- The area is in need of local shops, e.g. clothing stores.
- Jobs opportunities will be created.

Response from AdiEnvironmental

See Table 6.4.

6.4.3 General comment received from the Rockdale community during the distribution of the flyers

Whilst distributing the flyer in Rockdale, the following comments were received from passersby:

- The proposed development will be positive for the local community;
- The site is currently used as a dumping site for garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions.
- The unkept Erf is a security risk since criminals use the site to hide away.
- The spaza shops in the area are very expensive.
- New businesses will be convenient and will result in job opportunities.
- The community is in need of a grocery store, bottle store and clothing shops.

Response from AdiEnvironmental

See Table 6.4.

6.5 Department of Agriculture, Rural Development, Land and Environmental Affairs

The project was registered with the Department of Agriculture, Rural Development, Land and Environmental Affairs on 7 August 2020 (see cover letter and application dated: 7 August 2020; Appendix 1). In addition, a date for a meeting and site visit was requested.

6.6 List of Interested and Affected Parties

From the above public participation process, the following list of Interested and Affected Parties was compiled:



Table 6.3: List of Interested and Affected Parties

INTERESTED AND AFFECTED PARTY LIST	
Organisation	Name
Government Departments	
Department of Agriculture, Forestry and Fisheries (DAFF)	F. Mashabela
Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) - Directorate: Land Use and Soil Management – Ermelo	J. Venter
Department of Co-operative Governance and Traditional Affairs (COGTA)	M. Loock
Department of Mineral Resources	S. Mathavela
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	T. Mkhonto
Department of Water and Sanitation (DWS)	T. Ndlhovu
Other Organisations/Stakeholders	
Distriks Landbou Unie Middelburg	J.P.J. Schmahl
Eskom Distribution (Land & Rights)	T. Ludere
Eskom Transmission	L. Motsisi
Middelburg Chamber of Business and Commerce	M. Hanekom
Mpumalanga Tourism and Parks Agency (MTPA) – Land Advisory Unit	K. Narasoo
PlanAct	R. Mosaval
South African Civil Aviation Authority	K. Mthapo
South African Heritage Resources Agency (SAHRA)	J. Lavin (SAHRA website)
Telkom	J. Smit
Local Municipality and Municipal Councillor	
Nkangala District Municipality	S. Links, A. Thwala
Steve Tshwete Local Municipality	M. Mahamba
Steve Tshwete Local Municipality	Councillor J. Michelle (Ward 8)
Steve Tshwete Local Municipality	Councillor T. Motlounge (Ward 6)
Surrounding Landowners	
Property (Figure 6.2)	Landowner/Contact person
N11 national road	South African National Roads Agency (SANRAL) V. Bota, K. Schmid, I. van der Linde
N11 national road	Trans African Concessions (TRAC) C. Davis, W. Janse van Rensburg, R. Nkosi
RE/442	Rockdale Industrial (Pty) Ltd. M. Stead/D. Hyman



INTERESTED AND AFFECTED PARTY LIST	
Erf 406	Haiyana Mongezi Panuel
Erf 405	Manala Ramathabathe Emily
Erf 106	Mahlangu Fuduka Martha
Erf 135	Qwabe Victor Bheki
Erf 136	Rakgalakane Fransinah Sehubudi
Erf 137	Skosana John Elias
Erf 434	Phafudi Hlalaphi Jane
Erf 435	Nakchungue Daizy Maria
Erf 433	Phafudi Martha Bettie
Erf 138	Lubisi Leeneje Linah
Erf 267	Mokoena Vincent Xolane
Erf 105, 652, 573, 674, 1059	Steve Tshwete Local Municipality (M Mahamba)
Other	
Debbie Wessels	Leads to Business
J Brink; M Dazel	Contractor (Batsumi Engineering)

6.7 Summary of issues and response

Appendix 1 (3)(h)(iii) of the EIA Regulations, 2014 (as amended) requires that a summary of the issues raised by interested and affected parties be provided in the Basic Assessment Report as well as an indication of the manner in which the issues were addressed.

Table 6.4 provides such a summary as well as the response from the EAP.



Table 6.4: Summary of issues of concern and response

Issue	I&AP, Stakeholders, Authority (Section of Report)	Response
Need and desirability		
• <i>The area is in need of local shops, e.g. clothing stores.</i>	Erf 138 Valencia (Section 6.4.2)	Noted.
• <i>Jobs opportunities will be created</i>	Erf 138 Valencia (Section 6.4.2)	Noted.
• <i>New businesses will be convenient and will result in job opportunities</i>	General comment from Rockdale community (Section 6.4.3)	Noted.
• <i>The community is in need of a grocery store, bottle store and clothing shops</i>	General comment from Rockdale community (Section 6.4.3)	Noted and applicant informed.
• <i>The proposed development will be a good thing. The site is currently used as a dumping site for garden waste, domestic waste and dead animals. The site is also used by criminals as a hiding spot.</i>	Erf 138 Valencia (Section 6.4.2)	Noted.
• <i>The proposed development will be positive for the local community. The site is currently used as a dumping site for garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions. The unkept Erf is a security risk since criminals use the site to hide away in. The spaza shops in the area are very expensive.</i>	General comment from Rockdale community (Section 6.4.3)	Noted.
Heritage and Palaeontology		
The HIA or an exemption letter depending on the findings, must be undertaken by a suitably qualified archaeologist and it must comply with Section 38(3) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). Once the report is submitted to the case for commenting, SAHRA will provide further comments on this proposed development	SAHRA (Section 6.3.2)	An exemption letter was drafted by a suitably qualified archaeologist as requested by SAHRA. A copy of the exemption letter is provided in Appendix 7. No sites of cultural or archaeological importance were found on site – see Section 5.13 of the BAR.
In addition to the HIA report or exemption letter, SAHRA also requires an assessment of palaeontological resources by a suitably qualified palaeontologist. The HIA and the Palaeontology Impact Assessment (PIA) must be provided to SAHRA for commenting prior to the submission of the final BAR to the competent authority. All these documents will be assessed by SAHRA, and the comment issued by SAHRA must be included in the final BAR.	SAHRA (Section 6.3.2)	A Palaeontological Impact Assessment (PIA) was conducted by a qualified palaeontologist as requested by SAHRA. A copy of the PIA is provided in Appendix 7. The findings of the PIA are summarized in Section 5.13 of the Basic Assessment Report.
The South African Heritage Resources Agency (SAHRA) Archaeology, Palaeontology and Meteorites (APM) Unit notes the submission of the heritage reports to this case, however, SAHRA requires that the dBAR and its appendices must be submitted to the case in order to issue an informed comment. SAHRA awaits the submission of the dBAR and its appendices before providing further comments on the case.	SAHRA (Section 6.3.2)	A copy of the Draft Basic Assessment Report (DBAR) and the appendices will be loaded on the SAHRIS system as requested by SAHRA.
General		
Registered as Interested and Affected Party - Business opportunity	D. Wessels (Section 6.1.4)	Added as an Interested and Affected Party and will be kept up to date.
Need advance notice to vacate the site, since heavy machinery would have to be relocated. Requested a proposed time schedule for the project.	M. Dazel (Batsumi Engineering) (Section 6.2)	The process and estimated time schedule were explained telephonically. In addition, a copy of the Background Information Document was emailed to Mr. Dazel.
Please kindly submit the Basic Assessment report (BAR) to me in order to provide comment.	Department of Water and Sanitation (Section 6.3.1)	The following was indicated to Ms. Ndlovu: "Your request is noted. We just commenced with the process. The Basic Assessment should be available for comment in March/April. I will make sure to send a hard copy to you for comment"

6.8 Evaluation of Draft Basic Assessment Report

As indicated in Section 11, the Draft Basic Assessment Report (BAR) will be made available to I&APs, stakeholders and government departments for a 30-day review period.

Hard/soft copies of the document will be submitted to relevant authorities. An electronic version of the Draft BAR will be made available on the company website (www.adienvironmental.co.za) to the interested and affected parties and stakeholders consulted and/or registered as part of the process (refer to Table 6.3). An advertisement in this regard will be placed in the Middelburg Observer and on site in order to inform surrounding landowners/users. In addition, two hard copies of the Draft BAR will be provided to the Ward Councillor, who will then inform the residents of Rockdale (by using existing community channels e.g. WhatsApp Groups and small community meetings) of the availability of the DBAR for evaluation purposes.

The various departments, stakeholders and I&APs will be requested to forward any comments on the report to the consultant within the 30-day period provided. These comments will be included and addressed in:

- Section 11 (Evaluation of Draft Basic Assessment Report);
- Table 11.1 (Summary of Issues of Concern and Response); and
- Appendix 13;

of the Final Basic Assessment Report.

The Final BAR (incorporating comments from I&APs) will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs for final decision making.

An e-mail will be forwarded to the various departments, stakeholders and interested and affected parties informing them of the comments received and the submission of the Final BAR for decision making.



SECTION 7: DESCRIPTION OF ALTERNATIVES

According to Appendix 1 of the EIA Regulations, 2014 (as amended), one of the objectives of the basic assessment process is to identify the alternatives considered for the proposed development and to rank these alternatives in terms of the potential impacts identified in order to identify the preferred alternatives.

The EIA Regulations (2014; as amended) defines alternatives as:

"different means of meeting the general purpose and requirements of the activity, which may include alternatives to the -

- a. property on which or location where the activity is proposed to be undertaken;*
- b. type of activity to be undertaken;*
- c. design or layout of the activity;*
- d. technology to be used in the activity; or*
- e. operational aspects of the activity;*

and includes the option of not implementing the activity."

In addition to the above-mentioned, Section 240(1)(b)(iv) of NEMA requires that the competent authority must take into account *"where appropriate, any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment."*

This section therefore provides a detailed description of the various alternatives investigated and process followed to decide on the preferred alternatives to be implemented.

The following alternatives were investigated:

- 7.1: Alternative sites;
- 7.2: Alternative land uses;
- 7.3: Alternative layout plans;
- 7.4: Alternative service provision (water, electricity, sewage, waste management and storm water management);
- 7.5: No-go option.

7.1 Alternative sites

The Steve Tshwete Local Municipality passed a Council Resolution on 16 August 2019 to alienate the proposed site (Erf 1051) for the purpose of a commercial development.

The applicant, Chestar Supplies (Pty) Ltd. subsequently purchased the property from the Steve Tshwete Local Municipality on 2 October 2019 for the development of a neighbourhood shopping centre.

The site comprises an old borrow pit that is currently used by the local community for the dumping of building rubble, garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions. The site is also used by criminal elements and is thus a safety risk for the local Rockdale residents. The applicant intends to remove the waste, rehabilitate the property and develop it to its full potential.



The site is ideally located for a neighbourhood shopping centre, since it is located within the existing Rockdale residential area and within walking distance for most Rockdale residents. The neighbourhood shopping centre would also be easily accessible by road since it is located in close proximity to the N11 national road.

No alternative sites with regards to the proposed development were identified.

7.2 Alternative land uses

7.2.1 Alternative land use 1 (Public Open Space)

The proposed site forms part of the existing Rockdale residential area and is currently zoned 'Public Open Space'.

The site comprises an old borrow pit that is currently used by the local community for the dumping of building rubble, garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions. The site is also used by criminal elements and is thus a safety risk for the local Rockdale residents. The applicant intends to remove the waste, rehabilitate the property and develop it to its full potential.

A temporary construction camp was erected in the western portion of the site by the contractors responsible for the upgrading of the N11 national road.

According to Urban Dynamics (2019), the site was reserved for the purpose of a Public Open Space due to the presence of the borrow pit (used during the construction of the N4 national road). It is however, possible to rehabilitate the borrow pit and utilise the site for other purposes.

During the public participation process, the local community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk.

It is possible that funding could be obtained to rehabilitate the site and to develop it as a Park. Buy-in would be needed from the local community to ensure that the site is kept neat and used for the intended recreational purposes. To date, this has however, not happened which indicates a lack of interest from the STLM and the local community in general. This is confirmed by the Steve Tshwete Local Municipality passing a Council Resolution on 16 August 2019 to alienate the proposed site (Erf 1051) for the purpose of a commercial development.

In view of the above-mentioned, Alternative land use 1 (Public Open Space), was discarded.

7.2.2 Alternative land use 2 (Neighbourhood Shopping Centre)

The proposed site is currently zoned 'Public Open Space' and may not be used for commercial/business purposes without being rezoned by the Steve Tshwete Local Municipality.

The Steve Tshwete Local Municipality passed a Council Resolution on 16 August 2019 to alienate the proposed site (Erf 1051) for the purpose of a commercial development. Condition 7.10 of the Council Resolution (Annexure



D of Appendix 3) stipulates the following: *"That the portion to be alienated be used for business purposes."*

The applicant, Chestar Supplies (Pty) Ltd., subsequently purchased the property from the Steve Tshwete Local Municipality on 2 October 2019 for the development of a neighbourhood shopping centre.

As already indicated, the applicant intends to remove the waste, rehabilitate the property and develop it to its full potential. The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of a neighbourhood shopping centre.

Urban Dynamics Town and Regional Planners (hereafter referred to as Urban Dynamics, 2019) was appointed by the applicant to apply for the park closure and the rezoning. In the application for park closure and rezoning (Urban Dynamics, 2019), the following was indicated in terms of the 'need' for a neighbourhood shopping centre within the Rockdale residential area:

According to the latest Housing Sector Plan, the Strategic Development Areas around the Rockdale area could add another 14 893 households to the area which means that it could yield close to 20 000 households in the near future. Yet, no formal recognisable business centre was established in the area that can provide the residents with the day-to-day convenience items they need in walking distance from their place of residence.

Currently Rockdale hosts one business site known as the Rockdale Supermarket situated approximately 440m north-east of the application site that only provides basic needs to the community. The other shopping opportunity for the households in Rockdale other than the primary nodes like the CBD and Middelburg Mall is the newly established "Choppies" centre in Hlalamnandi (Middelburg Ext. 22). The business centre provides a convenience supermarket store, Standard Bank, take-away establishment and a funeral business. This centre is not situated within a Secondary Node and can therefore be considered as a neighbourhood centre providing basic retail needs to the surrounding neighbourhood, similar to the application site. The centre is approximately 5.5km from the Rockdale area which is not considered as an acceptable walking distance for residents. A neighbourhood centre should be within 1.5km or 2km walking distance from residents in a neighbourhood. Rockdale and its extension were established over a period of time and are nearly fully developed with residential units of a lower income nature or units provided by various mining companies that acquired sites for resettlement purposes. However, no formal neighbourhood centre were development as part of the drive towards integrated development although some business sites were provided as part of the township establishment process of which one site was developed with a basic supermarket.

Therefore the residents in Rockdale need to travel long distances to reach a neighbourhood centre that provides more retail opportunities than the basic supermarket already established.

During the public participation process, the local community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.

The development of a neighbourhood shopping centre (Alternative Land Use 2) was thus identified as the preferred land use.

7.2.3 Alternative land use 3 (Agriculture)

The site is located within the existing Rockdale residential area and is currently zoned as 'Public Open Space'.

From the aerial view (Figure 5.2), it is evident that that the site comprises an old borrow pit and that the topsoil and subsoils have already been excavated. This was also confirmed during the site visit. During the site visit, a few cattle were noted grazing on the kikuyu grass growing on the periphery of the site. Some of the cattle were noted to be eating the waste dumped on site.

Due to the lack of adequate soil, the dumping of waste, the size (only 1.99ha) and location of the site, it is not feasible to use the site for the cultivation of crops or grazing purposes(i.e. for agricultural purposes).

In view of the above-mentioned, Alternative land use 32 (Agriculture) was thus discarded.

7.2.4 Alternative land use 4 (Residential)

The proposed site is currently zoned 'Public Open Space' and may not be used for residential purposes without being rezoned by the Steve Tshwete Local Municipality. In view of the site comprising an old borrow pit, the site would have to be rehabilitated so that houses could be built – this could be a costly exercise.

Further to that, the Steve Tshwete Local Municipality identified the need for a commercial/business development on site and not the need for more low cost houses. Condition 7.10 of the Council Resolution (Annexure D of Appendix 3) stipulates the following: "*That the portion to be alienated be used for business purposes.*"

In view of the above-mentioned, Alternative land use 3 (Residential) was thus discarded.



Table 7.1: Matrix for determining the preferred alternative in terms of land use

Alternative	Advantages	Disadvantages	Ranking	Option selected
Alternative land use				
Alternative 1 – Public Open Space	<ul style="list-style-type: none"> ✓ The site is already zoned 'Public Open Space' and would not have to be rezoned. 	<ul style="list-style-type: none"> × The site would continue to be used by the local community as a dumping site for garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions. × The site would remain unkempt and used by criminals. × The local community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk. 	2nd Option	No
Alternative 2 – neighbourhood shopping centre	<ul style="list-style-type: none"> ✓ Condition 7.10 of the Council Resolution (Annexure D of Appendix 3) stipulates the following: "That the portion to be alienated be used for business purposes." ✓ Urban Dynamics (2019) is in the process of applying to have the property rezoned from Public Open Space to Business 2. Park closure is also being applied for. ✓ The Rockdale residential area currently does not have a shopping centre and residents must commute to Middelburg in order to do their shopping. The applicant plans to provide a neighbourhood shopping centre (within walking distance) where residents can buy their day-to-day convenience items. ✓ The local residents confirmed the need for a neighbourhood shopping centre during the public participation process. ✓ Being located within the existing Rockdale residential area, services can easily be connected to the existing networks of the Steve Tshwete Local Municipality. 	<ul style="list-style-type: none"> × The site would have to be rezoned from 'Public Open Space' to 'Business 2'. × An old borrow pit is present, which impacted on the geotechnical properties of the site. × The applicant would have to remove the waste and rehabilitate the site before any development can take place. 	1 Preferred	Yes
Alternative 3 – agriculture	<ul style="list-style-type: none"> ✓ During the site visit, a few cattle were noted grazing on the kikuyu grass growing on the periphery of the site. These cattle were however, also eating domestic waste dumped on site. 	<ul style="list-style-type: none"> × The site is located within a residential area. The vacant property west of the site is also being rezoned for residential purposes. The land use in the area is thus no longer rural/agricultural. × An old borrow pit is present, which resulted in the 	0 Fatal flaw	No



Alternative	Advantages	Disadvantages	Ranking	Option selected
		<p>removal of the topsoil and subsoils on site, which are required for the cultivation of crops.</p> <ul style="list-style-type: none"> × Due to the lack of adequate soil, the dumping of waste, the size (only 1.99 ha) and location of the site, it is not feasible to use the site for the cultivation of crops or grazing purposes. × The property would have to be rezoned from Public Open Space to Agriculture. 		
Alternative 4 - residential	<ul style="list-style-type: none"> √ The site is located within an existing residential area. The proposed land use would thus be compatible to that of the surrounding environment. √ Services can easily be connected to the existing networks of the Steve Tshwete Local Municipality. 	<ul style="list-style-type: none"> × The Steve Tshwete Local Municipality identified the need for a commercial/business development on site and not the need for more low cost houses. × The property would have to be rezoned from Public Open Space to Residential. × An old borrow pit is present, which impacted on the geotechnical properties of the site. The site would have to be rehabilitated so that houses could be built – this could be a costly exercise. 	3 rd Option	No

Legend: 0 = Fatal Flaw; 1 = Preferred Option; 2 = Second Option; 3 = Third Option



7.3 Alternative layout plans

Only one layout plan (Alternative Layout 1; Figure 3.2) for the proposed development was provided to AdiEnvironmental for investigation.

The proposed shopping centre will cover $\pm 4039\text{m}^2$ of the 1.99ha site and will comprise of an anchor shop and various line shops with provision made for possible future extensions. The proposed height of the buildings will be restricted to two storeys.

Delivery bays and parking areas would be provided on the remainder of the property. As indicated in Table 3.2 and Figure 3.2, a total of 368 parking bays are proposed based on a minimum parking ratio of 6 parking spaces per 100m^2 gross leasable area.

Access to the site will be obtained from Ekukhanyeni Street connecting to the N11 national road. The main access to the shopping centre (i.e. from Ekukhanyeni Street; Figure 3.2) will be located 100m east of the N11 national road as specified by the South African National Road Agency (SANRAL). A secondary access will be provided from the northern boundary of the site via Kangaroo Street (Figure 3.2).

A more detailed description of the proposed layout plan (Figure 3.2) is provided in Section 3.1 of this report.

7.4 Alternative service provision

Alternatives were investigated in terms of:

- | |
|---|
| <ul style="list-style-type: none">▪ 7.4.1: Water provision;▪ 7.4.2: Electricity;▪ 7.4.3: Sewage disposal;▪ 7.4.4: Waste disposal;▪ 7.4.5: Storm water management. |
|---|

7.4.1 Water provision

Alternative 1 - water from Steve Tshwete Local Municipality

During the operational phase, the development will connect to the existing water reticulation network of Rockdale. According to Booyesen (2019), the proposed development can connect to the existing 110 mm diameter water line located on the corner of Ekukhanyeni and Sol Plaatjies Streets, which is the largest available connection point in the area (Figure 3.3).

Water for Middelburg is sourced from the Middelburg Dam. From the Middelburg Dam it is pumped to a 10MI reservoir (located west of Nasaret) and then to the Vaalbank Water Treatment Works (Figure 7.1).

From the Vaalbank Water Treatment Works, water is pumped into three distribution systems, and more specifically three reservoirs:

- Nasaret Reservoir (Figure 7.1) which serves the Nasaret functional area and from which water is also pumped to the Kanonkop Reservoir which serves the townships north of the Klein Olifants River;



- The Vliegveld mini-water treatment works and Vliegveld reservoir (Figure 7.1) which serves the CBD and the residential extensions adjacent to the south of the railway line (the older parts of town).
 - The Skietbaan reservoir/pump station (Figure 7.1) which serves the new southern extensions of town towards the N4 freeway.
- Rockdale is provided with water from the Nasaret Reservoir (Figure 7.1).

According to the SDF (2015), the existing reservoirs and reticulation works in Middelburg are sufficient and no major capital investments are required.

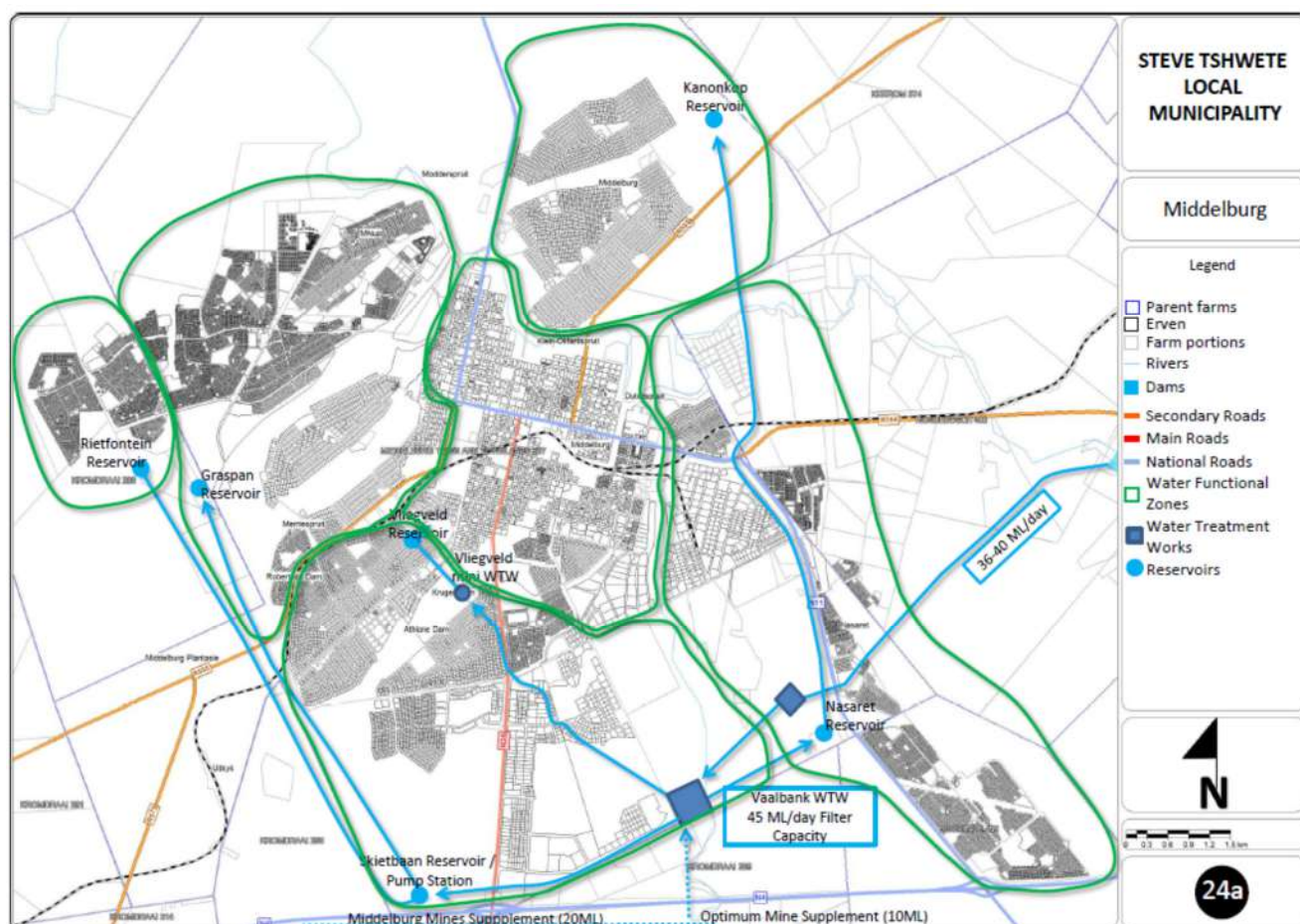


Figure 7.1: Municipal water provision by the Steve Tshwete Local Municipality (taken from SDF, 2015)

Alternative 2 - surface water

An unnamed tributary of the Klein Olifants River is located ±560 m north east of the site. Obtaining water from this river was not considered due to the disadvantages indicated in Table 7.3.

Alternative 3 - groundwater

Alternative 3 entails the abstraction of groundwater from new or existing boreholes near the site. No boreholes are present on site or in close proximity of the site. Obtaining water from a groundwater resource was not considered due to the disadvantages indicated in Table 7.3.

7.4.2 Electricity

According to Stoltz (2019), the total estimated additional load required for the proposed development is 60 VA/m². This estimate will be refined when the specific store/tenant details become available.

Alternative 1 - electricity from the Steve Tshwete Local Municipality

The proposed development falls under the jurisdiction of the Steve Tshwete Local Municipality and would therefore connect to the existing Municipal infrastructure. An 11kV bundle conductor overhead line is present on the western boundary the site. Another overhead line is present on the opposite side of the N11 national road.

The intention is to install a dedicated mini substation on the southern boundary of the site, which would connect to the existing 11kV network. The proposed location of the mini substation is indicated in Figure 3.4.

According to Stoltz (2019), the Steve Tshwete Local Municipality confirmed that capacity is available for the proposed development.

Alternative 2 - obtaining electricity from Eskom

According to Stoltz (2019), the proposed development falls under the jurisdiction of the Steve Tshwete Local Municipality and can therefore not connect to the Eskom grid.

7.4.3 Sewage disposal

Alternative 1 - connecting to the Steve Tshwete Local Municipality sewer system

During the operational phase, the development will connect to the existing sewer network of Rockdale. According to Booysen (2019), the sewer reticulation network consists of 160 mm diameter uPVC pipes (Figure 3.3). Connection points are available on site. The peak head flows of the shopping centre must however, still be estimated to determine the optimum pipe sizes required.

Sewage generated on site will be treated at the licensed (No 03/B12D/CFG1/4814) Boskrans Wastewater Treatment Plant (WWTP). According to Bouwer (2018a), the WWTP was upgraded in 2015 as indicated in Table 7.2 and does have available capacity (17 MI/day).

Table 7.2: Details of Boskrans Wastewater Treatment Plant (taken from Bouwer, 2018a)

Name of wastewater treatment plant	Boskrans Wastewater Treatment Plant
Present capacity of the plant	45 M./day
Present quantity of sewage treated	28 MI/day
Capacity available	17 MI/day
Planned refurbishment	The WWTP was upgraded in 2015
Quaternary catchment area	B12E
Sewage treatment plant licensed	Yes
License number	03/B12D/CFGi/4814
Effluent standard	Special Limit

A main outfall sewer runs parallel to the east of the N11 national road (Figure 7.2) and serves all the new developments/extensions of Nasaret and Rockdale along the eastern extents of town.



Waste water is pumped to the Boskrans WWTP along the main outfall sewer via a pump station located just to the north of Mhluzi. Figure 7.2 provides an indication of the location of the main outfall sewers in Middelburg and the location of the WWTP.

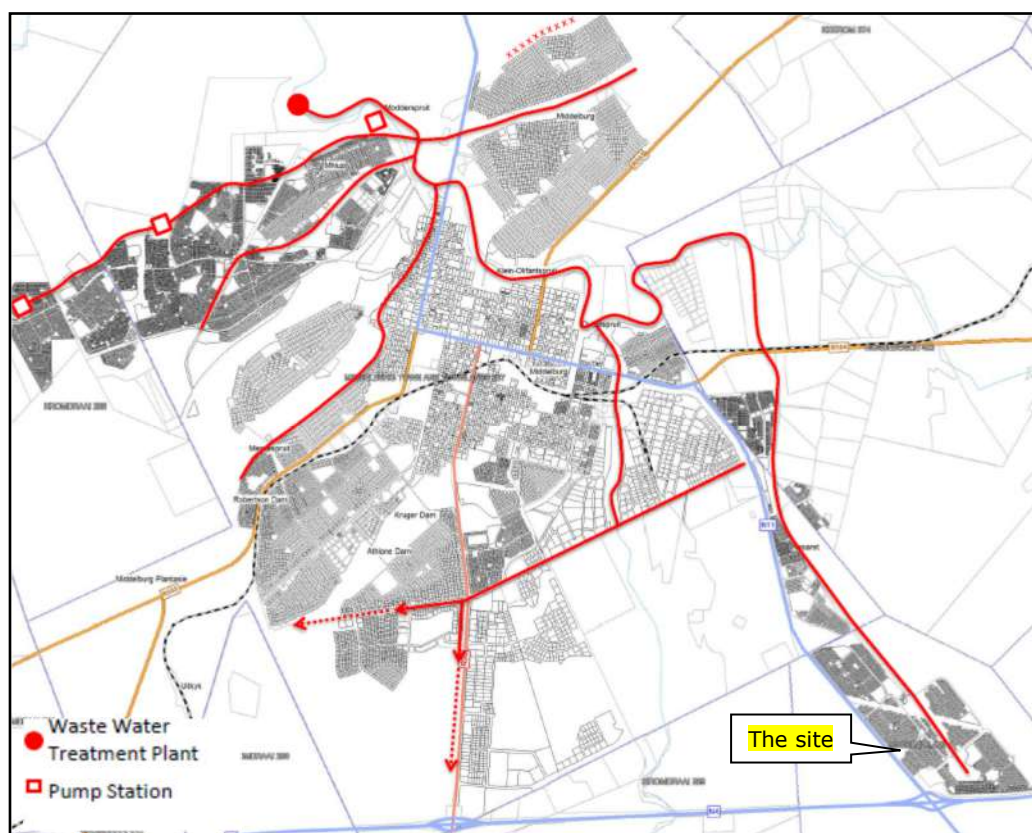


Figure 7.2: Main outfall sewer system of Steve Tshwete Local Municipality (taken from SDF, 2015)

Alternative 2 - sewage treatment/package plant

This alternative would entail the installation of a sewage treatment/package plant to treat sewage from the proposed development.

This option was not considered due to the disadvantages indicated in Table 7.3.

Alternative 3 - septic tank with French drain

Septic tanks with French drains are no longer accepted by the Department of Water and Sanitation due to the potential pollution risks. This option was thus not considered.

Alternative 4 - conservancy tank

This alternative would entail the installation of one large or numerous smaller conservancy tanks. Waste water would have to be abstracted on a regular basis and disposed of at the Boskrans Wastewater Treatment Plant.

This option was not considered due to the disadvantages indicated in Table 7.3.

7.4.4 Waste management

Alternative 1: Waste collection by the Steve Tshwete Local Municipality

During the operational phase, refuse will be collected by the Steve Tshwete Local Municipality's refuse removal unit and will be disposed of at the registered Rietfontein Waste Disposal Site.

Provision was made in the layout plan (Figure 3.2) for a 6m x 6m refuse area where the waste will be stored before being collected by the Municipality.

Waste collection by the Steve Tshwete Local Municipality is thus the preferred option.

Alternative 2: Development of a new onsite waste disposal site

This alternative would entail utilizing a portion of the site to establish a new waste disposal site. This option was not considered due to the disadvantages indicated in Table 7.3.

7.4.5 Storm water management

Alternative 1: Connecting to existing municipal storm water system in the existing Rockdale residential area

Only one alternative in terms of storm water management is available, namely connecting to the existing municipal storm water system in Rockdale.

According to Booyesen (2019), the closest storm water network is in Ekukhanyeni Street, in close proximity to one corner of the site.

Storm water from the site will be treated as surface runoff as far as possible, whereafter it will be diverted to the nearest kerb inlet located in Ekukhanyeni Street and into the existing storm water pipe network.

According to Booyesen (2019), the existing storm water pipe sizes still need to be confirmed to determine if sufficient capacity exists to drain the additional storm water from the shopping centre.



Table 7.3: Matrix for determining the preferred alternative in terms of service provision

Alternative	Advantages	Disadvantages	Ranking	Option selected
Alternative service provision				
7.4.1 Water provision				
Alternative 1 - water from Steve Tshwete Local Municipality	<ul style="list-style-type: none"> ✓ The development can connect to the existing water pipeline on the corner of Ekukhanyeni and Sol Plaatjies Streets. ✓ Potable water is available from the Nasaret reservoirs. ✓ The existing reservoirs and reticulation works in Middelburg are sufficient and no major capital investments are required to provide the proposed development with water. 		1 Preferred	Yes
Alternative 2 - surface water		<ul style="list-style-type: none"> × A hydrological study would have to be conducted to determine if a sustainable volume of water is available from the tributary of the Klein Olifants River. × The surface water could be polluted as a result of residential and agricultural activities taking place upstream of the site. × A water treatment plant would have to be installed. × A pipeline would have to be installed from the river, across a wetland, to the site. × A pump would have to be installed in the stream, which would be risky in terms of theft. × A servitude would have to be registered across the adjacent properties. × A water use license would be required from the Department of Water and Sanitation. 	0 Fatal flaw	No
Alternative 3 – groundwater		<ul style="list-style-type: none"> × No boreholes are present on site or in close proximity of the site. × A geohydrological study would have to be conducted to determine if a sustainable water supply could be provided from newly drilled boreholes. 	2nd Option	No
7.4.2 Electricity				
Alternative 1 - electricity from the Steve Tshwete Local	<ul style="list-style-type: none"> ✓ The proposed development falls under the jurisdiction of the Steve Tshwete Local 		1 Preferred	Yes



Alternative	Advantages	Disadvantages	Ranking	Option selected
Municipality	<p>Municipality and can connect to the existing infrastructure.</p> <ul style="list-style-type: none"> ✓ An 11kV bundle conductor overhead line is present on the western boundary the site. ✓ The Steve Tshwete Local Municipality confirmed that capacity is available for the proposed development. 			
Alternative 2 - obtaining electricity from Eskom		<ul style="list-style-type: none"> × The proposed development falls under the jurisdiction of Steve Tshwete Local Municipality and can therefore not connect to the Eskom grid. 	0 Fatal flaw	No
7.4.3 Sewage disposal				
Alternative 1 - connecting to the Steve Tshwete Local Municipality sewer system	<ul style="list-style-type: none"> ✓ The development can connect to the existing Rockdale outfall sewer which is located east of the site; ✓ Connection points are available on site. ✓ Sufficient capacity is available at the licensed Boskrans Wastewater Treatment Plant. 		1 Preferred	Yes
Alternative 2 - sewage package plant		<ul style="list-style-type: none"> × The estimated wastewater treatment demand may not warrant the installation of a sewage treatment/package plant (increased construction and maintenance costs). × Parking/retail space would be lost to make space for a sewage treatment/package plant. × If the sewage treatment/package plant is not functioning properly, it could impact on the shopping centre and surrounding Rockdale residents in terms of odours. × A water use license would be required from the Department of Water and Sanitation. 	2nd Option	No
Alternative 3 - septic tank and French drain		<ul style="list-style-type: none"> × Septic tanks with French drains are no longer accepted by the Department of Water and Sanitation due to the potential pollution risks. 	0 Fatal flaw	No
Alternative 4 - conservancy tanks		<ul style="list-style-type: none"> × Engineers would have to be appointed to determine the size and placing of conservancy tanks. × The conservancy tanks would have to be emptied on a regular basis by means of a honey sucker. This would result in additional costs as a service provider 	0 Fatal flaw	No



Alternative	Advantages	Disadvantages	Ranking	Option selected
		<p>would have to be sourced.</p> <ul style="list-style-type: none"> × The sewage would have to be disposed at the Boskrans Wastewater Treatment Plant, which could also result in additional costs. × There is a risk that the conservancy tank/tanks could overflow, resulting in soil and groundwater pollution as well as bad odours. 		
7.4.4 Waste management				
Alternative 1 – waste collected by the Steve Tshwete Local Municipality	<ul style="list-style-type: none"> ✓ Refuse will be collected by the Steve Tshwete Local Municipality's refuse removal unit and will be disposed of at the registered Rietfontein Waste Disposal Site. ✓ Provision was made in the layout plan (Figure 3.2) for a 6m x 6m refuse area where the waste will be stored before being collected by the Municipality. 		1 Preferred	Yes
Alternative 2 – new onsite waste disposal site		<ul style="list-style-type: none"> × The said site is only 1.99ha in extent. Parking/retail space would be lost in order to make provision for a waste disposal site. × An onsite waste disposal site would impact on the shopping centre and surrounding residents in terms of odours, flies and rodents. × A waste management license would have to be obtained. × An onsite waste disposal site would result in additional costs since the applicant would have to appoint a service provider to manage the site. 	0 Fatal flaw	No
7.4.5 Storm water management				
Alternative 1 - connecting to an existing Steve Tshwete Local Municipality storm water system	<ul style="list-style-type: none"> ✓ The development can connect to the existing municipal storm water system in Ekukhanyeni Street, in close proximity to one corner of the site. 		1 Preferred	Yes

Legend: 0 = Fatal Flaw; 1 = Preferred Option; 2 = Second Option; 3 = Third Option



7.5 The 'No Project Option'

The 'no project option' is the alternative of not going ahead with the proposed development. The 'no project option' is only considered if it is found that the development will have significant negative impacts on the environment, which cannot be mitigated or managed.

If the 'no project option' in terms of the proposed development was exercised, it could mean that:

- ⊗ The surrounding residents would continue using the site for the illegal dumping of waste, which would impact on adjacent landowners in terms of odours, flies and rodents.
- ⊗ The site would remain unkempt, posing a health and safety risk.
- ⊗ Potential business opportunities and employment opportunities would be lost.
- ⊗ There would still be a need for neighbourhood shopping centre in the community.
- ⊗ Residents would have to continue commuting to town or shopping centres in other residential areas for their basic supplies.
- ⊗ Other potential uses for the site would have to be investigated.
- ⊗ The applicant could sell the property.

It is anticipated that this development will add to the development potential and economic growth of the area and provide the required retail services.

7.6 Concluding statement on alternatives

In summary, the following alternatives are deemed feasible and will be assessed in Section 8 of this document:

Section	Preferred Alternative	Description
7.1	Erf 1051	The development site will be located on Erf 1051, Rockdale, and Middelburg (Figure 5.2).
7.2	Neighbourhood shopping centre Alternative 2	A neighbourhood shopping centre will be established on the said property.
7.3	Layout 1	Only one layout plan was drafted for the development of a neighbourhood shopping centre (Figure 3.2).
7.4.1	Water provision Alternative 1	The development will connect to the STLM water reticulation network.
7.4.2	Electricity Alternative 1	Electricity will be obtained from the STLM.
7.4.3	Sewage disposal Alternative 1	The development will connect to the STLM sewer network.
7.4.4	Waste management Alternative 1	Waste will be collected by the STLM and disposed of at the registered Rietfontein Waste Disposal Site.
7.4.5	Storm water management Alternative 1	The development will connect to the STLM storm water management system.

Mitigation and management measures to reduce any potential negative impacts relating to any of these alternatives are provided in Section 9 of this report.

SECTION 8: ENVIRONMENTAL IMPACT DESCRIPTION AND EVALUATION

8.1 Introduction

As required in terms of Appendix 1 of the EIA Regulations (2014, as amended), this section of the report describes the impacts and risks identified (physical and social) as a result of the proposed project, including:

- an indication of the preferred alternatives;
- the methodology used in determining and ranking the potential impacts;
- the nature, significance, consequence, extent, duration and probability of the impacts during all phases of the development;
- the degree to which these impacts can be avoided, managed, mitigated, reversed or may cause irreplaceable damage;
- positive impacts;
- cumulative impacts;
- mitigation measures to be implemented.

The impacts presented in this section were identified through the status quo of the environment, specialist input, experience of the EAPs and comment from I&APs.

8.2 Description of the preferred alternatives

Section 7 provides a detailed description of all alternatives investigated with regards to this project. As indicated in Section 7.6, the following alternatives are deemed feasible and will be assessed in Section 8.5:

Aspect	Description of alternative
Site	The said site will be located on Erf 1051, Rockdale, Middelburg (Figure 8.1).
Land Use	A neighbourhood shopping centre will be established on the said property (Figure 8.1).
Layout	Only one layout plan was drafted for the development of a neighbourhood shopping centre (Figure 8.1).
Services	Water: The development will connect to the STLM water reticulation network.
	Electricity: Electricity will be obtained from the STLM.
	Sewage disposal: The development will connect to the STLM sewer network.
	Waste management: Waste will be collected by the STLM and disposed of at the registered Rietfontein Waste Disposal Site.
	Storm water management: The development will connect to the STLM storm water management system.



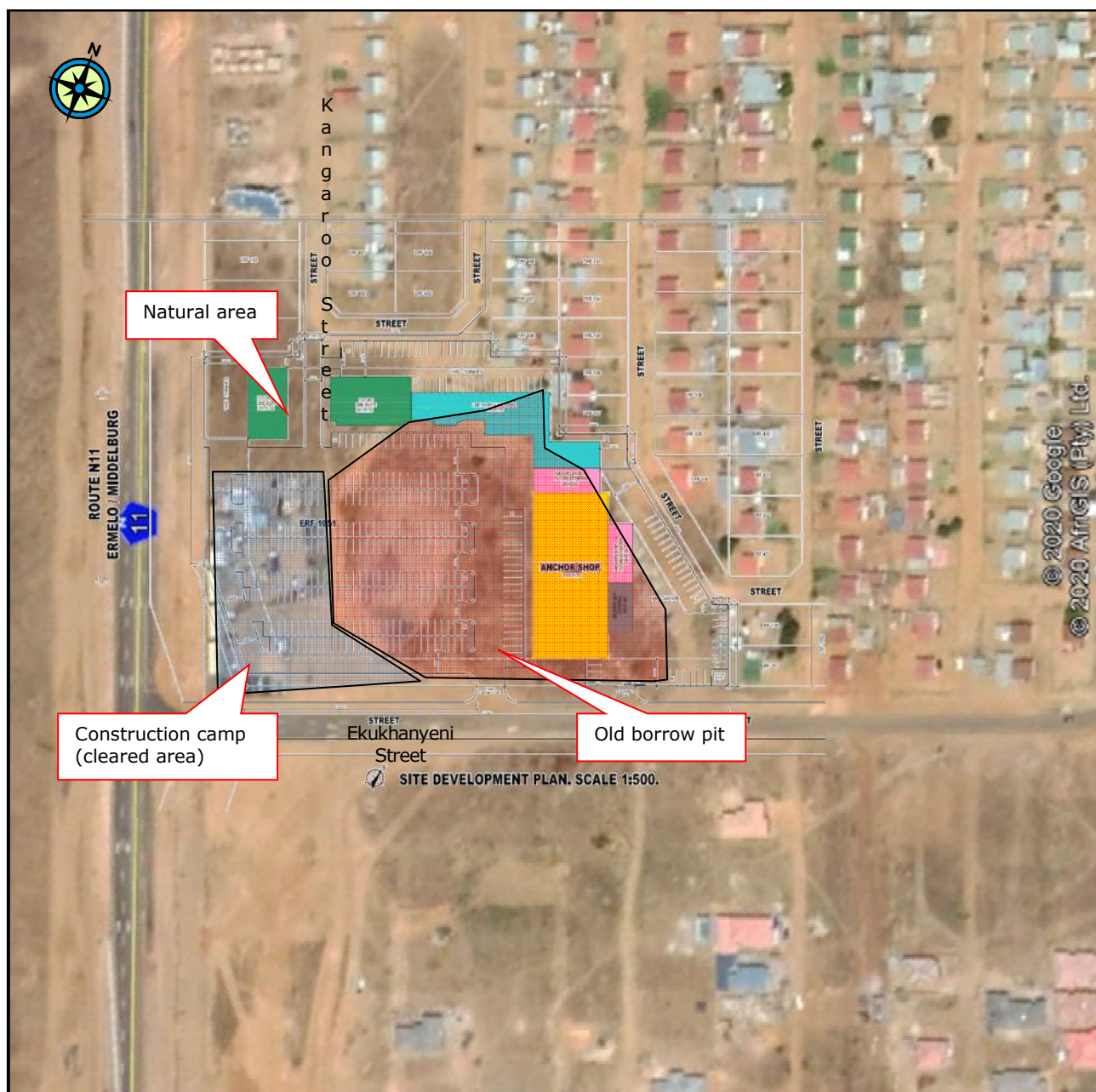


Figure 8.1: Proposed location and layout of the development

8.3 Development phases

The impact of the development has to be assessed in terms of the following development phases:

- **Planning and design phase**
- **Construction phase**
- **Operational phase**
- **Decommissioning phase**

8.3.1 Planning and design phase

The planning and design phase involved mostly office work and site surveys with regards to the design of the layout plan, the Basic Assessment Report

and the specialist studies. It also involves obtaining the necessary authorisations for the said development.

No actual construction took place on site. Thus, no impacts are associated with the planning and design phase.

8.3.2 Construction phase

The construction of the neighbourhood shopping centre and associated infrastructure would involve the pegging of the stand, installation of services and construction of buildings and parking area (Figure 8.1).

This would involve the following:

- ❖ Clearing and removal of waste on site;
- ❖ Clearing of the remaining vegetation and topsoil;
- ❖ Fencing of the site;
- ❖ Levelling of the site and filling of the borrow pit (if required);
- ❖ Excavation of trenches for foundations and services;
- ❖ Installation and connection of services;
- ❖ Laying of the required foundations;
- ❖ Building of the outer structures;
- ❖ Installation of the required internal fittings;
- ❖ Construction of access roads;
- ❖ Paving of the parking area;
- ❖ Rehabilitation of the disturbed areas (i.e. landscaping).

Section 8.5 provides details with regards to potential impacts identified during the construction phase.

8.3.3 Operational phase

The operational phase would involve the utilisation of the various buildings and infrastructure (including parking area) associated with the proposed neighbourhood shopping centre.

Section 8.5 provides details with regards to potential impacts identified during the operational phase.

8.3.4 Decommissioning phase

If required, this phase would involve the decommissioning of the facilities constructed as part of this project (see Section 8.3.2).

The decommissioning phase will not be discussed in detail. It is recommended that at the time of decommissioning, a specific Environmental Management Programme (EMPr) be compiled which specifically addresses this phase. This EMPr would have to address issues such as the removal of building rubble and the rehabilitation of the site. Soil conservation measures would also have to be implemented.

Section 8.5 indicates some of the potential impacts identified during the decommissioning phase.

8.4 Approach and methodology

This section presents the proposed approach to assessing the potential impacts, with the aim of determining the significance of these impacts. The impact will be determined for each aspect of the environment with and



without the implementation of mitigation measures. This allows for a prediction of how the impact can be managed or mitigated. The evaluation of impacts is conducted in terms of the following criteria:

- **Nature of impact (i.e. description of the impact)**
- **Extent (i.e. spatial scope or geographical extent of the impact to the receiving environment)**

Site	Effect limited to the site and its immediate surroundings
Local	Effect limited to within 3-5 km of the site
Regional	Effect will have an impact on a regional scale

- **Duration (i.e. length of permanence of the impact. In other words, how long will the impact last)**

Short	Effect lasts for a period 0 to 5 years
Medium	Effect continues for a period between 5 and 10 years
Long	Effect will cease after the operational life of the activity either because of natural process or by human intervention
Permanent	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient

- **Probability (i.e. likelihood that the impact will occur)**

Improbable	Less than 33% chance of occurrence
Probable	Between 33 and 66% chance of occurrence
Highly probable	Greater than 66% chance of occurrence
Definite	Will occur regardless of any prevention measures

- **Significance/intensity of impact (i.e. degree of alteration to the affected receiving environment)**

Low	Where the impact will have a relatively small effect on the environment and will not have an influence on the decision
Medium	Where the impact can have an influence on the environment and the decision and should be mitigated
High	Where the impact definitely has an impact on the environment and the decision regardless of any possible mitigation

- **Status (i.e. whether the impact will have a positive (beneficial) or negative (detrimental) effect on the receiving environment)**

Positive	Impact will be beneficial to the environment
Negative	Impact will not be beneficial to the environment
Neutral	Positive and negative impact

- **Reversibility (i.e. whether the impact can be reversed or not)**

Reversible	Impact is reversible without incurring significant time and cost
Reversible (costly)	Impact is reversible only by incurring significant time and cost
Irreversible	Impact is irreversible



8.5 Description of potential impacts

The following section provides an indication of the environmental features that will be impacted (directly and indirectly) during the construction, operational and decommissioning phases of the proposed project.

It must be noted that many of the potential negative consequences can be mitigated successfully. It is however, necessary to make a thorough assessment of all possible impacts in order to ensure that environmental considerations are taken into account, in a balanced way, as far as possible, supporting the aim of creating a healthy and pleasant environment.

Please note: Only the most important mitigation measures associated with identified impacts are indicated in this section. The Environmental Management Programme Report (EMPr; included in Section 9 of this report) provides a comprehensive description of the various mitigation and management measures proposed to ensure minimal impact on the environment.

8.5.1 Topography

As indicated in Section 5.5, the topography of the site has already been impacted by the old borrow pit (60% of site) and the temporary construction camp present on site (20% of site; Figure 8.1). The topography of only $\pm 20\%$ (0.4ha) of the site has not been impacted (Figure 8.1).

Construction phase

As part of the construction process, the dumped waste will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then have to be backfilled (using clean material) as per the geotechnical engineer's recommendations in order to ensure that the site is geotechnically stable for development purposes.

Changes to the topography could result in changes to runoff patterns and an increased risk of soil erosion if mitigation measures are not implemented. This could indirectly impact on the adjacent gravel roads and nearby residences (Figure 8.1).

Operational phase

Direct impact on topography will continue in terms of the presence of the buildings, which in turn could result in increased surface water runoff. This could impact on the adjacent gravel roads and nearby residences if mitigation measures are not implemented.

Decommissioning phase

During decommissioning, the buildings and associated infrastructure will be demolished and removed from site. The site will be top soiled and shaped to conform to the original slope of the area, which will have a positive impact on the topography and runoff from the site.



IMPACT ON TOPOGRAPHY					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Probable	Low Positive	Low Positive	N/A

Proposed mitigation:

- The mitigation measures in Section 9 with regards to storm water management must be implemented during all phases of the development.
- The storm water infrastructure must be connected to the STLM storm water management system as soon as possible.

8.5.2 Geology

Construction phase

As indicated in Section 5.4, the proposed site is underlain by sandstone, shale and conglomerates of the Vryheid Formation, Ecca Group, Karoo Supergroup.

The geology on the majority of the site (±60% or 1.2ha) has however, been impacted by the excavation of a borrow pit (Figure 8.1). As indicated in Section 5.4.2, Hansmeyer (2005) classified the site as Geotechnical Zone 3a (Figure 5.5a) i.e. a borrow pit where no development should take place. As indicated in Figure 8.1, the anchor shop and the 4 line shops are proposed to be developed within this area. The rest of the site will comprise of a parking area.

As part of the construction process, the dumped waste will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then have to be backfilled (using clean material) as per the geotechnical engineer’s recommendations in order to ensure that the site is geotechnically stable for development purposes. Other recommendations by the geotechnical engineer will also have to be implemented in order to avoid any impact on the structures to be built.

The excavation of trenches for services and foundations in the area where the underlying geology is still intact (i.e. where the construction camp is located and the natural area, Figure 8.1) could impact on the sandstones of the Vryheid Formation depending on the depth of the earthworks required. The impact is however, expected to be minimal due to the small footprint of the development and the fact that a large portion of the site would comprise of a parking area (Figure 8.1), which does not require foundations. The impact on the underlying geology cannot be mitigated.

Operational phase

During the operational phase, the buildings and associated infrastructure could continue to be impacted if the geotechnical engineer’s recommendations are not implemented during the construction phase.

Decommissioning phase

No further impact expected since no further excavation would take place.



IMPACT OF GEOLOGY/GEOTECHNICAL ASPECTS					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Permanent	Probable	Medium Negative	Low Negative	Irreversible
OPERATIONAL PHASE					
Site	Permanent	Probable	Medium Negative	Low Negative	Irreversible
DECOMMISSIONING PHASE					
None					

Proposed mitigation:

- o A geotechnical engineer must be consulted regarding the rehabilitation of the old borrow pit area in order to ensure that the site is geotechnically stable for development purposes.
- o The geotechnical engineer’s recommendations to be implemented as part of the construction phase.

8.5.3 Soil

A) Disturbance of soil profiles

Construction, Operational and Decommissioning phases

As indicated in Section 5.6, the soil profiles over ±60% of the site (1.2ha; Figure 8.1) have been transformed as a result of past excavation activities (old borrow pit) and the dumping of building rubble and waste within the borrow pit.

It is estimated that ±20% of the site soils (0.4ha) have been impacted in terms of compaction due to the presence of the construction camp and the movement of heavy vehicles. The proposed construction activities will result in further changes in soil structure, nutritional and chemical values when the remaining soil is removed and the buildings and parking areas are constructed.

The remaining 20% of the site (Figure 8.1) is still in a fairly natural state with no real impacts on the soil evident. The soil profiles within this area will be directly impacted in terms of soil structure, nutritional and chemical values when the topsoil is removed and the buildings and parking areas are constructed.

Operational phase

Direct impact on soil i.t.o. soil structure, nutritional and chemical values and soil compaction will continue due to the presence of the buildings and parking areas.

Decommissioning phase

The decommissioning activities will have an initial negative impact on the soil in terms of disturbance (physical and biological properties). The removal of any polluted soil and proper rehabilitation of the site after decommissioning will however, have a positive impact on the soil.



DISTURBANCE OF SOIL PROFILES					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Low Negative	Low Negative	Irreversible
OPERATIONAL PHASE					
Site	Long	Definite	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Probable	Low Positive	Low Positive	N/A

B) Increase in erosion

Construction phase

Currently, most of the surface water runoff ponds within the old borrow pit. Changes to the topography during construction (i.e. filling in of the borrow pit, levelling of the site, construction of buildings and parking area) would result in changed runoff patterns and an increased risk of soil erosion if mitigation measures are not implemented. This could indirectly impact on the adjacent gravel roads and nearby residences (Figure 8.1) in terms of erosion and sedimentation since surface water runoff would no longer be contained on site.

Operational phase

The presence of impermeable surfaces (i.e. buildings and parking area) would impact on the surface water runoff patterns (volume, intensity, infiltration) on site, which could lead to an increased risk of soil erosion if storm water management measures were not implemented during the construction phase and are not maintained during the operational phase. This could indirectly impact on the adjacent roads and nearby residences.

Decommissioning phase

The decommissioning activities could initially result in soil erosion when the buildings and storm water management measures are demolished. However, proper rehabilitation and vegetation of the site after decommissioning will have a positive impact in terms of reduced soil erosion risk.

INCREASE IN EROSION					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Probable	Low Positive	Low Positive	N/A

Proposed mitigation:

- The mitigation measures in Section 9 with regards to storm water management must be implemented during all phases of the development.
- The storm water infrastructure must be connected to the STLM storm water management system as soon as possible.
- Monitor for erosion and intervene and/or rehabilitate where necessary.

C) Risk of soil pollution

Construction phase

Soil pollution has already taken place on site due to the illegal dumping of building rubble, garden and domestic waste within the old borrow pit. As part of the construction process, the dumped waste will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then have to be backfilled (using clean material) as per the geotechnical engineer's recommendations in order to ensure that the site is geotechnically stable for development purposes. This would have a positive impact on the soils of the site.

During construction, soil pollution may occur if the construction vehicles are not maintained/repared resulting in oil leaks and fuel spills, waste management measures are not implemented and proper ablution and sanitation facilities are not provided for the site workers to use on site.

Operational phase

Soil pollution could occur if waste is not collected by the STLM and disposed of at the registered Rietfontein Waste Disposal Site, and if the sewerage system (to be connected to the STLM sewer network) does not have sufficient capacity or was not installed properly resulting in sewage overflowing from the manholes.

Decommissioning phase

The removal of any polluted soil and proper rehabilitation of the site after decommissioning will have a positive impact on the soil.

RISK OF SOIL POLLUTION					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Medium Positive	Medium Positive	N/A
Site	Short	Probable	Low Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Probable	Low Positive	Low Positive	N/A

Proposed mitigation:

- The existing waste within the old borrow pit to be removed and disposed at the registered Rietfontein Waste Disposal site.
- The site to be backfilled (using clean material) as per the geotechnical engineer's recommendations.
- The waste management measures as indicated in Sections 3 and 9 to be implemented during all phases of the development.

D) Loss of arable land

Construction, Operational and Decommissioning phases

As indicated in Section 5.6, approximately 60% of the site's soils (1.2ha) have been severely impacted in terms of the excavation of the old borrow pit and the subsequent dumping of building rubble and waste within the borrow pit. It is estimated that ±20% of the site soils (0.4ha) have been impacted in terms of compaction due to the presence of the construction camp and the

movement of heavy vehicles. The remaining 20% of the site (0.4ha) is still in a fairly natural state with no real impacts on the soil evident. These soils (Westleigh soil type) are however, not suitable for cultivation purposes. The construction, operational and decommissioning activities will therefore not impact on arable land.

8.5.4 Land use and sense of place

As indicated in Section 5.3, the proposed site is located within the existing Rockdale residential area and zoned as Public Open Space. The site is however, highly disturbed and cannot be used by residents as a Public Open Space due to its current state.

Construction phase

The rezoning of the site from Public Open Space to Business 2 (for the purposes of a neighbourhood shopping centre) would not impact on residents of Rockdale since the site is currently highly disturbed and cannot be used by the residents for the intended purpose. During the public participation process, the local community indicated that they would prefer that the site be developed, since the current situation is unhealthy and poses a safety risk.

As part of the construction process, the waste dumped in the old borrow pit will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then have to be backfilled (using clean material) as per the geotechnical engineer's recommendations in order to ensure that the site is geotechnically stable for development purposes (i.e. construction of a neighbourhood shopping centre). This would have a positive impact on the site and immediate surrounding residential area in terms of land use and sense of place.

Operational phase

The operation of the neighbourhood shopping centre should have a positive impact on the land use and sense of place of the Rockdale residential area. During the public participation process, the local community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.

Decommissioning phase

The decommissioning of the buildings and associated infrastructure and rehabilitation of the site would allow for a different land use on site. The impact will depend on the land use in the area at the said time.

IMPACT ON LAND USE AND SENSE OF PLACE					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Definite	Medium Positive	Medium Positive	N/A
OPERATIONAL PHASE					
Site	Long	Definite	Medium Positive	Medium Positive	N/A
DECOMMISSIONING PHASE					
Site	Long	Highly probable	Low Neutral	Low Neutral	N/A



8.5.5 Natural vegetation and animal life

As indicated in Section 5.7, the natural vegetation and habitat on site are highly transformed as a result of the borrow pit, gravel roads, dumping of waste and presence of the construction camp. The site comprises mostly of vegetation indicative of disturbance (within the old borrow pit) and bare areas (e.g. construction camp, parking area, material storage area and gravel roads; Figure 5.2). A small piece of Rocky Grassland vegetation (0.4ha) is present in the north western portion of the site. No 'Species of Conservation Concern' are known to be present on site or are likely to occur.

A) Destruction of natural vegetation

Construction phase

The construction activities would result in the removal of ±0.4ha of Rocky Grassland vegetation and ±1ha of highly disturbed vegetation (mainly weeds and alien plants present). The impact on the vegetation is deemed to be low due to the small area that would be cleared, the disturbed nature of the vegetation and the fact that the surrounding area has already been developed.

The removal of invader plants will have a positive impact on the natural environment and stop the spread thereof into the surrounding area.

Operational phase

No direct impact since no more vegetation would be removed. Alien vegetation could however, establish on site and spread to the surrounding area if disturbed areas were not properly rehabilitated during the construction phase or if alien plants are utilized in the gardens.

Decommissioning phase

The rehabilitation of the site after decommissioning would be positive, unless the area is not rehabilitated properly and alien species are introduced.

DESTRUCTION OF NATURAL VEGETATION					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Definite	Low Neutral	Low Neutral	N/A
OPERATIONAL PHASE					
Site	Long	Probable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Highly probable	Low Neutral	Low Neutral	N/A

B) Impact on animal life

Construction phase

It is not anticipated that the development would have a significant impact on animal life since the site is highly disturbed as indicated in Section 5.8. Smaller species such as birds, reptiles, amphibians, etc. may however, be present due to artificial habitat created within the old borrow pit (e.g. building rubble; depressions filled with water, etc.). The construction activities could impact on these species.



Operational phase

No further direct impact on animal life is expected as no further construction activities will take place.

Decommissioning phase

During decommissioning, building rubble and any polluted soil will be removed from the site and disposed of accordingly. The said area will then be rehabilitated in order to establish a vegetation cover and prevent soil erosion. This could result in the creation of habitat for animal life within the rehabilitated area.

IMPACT ON ANIMAL LIFE					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Low Negative	Low Negative	Reversible
OPERATIONAL PHASE					
None	None	None	None	None	N/A
DECOMMISSIONING PHASE					
Site	Long	Probable	Low Positive	Low Positive	N/A

8.5.6 Surface water (including wetlands and sensitive landscapes)

As indicated in Section 5.9, no streams, rivers, dams or wetlands are located on or adjacent to the site. A small unnamed stream and associated wetland is located ±560m northeast of the site. The area between this stream and the site is developed.

In general, the site and surrounding area drain in a north easterly direction towards the unnamed stream. The natural surface water runoff from the site has however, been severely impacted as a result of the old borrow pit and dumping of building rubble. The clearing of vegetation for the temporary construction camp, the construction of the Rockdale residential area and the gravel/tar roads located on the periphery of the site has also impacted on the surface water runoff direction and velocity.

Surface water (rainwater) tends to pond within the old borrow pit and on the gravel roads and does not drain towards the stream.

A) Direct impact on surface water environments (including wetlands)

Construction, Operational and Decommissioning phases

The development will not impact directly on any surface water environments (including wetlands) as the site is located ±560m away from the unnamed stream and associated wetland. No wetland is present on site as indicated in Section 5.9.4.

B) Impact on surface water runoff velocity

Construction phase

Currently, surface water mostly ponds within the old borrow pit. The earthworks required during the construction phase (i.e. removal of dumped waste within old borrow pit, backfilling of old borrow pit, levelling of the site) would result in changed runoff patterns and an increased risk of soil erosion if mitigation measures are not implemented. This could indirectly impact on the adjacent gravel roads and nearby residences in terms of erosion,



sedimentation and flooding during extreme rainfall events since surface water runoff would no longer be contained on site.

Operational phase

The presence of the buildings and impermeable surfaces will continue to impact on the surface water runoff of the site (decreased infiltration and increased runoff velocities). If not well managed, this could impact on the adjacent gravel roads and nearby residences in terms of erosion, sedimentation and flooding during extreme rainfall events if storm water management measures are not implemented.

Decommissioning phase

The decommissioning activities could initially result in soil erosion when the buildings and storm water management measures are demolished. However, proper rehabilitation and vegetation of the site after decommissioning will have a positive impact in terms of reduced soil erosion risk.

IMPACT ON SURFACE WATER RUNOFF VELOCITY (EROSION, SEDIMENTATION, FLOODING)					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Highly probable	Low Positive	Low Positive	N/A

Proposed mitigation:

- The mitigation measures in Section 9 with regards to storm water management must be implemented during all phases of the development.
- The storm water infrastructure must be connected to the STLM storm water management system as soon as possible.
- Monitor for erosion and intervene and/or rehabilitate where necessary.

C) Impact on surface water runoff quality

Construction phase

The illegal dumping of building rubble, garden and domestic waste may already have impacted on the surface water runoff quality from the site. As part of the construction process, the dumped waste will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then be backfilled (using clean material) as per the geotechnical engineer's recommendation in order to ensure that the site is geotechnically stable for development purposes. This would have a positive impact on the surface water runoff quality from the site.

During construction, surface water runoff may be polluted if the construction vehicles are not maintained/repared resulting in oil leaks and fuel spills, waste management measures are not implemented and proper abluion and sanitation facilities are not provided for the site workers to use on site.

Operational phase

Indirect pollution of surface water runoff could take place if waste is not collected by the STLM and disposed of at the registered Rietfontein Waste



Disposal Site, and if the sewerage system (to be connected to the STLM sewer network) does not have sufficient capacity or was not installed properly resulting in sewage overflowing from the manholes.

Decommissioning phase

During the decommissioning phase, building rubble and any polluted soil will be removed from the site and disposed of accordingly. The said area will then be rehabilitated in order to establish a vegetation cover. This would result in clean runoff from the site.

IMPACT ON SURFACE WATER RUNOFF QUALITY					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Low Positive	Low Positive	N/A
Site	Short	Probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Probable	Low Positive	Low Positive	N/A

Proposed mitigation:

- The waste management measures as indicated in Section 3 and 9 to be implemented during all phases of the development.
- Sewerage system to be maintained.

8.5.7 Groundwater

As indicated in Section 5.10, no boreholes, wells or fountains are present on site. No wetlands were recorded by Burton (2018), indicating that no seepage is present on site. Seasonal ponding does however, take place within the borrow pit.

A) Direct impact on groundwater

Construction, operational and decommissioning phases

No direct impact on the groundwater is expected as a result of construction, operational or decommissioning activities since there are no signs indicating the presence of a shallow groundwater table.

B) Indirect impact on groundwater quality

Construction phase

Most of the surface water runoff (rainwater) currently ponds within the old borrow pit and could be polluted as a result of the illegal dumping of building rubble, garden and domestic waste. The polluted surface water could potentially reach the groundwater depending on the soil conditions, geology and depth to groundwater table. As part of the construction process, the dumped waste will be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then be backfilled (using clean material) as per the geotechnical engineer's recommendation in order to ensure that the site is geotechnically stable for development purposes. This would have a positive impact on the groundwater quality of the site.



During construction, indirect pollution of the groundwater could take place if the construction vehicles are not maintained/repared resulting in oil leaks and fuel spills, proper ablution and sanitation facilities are not provided for the site workers to use on site and proper waste management measures are not implemented. Pollution of the groundwater is however, highly unlikely since no seepage was noted on site which could indicate a shallow water table. In addition, no boreholes are present in the area, meaning that no downstream groundwater users would be impacted.

Operational phase

Indirect pollution of the groundwater could take place if proper waste management measures are not implemented and the sewerage system does not have sufficient capacity and is not maintained. Pollution of the groundwater is however, highly unlikely since no seepage was noted on site which could indicate a shallow water table. In addition, no boreholes are present in the area, meaning that no downstream groundwater users would be impacted.

Decommissioning phase

During the decommissioning phase, building rubble and any polluted soil will be removed from the site and disposed of accordingly. The said area will then be rehabilitated in order to establish a vegetation cover. This could result in clean runoff from the site and improved infiltration, which could have a positive impact on the groundwater.

INDIRECT IMPACT ON GROUNDWATER QUALITY					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Low Positive	Low Positive	N/A
Site	Short	Improbable	Low Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Improbable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Long	Improbable	Low Positive	Low Positive	N/A

C) Impact of groundwater abstraction

Construction, operational and decommissioning phases

No impact as groundwater abstraction will not take place. The development will be connected to the STLM water reticulation network.

8.5.8 Sites of archaeological and cultural interest

A) Impact on archaeological/cultural sites

Construction, operational and decommissioning phases

None. As indicated in Section 5.13.1, Van Vollenhoven (2020) identified nothing of heritage importance on the proposed site.

B) Impact on palaeontology

The proposed site is underlain by shale, shaly sandstone, grit and sandstone of the Vryheid Formation, which has a 'Very High' palaeontological sensitivity. The geology (and by extension the palaeontology) of ±60% of the site has



already been impacted by the excavation of the old borrow pit. In addition, Fourie (2020) found no surface fossils on site during the walk through.

Construction phase

Fourie (2020) found no surface fossils on site during the walk through and therefore no direct impact on palaeontology is anticipated.

Any direct impact on the palaeontology during the construction phase (e.g. digging, drilling, blasting, excavating of foundations, removal of overburden, etc.) will depend on the extent of the existing impacts and the depth of new excavations required for the building and services.

Operational phase

The operational activities will have no direct or indirect impact on the palaeontology of the site as no further construction will take place.

Decommissioning phase

The decommissioning activities will have no direct or indirect impact on the palaeontology of the site as no further construction will take place.

IMPACT ON PALAEOLOGY					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Improbable	Low Negative	Low Negative	Irreversible
OPERATIONAL PHASE					
None	None	None	None	None	N/A
DECOMMISSIONING PHASE					
None	None	None	None	None	N/A

8.5.9 Air quality

The proposed site is located in the Steve Tshwete Municipal area hot spot. Activities in the surrounding area that could potentially impact on the air quality of the site include various industrial activities in Middelburg, emissions and dust from vehicles utilizing the surrounding roads (e.g. N11, N4, residential and gravel roads), smoke emitted from veld fires, odours from garden waste, domestic waste and dead animals dumped on site.

A) Impacts in terms of dust

Construction phase

Dust generation and vehicle emissions due to construction activities (including the removal of the dumped waste within the old borrow pit) and use of heavy machinery could impact on site workers, Rockdale residents living near the site and motorists travelling along Ekukhanyeni Street and the section of the N11 passing the site. The extent of the impact would depend on the time of year, wind direction (which is predominantly in a north westerly and south easterly direction), wind velocity and mitigation measures in place.

Operational phase

The utilization of the shopping centre is not expected to result in an increase in dust since it is assumed that the parking area and the main access road to the shopping centre (from Ekukhanyeni Street) will be surfaced (Figure 3.2).

The air quality of the site and surrounding area could however, be slightly impacted by dust as a result of vehicles using the secondary access in

Kangaroo Street, which is currently a gravel road (Figure 3.2). Only local residents are expected to use this road.

A slight increase in vehicle emissions is also expected due to an increase in traffic (i.e. delivery vehicles and shoppers). Most shoppers should however, visit the site on foot or by bus/taxi due to the socio-economic nature of the community.

Decommissioning phase

Dust generation and vehicle emissions due to decommissioning activities and use of heavy machinery could impact on site workers and people residing near the site at the said time. After decommissioning, the said area will be rehabilitated in order to re-establish a vegetation cover, which would decrease dust.

IMPACT IN TERMS OF DUST					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Highly probable	Low Neutral	Low Neutral	Reversible

Proposed mitigation:

- *Dust suppression measures to be implemented on site during the construction phase (see EMP for details).*
- *Construction vehicles to only access the site from Ekukhanyeni Street.*

B) Impacts in terms of odours

Construction phase

As part of the construction process, the dumped waste will be removed and disposed of at the registered Rietfontein Waste Disposal Site. This could result in the nearby residents being impacted in terms of odours from the said waste. The site will then be backfilled (using clean material) as per the geotechnical engineer's recommendation in order to ensure that the site is geotechnically stable for development purposes. This would have a positive impact on the air quality in terms of the reduction of odours.

During construction, the air quality of the site and surroundings could be impacted in terms of odours if the chemical toilets used are not maintained and proper waste management measures are not implemented.

Operational phase

During the operational phase, the air quality of the site and surroundings could be impacted if the sewerage system (to be connected to the STLM sewer network) does not have sufficient capacity or was not installed properly resulting in sewage overflowing from the manholes. The air quality could also be impacted if proper waste management measures are not implemented and the waste is not removed by the STLM and disposed of at the registered Rietfontein Waste Disposal Site (on a regular basis).

Decommissioning phase

None, since all waste will be removed from site and the site rehabilitated.



IMPACT IN TERMS OF ODOURS					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Positive	Medium Positive	N/A
Site	Short	Probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Probable	Medium Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Highly probable	Low Neutral	Low Neutral	Reversible

Proposed mitigation:

- The waste management measures as indicated in Section 3 and 9 to be implemented during all phases of the development.
- The sewerage infrastructure to be well maintained.

8.5.10 Noise

In general, the ambient noise level of the site is relatively high since the site is located in a residential area and adjacent to the N11 national road (Figure 5.2). As indicated in Section 5.12, the major contributing factor to the ambient noise level of the site would be as a result of vehicles using the surrounding road network (e.g. N11 national road, Ekukhanyeni Street, Kangaroo Street, etc.), residential activities and construction activities associated with the rehabilitation of the N11 national road.

Construction phase

Heavy machinery used during the construction phase (including the removal of the dumped waste within the old borrow pit) will contribute to increased ambient noise levels in the immediate area, which could impact on the construction workers and Rockdale residents living near the site (Figure 5.2). Construction noise cannot really be mitigated, but would be of short duration.

Operational phase

Some operational noise would be created in the form of increased numbers of people and vehicles visiting the shopping centre. This could impact on the Rockdale residents living near the site (Figure 5.2).

Decommissioning phase

In general, the use of heavy machinery for decommissioning activities would impact on the surrounding area in terms of noise. The impact would depend on the land use at that time.

IMPACT IN TERMS OF NOISE					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Negative	Medium Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Highly probable	Low Negative	Low Negative	Reversible

Proposed mitigation:

- The mitigation measures in terms of noise as indicated in Section 9 to be implemented during all phases of the development



8.5.11 Visual aspects

As indicated in Section 5.15, the visual aspects of the site have been impacted by the presence of the temporary construction camp, the old borrow pit and the dumping of waste. The site is highly visible from the existing Rockdale residential area (north, east and south of the site), the N11 national road (west of the site), the main access road to Rockdale (Ekukhanyeni Street), the gravel roads on the periphery of the site and the vacant property located to the west (Figure 5.2).

Construction, operational and decommissioning phase

Construction activities (including the construction camp) would be highly visible from the residences located within the existing Rockdale residential area (north, east and south of the site), the main access road to Rockdale (Ekukhanyeni Street), the gravel roads on the periphery of the site and the N11 national road (west of the site).

As part of the construction process, the dumped waste will be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then be backfilled (using clean material) as per the geotechnical engineer's recommendation in order to ensure that the site is geotechnically stable for development purposes. This would have a positive impact on the visual aspects of the site and immediate surrounding area (including the nearby residences).

Operational phase

Residents of Rockdale and people travelling on the surrounding road network (Ekukhanyeni Street, Kangaroo Street, N11 national road) could be negatively impacted in terms of visual aspects if the shopping centre is not maintained and is not kept neat and tidy.

Decommissioning phase

The decommissioning of the shopping centre would initially have a negative impact on the visual aspects of the area. The intended end land use would however, determine the visual aspects of the site in the long term.

IMPACT IN TERMS OF VISUAL ASPECTS					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Low Negative	Low Negative	Reversible
Site	Short	Definite	Medium Positive	Medium Positive	N/A
OPERATIONAL PHASE					
Site	Long	Probable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Definite	Low Neutral	Low Neutral	Reversible

8.5.12 Traffic

As indicated in Figure 3.2, access to the site will be obtained from Ekukhanyeni Street connecting to the N11 national road. The main access to the shopping centre will be located 100m east of the N11 national road as specified by the South African National Road Agency (SANRAL). A secondary access will be provided from the northern boundary of the site via Kangaroo Street (Figure 3.2).



Separate delivery accesses will be provided further east of the main access as well as in the northern portion of the site (Figure 3.2). This is to separate traffic from the customers and deliveries. The delivery accesses will be secured by means of sliding gates.

Construction phase

All construction activities will take place on site and will not directly impact on traffic utilising Ekukhanyeni Street, Kangaroo Street or the N11 national road.

The delivery of building material during the construction period could lead to a slight increase in traffic on Ekukhanyeni Street and the N11 national road. The deliveries would however, not occur on a continuous basis.

Motorists could be impacted when the access from Ekukhanyeni Street to the shopping centre is constructed. The impact is however, expected to be low and short term.

Operational phase

The operation of the shopping centre would result in a slight increase in cars, buses and taxis in the area. According to Roberts (2019), the access point proposed on Road D (Ekukhanyeni Street) is adequate to meet the future traffic demand at satisfactory levels of service and no side-street queuing challenges are expected. No additional right-turn lanes or pedestrian crossings are required.

Due to the socio-economic situation of the area, it is expected that most customers will visit the shopping centre on foot. The impact on traffic along the N11 national road, Ekukhanyeni and Kangaroo Streets is therefore expected to be low. Roberts (2019) however, recommended a 2m wide pedestrian walkway and a 20m long lay bye for buses and taxis.

Decommissioning phase

Building rubble and other waste would have to be removed from site. This could lead to a slight increase in traffic on the road network. Impact on traffic after decommissioning will however, depend on the intended end land use.

IMPACT IN TERMS OF TRAFFIC					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Probable	Low Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Low Negative	Low Negative	Reversible
DECOMMISSIONING PHASE					
Site	Short	Highly probable	Low Negative	Low Negative	Reversible

8.5.13 Interested and affected parties

The proposed development site belongs to the project applicant and therefore no other landowner will be directly impacted in terms of the development of the said site (i.e. in the short term and/or long term).



A) Positive impacts on Interested and Affected Parties (I&APs)

Construction, operational and decommissioning phases

The proposed development could have the following positive impacts on I&APs:

- The air quality in the immediate area would be improved (in terms of odours) as a result of the removal of the dumped waste from the old borrow pit. There would also be a reduction in flies and/or rodents.
- The surrounding residents would no longer be able to use the site for the illegal dumping of waste resulting in a reduction in terms of odours, flies and/or rodents.
- The visual aspects of the site would be improved.
- Security would be improved as criminals would no longer be able to use the old borrow pit as a hiding place.
- The site is located within the existing Rockdale residential area and within walking distance for most Rockdale residents. Residents would not have to commute to town or shopping centres in other residential areas for their day-to-day convenience items. They would be able to walk to the said shopping centre resulting in savings in terms of transport, etc.
- The proposed development would lead to additional employment opportunities during the construction and operational phases.
- Business opportunities would be provided in the form of new shops.

The impact of the decommissioning of the development in terms of Interested and Affected Parties will depend on the landowner at the said time, the character of the area at that time and the intended end land use

POSITIVE IMPACTS ON I&APs					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Positive	Medium Positive	N/A
OPERATIONAL PHASE					
Site	Long	Highly probable	Medium Positive	Medium Positive	N/A

B) Potential negative impacts on Interested and Affected Parties (I&APs)

Construction, operational and decommissioning phases

The proposed development could have the following negative impacts on I&APs:

- During the construction phase, contractors working on site could be directly impacted upon if the necessary safety and occupational health measures are not adhered to.
- Residents of Rockdale could be impacted if they are not informed of possible water and electricity outages when the shopping centre is connected to the municipal network.
- Eskom and the South African National Roads Agency (SANRAL) could be impacted if the building lines are not adhered to and the development extends into the servitudes associated with the N11 national road.
- Other impacts in terms of the natural environment, noise, odours, visual, traffic, etc. are indicated in the preceding sections.



The impact of the decommissioning of the development in terms of Interested and Affected Parties will depend on the landowner at the said time, the character of the area at that time and the intended end land use.

NEGATIVE IMPACTS ON I&APs					
CONSTRUCTION PHASE					
Extent	Duration	Probability	Significance pre-mitigation	Significance post-mitigation	Reversibility
Site	Short	Highly probable	Medium Negative	Low Negative	Reversible
OPERATIONAL PHASE					
Site	Long	Highly probable	Medium Negative	Low Negative	Reversible

Proposed mitigation:

- All phases of development to be managed according to the Environmental Management Plan (Section 9 of this report).

8.6 Cumulative impacts

Due to the disturbed nature and location of the site as well as the small scale of the proposed development, no significant cumulative impacts are expected in terms of the following: topography, geology, soil, land use, vegetation, animal life, surface water (including wetlands), groundwater, air quality, noise or sites of archaeological and cultural sensitivity.

It is expected that the aesthetics of the area (visual aspects and air quality) and security will be improved as a result of the removal of waste, rehabilitation of the borrow pit and the construction of the neighbourhood shopping centre.

In terms of traffic, the proposed neighbourhood shopping centre could result in a cumulative impact on traffic volumes in the area. The impact is however, expected to be low. According to Roberts (2019), the access point proposed in Ekukhanyeni Street is adequate to meet the future traffic demand at satisfactory levels of service.

8.7 'No project' impacts

The 'no project option' is the alternative of not going ahead with the proposed development. The 'no project option' is only considered if it is found that the development will have significant negative impacts on the environment, which cannot be mitigated or managed.

If the 'no project option' in terms of the proposed development was exercised, it could mean that:

- Ⓐ The surrounding residents would continue using the site for the illegal dumping of waste, which would impact on adjacent landowners in terms of odours, flies and rodents.
- Ⓑ The site would remain unkempt, posing a health and safety risk.
- Ⓒ Potential business opportunities and employment opportunities would be lost.
- Ⓓ There would still be a need for neighbourhood shopping centre in the community.
- Ⓔ Residents would have to continue commuting to town or shopping centres in other residential area for their basic supplies.



- ④ Other potential uses for the site would have to be investigated.
- ④ The applicant could sell the property.

It is anticipated that this development will add to the development potential and economic growth of the area and provide the required retail services.

8.8 Concluding remarks

As indicated in the preceding sections, the proposed development of the said site would not impact on the following:

- Arable soils;
- Surface water environments (including wetlands);
- Groundwater;
- Sites of archaeological/cultural interest (including palaeontology of the site).

In view of the highly disturbed nature of the site, the proposed development of the neighbourhood shopping centre would have a low negative impact on the natural vegetation, animal life, traffic and visual aspects of the site.

Medium negative impacts as a result of the proposed development of the site are anticipated in terms of topography, geology, soil, air quality and noise. These potential impacts can be reduced by implementing the mitigation measures as indicated in Section 9 (EMPr) of this report. Of particular importance will be the implementation of the geotechnical engineer's recommendations.

In terms of land use and sense of place, the rezoning of the site from Public Open Space to Business 2 (for the purposes of a neighbourhood shopping centre) would not impact on residents of Rockdale since the site is currently highly disturbed and cannot be used by the residents for the intended purpose. During the public participation process, the local community indicated that they would prefer that the site be developed, since the current situation is unhealthy and poses a safety risk.

As part of the construction process, the waste dumped in the old borrow pit will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site. The site will then have to be backfilled (using clean material) as per the geotechnical engineer's recommendations in order to ensure that the site is geotechnically stable for development purposes (i.e. construction of a neighbourhood shopping centre). This would have a positive impact on the site and immediate surrounding residential area in terms of land use and sense of place.

The operation of the neighbourhood shopping centre should have a positive impact on the land use and sense of place of the Rockdale residential area. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.



SECTION 9: ENVIRONMENTAL MANAGEMENT PROGRAMME

9.1 Definition and objectives

As indicated in Regulation 19(4) of the EIA Regulations, 2014 (as amended), an Environmental Management Programme (EMPr) must form part of the Basic Assessment Report.

The EMPr was compiled in accordance with Appendix 4 of the EIA Regulations, 2014 (as amended) as well as the Western Cape Guideline for Environmental Management Plans (Lochner, 2005).

According to the Western Cape Guideline, an Environmental Management Programme (EMPr) can be defined as:

An environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced.

According to the EIA Regulations, 2014 (as amended), an EMPr must include-

(d) A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed or mitigated as identified through the environmental impact assessment process for all phases of the development including -

- (i) planning and design;*
- (ii) pre-construction and construction activities;*
- (iii) operation or undertaking of the activity;*
- (iv) rehabilitation of the environment; and*
- (v) closure, where relevant.*

This section therefore provides an indication of the mitigation measures to be implemented by the site operator (and site workers) in order to reduce the potential impacts identified (see Section 8).

9.2 Contact details of Environmental Assessment Practitioner

An EMPr must include -

(a) details of-

- (i) the EAP who prepared the environmental management programme; and*
- (ii) the expertise of that person to prepare an environmental management programme, including a curriculum vitae.*

The contact details and expertise of the Environmental Assessment Practitioner who prepared the EMPr are provided in Section 2 of this Basic Assessment Report.

The applicant will be responsible for the implementation of the EMPr. The contact details are provided in Section 2 of this Basic Assessment Report.



9.3 Description of the proposed project

*An EMPr must provide -
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.*

A detailed description of the proposed development and aspects covered by the EMPr is provided in Section 3 and Section 7 of this Basic Assessment Report. Section 5 of this Basic Assessment Report provides a description of the biophysical environment of the site.

In summary, the following alternatives as indicated in Section 7.6 will be implemented:

Aspect	Description of alternative
Site	The said site will be located on Erf 1051, Rockdale, Middelburg (Figure 8.1).
Land Use	A neighbourhood shopping centre will be established on the said property (Figure 8.1).
Layout	Only one layout plan was drafted for the development of a neighbourhood shopping centre (Figure 8.1).
Services	Water: The development will connect to the STLM water reticulation network.
	Electricity: Electricity will be obtained from the STLM.
	Sewage disposal: The development will connect to the STLM sewer network.
	Waste management: Waste will be collected by the STLM and disposed of at the registered Rietfontein Waste Disposal Site.
	Storm water management: The development will connect to the STLM storm water management system.

Mitigation and management measures with regards to these alternatives are provided in Section 9.5.

9.4 Sensitivity mapping

*An EMPr must provide -
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.*

Section 5 of this Basic Assessment Report provides a description of the biophysical environment of the site.

No sensitive landscapes are present on site or adjacent to the site. As indicated in Section 5, the site is highly transformed and comprises mostly of a borrow pit (60% of site) into which building rubble and waste have been dumped. The western portion of the site was cleared for a temporary construction camp, material storage and parking area (20% of site). Only a very small piece of natural vegetation remains in the north western corner of the site (20% of site).



9.5 Mitigation and management measures to be implemented

An EMPr must include -

(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to -

- (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*
- (ii) comply with any prescribed environmental management standards or practices;*
- (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*
- (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable.*

Before any construction can commence, the following permissions will be required:

- Environmental Authorisation in terms of the Environmental Impact Assessment Regulations, 2014 (as amended);
- Approval of the park closure and rezoning application (from Public Open Space to Business 2) in terms of the Steve Tshwete Local Municipality Spatial Planning and Land Use Management By-Laws 2016.

9.5.1 Construction site office

Impact management outcome:

- 1) *To ensure that an appropriate site is selected for the construction site office and that the construction site office is managed in an environmentally responsible manner with the least impact on the natural environment, site workers and adjacent landowners/users.*

Mitigation and management measures:

- a. A suitable area within the site boundaries must be selected, demarcated and fenced for the construction site office. It is recommended that the new construction site office be placed in the south western corner of the site on the footprint of the existing construction camp used for the N11 road upgrade. This area has already been impacted in terms of vegetation clearance, soil compaction and levelling. According to Figure 8.1, this area was set aside as a parking area and is thus an ideal location for the construction site office since the parking area will be constructed last. The construction site office will also be easily accessible from the N11 national road via Ekukhanyeni Street.
- b. The construction site office may not be placed outside the boundaries of Erf 1051 (i.e. on the adjacent Erven).
- c. No overnight accommodation may be provided at the construction site office.
- d. Chemical toilets must be provided for use by the site workers. These must be serviced on a regular basis. No long drop toilets may be allowed.
- e. Potable water must be made available to site workers.
- f. Proper waste management facilities must be provided as part of the construction site office.
- g. No dumping of any kind of waste (domestic, general, building rubble, etc.) may take place in the surrounding area. All waste must be removed to the licensed Rietfontein Waste Disposal Site.



- h. No servicing of vehicles may take place on site.

9.5.2 Construction activities

Impact management outcome:

- 1) *To ensure that the activities that occur during the construction phase have the least impact on the natural environment, site workers and adjacent landowners/users*

General

- a. The applicant must comply with the conditions of the issued Environmental Authorisation.
- b. No construction activities may take place within the N11 national road servitude located on the western boundary of the site. The rights and conditions of the South African National Roads Agency (SANRAL) and TRAC must be respected and adhered to at all times.
- c. Care must be taken not to impact on the STLM powerlines located on the western boundary of the site (i.e. within the N11 national road servitude).
- d. Site Environmental Control Officer (SECO): Before construction commences, the applicant must appoint a person who will be responsible for the day-to-day implementation of the EMPr (including Environmental Awareness Training) and who will report to the site manager.
- e. Environmental Control Officer/Auditor (ECO): The applicant must also appoint an ECO who will have the responsibility of monitoring and reporting on compliance (on a monthly basis) with the conditions of the Environmental Authorisation as well as monitoring and reporting on the implementation of the EMPr.
- f. All construction activities must be limited to the said site. The said site must be properly demarcated/fenced and the footprint kept as small as possible.
- g. Area to be cleared of vegetation at any one time must be limited in order to reduce the potential for dust generation during the windy months and erosion during the rainy season.
- h. No removal of vegetation may take place outside of the site boundaries.
- i. All site workers/contractors must be informed that no poaching/trapping of animals will be allowed on the vacant property west of the site.
- j. Should any animals (e.g. reptiles or mammals) be found during the construction phase, a specialist should be contacted immediately to ensure the safe removal of the specimen.
- k. Dust suppression measures must be implemented during dry and windy periods.
- l. Water for dust suppression must be obtained from the Steve Tshwete Local Municipality and not from any surface water sources (e.g. the stream located north west of the site).
- m. Any remaining topsoil (specifically in the north western portion of the site) must be removed and stockpiled for landscaping of the site (i.e. gardens, etc.).
- n. For safety purposes, excavations must not be undertaken until such time as all required materials are available and services can be laid.
- o. Excavations should be closed as soon as is practically possible.
- p. The adjacent landowners/users must be provided with contact numbers with whom complaints or concerns can be discussed.



- q. If any archaeological remains are exposed during the construction phase, the construction must be terminated immediately and the Provincial Heritage Resources Authority must be notified. In this regard, the applicant must take note of the requirements in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).
- r. If any graves are discovered during construction, the discovery must be reported to the SA Police Service and/or SAHRA or an archaeologist must be called in to handle the matter.
- s. The appointed Site ECO must familiarise him- or herself with the Vryheid Formation and its fossils. Alternatively, a palaeontologist to be involved during the digging and excavation (ground breaking) phase of the development. If any palaeontological material is exposed (during digging, excavating, drilling or blasting) SAHRA must be notified, all construction activities must be stopped, a 30 m no-go barrier constructed and a palaeontologist called to determine proper mitigation measures. A protocol for finds and management plan are provided in Appendix 2 of Appendix 7 of the Basic Assessment Report.

Geotechnical recommendations

Impact management outcome:

1) *To ensure that the buildings are not impacted upon by taking into account the geotechnical aspects of the site.*

- a. The existing waste within the old borrow pit to be removed and disposed at the registered Rietfontein Waste Disposal site.
- b. A geotechnical engineer must be consulted regarding the rehabilitation of the old borrow pit area in order to ensure that the site is properly rehabilitated so that it is geotechnically stable for development purposes.
- c. The site to be backfilled (using clean material) as per the geotechnical engineer's recommendations.
- d. Fill material must be sourced from a licensed supplier and not from illegal borrow pits in the area.

Management measures in terms of soil and storm water runoff

Impact management outcome:

1) *To reduce the potential impact of storm water drainage from the site (during the construction and operational phases) on the adjacent roads and residents in terms of soil erosion, sedimentation and flooding.*

- a. The proposed shopping centre will connect to the existing storm water management system of Rockdale. Before construction, the engineers must ensure that the existing storm water pipe sizes have sufficient capacity to drain the additional storm water from the shopping centre.
- b. The storm water infrastructure must be connected to the STLM storm water management system as soon as possible.
- c. Appropriate soil conservation and storm water management measures to be provided in order to prevent soil erosion and loss of topsoil. Increased run-off during construction must be managed using contour berms and other suitable structures (e.g. geo-textile silt fences, gabions, placement of bales or the use of sandbags) to ensure flow velocities are reduced.
- d. If it is necessary to convey surface flows away from the construction footprint using drainage channels, then energy breaks (such as lining with stones or grass) should be installed to reduce the water velocity and the risk of erosion or flooding of adjacent properties. The area where the



- water is dispersed from the channel must be suitable for such and must not be susceptible to erosion and flooding.
- e. Sediment controls (e.g. geo-textile silt fences and silt traps) should be placed immediately downslope of the construction footprint to intercept sediment. The same measures should be put in place downslope of soil or materials stockpiles.
 - f. If soil erosion is noted, appropriate remediation measures must be implemented.
 - g. Proper storm water drainage must be provided in order to prevent the ponding of water on site.
 - h. Permeable paving blocks should be used as far as possible for the parking areas to promote the infiltration of water into the soil and to reduce stormwater runoff from the site.
 - i. The following additional measures should be implemented to ensure that the storm water management measures are functional and not causing flooding of the surrounding roads or properties: debris and rubbish to be removed from kerb inlets and conduits during routine inspections; sediment to be removed especially after the first couple of month of installation as un-surfaced areas contribute a lot of sand/debris; stone pitching or gabion work to be repaired after major flooding; check on structural integrity of kerb inlets; damaged kerb inlets could lead to uncontrolled erosion downstream.

Management measures in terms of waste

Impact management outcome:

- 1) *To ensure the proper storage, management and disposal of waste during the construction phase.*
- 2) *To reduce potential soil, surface water and groundwater pollution as a result of waste management activities during construction.*

- a. Proper waste management measures to be implemented on site.
- b. The applicant/contractor must ensure that all site workers receive appropriate training with regards to waste management measures to be implemented for the said site.
- c. Waste skips/bins to be provided for placement of general waste, building rubble, etc.
- d. Waste skips to be covered with a net to prevent windblown waste.
- e. Hazardous waste to be separated from general waste, stored separately in appropriate containers and disposed of at a licensed hazardous waste disposal facility or certified recycling facility. No hazardous substance to be disposed of on site or in the surrounding area.
- f. The waste collection area must be kept clean and tidy at all times. This area should not be littered with waste lying outside of the waste bins/skips. Site workers to be instructed on a daily basis (at end of the day) to collect windblown rubbish which may collect on site and in the adjacent area. This will assist with the overall visual appearance of the site.
- g. No waste to be burnt, buried or dumped on site or the surrounding area.
- h. Waste skips/bins to be emptied on a regular basis and the waste disposed of at the licensed Rietfontein Waste Disposal Site.
- i. Proper bunded storage facilities must be provided for the storage of oils, grease, fuels, etc. to be used during the construction phase.
- j. Waste (including building rubble) not to be placed on the soil stockpiles or disposed in a haphazard way in the surrounding area resulting in the contamination of the soil and the environment.
- k. During the construction phase, cement/concrete should be mixed in either demarcated areas or on metal sheeting or conveyor belts. If mixed



in demarcated areas, these areas must be ripped and the cement/concrete removed on completion of construction activities.

- l. Collection containers (e.g. drip trays) must be placed under all dispensing mechanisms for hydrocarbons or hazardous liquid substances to ensure that potential contamination from leaks/spillage is reduced. All spills of chemicals or hydrocarbons (oil, grease, diesel, petrol, etc.) should be cleaned with the use of suitable absorbent materials (e.g. drizit or oclanzorb). Appropriate soil remediation measures should be implemented where soil has been contaminated with oil.
- m. Contaminated soil generated as a result of fuel, oil, etc. spills to be disposed of in a specially marked drum located at the construction site office. An approved waste contracting firm to collect the drum and dispose of the contaminated soil at an appropriate waste disposal site.
- n. An environmental incident report must be completed indicating the date of the incident, description of incident and action taken.
- o. The Department of Agriculture, Rural Development, Land and Environmental Affairs (DARLEA) and the Department of Water and Sanitation (DWS) must be informed of the event within 24 hours.
- p. A copy of the environmental incident report must be kept on file at the construction site office(s).

Example of Environmental Incident Register:

ENVIRONMENTAL INCIDENT REGISTER				
DATE AND TIME	INCIDENT REPORTED BY	CONTACT DETAILS (telephone/cell number; address)	DETAILED DESCRIPTION OF ENVIRONMENTAL INCIDENT	RESPONSE FROM ECO

Recommendations regarding traffic

Impact management outcome:

- 1) *To avoid an impact on the general road users and pedestrians during the construction and operational phases of the development.*
 - a. Proper signage, warning signals, a barrier, etc. (i.e. required safety measures) must be provided along Ekukhanyeni Street to warn the road users that the access road to the shopping centre is being constructed. These signs must also be visible at night.
 - b. Construction vehicles to only access the site from Ekukhanyeni Street.



- c. Only the access points from Ekukhanyeni and Kangaroo Streets to be used during the operational phase as indicated in the layout plan (Figure 3.2).

The following to be implemented as recommended by Roberts (2019):

- d. A pedestrian walkway along the site's frontage in Ekukhanyeni Street to be constructed.
- e. A standard 20m long lay bye for buses and minibus taxis to be provided on both sides of Ekukhanyeni Street at the main neighbourhood shopping centre access.

9.5.3 Rehabilitation of the environment after construction

Impact management outcome:

- 1) *To ensure that any disturbed areas not developed are properly rehabilitated and maintained.*
- 2) *To control the growth of declared weeds and/or invader plants.*

Mitigation and management measures:

- a. Before construction, the remaining topsoil must be removed and stockpiled in a demarcated area within the site for rehabilitation of disturbed areas and/or landscaping.
- b. The topsoil should not be compacted.
- c. Once construction has been completed, all temporary structures, excess materials, equipment and waste must be removed from site.
- d. All residual stockpiles must be removed to spoil or spread on site as directed by the Site ECO.
- e. Any undeveloped disturbed areas (i.e. areas to be developed at a later stage or to be used for landscaping) must be top soiled and re-vegetated (i.e. rehabilitated) as soon as possible in order to prevent soil erosion and the establishment of alien vegetation.
- f. Proper storm water control measures and erosion control must be implemented to prevent erosion of the newly rehabilitated areas during heavy rainfall.
- g. Temporary erosion control measures (e.g. geo-textile silt fences, diversion ditches, sediment traps, sandbags, etc.) to be kept in place to control erosion until the long-term erosion control methods are established and functioning.
- h. Depending on the final landscaping plan, disturbed areas may be planted with kikuyu grass. Although kikuyu grass is highly invasive, the site is surrounded by roads and located within a residential area. No wetlands or natural vegetation would thus be impacted by the use of kikuyu. The kikuyu grass should be mowed on a regular basis to ensure that the site looks neat.
- i. The planting of any alien invader plant species as part of landscaping should be prohibited in order to prevent the spread of invasive species from the site.
- j. The regulations in terms of Alien Invasive Species and the Mpumalanga Nature Conservation Act, 1998 (Act 10 of 1998) with regards to declared alien species must be noted and complied with.
- k. Regular site inspections to be conducted to identify any declared weeds and/or invader plants. If identified, the plants to be eradicated using appropriate methods.



- l. It is advisable to consult the latest edition of 'A guide to the use of herbicides' or contact the National Department of Agriculture, Forestry and Fisheries with regards to the latest information pertaining to the application of herbicides. If pesticides or herbicides are to be used, the product should be chosen responsibly. Storage, administering and disposal must be done according to the prescribed methods.
- m. A post-construction audit by the Site ECO must be conducted to ensure that any shortcomings are identified and addressed.

9.5.4 Interested and Affected Parties (I&APs)

Impact management outcome:

- 1) *To ensure that the site workers are not impacted in terms of the construction work being performed.*

Mitigation and management measures to be implemented:

- a. The applicant/contractor must adhere (at all times) to the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) (as amended), the Construction Regulations, 2003 (as amended) and any other applicable legislation (including applicable bylaws of the Steve Tshwete Local Municipality).
- b. The applicant/contractors must ensure that the necessary protective gear (PPE) is worn at all times and that signs are erected to warn workers to use hearing protection as well as any other hazards.
- c. All machinery used on site must be properly muffled and maintained so as to reduce noise generation to a minimum.
- d. If blasting is required, the requirements of the Explosives Act, 2003 (Act 15 of 2003) must be put in place in order to prevent any impact on site workers.

Impact management outcome:

- 2) *To ensure that adjacent landowners/users (i.e. residents of Rockdale) are not impacted in terms of the construction work performed.*

Mitigation and management measures to be implemented:

- a. Landowners/users to be notified in advance that construction will commence.
- b. Landowners/users to be provided with contact numbers (e.g. cell numbers, email, etc.) with whom complaints can be lodged.
- c. Landowners/users to be informed in advance that blasting will take place (if required). Mitigation measures to be implemented to limit the impact of blasting on residents, property, domestic animals, etc.
- d. The waste management measures as indicated in Section 9.5.2 to be implemented in order to keep the site neat and tidy at all times.
- e. All machinery used on site to be properly muffled and maintained so as to reduce noise generation to a minimum.
- f. Site workers must be instructed to keep noise to a minimum.
- g. Construction activities to be limited to daylight hours (7am - 6pm) and weekdays (Monday to Friday) in order to minimize the impact on residents in terms of noise and dust.
- h. No members of the general public should be allowed at the construction site.



Impact management outcome:

- 3) To ensure good relations with all Interested and Affected Parties (I&APs) by creating open channels of communication to address matters of concern that may arise.

Mitigation and management measures to be implemented:

- a. Landowners/users (i.e. residents of Rockdale) to be provided with contact numbers (cell numbers, email, etc.) with whom complaints can be lodged.
- b. A Complaints Register to be kept at the construction site office(s).
- c. All complaints received to be recorded in the Complaints Register. The following to be recorded:
 - Date when complaint/concern was received;
 - Name of person to whom the complaint/concern was reported;
 - Nature of the complaint/concern reported;
 - Way in which the complaint/concern was addressed (date to be included).
- d. The Complaints Register to be kept up to date for inspection by members of the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) and the eMalahleni Local Municipality (ELM).

An example of a complaints register is provided below.

COMPLAINTS REGISTER				
DATE AND TIME	NAME	CONTACT DETAILS (telephone/cell number; address)	DETAILED DESCRIPTION OF COMPLAINT	RESPONSE FROM ECO

9.5.5 Operational activities

- a. The applicant must comply with the conditions of the issued Environmental Authorisation.
- b. All operational activities must be limited to the said site.
- c. The following **energy saving** initiatives should be implemented, where possible, in order to reduce the carbon footprint of the development.



- *Energy efficient lighting (e.g. LED lighting) to be installed where possible;*
- *Designing the buildings in such a way as to maximize the use of daylight (e.g. skylights, large windows, etc.);*
- *Solar geysers to be installed where feasible.*
- d. The following measures to minimize **water use** during the operational phase must be implemented:
 - *Regular maintenance of the water infrastructure to minimize water wastage;*
 - *Harvested stormwater to be used for irrigation of gardens if required;*
 - *Water usage to be monitored;*
 - *Waterwise signage to be displayed in the public restrooms;*
 - *Waterwise taps (e.g. taps with infra-red sensors/low-flow taps) to be installed in the public restrooms.*
- e. The water and sewer infrastructure should be inspected on a regular basis to ensure that there are no blockages/leakages or spillage.
- f. Proper waste management measures must be implemented at the shopping centre.
 - Waste bins for general waste must be provided in a number of places on site and in the parking area to minimize the distance to waste bins.
 - The site must be kept clean and tidy at all times and may not be littered with waste lying outside of waste bins.
 - No waste may be burnt, buried or dumped on site.
 - Where possible, recycling of waste must be encouraged and appropriate bins provided for the recycling initiative.
 - A fence/wall must be erected around the refuse area (Figure 3.2) in order to contain the waste and to ensure that it does not have a visual impact on shoppers and adjacent residents.
- g. The overall management of the site and associated infrastructure will be of utmost importance and therefore the implementation of these mitigation measures must be monitored and audited on a regular basis.
- h. It is recommended that the developer and new shop owners become involved with the local Community Policing Forum (CPF) in order to combat crime (e.g. burglaries, etc).

9.6 Implementation and monitoring of the EMPr

An EMPr must include -

- (g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
- (h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);*
- (i) an indication of the persons who will be responsible for the implementation of the impact management actions;*
- (j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;*
- (k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);*
- (l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;*



The implementation of the Environmental Management Programme (EMPr) as part of the daily construction and operational activities is crucial and requires commitment from all levels of management and the on-site workers. The successful implementation of an EMPr has the following advantages:

- Meeting legal obligations;
- Contributes to environmental awareness;
- Can facilitate the prevention of environmental degradation;
- Can minimize impacts when they are unavoidable;
- Can ensure good environmental performance and improve community relations.

An approved contractor should be appointed to do the necessary construction on the said site. The contractor and site workers must be aware of their environmental responsibilities. Penalty clauses, in terms of the environment, must be built into the contracts and must be implemented. Monitoring of the environmental management programme must take place on a regular basis in order to ensure compliance.

The contractor must inform all site workers of their environmental responsibility during the construction phase. Measures to protect the environment and mitigation measures formulated in this EMPr must be implemented by the contractor and the site workers. The contractor must thus ensure that the site workers are aware of the Environmental Authorisation and this EMPr and understand the contents thereof.

In order to achieve the above-mentioned, the contractor and site workers should undergo basic environmental awareness training with regards to the contents of this EMPr. Environmental awareness training is critical for the contractor and site workers to understand how they can play a role in achieving the objectives specified in the EMPr. The contractor must ensure that the site workers undergo the necessary environmental awareness training (see Section 9.6.1) before commencing with activities on the site.



This section must be completed on acceptance of the appointment.

MANAGEMENT ACCOUNTABILITY		
Accountability	Title	Name

MANAGEMENT DECLARATION

I, the undersigned in my capacity as designated above hereby undertake to ensure that the conditions and recommendations in terms of the Environmental Authorisation and Environmental Management Plan (EMPr) are implemented and assume responsibility and accountability in this respect.

I further understand that officials from the Steve Tshwete Local Municipality, Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) and Department of Water and Sanitation (DWS) may (at any time) conduct an inspection of the project in order to ensure compliance with the conditions and recommendations in the EMPr.

CONTRACTOR
..... Name and Designation
..... Signature:
..... Date:
EMPLOYER
..... Name and Designation:
..... Signature:
..... Date:



9.6.1 Environmental Awareness Plan (EAP)

An EMPr must include -

- (m) An environmental awareness plan describing the manner in which-*
- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and*
 - (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.*

It is recommended that the employees receive basic environmental awareness training. In order to ensure proper training, the applicant must develop and implement an Environmental Awareness Plan (EAP). This section provides an overview of what the proposed EAP will contain and how it will be implemented.

The following components would form an essential part of an Environmental Awareness Plan (EAP): -

- ✚ Development of an environmental policy;
- ✚ Identification of environmental impacts/risks and mitigation measures;
- ✚ Environmental training, awareness and competence;
- ✚ Environmental communication and reporting.

Development of an environmental policy

The applicant would have to compile an Environmental Policy (if they do not have one already), which is a one page statement setting out certain principles in terms of their environmental performance.

The environmental policy should indicate the following:

- The applicant's commitments in terms of the environment;
- Identify environmental impacts as a result of the activities taking place on site;
- Actions to be taken to minimize/mitigate the environmental impacts.
- Signature of management.

In order to ensure effective environmental management, it is important that the Environmental Policy is known and understood by all employees. It should thus be displayed at the construction site office.

An Environmental Policy Template is provided to assist the applicant in the compilation of their Environmental Policy. A number of templates are also available on the internet.



Environmental Policy Template (taken from Richmond upon Thames, 2012)

[Insert company name here] believe that we have a responsibility to care for and protect the environment in which we operate. We are fully committed to improving environmental performance across all of our business activities, and will encourage our business partners and members of the wider community to join us in this effort.

[Insert company name here] recognises our key impacts to be in the areas of [for example]:

- o energy use*
- o raw material use*
- o waste generation*
- o emissions to air/water*
- o water use*
- o transport*
- o procurement*

We will strive to:

- o Adopt the highest environmental standards in all areas of operation, meeting and exceeding all relevant legislative requirements.*
- o Assess our organisational activities and identify areas where we can minimise impacts.*
- o Minimise waste through careful and efficient use of all materials and energy.*
- o Purchase sustainable products wherever feasible [e.g. recycled, FSC or low environmental impact products and energy from renewable sources].*
- o Train employees in good environmental practice and encourage employee involvement in environmental action.*
- o Reduce risks from environmental, health or safety hazards for employees and others in the vicinity of our operations.*
- o Adopt an environmentally sound transport strategy.*
- o Aim to include environmental and ethical considerations in investment decisions where appropriate.*
- o Assist in developing solutions to environmental problems.*
- o Continually assess the environmental impact of all our operations.*

[Insert company name here] have developed a series of action plans to supplement each of our environmental policy objectives. These can be found [in an appropriate place].

[Insert company name here] will periodically review performance and publish these results [in an appropriate manner].

Signed _____

Identification of environmental impacts / risks and mitigation measures

Environmental impacts/risks in terms of the development are indicated in Section 8 of this document while mitigation measures to be implemented are provided in Section 9.

Activities or work procedures that could have a significant impact on the environment have thus been identified and mitigation measures proposed in order to avoid pollution or the degradation of the environment.

This information must be communicated to the employees and thus forms the basis for developing an Environmental Awareness Plan (EAP) in order to ensure effective environmental management.



Environmental training, awareness and competence

Training is necessary in order to advance the competency of employees in implementing the Environmental Policy and the EMPr and to ensure effective overall environmental management.

The applicant (including appointed contractor) must inform all his employees of their environmental responsibilities in terms of this Environmental Management Programme (EMPr). Measures to protect the environment and mitigation measures formulated in this EMPr must thus be implemented by the applicant and employees (including appointed contractor).

In addition, job specific training must be conducted that will be appropriate to the activity and the responsibility of the individual employees. Ad-hoc training will be undertaken as required.

Through training/awareness, the applicant will also make his employees aware of:

- ✚ the importance of conformance with the environmental policy and the requirements of the EMPr;
- ✚ the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;
- ✚ their roles and responsibilities in achieving conformance with the environmental policy and the requirements of the EMPr, including emergency preparedness and response requirements; and
- ✚ the potential consequences of departure from the specific operating procedures and/or mitigation measures specified in the EMPr.

Environmental training and development needs of employees will be identified on a regular basis through:

- Identification of significant environmental impacts;
- Analysis of non-conformance and incident reports;
- Audit reports.

Environmental communication and reporting

Environmental communication and reporting form an integral part of an Environmental Awareness Plan. It is important to maintain effective communication internally and to ensure that external communication (e.g. with government departments or adjacent landowners) is maintained.

In general, environmental communication and reporting will aim to:

- ✚ Ensure that employees understand the environmental policy and objectives;
- ✚ Ensure that information is communicated and readily accessible to the relevant parties;
- ✚ Improve feedback of operational and environmental performance to management;
- ✚ Ensure effective and constructive communication with relevant government departments and adjacent landowners (if applicable);
- ✚ Ensure that records are kept of environmental communication and interaction.



The following are some of the topics that should be discussed with new employees:

- Time of commencement and completion of duties;
- Cleaning of workplace and the importance thereof;
- Safety clothing and its importance and correct use;
- Procedure to follow in case of illness and injury;
- Annual leave and when due;
- Importance of instructions;
- Late for work and leaving workplace without permission;
- Emergency procedures;
- Environmental awareness;
- Training and its importance;
- Alcohol and drug abuse;
- Medical fitness;
- Disciplinary procedures.

The following topics should form part of the environmental awareness discussions to be held with the employees:

- NO-GO areas;
- Water;
- Fauna and flora;
- Smoking and fires;
- Dust;
- Noise;
- Waste management.

Various signs (including the Environmental Policy) should be displayed on site to remind site workers of the basic environmental principles and inform them of the 'DO'S' and 'DON'TS'.

The applicant must conduct regular inspections to check on site conditions and to provide training when necessary to ensure that the mitigation measures are being implemented and that the environment is carefully looked after.

9.6.2 Site documentation and record keeping

The following documentation must be available (at all times) at the construction site office:

- A copy of the Basic Assessment Report (BAR) and Environmental Management Programme;
- A copy of the Environmental Authorisation;
- A copy of the Environmental Policy;
- A copy of site audit reports;
- A copy of any other permits/approvals and/or service agreements from other authorities/landowners/etc.

The documents should be kept as hard copies as well as in electronic format.

Complaints Register

A complaints register must be kept at the construction site office. Any complaints received with regards to the project must be recorded in the complaints register. The following information must be recorded:

- Date complaint recorded;



- Nature of complaint;
- Details of complainant (name, address, telephone number, etc.);
- Manner in which complaint was dealt with;
- Date when complaint was reported to the Department of Agriculture, Rural Development, Land and Environmental Affairs and the Department of Water and Sanitation.

Emergency numbers

Emergency numbers (e.g. manager, police, fire department, ambulance, etc.) must be prominently displayed at the construction site office.

Contact details of affected landowners/users must also be kept on file.

Other legislation

The following should also be displayed at the construction site office:

- Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended;
- Basic Conditions of Employment Act, 1997;
- Summary of the Employment Equity Act.

Supplementary documentation

The following supplementary documentation should be kept at the construction site office:

- Site instructions;
- Emergency preparedness and response procedures;
- Incident reports;
- Training records;
- Site inspection, monitoring and auditing reports.

During the course of the development, the applicant and employees must also comply with all other relevant legislation.

9.6.3 Auditing and corrective action

Environmental audits identify existing and potential environmental problems and determine what action is needed to comply with legal requirements and the Environmental Management Programme (EMPr). Subsequent audits then confirm that corrective actions have been taken and assess the effectiveness of such actions.

Construction phase:

Site Environmental Control Officer (SECO): The applicant must appoint a person who will be responsible for the day-to-day implementation of the EMPr (including Environmental Awareness Training) and will report to the site manager.

Environmental Control Officer/Auditor (ECO): The applicant must appoint an ECO who will have the responsibility of monitoring and reporting on compliance with the conditions of the Environmental Authorisation as well as monitoring and reporting on the implementation of the EMPr.

The ECO must be appointed before the commencement of construction and must remain employed until all rehabilitation measures as well as site clean-up are completed.

The ECO will be responsible to:

- Monitor and audit the construction activities on a monthly basis;
- Keep a record of each site inspection and the findings thereof;



- Make a register of the environmental monitoring and auditing results available for inspection at the construction site office;
- Keep records relating to the compliance and non-compliance with the conditions of the Environmental Authorization;
- Make these records available to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) within seven (7) working days of the date of the written request by the Department for such records.

A good approach to facilitate legal enforceability of the EMPr during the construction phase is to integrate the EMPr into the tender and contract document (i.e. between the project applicant and the contractors) as a set of environmental specifications. The contractor will thus be informed prior to being appointed of his environmental responsibilities.

Penalties in terms of the environment should be implemented upon non-compliance. This will ensure that the project applicant does not sit with an environmental liability at the end of the contract.

A post-construction audit should be conducted prior to the contractors leaving site. There are several levels at which corrective action can be affected, namely verbal instructions, written instructions and contract notices.

Level 1: The problem is discussed with the contractor and a solution is worked out together. The discussion is minuted for record purposes and the solution implemented.

Level 2: When a more serious infringement is observed, the contractor is notified in writing and given a deadline by which the issue must be rectified. Costs to be borne by the contractor.

Level 3: The contractor will be ordered to suspend all or part of the work until such time as the problem is rectified or remedial measures put in place. Costs to be borne by the contractor and no extension of time will be granted.

Level 4: Breach of contract and/or termination of employment. The applicant may also institute legal proceedings against the contractor.

An example of a penalty schedule is provided below.



PENALTY SCHEDULE			
Level	Description	Penalty	Offences
1	Minor offence	R1000 first offence R2000 second offence And R1000/per day that offence continues beyond notification of offence	<ul style="list-style-type: none"> • Littering; inadequate or inappropriate on-site waste management or sanitation • Uncontrolled noise and dust nuisance • Poaching on site • Inadequate soil / water protection controls for fuel storage & dispensing areas, vehicle parking areas
2	Moderate offence	R5000 first offence R10 000 second offence And R5000 per day that the offence continues beyond notification of offence	<ul style="list-style-type: none"> • Trespassing onto neighbours properties • Removal of indigenous trees marked for conservation purposes without the permission of the ECO, or trees in demarcated sensitive environmental zones • Disposal of any form of waste to a non-approved dump site • Any illegal /non-permitted abstraction or use of water from a natural resource • The withholding of pertinent information or provision of false information to the ECO or Project Manager
3	Significant offence	R30 000 first offence R50 000 second offence And R30 000 per day that the offence continues beyond notification of offence	<ul style="list-style-type: none"> • Non-compliance with any risk or safety management requirements • Significant spillage of hazardous materials • Use of natural materials not sourced from a legally permitted source • Construction or use of roads/access across rivers, streams or wetlands that has not been authorized by the Project Manager and ECO
4	Serious offence	Up to R500 000 or total cost of rehabilitating damaged environment	<ul style="list-style-type: none"> • Any serious pollution event or accident • Any serious encroachment into demarcated sensitive environmental zones, by accident or on purpose • Any serious stormwater damage that could have been avoided through appropriate management interventions

In addition to the schedule of penalties, a portion of the Retention on all contracts could be apportioned to compliance with the EMPr.

Operational phase:

The applicant will be responsible for auditing and corrective action during the operational phase of the development.



SECTION 10: ENVIRONMENTAL IMPACT STATEMENT

10.1 Introduction

The applicant, *Chestar Supplies (Pty) Ltd.* (represented by Mr. S. Latif), intends to develop a neighbourhood shopping centre on Erf 1051, Rockdale, Middelburg. The property is ±2 ha in extent and located in the residential area of Rockdale, adjacent to the N11 national road (Hendrina Road). The proposed shopping centre will comprise of an anchor shop, various line shops, delivery bays and parking areas.

The Rockdale residential area (comprising of nearly 5000 households) currently does not have a shopping centre. Residents must commute to Middelburg in order to do their shopping. The applicant plans to provide a neighbourhood shopping centre (within walking distance) where residents can buy their day-to-day convenience items.

The site is currently zoned 'Public Open Space' and may not be used for commercial/business purposes without being rezoned by the Steve Tshwete Local Municipality.

The Steve Tshwete Local Municipality passed a Council Resolution on 16 August 2019 to alienate the proposed site (Erf 1051) for the purpose of a commercial development. Condition 7.10 of the Council Resolution (Annexure D of Appendix 3) stipulates the following: "*That the portion to be alienated be used for business purposes.*"

The applicant, *Chestar Supplies (Pty) Ltd.*, subsequently purchased the property from the Steve Tshwete Local Municipality on 2 October 2019 for the development of a neighbourhood shopping centre. The said property will be rezoned from 'Public Open Space' to 'Business 2' to allow for the development of the shopping centre. Urban Dynamics Town and Regional Planners was appointed by the applicant to apply for the park closure and rezoning.

10.2 Alternatives

Section 7 provides a detailed description of all alternatives investigated with regards to this project. As indicated in Section 7.5, the following alternatives were deemed feasible and were assessed in Section 8.5:

Aspect	Description of alternative
Site	The said site will be located on Erf 1051, Rockdale, Middelburg (Figure 8.1).
Land Use	A neighbourhood shopping centre will be established on the said property (Figure 8.1).
Layout	Only one layout plan was drafted for the development of a neighbourhood shopping centre (Figure 8.1).
Services	Water: The development will connect to the STLM water reticulation network.
	Electricity: Electricity will be obtained from the STLM.
	Sewage disposal: The development will connect to the STLM sewer network.
	Waste management: Waste will be collected by the STLM and



Aspect	Description of alternative
	disposed of at the registered Rietfontein Waste Disposal Site. Storm water management: The development will connect to the STLM storm water management system.

10.3 Potential impacts identified

The environmental features of the site and surrounding area are described in Section 5 of this report. Potential impacts on the environment (both positive and negative) that could take place are detailed in Section 8 while Section 9 provides mitigation measures to be implemented in order to reduce the said impacts.

The proposed site is located within the existing Rockdale residential area, east of the N11 national road and north of the N4 national road. The central portion of the site ($\pm 60\%$ of the site) comprises an old borrow pit. A temporary construction camp was erected in the western portion of the site by the contractors responsible for the upgrading of the N11 national road. The south western corner of the site was cleared for a parking area. The contractors also cleared a portion of the old borrow pit for the storage of construction material (gravel) (Figure 5.2). The site is abutted by roads, which form part of the Rockdale internal road network.

As indicated in Section 8, the proposed development of the site would not impact on the groundwater or any surface water environments. No streams, rivers or dams are located on or adjacent to the site. The closest watercourse is a small unnamed stream located $\pm 560\text{m}$ northeast of the site. A wetland study was conducted by Burton (2019), who recorded no wetlands on site or in the immediate area. In addition, no boreholes, wells or fountains are present on site.

In terms of sites of archaeological and/or cultural interest, Van Vollenhoven (2020) identified nothing of heritage importance on the proposed site. In addition, Fourie (2020) found no surface fossils on site during the walk through and therefore no direct impact on palaeontology is anticipated.

Impacts in terms of geology, topography, soil, natural vegetation, animal life, air quality, noise, traffic and visual aspects would be limited to the site and immediate surroundings and of low to medium significance. The negative impacts that are expected to occur are generally associated with construction activities and would be of short duration. These impacts can be managed through the implementation of the EMPr (see Section 9 of this report).

The impact on the vegetation and animal life is deemed to be low due to the small area that would be cleared, the disturbed nature of the vegetation and the fact that the surrounding area has already been developed. The removal of invader plants will have a positive impact on the natural environment and stop the spread thereof into the surrounding area.

As indicated in Section 5.4, Hansmeyer (2005) classified the site as Geotechnical Zone 3a (i.e. a borrow pit where no development should take place). As part of the construction phase, the old borrow pit will have to be backfilled and rehabilitated. A geotechnical engineer must be consulted regarding the rehabilitation of the old borrow pit area in order to ensure that



the site is properly rehabilitated so that it is geotechnically stable for development purposes.

The operation of the shopping centre would result in a slight increase in cars, buses and taxis in the area. According to Roberts (2019), the access point proposed in Ekukhanyeni Street is adequate to meet the future traffic demand at satisfactory levels of service. No additional right-turn lanes or pedestrian crossings are required. Roberts (2019) however, recommended a 2m wide pedestrian walkway and a 20m long lay bye for buses and taxis.

In terms of land use and sense of place, the rezoning of the site from Public Open Space to Business 2 (for the purposes of a neighbourhood shopping centre) would not impact on residents of Rockdale since the site is currently highly disturbed and cannot be used by the residents for the intended purpose.

As part of the construction process, the waste dumped in the old borrow pit will have to be removed and disposed of at the registered Rietfontein Waste Disposal Site and the site will have to be backfilled using clean material. During the public participation process, the local community indicated that they would prefer that the site be developed, since the current situation is unhealthy and poses a safety risk.

The operation of the neighbourhood shopping centre should have a positive impact on the land use and sense of place of the Rockdale residential area. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.

Since the site is located within a residential area and adjacent to the N11 national road and therefore highly visible, the management of the site during the construction and operational phases will be of importance, not only from a visual point of view but also to minimize any negative impact on the environment and interested and affected parties. Regular monitoring and auditing of the activities must take place during the construction phase.

10.4 Public participation

The public participation process followed is described in Section 6 of this report.

The proposed development site belongs to the project applicant and the development of the said site will thus not impact directly on any other interested and affected party.

Issues of concern received through this public participation process and the way in which these issues were addressed are detailed in Section 6 and Table 6.4. As indicated, correspondence was only received from the South African Heritage Resources Agency, the Department of Water Affairs and Sanitation, Batsumi Engineering and Leads2Business.

No objections in terms of the proposed development were received.



During the public participation process, the Rockdale community indicated that they prefer that the site be developed, since the current situation is unhealthy and poses a safety risk. The need for a neighbourhood shopping centre was confirmed by the local residents, who indicated that the development would be positive for the community. New businesses would be convenient and would result in job opportunities.

10.5 Assumptions, uncertainties and gaps in knowledge

The following assumptions and limitations are applicable to this report:

- The report is based on project information provided by the applicant.
- In determining the significance of impacts after mitigation, it is assumed that the proposed mitigation measures will be implemented by the applicant during the construction and operational phases of the development.
- Due to the subterranean nature of fossils and heritage resources, objects or features may be uncovered during the construction phase.
- The data presented in the specialist reports are based on single site visits, which are deemed sufficient for the purposes of this BA process.
- A geotechnical engineer must be consulted regarding the rehabilitation of the old borrow pit area in order to ensure that the site is properly rehabilitated so that it is geotechnically stable for development purposes.

10.6 Reasoned opinion as to whether the proposed activity should be authorised (or not)

Based on the findings of this Basic Assessment Report, it is felt that the proposed project could be approved subject to the implementation of the mitigation measures proposed in the Environmental Management Programme (EMPr) provided in Section 9 of this report.

Regular monitoring and auditing of the activities should take place during both the construction and operational phases to ensure that the mitigation measures are implemented. The development must be managed in such a way that it is environmentally sustainable, acceptable to the community and complies with the objectives of the National Environmental Management Act, 1998 (Act 107 of 1998).

In view of the findings of this Basic Assessment, the following listed activities can be approved:

Listing	Activity
Listing Notice 1 (GN R983 as amended) Listed Activity 27	<i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 12	<i>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i>
Listing Notice 3 (GN R985 as amended) Listed Activity 15	<i>The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.</i>



10.7 Reasons why the activity should be authorised (or not)

It is recommended that the activity be authorised for the following reasons:

- ✓ The proposed development site belongs to the project applicant.
- ✓ No Interested and Affected Party will be directly impacted.
- ✓ No objections to the proposed neighbourhood shopping centre were received.
- ✓ The proposed development will NOT impact on any sensitive natural or cultural areas.
- ✓ No surface water environments (e.g. rivers, streams, wetlands, etc.) are present on site.
- ✓ The proposed project will not have any negative impacts on the environment that cannot be mitigated and managed.
- ✓ The air quality in the immediate area would be improved (in terms of odours) as a result of the removal of the dumped waste from the old borrow pit. There would also be a reduction in flies and/or rodents.
- ✓ The surrounding residents would no longer be able to use the site for the illegal dumping of waste resulting in a reduction in terms of odours, flies and/or rodents.
- ✓ The visual aspects of the site would be improved.
- ✓ Security would be improved as criminals would no longer be able to use the old borrow pit as a hiding place.
- ✓ The development can connect to the existing municipal water, sewerage and electrical networks and be provided with the required municipal services.
- ✓ The access point proposed in Ekukhanyeni Street is adequate to meet the future traffic demand at satisfactory levels of service.
- ✓ The site is located within the existing Rockdale residential area and within walking distance for most Rockdale residents. Residents would not have to commute to town or shopping centres in other residential areas for their day-to-day convenience items. They would be able to walk to the said shopping centre resulting in savings in terms of transport, etc.
- ✓ The proposed development would lead to additional employment opportunities during the construction and operational phases.
- ✓ Business opportunities would be provided in the form of new shops.

Based on the above-mentioned, it is evident that:

- the proposed development is necessary (need);
- the proposed development will be located on an appropriate site (desirability);
- the development will benefit the local/regional community.

Therefore the need and desirability of the said project was determined through the Basic Assessment process.

10.8 Period for which the EA is required

Construction should commence as soon as all the relevant authorisations have been obtained.

The shopping centre will initially comprise of an anchor shop (1655.34 m²) and line shops (902.30 m²) with provision for future extensions (1318.65 m²). It is expected that construction of the anchor and line shops will commence as soon as the relevant approvals are obtained. The development of the overall shopping centre may depend on the market and the demand for retail space.



It is therefore estimated that the period for which the EA is required is 10 years.

10.9 Conditions to be included in the EA

The following conditions should be included in the Environmental Authorisation:

- *The management and monitoring measures as indicated in Section 9 (EMPr) of the Basic Assessment Report must be implemented.*
- *The existing waste within the old borrow pit to be removed and disposed at the registered Rietfontein Waste Disposal site.*
- *A geotechnical engineer must be consulted regarding the rehabilitation of the old borrow pit area in order to ensure that the site is properly rehabilitated so that it is geotechnically stable for development purposes.*



SECTION 11: EVALUATION OF DRAFT BASIC ASSESSMENT REPORT

11.1 Availability of Basic Assessment Report

The Draft Basic Assessment Report (dated: July 2020) was submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs on 7 August 2020 (letter dated: 7 August 2020; Appendix 13).

The Draft Basic Assessment Report (dated: July 2020) was also submitted/couriered to the following authorities for evaluation (30-day period):

- Department of Water and Sanitation – report sent via dropbox (email and letter dated: 14 August 2020; Appendix 13);
- Steve Tshwete Local Municipality – report sent via dropbox (email and letter dated: 14 August 2020; Appendix 13);
- Mpumalanga Tourism and Parks Agency – hard copy of report couriered (email dated: 13 August 2020 and letter dated: 14 August 2020; Appendix 13).

Notices (in English and Zulu; Appendix 13) with regards to the availability of the Draft Basic Assessment Report were displayed on site as indicated in Photo 11.1. A notice was also placed in the Middelburg Observer on 14 August 2020 (Appendix 13).



Photo 11.1: View of notices displayed on site.

Two hard copies of the Draft BAR (including a notice to I&APs and register) were provided to the Ward Councillor, Mr. T. Motloug (Photo 11.2) during the meeting and site visit held on 14 August 2020 (email and letter dated: 14 August 2020; Appendix 13). The Councillor indicated that he would inform the residents of Rockdale by using existing community channels (e.g. WhatsApp Groups and small community meetings) of the availability of the DBAR for evaluation purposes.



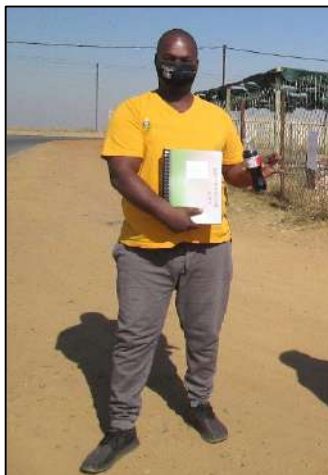


Photo 11.2: Document handover to Councilor Motloug on 14 August 2020

A copy of the document was also provided on the company website (www.adienvironmental.co.za) for download (Appendix 13). In addition, a copy of the document was loaded (date: 12 August 2020) onto the South African Heritage Resources Agency website (SAHRIS) for their input (Appendix 13).

E-mails (dated: 14 August 2020; Appendix 13) were forwarded to government departments, stakeholders and interested and affected parties (see interested and affected party list) informing them that the document was available for evaluation purposes from 14 August 2020 to 14 September 2020.

The following interested and affected parties/stakeholders/government departments were notified of the said report:

INTERESTED AND AFFECTED PARTY LIST	
Organisation	Name
Government Departments	
Department of Agriculture, Forestry and Fisheries (DAFF)	F. Mashabela
Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) - Directorate: Land Use and Soil Management – Ermelo	J. Venter
Department of Co-operative Governance and Traditional Affairs (COGTA)	M. Loock
Department of Mineral Resources	S. Mathavela
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	T. Mkhonto
Department of Water and Sanitation (DWS)	T. Ndlhovu
Other Organisations/Stakeholders	
Distriks Landbou Unie Middelburg	J.P.J. Schmahl
Eskom Distribution (Land & Rights)	T. Ludere
Eskom Transmission	L. Motsisi
Middelburg Chamber of Business and Commerce	M. Hanekom



INTERESTED AND AFFECTED PARTY LIST	
Mpumalanga Tourism and Parks Agency (MTPA) – Land Advisory Unit	K. Narasoo
PlanAct	R. Mosaval
South African Civil Aviation Authority	K. Mthapo
South African Heritage Resources Agency (SAHRA)	J. Lavin (SAHRA website)
Telkom	J. Smit
Local Municipality and Municipal Councillor	
Nkangala District Municipality	S. Links, A. Thwala
Steve Tshwete Local Municipality	M. Mahamba, D. Lambrechts
Steve Tshwete Local Municipality	Councillor T. Motloung (Ward 6)
Surrounding Landowners	
Property (Figure 6.2)	Landowner/Contact person
N11 national road	South African National Roads Agency (SANRAL) V. Bota, K. Schmid, I. van der Linde
N11 national road	Trans African Concessions (TRAC) C. Davis, W. Janse van Rensburg, R. Nkosi
RE/442	Rockdale Industrial (Pty) Ltd. M. Stead/D. Hyman
Erf 406	Haiyana Mongezi Panuel
Erf 405	Manala Ramathabathe Emily
Erf 106	Mahlangu Fuduka Martha
Erf 135	Qwabe Victor Bheki
Erf 136	Rakgalakane Fransinah Sehubudi
Erf 137	Skosana John Elias
Erf 434	Phafudi Hlalaphi Jane
Erf 435	Nakchungue Daizy Maria
Erf 433	Phafudi Martha Bettie
Erf 138	Lubisi Leeneje Linah
Erf 267	Mokoena Vincent Xolane
Erf 105, 652, 573, 674, 1059	Steve Tshwete Local Municipality (M Mahamba)
Other	
Debbie Wessels	Leads to Business
J Brink; M Dazel	Contractor (Batsumi Engineering)



11.2 Comments received

11.2.1 Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA)

A letter (dated: 14 August 2020; Ref: 1/3/1/16/1N-218; Appendix 13) was received from the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) acknowledging receipt of the Application Form. It was indicated that the responsible officer for the project is Ms. D. Tswai.

A site visit was attended by Ms. R. Janse van Rensburg of AdiEnvironmental cc and Ms. D. Tswai of DARDLEA on 2 September 2020.

During the site visit, Ms. Tswai provided the following comment (see email dated: 2 September 2020; Appendix 13):

- 1. Public Open Space – The townplanners must confirm that there are enough Public Open Spaces available within the Rockdale area should this one be developed.*
- 2. Geotechnical – A geotechnical engineer must provide a statement/report confirming that the site is geotechnically stable and can be developed.*
- 3. Public Participation – the minutes of any meeting arranged by the Ward Councilor during which the proposed development was discussed should be included in the Final Basic Assessment Report.*

Response from AdiEnvironmental

1. Public Open Space - The following Public Open Spaces are provided in the Rockdale area as indicated in the table below and in Figure 11.1:

Extension (Figure 11.1)	Number of Stands	Area
Rockdale	33	6.07 ha
Rockdale X1	22	21.39 ha
Rockdale X2	27	23.92 ha
	Total:	51.39 ha

It is evident from the table above and Figure 11.1 that more than enough Public Open Spaces (>50 ha) would still be available within the larger Rockdale area should Erf 1051 be developed. Currently, the site comprises an old borrow pit that is used for the dumping of waste.



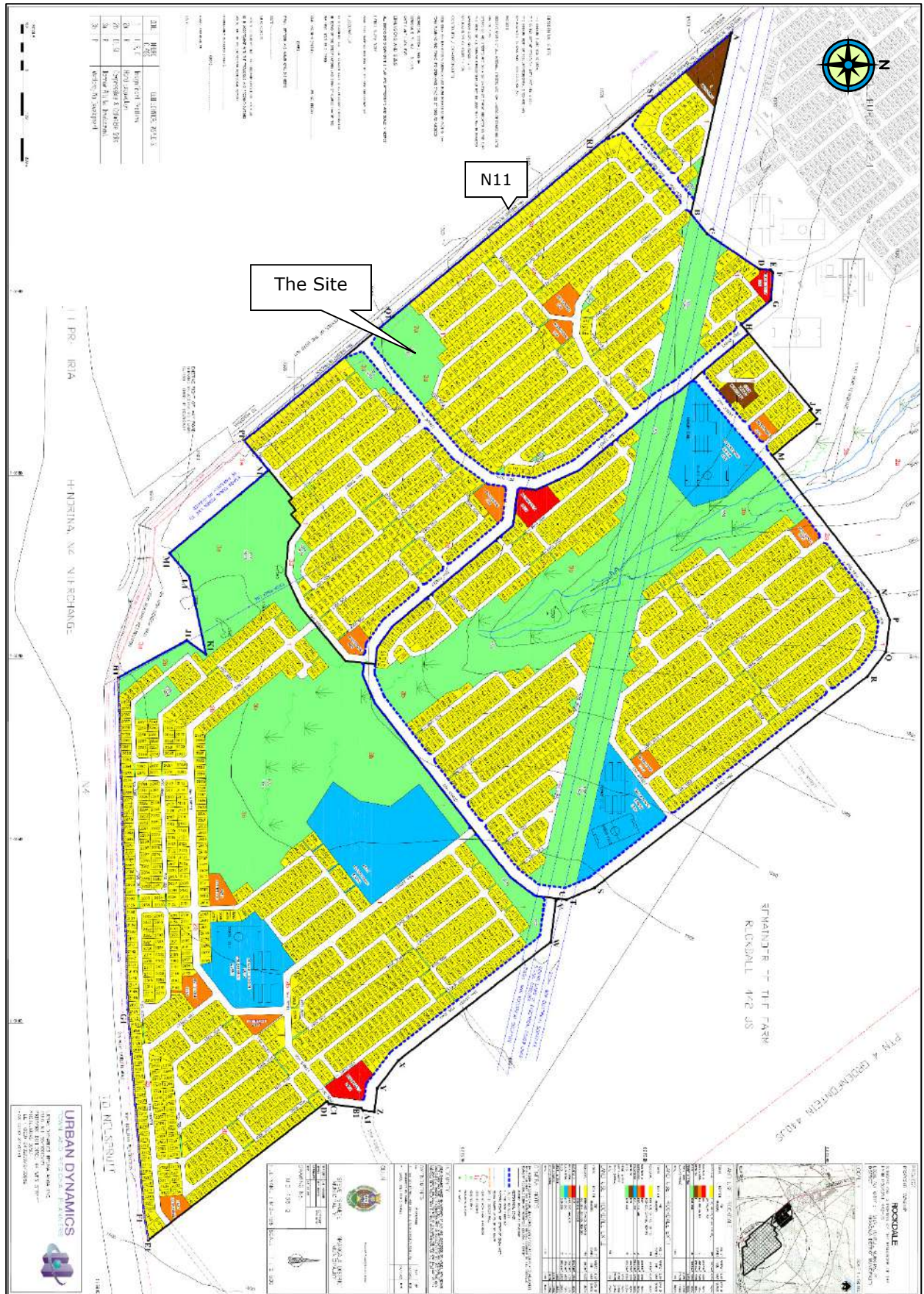


Figure 11.1: Public Open Spaces available in Rockdale (taken from Urban Dynamics, 2008)

- Geotechnical – A letter was obtained from Tirisano Consulting Engineers (letter not dated) confirming that the site can be developed. A copy of the letter is provided in Appendix 13. The following was indicated:

"This letter serves to confirm that Tirisano Consulting Engineers was involved as the civil and structural engineers for this new development. Preliminary specifications were calculated for the civil and structural aspects and input specification reports was submitted.

As indicated in Section 5.4, Hansmeyer (2005) classified the site as Geotechnical Zone 3a (i.e. a borrow pit where no development should take place). As part of the construction phase, the old borrow pit will have to be backfilled and rehabilitated.

Tirisano have looked at the different material properties required for the backfill and the engineered layers below the foundations of new structures, and the layerworks required for the parking areas. The site will be properly rehabilitated so that it is geotechnically stable for future development purposes."

- Public Participation – Councilor T. Motloutng telephonically confirmed (18 September 2020) that a community meeting was held on 31 August 2020 during which the proposed development was presented and discussed. Photo 11.3 provides photographic evidence of the attendance register completed by the community members. A copy of all pages of the register are provided in Appendix 13.

According to the Councilor, the Rockdale community did not raise any concerns and are satisfied with the establishment of a neighbourhood shopping centre on Erf 1051, Rockdale.

NAME	ADDRESS	CONTACT DETAILS
TURBEN CONSULTING	421 Koccamo North	0790236678 / 046 093 0052
NONDEI ENGINEERING (PTY) LTD	456 Koccamo North	0677957418
MATHI ZIBE HOLDINGS (PTY) LTD	631 Koccamo North	072 577 445
BLUMBERG TRADING	472 Koccamo North	082 933 9421 / 053 0076160
MIRROD YEMUEL	2536 Koccamo EXT 2	079 3067032
ROSEMANUKA TRADING	1296 Koccamo - NEMMELA	0761057887
BOHADI ENGINEERING (PTY) LTD	446 Koccamo North	040 3324018 / 046 063 8478
PRONA HOLDINGS	442 Koccamo North	0663457168
DECOCK & FRANCES JV (PTY) LTD	406 R/Monte	078 725 2493 / 046 281 5687
NOGIBARA TRADING	119 Koccamo EXT 1	076741 1453
SEMANTAWACHE ENGINEERING	119 Koccamo EXT 1	0606 7079 05
KIMMURANCE TRADING	0536 R/EXT 2	0722522789
SOMICA PROJECTS	UNIT 65 MONTELU STREET PHASE 2, MIDDLEBURG, SANDILE	079 766 4572
ROSEMANUKA ENGINEERING	UNIT 90 MONTAGUE STREET SANDILE	078 977 4281
MAMAZALA LEGACY		
BANDIENHOUT LESNAY	3019 EXT 24	0767749859

Photo 11.3: Attendance register of community meeting

11.2.2 Government Departments

No comment was received from any government departments on the Draft Basic Assessment Report.



11.2.3 Other organisations

Comment on the Draft Basic Assessment Report was received from:

- Mpumalanga Tourism and Parks Agency.

Mpumalanga Tourism and Parks Agency (MTPA)

A letter (dated: 15 September 2020; Ref: LUA 20/2493; Appendix 13) was received from the MTPA indicating the following:

1. *MTPA has no objection to the proposed development on the proposed site.*
2. *The MBSP (2019) Terrestrial biodiversity assessment, figure 1, and the Freshwater assessment MBSP figure 2, and a Esri worldmap, figure 3 indicates that there are no biodiversity concerns.*
3. *The MTPA however is concerned about the stability of the soil and recommend that a Geohydrology study is done.*

Response from AdiEnvironmental

1. Noted.
2. Noted and agreed. In Section 5.7 of the Draft and Final Basic Assessment Report (Figure 5.15), it is indicated that the site is heavily modified as per the Terrestrial biodiversity assessment. The Freshwater biodiversity assessment of the Mpumalanga Biodiversity Sector Plan (Figure 5.17) in Section 5.8 of the Basic Assessment Report also indicates that the site is heavily modified.
3. A letter was obtained from Tirisano Consulting Engineers (letter not dated) confirming that the site can be developed. A copy of the letter is provided in Appendix 13. The following was indicated:

"This letter serves to confirm that Tirisano Consulting Engineers was involved as the civil and structural engineers for this new development. Preliminary specifications were calculated for the civil and structural aspects and input specification reports was submitted.

As indicated in Section 5.4, Hansmeyer (2005) classified the site as Geotechnical Zone 3a (i.e. a borrow pit where no development should take place). As part of the construction phase, the old borrow pit will have to be backfilled and rehabilitated.

Tirisano have looked at the different material properties required for the backfill and the engineered layers below the foundations of new structures, and the layerworks required for the parking areas. The site will be properly rehabilitated so that it is geotechnically stable for future development purposes."

Please note: A geotechnical study deals with the stability of the soil and not a geohydrological study.

11.2.4 Local municipality and councillor

No comment was received from the Steve Tshwete Local Municipality or the Nkangala District Municipality on the Draft Basic Assessment Report.

During the site visit held on 14 August 2020, Councilor Motloug requested that people from the local Rockdale community be given preference with



regards to employment opportunities and/or contracts at the neighbourhood shopping centre.

Response from AdiEnvironmental

During the site visit of 14 August 2020, AdiEnvironmental indicated that the Councilor should contact the developer directly to ensure that people from the local Rockdale community are employed where possible. The developer's contact details are provided in Section 1 of the Draft and Final Basic Assessment Reports.

Comments from the Councilor on the Draft Basic Assessment Report were not received.

11.2.5 Community

Comment was only received from one of the community members, Ms. Valencia Mamafake who indicated the following:

<i>Thank you for the feedback.</i>

11.2.6 Summary of issues and response

Appendix 1 (3)(h)(iii) of the EIA Regulations, 2014 (as amended) requires that a summary of the issues raised by interested and affected parties be provided in the Basic Assessment Report as well as an indication of the manner in which the issues were addressed.

Table 11.1 provides such a summary as well as the response from the EAP.

11.3 Evaluation of Final Basic Assessment Report

A hard copy of the Final Basic Assessment Report (dated: September 2020) will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs for final decision making.



Table 11.1: Summary of issues of concern and response

Issue	I&AP, Stakeholders, Authority (Section of Report)	Response															
Need and desirability																	
• The area is in need of local shops, e.g. clothing stores.	Erf 138 Valencia (Section 6.4.2)	Noted.															
• Jobs opportunities will be created.	Erf 138 Valencia (Section 6.4.2)	Noted.															
• New businesses will be convenient and will result in job opportunities.	General comment from Rockdale community (Section 6.4.3)	Noted.															
• The community is in need of a grocery store, bottle store and clothing shops.	General comment from Rockdale community (Section 6.4.3)	Noted and applicant informed.															
• The proposed development will be a good thing. The site is currently used as a dumping site for garden waste, domestic waste and dead animals. The site is also used by criminals as a hiding spot.	Erf 138 Valencia (Section 6.4.2)	Noted.															
• The proposed development will be positive for the local community. The site is currently used as a dumping site for garden waste, domestic waste and dead animals resulting in bad odours and unhealthy conditions. The unkept Erf is a security risk since criminals use the site to hide away in. The spaza shops in the area are very expensive.	General comment from Rockdale community (Section 6.4.3)	Noted.															
Geotechnical																	
Geotechnical – A geotechnical engineer must provide a statement/report confirming that the site is geotechnically stable and can be developed.	DARDLEA (Section 11.2.1)	<p>A letter was obtained from Tirisano Consulting Engineers (letter not dated) confirming that the site can be developed. A copy of the letter is provided in Appendix 13. The following was indicated: <i>"This letter serves to confirm that Tirisano Consulting Engineers was involved as the civil and structural engineers for this new development. Preliminary specifications were calculated for the civil and structural aspects and input specification reports was submitted.</i></p> <p><i>As indicated in Section 5.4, Hansmeyer (2005) classified the site as Geotechnical Zone 3a (i.e. a borrow pit where no development should take place). As part of the construction phase, the old borrow pit will have to be backfilled and rehabilitated.</i></p> <p><i>Tirisano have looked at the different material properties required for the backfill and the engineered layers below the foundations of new structures, and the layerworks required for the parking areas. The site will be properly rehabilitated so that it is geotechnically stable for future development purposes."</i></p>															
The MTPA however is concerned about the stability of the soil and recommend that a Geohydrology study is done.	MTPA (Section 11.2.3)	See response to DARDLEA above. Please note: A geotechnical study deals with the stability of the soil and not a geohydrological study.															
Public Open Space																	
Public Open Space – The townplanners must confirm that there are enough Public Open Spaces available within the Rockdale area should this one be developed.	DARDLEA (Section 11.2.1)	<p>The following Public Open Space stands are provided in the Rockdale area as indicated in the table below and in Figure 11.1:</p> <table border="1" data-bbox="1855 1331 2585 1482"> <thead> <tr> <th>Extension (Figure 11.1)</th> <th>Number of Stands</th> <th>Area</th> </tr> </thead> <tbody> <tr> <td>Rockdale</td> <td>33</td> <td>6.07 ha</td> </tr> <tr> <td>Rockdale X1</td> <td>22</td> <td>21.39 ha</td> </tr> <tr> <td>Rockdale X2</td> <td>27</td> <td>23.92 ha</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td>51.39 ha</td> </tr> </tbody> </table> <p>It is evident from the table above and Figure 11.1 that more than enough Public Open Spaces (>50 ha) would be available within the larger Rockdale area should Erf 1051 be developed. Currently, the site comprises an old borrow pit that is used for the dumping of waste.</p>	Extension (Figure 11.1)	Number of Stands	Area	Rockdale	33	6.07 ha	Rockdale X1	22	21.39 ha	Rockdale X2	27	23.92 ha	Total:		51.39 ha
Extension (Figure 11.1)	Number of Stands	Area															
Rockdale	33	6.07 ha															
Rockdale X1	22	21.39 ha															
Rockdale X2	27	23.92 ha															
Total:		51.39 ha															
Biodiversity																	
The MBSP (2019) Terrestrial biodiversity assessment, figure 1, and the Freshwater assessment MBSP figure 2, and a Esri worldmap, figure 3 indicates that there are no biodiversity concerns.	MTPA (Section 11.2.3)	Noted and agreed. In Section 5.7 of the Draft and Final Basic Assessment Report (Figure 5.15), it is indicated that the site is heavily modified as per the Terrestrial biodiversity assessment. The Freshwater biodiversity assessment of the Mpumalanga Biodiversity Sector Plan (Figure 5.17) in Section 5.8 of the Basic Assessment Report also indicates that the site is heavily modified.															
Public Participation																	
Public Participation – the minutes of any meeting arranged by the Ward Councilor during which the proposed development was discussed should be included in the Final Basic Assessment Report.	DARDLEA (Section 11.2.1)	Councilor T. Motloug telephonically confirmed (18 September 2020) that a community meeting was held on 31 August 2020 during which the proposed development was presented and discussed. Photo 11.3 provides photographic evidence of the attendance register completed by the community members. A copy of all pages of the register are provided in Appendix 13.															

Table 11.1: Summary of issues of concern and response

Issue	I&AP, Stakeholders, Authority (Section of Report)	Response
		According to the Councilor, the Rockdale community did not raise any concerns and are satisfied with the establishment of a neighbourhood shopping centre on Erf 1051, Rockdale.
Heritage and Palaeontology		
<i>The HIA or an exemption letter depending on the findings, must be undertaken by a suitably qualified archaeologist and it must comply with Section 38(3) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). Once the report is submitted to the case for commenting, SAHRA will provide further comments on this proposed development.</i>	SAHRA (Section 6.3.2)	An exemption letter was drafted by a suitably qualified archaeologist as requested by SAHRA. A copy of the exemption letter is provided in Appendix 7. No sites of cultural or archaeological importance were found on site – see Section 5.13 of the BAR.
<i>In addition to the HIA report or exemption letter, SAHRA also requires an assessment of palaeontological resources by a suitably qualified palaeontologist. The HIA and the Palaeontology Impact Assessment (PIA) must be provided to SAHRA for commenting prior to the submission of the final BAR to the competent authority. All these documents will be assessed by SAHRA, and the comment issued by SAHRA must be included in the final BAR.</i>	SAHRA (Section 6.3.2)	A Palaeontological Impact Assessment (PIA) was conducted by a qualified palaeontologist as requested by SAHRA. A copy of the PIA is provided in Appendix 7. The findings of the PIA are summarized in Section 5.13 of the Basic Assessment Report.
<i>The South African Heritage Resources Agency (SAHRA) Archaeology, Palaeontology and Meteorites (APM) Unit notes the submission of the heritage reports to this case, however, SAHRA requires that the dBAR and its appendices must be submitted to the case in order to issue an informed comment. SAHRA awaits the submission of the dBAR and its appendices before providing further comments on the case.</i>	SAHRA (Section 6.3.2)	A copy of the Draft Basic Assessment Report (DBAR) and the appendices will be loaded on the SAHRIS system as requested by SAHRA.
General		
<i>Registered as Interested and Affected Party - Business opportunity.</i>	D. Wessels (Section 6.1.4)	Added as an Interested and Affected Party and will be kept up to date.
<i>Need advance notice to vacate the site, since heavy machinery would have to be relocated. Requested a proposed time schedule for the project.</i>	M. Dazel (Batsumi Engineering) (Section 6.2)	The process and estimated time schedule were explained telephonically. In addition, a copy of the Background Information Document was emailed to Mr. Dazel.
<i>Please kindly submit the Basic Assessment report (BAR) to me in order to provide comment.</i>	Department of Water and Sanitation (Section 6.3.1)	The following was indicated to Ms. Ndlovu: "Your request is noted. We just commenced with the process. The Basic Assessment should be available for comment in March/April. I will make sure to send a hard copy to you for comment"
<i>MTPA has no objection to the proposed development on the proposed site.</i>	MTPA (Section 11.2.3)	Noted.
<i>Thank you for the feedback.</i>	Erf 138 Valencia (Section 11.2.5)	Noted.
Employment opportunities		
<i>During the site visit held on 14 August 2020, Councilor Motloung requested that people from the local Rockdale community be given preference with regards to employment opportunities and/or contracts at the neighbourhood shopping centre.</i>	Councilor Motloung (Section 11.2.4)	During the site visit of 14 August 2020, AdiEnvironmental indicated that the Councilor should contact the developer directly to ensure that people from the local Rockdale community are employed where possible. The developer's contact details are provided in Section 1 of the Draft and Final Basic Assessment Reports.

REFERENCES

- ❖ Booyesen, C. 2019. **Civil Services Report, Rockdale Erf 1051, Middelburg, Mpumalanga.** Report prepared by: Tirisano Consulting Engineers (Pty) Ltd. Report dated: 7 November 2019. Report number: 0327UDP.
- ❖ Burton, S. 2018. **Wetland Delineation Report. Erf 1051, Rockdale, Middelburg, Mpumalanga.** Report compiled by: Sivest SA (Pty) Ltd. Report dated: November 2018. Report no.: 15442.
- ❖ Cilliers, B and M. Meyer. 2017. **Phase 1 Engineering Geological Investigation for Township Development at the Remaining Extent of the Farm Rockdale 442-JS, Middelburg – Mpumalanga.** Report compiled by: Engeolab. Report dated: October 2017. Report number: LL2858. Volume 1 and Volume 2.
- ❖ Council for Geoscience. **1: 250 000 Geological Series Map, 2528 Pretoria.**
- ❖ DEA (Department of Environmental Affairs). 2017. **Guideline on Need and Desirability.**
- ❖ Fourie, H. 2020. **The Development of a Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space), Rockdale, Middelburg. Palaeontological Impact Assessment: Phase 1 Field Study.** Report dated: 19 March 2020. Report prepared by: Heidi Fourie Consulting.
- ❖ **List of Ecosystems that are Threatened and in Need of Protection.** (General Notice No. 1002 of 2011). *Government Gazette* 34809: 3-541, 9 December 2011. Government Printing Works, Pretoria.
- ❖ Lotter, M.C., Lechmere-Oertel, R. & Cadman, M. 2014. **Mpumalanga Biodiversity Sector Plan Handbook.** Mpumalanga Tourism & Parks Agency, Nelspruit.
- ❖ Mpumalanga Tourism and Parks Agency. 2013. **Mpumalanga Biodiversity Sector Plan Map, 2013.**
- ❖ Mucina, L. & Rutherford, M. C. (eds). 2006. **The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19.** South African National Biodiversity Institute, Pretoria.
- ❖ Mucina, L., Rutherford, M.C. & Powrie, L.W. (eds). 2005. **Vegetation Map of South Africa, Lesotho and Swaziland, 1: 1 000 000 scale sheet maps.** South African National Biodiversity Institute, Pretoria.
- ❖ **National Environmental Management Act 1998 (Act No. 107).** Republic of South Africa, Cape Town.
- ❖ **National List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998).** (General Notice No. 734 of 2011). *Government Gazette* 34595: 13-15, 16 September 2011. Government Printing Works, Pretoria.



- ❖ **National Water Act, 1998 (Act No 36 of 1998).** Republic of South Africa, Cape Town.
- ❖ Roberts, B. 2019. **Erf 1051 Rockdale Middelburg Proposed New Neighbourhood Shopping Centre (The site): Traffic Impact Assessment (TIA) for rezoning purposes.** Report compiled by: Moyeni Professional Engineering (Pty) Ltd. Report dated: November 2019. Report number: MPE0280/TIA.
- ❖ **South African Heritage Resources Information System (SAHRIS).** 2015. [www.sahra.org.za/sahris].
- ❖ **South African Air Quality Information System.** 2020. [www.saaqis.environment.gov.za].
- ❖ Stoltz, M. 2019. **Electrical Services Report Rev A: Rockdale Erf 1051.** Report prepared by: LTZ Consulting. Report dated: 5 November 2019.
- ❖ Urban Dynamics Mpumalanga (Pty) Ltd. 2019. **Motivating Memorandum in Support of an Application for the Park Closure and Rezoning of Erf 1051, Rockdale, Steve Tshwete Local Municipality.** Report dated: 8 November 2019.
- ❖ Venter, I and L. Niemand. 2017. **Ecological Assessment for the Proposed Rockdale Development, Middelburg.** Report compiled by: Kyllinga Consulting and Pachnoda Consulting. Report dated: October 2017.
- ❖ Van Vollenhoven, A.C., J. Smit and D. Viljoen. 2020. **Letter for HIA Exemption Request: Proposed Development of a Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space), Rockdale, Middelburg, Mpumalanga Province.** Letter compiled by: Archaetnos Culture & Cultural Resource Consultants. Letter dated: 5 March 2020.
- ❖ Viljoen, C.J. 2017. **Remainder Farm Rockdale 442-JS Middelburg Specialist Soil Assessment.** Report compiled by: Viljoen & Associates. Report dated: October 2017. Report no.: P350.



APPENDIX 1:

APPLICATION FORM

- ❖ Cover letter from AdiEnvironmental cc (dated: 7 August 2020; Ref: BA 2020/02) to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) regarding submission of application form.
- ❖ Copy of the application form.



APPENDIX 2:

CURRICULUM VITAE

- ❖ A. Erasmus *Pr. Sci. Nat. ; Registered EAP*
- ❖ List of projects completed by A. Erasmus and R. Janse van Rensburg
- ❖ R. Janse van Rensburg *Registered EAP*
- ❖ A. van Vollenhoven *Accredited archaeologist*
- ❖ H. Fourie *Accredited palaeontologist*



APPENDIX 3:

TOWNPLANNING MEMORANDUM

- Urban Dynamics Mpumalanga (Pty) Ltd. 2019. **Motivating Memorandum in Support of an Application for the Park Closure and Rezoning of Erf 1051, Rockdale, Steve Tshwete Local Municipality.** Report dated: 8 November 2019.



APPENDIX 4:

SERVICES REPORT

- ❖ Booyesen, C. 2019. **Civil Services Report, Rockdale Erf 1051, Middelburg, Mpumalanga.** Report prepared by: Tirisano Consulting Engineers (Pty) Ltd. Report dated: 7 November 2019. Report number: 0327UDP.
- ❖ Stoltz, M. 2019. **Electrical Services Report Rev A: Rockdale Erf 1051.** Report prepared by: LTZ Consulting. Report dated: 5 November 2019.



APPENDIX 5:

WETLAND STUDY

- ❖ Burton, S. 2018. **Wetland Delineation Report. Erf 1051, Rockdale, Middelburg, Mpumalanga.** Report compiled by: Sivest SA (Pty) Ltd. Report dated: November 2018. Report no.: 15442.



APPENDIX 6:

HERITAGE REPORT

- ❖ Van Vollenhoven, A.C., J. Smit and D. Viljoen. 2020. **Letter for HIA Exemption Request: Proposed Development of a Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space), Rockdale, Middelburg, Mpumalanga Province.** Letter compiled by: Archaetnos Culture & Cultural Resource Consultants. Letter dated: 5 March 2020.



APPENDIX 7:

PALAEONTOLOGICAL REPORT

- ❖ Fourie, H. 2020. **The Development of a Neighbourhood Shopping Centre on Erf 1051 (Zoned Public Open Space), Rockdale, Middelburg. Palaeontological Impact Assessment: Phase 1 Field Study.** Report dated: 19 March 2020. Report prepared by: Heidi Fourie Consulting



APPENDIX 8:

ADVERTISING OF THE PROJECT

- ◆ A copy of the advertisement published in the Middelburg Observer, 31 January 2020.
- ◆ A copy of the on-site notice (English and Zulu)
- ◆ Printout of company website page www.adienvironmental.co.za – Document Downloads.
- ◆ E-mail from D. Wessels (Leads2Business) (dated: 5 March 2020) to AdiEnvironmental cc.



APPENDIX 9:

BACKGROUND INFORMATION DOCUMENT and FLYER



APPENDIX 10: CORRESPONDENCE WITH AUTHORITIES

- ◆ E-mail from AdiEnvironmental cc (AdiEnv) (dated: 11 February 2020) to:

AUTHORITY/ STAKEHOLDER	CONTACT PERSON
Department of Agriculture, Forestry and Fisheries	Mashabela, F
Department of Agriculture, Rural Development, Land and Environmental Affairs - Directorate: Land Use and Soil Management – Ermelo	Venter, J
Department of Co-Operative Governance and Traditional Affairs	Loock, M
Department of Mineral Resources	Mathavhela, S
Department of Rural Development and Land Reform (Commission on Restitution of Land Rights)	Mkhonto, T
Department of Water and Sanitation	Ndlhovu, T
Mpumalanga Tourism and Parks Agency	Narasoo, K

- ◆ E-mail from T. Ndlhovu (Department of Water and Sanitation) (dated: 13 February 2020) to AdiEnv.
- ◆ E-mail from AdiEnv (dated) 13 February 2020) to T. Ndlhovu.
- ◆ E-mail from AdiEnv (dated: 11 February 2020) to:

Distriks Landbou Unie Middelburg	Schmahl, JPJ
Eskom Distribution	Ludere, T
Eskom Transmission	Motsisi, L
PlanAct	Mosaval, R
Middelburg Chamber of Business and Commerce	Hanekom, M
South African Civil Aviation Authority (SACAA)	Mthapo, K
Telkom	Smit, J

- ◆ Webpage printout (dated: 13 February 2020): South African Heritage Resources Information System (SAHRIS).
- ◆ Letter from the South African Heritage Resources Agency (SAHRA) (dated: 21 February 2020; Ref: 14851) to AdiEnv.
- ◆ Letter from SAHRA (dated: 25 May 2020; Ref: 14851) to AdiEnv
- ◆ E-mail from AdiEnv (dated: 11 February 2020) to:

Nkangala District Municipality	Links, S Thwala, A
Steve Tshwete Local Municipality	Mahamba, M
Councillor Ward 8	Michelle, J

- ◆ E-mail from AdiEnvironmental cc (dated: 22 February 2019) to Councillor Motlung (Ward 6).



APPENDIX 11:

CORRESPONDENCE WITH INTERESTED AND AFFECTED PARTIES

- ◆ E-mail from AdiEnvironmental cc (AdiEnv) (dated: 13 February 2020) to J. Brink.
- ◆ E-mail from AdiEnv (dated: 26 February 2020) to M. Dazel.
- ◆ E-mail from AdiEnv (dated: 11 February 2020) to:

Property	Landowner/Contact person
N11 national road	South African National Roads Agency (SANRAL) V. Bota K. Schmid I. van der Linde
N11 national road	Trans African Concessions (TRAC) C. Davis, W. Janse van Rensburg, R. Nkosi
RE/442	Rockdale Industrial (Pty) Ltd. M. Stead/D. Hyman

- ◆ E-mail from R. Barkhuizen (SANRAL) (dated: 2 March 2020) to AdiEnv.
- ◆ E-mail from AdiEnv (dated: 17 February 2020) to Stand 434 (J. Phafudi) and Stand 138 (Valencia).



APPENDIX 12:

TRAFFIC IMPACT ASSESSMENT

- Roberts, B. 2019. **Erf 1051 Rockdale Middelburg Proposed New Neighbourhood Shopping Centre (The site): Traffic Impact Assessment (TIA) for rezoning purposes.** Report compiled by: Moyeni Professional Engineering (Pty) Ltd. Report dated: November 2019. Report number: MPE0280/TIA.



APPENDIX 15:

EVALUATION OF DRAFT BASIC ASSESSMENT REPORT

- ◆ Letter from AdiEnvironmental cc (AdiEnv) (dated: 7 August 2020; Ref: BA 2020/02) to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA).
- ◆ Email and letter from AdiEnv (dated: 14 August 2020; Ref: BA 2020/02) to the Department of Water and Sanitation.
- ◆ Email and letter from AdiEnv (dated: 14 August 2020; Ref: BA 2020/02) to the Steve Tshwete Local Municipality.
- ◆ Emails (dated: 13 August 2020) between AdiEnv and P. Nkosi (Mpumalanga Tourism and Parks Agency) regarding submission of documentation.
- ◆ Letter from AdiEnv (dated: 14 August 2020; Ref: BA 2020/02) to the Mpumalanga Tourism and Parks Agency and courier printout.
- ◆ Email from AdiEnv (dated: 14 August 2020) to Councilor T. Motloung regarding the site meeting and document handover.
- ◆ Letter from AdiEnv (dated: 14 August 2020) to Councilor T. Motloung.
- ◆ Copy of the notices (English and Zulu) displayed on site, the notice provided with the Draft Basic Assessment Report and the register.
- ◆ A copy of the newspaper notice (dated: 14 August 2020) in the Middelburg Observer.
- ◆ Web page printout (dated: 13 August 2020) - www.adienvironmental.co.za.
- ◆ Web page printout (dated: 12 August 2020) - SAHRIS (South African Heritage Resources Information System).
- ◆ Email from AdiEnv (dated: 14 August 2020) forwarded to government departments.
- ◆ Email from AdiEnv (dated: 14 August 2020) forwarded to the municipalities.
- ◆ Email from AdiEnv (dated: 14 August 2020) forwarded to stakeholders.
- ◆ Email from AdiEnv (dated: 14 August 2020) forwarded to interested and affected parties.
- ◆ Letter from the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) (dated: 14 August 2020; Ref: 1/3/1/16/1N-218) acknowledging receipt of the application form.
- ◆ Email from AdiEnv (dated: 2 September 2020) to D. Tswai (DARDLEA) regarding the site visit.
- ◆ Letter from C. Booyesen (Tirisano Consulting Engineers) regarding the backfilling and rehabilitation of Erf 1051.
- ◆ Letter from the Mpumalanga Tourism and Parks Agency (dated: 15 September 2020; Ref: LUA 20/2493) to AdiEnv.
- ◆ Email from Ms. V. Mamafake (dated: 14 August 2020) to AdiEnv.
- ◆ Attendance registers signed by the Rockdale Community on 31 August 2020 and provided by Councilor Motloung.

