



Registration no. 2003/0890358/23

**TRANSNET'S PROPOSED NEW LEPHALALE RAILWAY YARD, STEENBOKPAN,
LEPHALALE LOCAL MUNICIPALITY, WATERBERG DISTRICT, LIMPOPO
PROVINCE**

Scoping and Environmental Impact Assessment Process

SCOPING REPORT

Version: Draft

DEA Reference number to be issued

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Prepared for: Transnet SOC Limited

Transnet Ref: Lephalale Railway Yard Environmental Assessment: 3424302.023S

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Revisions:

Draft

THIS SCOPING REPORT HAS BEEN PREPARED FOR THE APPLICATION FOR ENVIRONMENTAL AUTHROISATION FOR THE PROPOSED DEVELOPMENT OF TRANSNET'S NEW LEPHALALE RAILWAY YARD

Naledzi Environmental Consultants (Pty) Ltd has prepared this Draft Scoping Report (DSR) for the sole use of Transnet SOC Limited. The report is also privy to review by the public, interested and affected parties (I&APs) as well as relevant competent authorities as part of a public participation process. No part of the report may be reproduced in any manner without written permission from Naledzi Environmental Consultants (Pty) Ltd representing Transnet SOC Limited. No other warranty, expressed or implied, is made as to the professional advice included in this report.

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NEC is an independent environmental consultancy with no vested interested (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed. We do not echo the views of the applicant or client however provide an independent view formed by tasks conducted under the NEMA and the EIA Regulations of 2014.

PROJECT INFORMATION

Title: Application for Environmental Authorisation for the development of a new Lephalale Railway Yard, Steenbokpan, Lephalale, Waterberg District, Limpopo Province.

Authors: Marissa Botha

Reviewer: Desmond Musetsho

Status of Report: Draft Scoping Report (DSR)

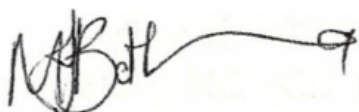
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Applicant Environmental Authorisation: Transnet SOC Limited

Independent Environmental Assessment Practitioner: Naledzi Environmental Consultants (Pty) Ltd (NEC)

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Background and Purpose of the Scoping Report

Transnet SOC Limited proposes to develop the ‘Lephalale Railway Yard’ at Steenbokpan south west of Lephalale along the existing single track Lephalale-Thabazimbi railway line. This existing railway line forms part of the Waterberg Railway Corridor and is a key corridor to Transnet for transportation of various commodities, in particular coal.

The new yard will be situated south of the existing track; it will be 4km in length and 60m wide. It will go beyond Transnet servitude and requires approximately 22 hectares of land to be acquired.

The new railway yard is a Strategic Infrastructure Project (SIP 1) and is instrumental to ‘unlocking the northern mineral belt of the Waterberg as a catalyst’ by creating rail capacity to Mpumalanga and Richards Bay. The requirement to transport coal and coal products from Lephalale to end users across SA and beyond have increased tremendously. Demand scenarios generated from customers and public domain sources range from 80 Mtpa to some 135 Mtpa. Increased rail capacity is required to support the forecast growth and demand for long term rail network capacity from the Waterberg area.

Transnet will be undertaking several listed activities that require environmental authorisation through a Scoping and Environmental Impact Assessment (EIA) Process in terms of the National Environmental Management Act 1998 (Act 107 of 1998) (NEMA), as amended and the EIA Regulations of 2014 (as amended by GN. 326). In accordance with the requirements of the NEMA, the decision making authority for the project is the National Department of Environmental Affairs (DEA).

The Scoping and EIA Process comprise two phases namely a Scoping Phase and EIA Phase. The process is subject to a series of environmental reports namely a Scoping Report, Environmental Impact Report, and Environmental Management Programme including two rounds of public engagement. The Scoping Report therefore forms part of the series of reports that are being provided as part of the Scoping and EIA Process for the proposed Lephalale Railway Yard development.

The report describes the proposed project, the environment in which the project is to be located, feasible alternatives, and the specialist studies that will be undertaken as part of the EIA Phase. It also aims to solicit inputs and comments from Interested and Affected Parties (I&AP’s) on the proposed project. I&APs are given the opportunity to comment on the proposal and scope for the EIA phase by reviewing the draft Scoping Report.

Accordingly, the draft Scoping Report is currently being made available to all stakeholders for a 30-day review period from 29 October to 27 November 2018 at public venues and on the Naledzi website.

A number of public engagements will take place during the scoping phase of the project. The comments received on the Scoping Report and public engagements will be captured in an Issues and Response Report (IRR) which will accompany the final Scoping Report which is submitted to DEA for approval.

This initial scope and public inputs guide DEA in determining whether there are gaps in information and whether additional measures are necessary to assess the potential impacts of the development on the biophysical and social environment. DEA seeks such input to support their decision making process and determine whether all potential issues have been identified or whether further information is required.

Content of Scoping Report

- Background and a description of the proposed project;
- An overview of the EIA process, including public participation followed to date;
- Important characteristics of the affected environment;
- Feasible alternatives identified for further assessment
- Legal, policy and planning context for the activity
- The potential environmental issues and impacts which have been identified based on desktop analysis and literature review; this will be populated as we progress in public interactions and site specific investigations through specialists desktop analysis
- List of interested and affected parties identified and consulted to date;
- The preliminary scope of the specialist studies proposed to be undertaken as part of this EIA.

Public review of the draft Scoping Report

This draft Scoping Report is currently available for download at www.naledzi.co.za/publicdocuments. Copies of the report are also available at the below tabled public venues. For a period of 30 days, from **29 October** to **27 November 2018**, the Scoping Report will be made available for review and submission of comments regarding the project.

Public Venues	Address	Contact details
Lephalale Public Library	c/o Joe Slovo & Doewater Street	Librarian – Johanna Ndweni 014 762 1453
Marapong Public Library	916 Phukubye Street, Marapong	Librarian – Mr Sophonia Petje 073 210 8954
Lesedi Tshukudu Thusong Centre	Steenbokpan	Community member contact 076 535 8026/0738204486.

Two public information sessions have been scheduled:

	Date	Time	Venue
1	Tuesday, 13 November 2018	2pm – 4pm	Mogol Golf Club, Grootgeluk Conference Room, Lephalale
2	Tuesday, 13 November 2018	6pm – 8pm	Mogol Golf Club, Grootgeluk Conference Room, Lephalale

Interested and Affected parties wishing to comment on the Scoping Report may do so by:

- Comment by email, facsimile or telephone;
- Any written submission

All comments can be sent to the offices of Naledzi Group no later than **27 November 2018**. Direct your comments to: (overleaf)



Contact the Naledzi Group Pty Ltd

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ABBREVIATIONS

NEC	NALEDZI ENVIRONMENTAL CONSULTANTS
NEMA	NATIONAL ENVIRONMENTAL MANAGEMENT ACT
EA	ENVIRONMENTAL AUTHORISATION
DEA	NATIONAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS
LEDET	LIMPOPO ECONOMIC DEPARTMENT OF ENVIRONMENT AND TOURISM
DMR	DEPARTMENT OF MINERAL RESOURCES
DWS	DEPARTMENT OF WATER AND SANITATION
NWA	NATIONAL WATER ACT
WULA	WATER USE LICENCE APPLICATION
WUL	WATER USE LICENCE
EIR	ENVIRONMENTAL IMPACT ASSESSMENT REPORT
EIA	ENVIRONMENTAL IMPACT ASSESSMENT
EMPR	ENVIRONMENTAL MANAGEMENT PROGRAMME
BID	BACKGROUND INFORMATION DOCUMENT
PPP	PUBLIC PARTICIPATION PROCESS
I&APS	INTERESTED AND AFFECTED PARTIES

DRAFT SCOPING REPORT

SECTION A – PROJECT OVERVIEW AND LOCATION

1 INTRODUCTION

1.1 Introduction

Transnet SOC Limited (herein after Transnet) proposes to develop a new railway yard south west of Lephalale town along the existing single track Lephalale-Thabazimbi railway line. The railway line is a key corridor to Transnet for the transportation of various commodities in particular coal.

Transnet requires a new railway yard along the key corridor to allow more trains to enter and exit Lephalale, allow switching of crew and to function as a service and maintenance facility for diesel locomotives. The new yard will go beyond Transnet servitude and requires approximately 22 hectares of land to be acquired.

The development triggers listed activities under the National Environmental Management Act 1998 (Act 107 of 1998) (NEMA), as amended and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended by GN. 326). As a result Transnet requires environmental authorisation (EA) from the National Department of Environmental Affairs (DEA) and is required to undertake a Scoping and EIA before it can commission the project.

Naledzi Environmental Consultants Pty Ltd (NEC) has been appointed by Transnet to undertake the Scoping and EIA process in an effort to obtain environmental authorisation from the DEA for the project.

1.2 Purpose of the Scoping Report

This Scoping Report forms part of a series of reports that are being provided as part of the EIA Process for the proposed Lephalale Railway Yard development.

The report describes the proposed project, the environment in which the project is to be located, identifies feasible alternatives and the specialist studies that will be undertaken as part of the EIA Phase. It also aims to solicit inputs and comments from Interested and Affected Parties (I&AP's) on the proposed project. I&APs are given the opportunity to comment on the proposal and scope for the EIA phase by reviewing this draft Scoping Report.

1.3 Objective and Outcome of Scoping exercise

In terms of the NEMA EIA Regulation 2014 (GN. 326), Regulation 21 (3) a Scoping Report must contain all information set out in Appendix 2 to the EIA Regulations. The objective of a Scoping Process stipulated within Appendix 2 indicates that through a consultative process:

- Identify relevant policies and regulations relevant to the activity;
- Motivate the need and desirability of the activity (in relation to context of preferred location);

- Identify and confirm the preferred activity and technology alternatives through an impact and risk assessment ranking;
- Identify and confirm the preferred site;
- Identify the key issues to be addressed in the assessment phase;
- Level of assessment to be undertaken and the methodology to be applied;
- Identify suitable measures to avoid, manage and mitigate identified impacts

The outcome of the Scoping exercise will be to have:

- An issues trail from stakeholders to be considered in the EIA Phase
- Closure on issue to be addressed in the EIA Phase and in any specialist studies to be undertaken;
- Provision of feedback on the way concerns raised will be incorporated in the EIA Process;

1.4 Content of Document

The content requirements of the Scoping has been addressed and divided into Section A- G within this report. The sections are as follows:

- Section A – Project Overview and Location
- Section B – Project Motivation and Description
- Section C – Need and Desirability of the Project
- Section D – Project Alternatives
- Section E – Policy and Legislative Requirements
- Section F – Description of Biophysical and Social Environment
- Section G – Identified Impacts on Environmental Attributes
- Section H – Public Participation Process
- Section G – Plan of Study for EIA

2 DETAILS OF THE APPLICANT

The applicant for the EA is Transnet SOC Limited.

Table 1: Details of Applicant

Applicant:	Transnet SOC Limited,
Company Reg. no:	1990/000900/30
Contact:	Mr Andries Van Ross
Address:	2 nd Floor, Waterfall Business Estate, 9 Country Estate Drive Midrand, 1662
Tel:	011 308 1681
Fax:	0866 780 171
Email:	Andries.VanRoss@transnet.net

3 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

3.1 Details of the EAP who prepared the report

NEC has been appointed by Transnet to undertake the EIA Process in terms of the NEMA EIA Regulations of 2014 (GNR. 326). The project consultants responsible for the project are:

Name of Practitioner: Naledzi Environmental Consultants Pty Ltd

Contact person: Marissa Botha

Telephone no.: +2715 296 3988 / +2784 226 5584

Fax no.: +2715 296 4021

Email: botham@naledzi.co.za

3.2 Expertise of the EAP who prepared the report

Mrs Marissa Botha is a registered professional Environmental Scientist with South African Council for Natural Scientific Professions (SACNASP) (registration number 117526) has 13 years working experience in the environmental management industry. **See Appendix E for Curriculum Vitae of EAP.**

3.3 Project Team

Other than the project consultant (EAP), a team of specialists have been appointed to form part of the project team. These specialists would conduct detailed investigations to assess anticipated environmental impacts from the proposed railway yard development. Specialists which would be involved include:

- GCS Environmental Engineering - Waste Management Plan
- Holistic Environmental Services - Ecologist Assessment and Wetland Biodiversity Study;
- Millennium Heritage Group Pty Ltd – Heritage Impact Assessment Study;
- dBA Acoustics - Noise and Vibration Study;
- Naledzi Waterworks – Hydrogeological Impact Assessment Study;
- Equispectives Research and Consulting Services – Social Impact Assessment Study;
- Traffic Engineer – Traffic Impact Assessment;
- Visual Specialist - Visual Impact Assessment

4 RELEVANT AUTHORISATION PROCESSES

4.1 Environmental Authorisation (Scoping and EIA Process)

The Scoping and EIA Process requirement has been addressed in Section 1.1. GN 327, 325 and 324 of the NEMA EIA Regulations (GN. 326) schedules listed activities which require EA. The project triggers activity 4 under GNR 325, activities 4, 25 and 64 under GNR 327 and activities 2, 4 and 12 under GNR 324 hence is subject to a full Scoping and EIA Process. The process is regulated at 300 days. Application will be made to DEA as the decision making authority with the Limpopo Department of Economic Development, Environment and Tourism (LEDET) being the commenting authority.

Table 2: Scheduled listed activities triggered by the Lephalale Railway Yard project

Listed activity	Description of project activity that triggers listed activity
GNR 325, Activity 4	<p>The yard will include two 300 000 litre diesel tanks with decanting slabs. There shall be four (4) rail decanting points and one road decanting point provided all at one location. The total fuel storage volume is 600 000 litres. This meets the more than 500 cubic metres threshold of Activity 4.</p> <p>There will be 1 x 500 litre diesel tanker in the fire pump room.</p> <p>6720 litres of oil storage (32 drums of oil)</p>
GNR 327, Activity 25	<p>Wastewater will be collected in 12 x 12 500 litre conservancy tanks which will be serviced regularly.</p> <p>There will also be effluent management (water/oil separator) to deal with contaminated liquids on site. Once the water has passed through the oil separator and tested, it will then be drained to the sewer network.</p>
GNR 327, Activity 64	<p>The development of the Lephalale Railway Yard would take place on the existing Lephalale / Thabazimbi single railway line. The single railway line will be expanded with 4 service tracks with the addition of the yard mainly comprise three buildings; office building, administration building and maintenance & repair building with associated infrastructure and 4 service tracks. The development of the Lephalale Railway Yard goes beyond Transnet servitude therefore requires approximately 22 hectares of land to be acquired.</p>
GNR 324, Activity 2	<p>The yard will include a Water Reservoir (steel tank) with a volume of 260m³ for its bulk water supply. The reservoir will be positioned on the Remainder of the farm Geelhoutkloof 359LQ. The land parcel is also the Koedoe Private Nature Reserve declared in 1962. The reservoir will be positioned in a Critical Biodiversity Area (Ecological Support Area 1) in terms of the Limpopo Conservation Plan 2013.</p>
GNR 324, Activity 4	<p>The project site corresponds to a critical biodiversity area 2 and Ecological support Area 1 as per the Limpopo Conservation Plan 2012. The development includes construction of a 3.7km, 7 metre wide tarred access road from entry of the yard to the furthest facility on the west. It also includes a 3.7km, 4 metre wide service road north of the existing railway line, within existing Transnet servitude. The western sections of the project site traversed by these proposed roads correspond to a Critical Biodiversity Area 2.</p> <p>The existing single railway line and proposed new Lephalale Railway Yard traverse one nature reserve namely Koedoe Nature Reserve as per the National Protected Areas Database.</p>
GNR 324, Activity 12	<p>The project site corresponds to a critical biodiversity area 2 and Ecological support Area 1 as per the Limpopo Conservation Plan 2012.</p> <p>The project will require clearance of indigenous vegetation in a critical biodiversity area on the western portion of the project site to make way for the railway tracks and infrastructure. It is expected that more than 300 square metres of indigenous vegetation would be removed for these purposes.</p>

The Scoping and EIA Procedure is set out in Regulation 21 – 24 of GN R.326 and is subject to the following:

- A Public Participation Process (PPP) in terms of Regulations 40 – 44;
- Scoping Report in terms of Appendix 2; **(WE ARE HERE)**
- Environmental Impact Report (EIR) in terms of Appendix 3;
- Environmental Management Programme (EMPr) in terms of Appendix 4;
- Any specialist studies must be complied in terms of Appendix 6.

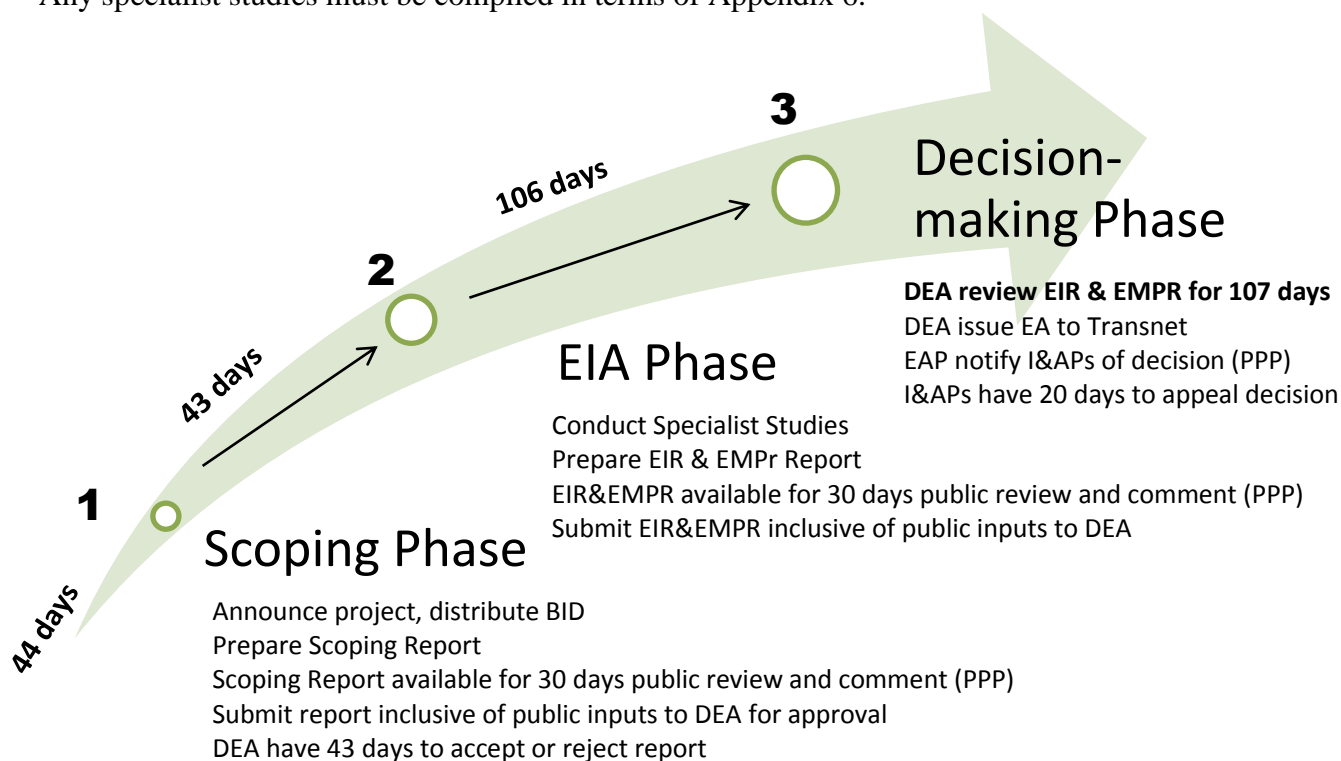


Figure 1: Diagrammatic presentation of the Scoping and EIA Process

The EIA Process has a regulated timeframe of 300 days. All environmental reports generated as part of the EIA Process will in turn be subject to a 30 day public review and commenting period.

The process starts with the Scoping Phase which has been addressed under Section 1.2 and 1.3. The EAP has 44 days from application submission, to prepare the Scoping Report, make it available for public review and submit it, inclusive of public inputs, to DEA for approval. DEA will have 43 days to approve/reject the Scoping Report. Approval of the Scoping Report will permit the commencement of the EIA Phase.

The EIA phase will consider the identified impacts and assesses the impacts through specialist investigations. The findings of the assessment are then consolidated in an EIR and EMPr and made available for public review and comment. The EAP has 106 days to complete the said and submit the reports, inclusive of public inputs, to DEA for decision making.

The decision making phase involves decision making by the DEA which will review the EIR and EMPr and reach a decision on the application within 107 days. Next an environmental

authorisation may be issued to Transnet and conditions of the decision would be given in detail by the DEA.

Next, the EA will be made available to I&AP's for period of 20 consecutive calendar days. This will provide I&AP's with the opportunity to verify that the decision taken has considered their comments and concerns raised. I&APs will also then be informed of the appeal procedure, should they have a reason to appeal.

4.2 Water Use License

The project triggers Section 21 (c), (i) and (g) water uses under the National Water Act (Act 36 of 1998) (NWA) and requires a water use license from Department of Water and Sanitation (DWS). The railway yard will discharge wastewater into conservancy tanks and a septic tank and will potentially cross drainage lines with the new rail tracks and access roads. The latter is yet to be confirmed.

Furthermore alternative sewage disposal methods are also being considered namely servicing conservancy tanks by honey suckers and disposing sewage at the municipal treatment works or alternatively setting up a small sewage treatment package plant to treat the effluent water. The preferred option will be stated in the EIA Phase. The treated effluent can be used for irrigation or landscaped areas at the yard or reused in the yard process. The water uses that may be triggered by such alternatives include Section 21 (e) for irrigation with treated water or alternatively Section 21 (f), (c) and (i) if the treated water is discharged to the Sandloop River.

NEC will submit the relevant applications and subject reporting to the DWS Limpopo Province under the Limpopo Water Management Area. The process will be integrated with the EIA Process.

4.3 Mining Permit (Borrow Pit Application)

The railway development will also require two borrow pit areas in proximity to the new railway yard. NEC will submit the relevant applications and subject reporting to the Department of Mineral Resources (DMR) in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA) and NEMA EIA Regulations 2014 (GNR 326).

Table 3: Scheduled Listed Activities triggered by the creation of borrow areas for the Lephalale Railway Yard

Listing Notice	Activity	Applicability
GNR 327 Listing Notice 1 Activity 21	Any activity including the operation of that activity which requires a mining permit in terms of Section 27 of the MPRDA, including: a) Associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource	Mining of gravel from borrow pits for cut and fill requirements and road construction at the proposed railway yard.
GNR 327 Listing Notice 1	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of	Mining Permits are submitted if the mining area in question does not exceed 5 hectares. The area for the required

Activity 27	indigenous vegetation is required for – i. Undertaking a linear activity; or ii. Maintenance purposes undertaken in accordance with maintenance management plan.	borrow pits may exceed one hectare and would require the removal of indigenous vegetation.
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5 PROJECT LOCATION

5.1 Location of activity

The study site is situated approximately 30km south west of Lephalale Town (Ellisras) on the existing single railway line between Thabazimbi to Lephalale, in the rural game farming area of Steenbokpan – see Table 4. It falls within Ward 3 of the Lephalale Local Municipality in the Waterberg District of Limpopo Province – see Figure 2 for the Regional locality of the project.

Table 4: Lephalale railway yard coordinates

Phase	Start	End
1 – Bypass line	23°46'34.23"S 27°25'55.86"E	23°45'0.97"S 27°28'11.61"E
2 – Arrival line	23°46'11.67"S 27°26'16.54"E	23°45'04.54"S 27°28'05.76"E



Figure 2: Google Earth Aerial Locality Map of the proposed location of the Lephale Railway Yard

The new railway yard will be developed on Portion 1 (remaining extent) and the remainder of the farm Geelhoutkloof 359LQ, farm Enkeldraai 314LQ and Kringgatspruit 318LQ (now Pontes Estate 712LQ) – see Figure 3 for a Topographical Map indicating the location of the railway line and affected properties.

The proposed project will require approximately 22 hectares of private land to develop the railway yard – see Table 5 under Section 5.2.

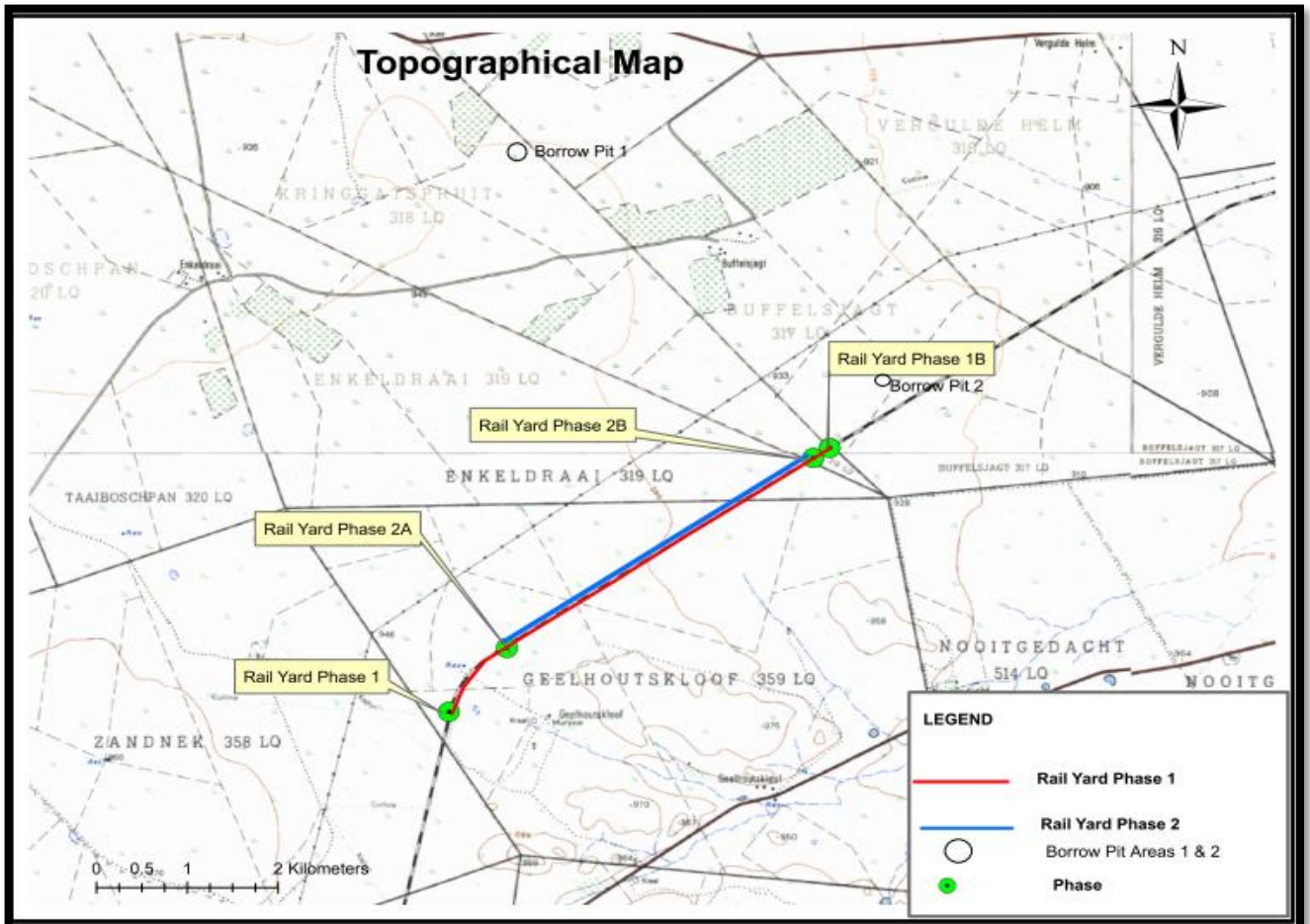


Figure 3: Topographical Map indicating the location of the new railway yard and the affected properties

5.2 21 Digit Surveyor General Codes

Table 5: Affected land parcels and details

Farm name	Title Deed	LPI Code	Extent	Registered Landowner
Portion 1, Geelhoutkloof 359LQ	T52917/2007	T0LQ00000000035900001	838.31Ha	Hennie Hills Boerdery CC (Hennie Hills)
Remainder, Geelhoutkloof 359LQ	T53434/2005	T0LQ00000000035900000	1,228.72Ha	Hennie Hills Boerdery CC (Hennie Hills)
Enkeldraai 314LQ	T39336/1980	T0LQ00000000031400000	1,284.33Ha	Johannes Jacobus Sauer (Tjaart Sauer)
Kringgatspruit 318LQ (now Pontes Estates 712LQ)	T70472/2004	T0LQ00000000031800000 (T0LQ00000000071200000)	1,526.29Ha	Resgen South Africa Pty Ltd (Hennie van den Aardweg)

See Appendix A for Site Plans showing the portions of land required from the above landowners.

5.3 Servitudes and existing infrastructure on site

An existing Eskom 11-33kV distribution line is situated approximately 6m south of the existing railway line and routes alongside the existing railway line service road-see Figure 4. Neither the existing railway line nor the 4 new service tracks will be electrified, diesel locomotives are used. The 11-33kV power line would need to be relocated to make way for the railway yard facilities.

There is also an existing 132kV Eskom power line 350m north of the existing railway line. The new railway yard will not impact on the 132kV power line, but one borrow area has been identified next to the power line which may pose a risk for structural damage to the power line. Its location would need to be reconsidered. This will be addressed as part of the DMR application process.

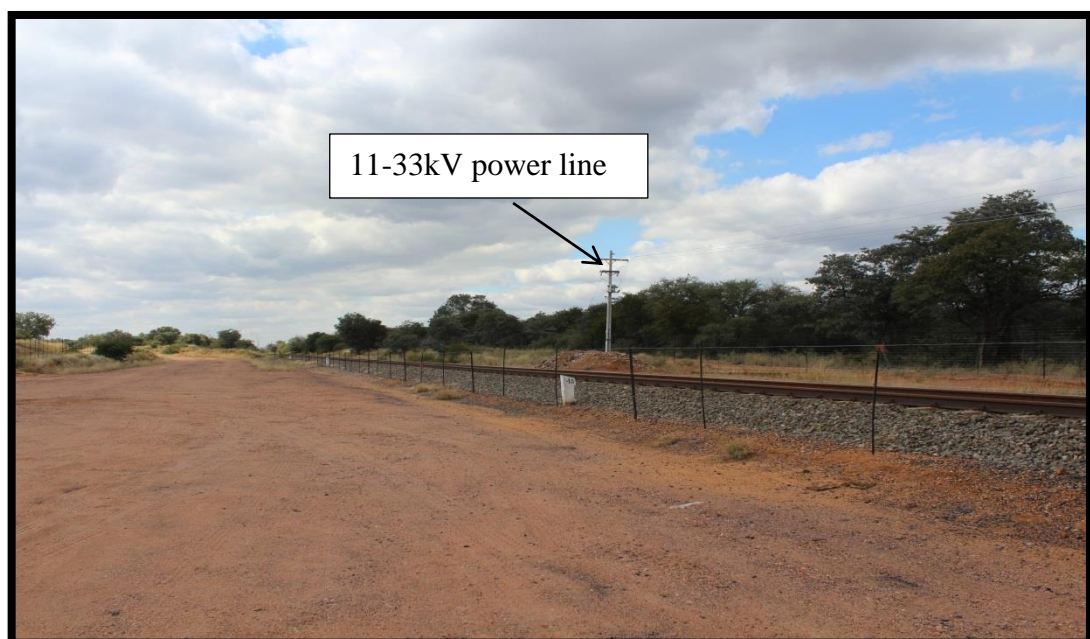


Figure 4: Photo indicating the Eskom 11-33kV distribution power line south of the existing railway track

5.4 Property Zoning

All affected properties are zoned for agricultural purposes and used as commercial game hunting farms as well as commercial cattle grazing. The remainder of the farm Geelhoutkloof 359LQ is proclaimed as 'Koedoe Private Nature Reserve' in terms of the National Protected Areas Register. The farm is privately owned and used as a commercial game hunting farm. The existing Lephalale-Thabazimbi railway track already routes through the private nature reserve. The intent is to develop the railway yard south of the existing Transnet servitude 60m into the private nature reserve - see Figure 5 overleaf.

5.5 Any Land Claims lodged against the project site

The Office of the Regional Land Claims Commissioner: Limpopo has confirmed there is an existing land claim against Portion 1 and the remainder of the farm Geelhoutkloof 359LQ. The claim was lodged by Mokhaetji Johanna Manyathela with Ref No. R/5/124/467/156164.

The claim was lodged in terms of the Restitution of Land Rights Amendment Act 2014 (Act 15 of 2014) which reopened the lodgement of claimed for a period of 5 years.

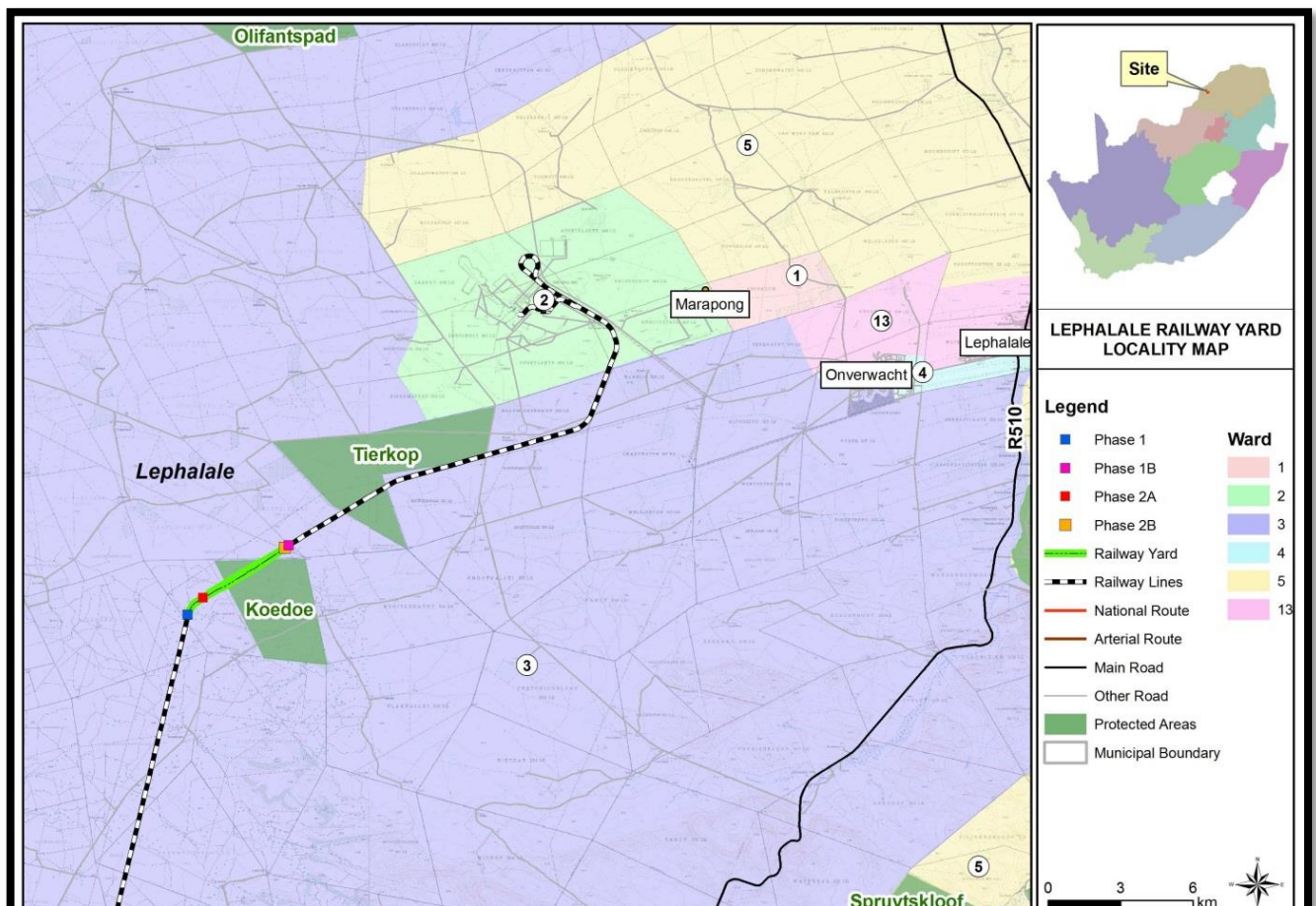


Figure 5: Location of the proposed project in relation to Koedoe Private Nature Reserve (map courtesy of Equippectives Social Scoping Report)

SECTION B – PROJECT MOTIVATION AND DESCRIPTION

6 BACKGROUND, MOTIVATION AND IMPORTANCE

6.1 Background and Motivation

Transnet is a state owned company and the custodian of rail, ports and pipelines in South Africa thereby responsible for delivering reliable freight transport and handling services that satisfy customer demand.

Transnet's Waterberg coal line is the rail line that stretches from Lephalale through Thabazimbi, Rustenburg and Pyramid South and links to the existing Ermelo railway line, which provides linkage to the main coal export terminal in Richards Bay Harbour. See Figure 6 for the Waterberg Route Alignment.

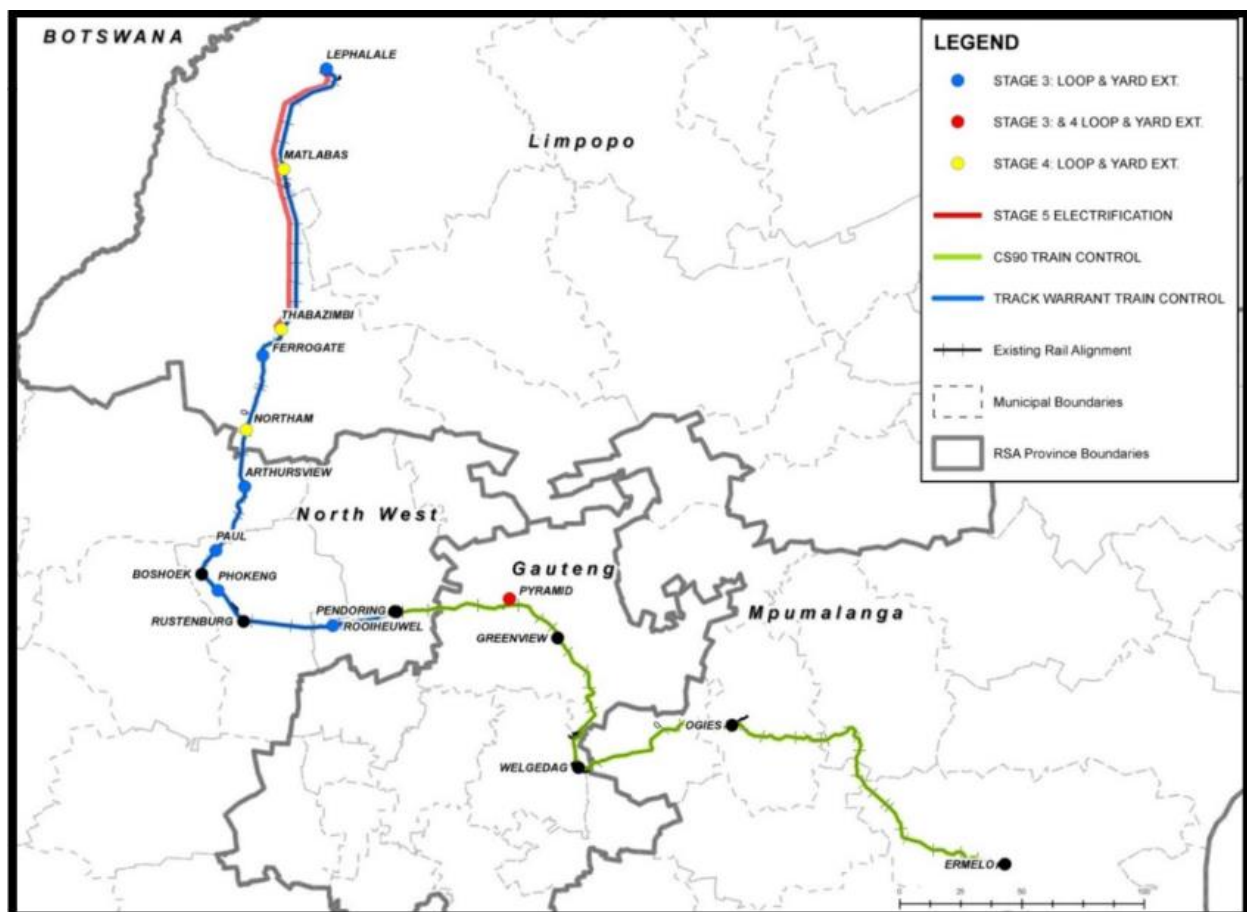


Figure 6: Waterberg Route Alignment

Over the past decade there has been a substantial growth in volume of high grade coal transported from Grootgeluk coal mine to Exxaro clients in Limpopo, North West, Mpumalanga and Gauteng Province. Further coal mines on the eastern Highveld in Mpumalanga cannot keep up with the demand as some are reaching their life of mine and can only supply medium to low grade coal. In comparison, the Waterberg coal fields are relatively unexploited and have large reserves of high

grade coal available. The requirements to transport coal and coal products from Lephalale to end users across SA and beyond have increased tremendously (Lephalale IDP 2018/2019).

Further coal mines are planned at Lephalale. Resgen Boikarabelo coal mine is planned north-east of Lephalale, Sekoko mine is located along the Botswana border. These projects will result in the need for coal transportation when mining commences.

The Waterberg complex is hence regarded as a strategic growth node for various activities within the Mining and Industrial sectors. Adequate rail infrastructure capacity is deemed critical to unlock the potential of this economic hub. In order to meet the anticipated transportation of coal volumes from the Waterberg region, additional freight capacity is required to supply the market demand for coal.

Projected increase in coal volumes of up to 25Mtpa can be accommodated on the current infrastructure with minimum additional infrastructure requirements. The major infrastructure requirement is the extension of current yards and crossing loops to accommodate 200 wagon trains. The section between Lephalale and Pyramid South requires the major infrastructure modifications as well as new infrastructure. The current yard at Lephalale (Grootgeluk mine) is not able to accommodate a 200 wagon train.

Transnet has identified the need to develop a Network Stabilisation Facility (NSF) as part of the Waterberg programme, the Lephalale Railway Yard. The new railway yard forms part of the endeavour to increase capacity and to allow more trains to enter and exit Lephalale. The purpose of the yard is to allow compilation of 100 wagon trains from the surrounding mines, to refuel diesel locomotives, sanding, crew switch and on track inspections of rolling stock.

Resgen Boikarabelo Coal Mine is currently constructing the first phase of the holding yard which accommodates 100 train wagons on 2 lines from the existing Lephalale-Thabazimbi single track to the proposed Resgen Plant. Transnet will augment the holding yard with the development of the Lephalale Railway Yard to accommodate a further 100 train wagons.

6.2 Strategic Importance of the project

South Africa has several public/strategic infrastructure projects (SIP's), including railways, under the Infrastructure Development Bill (B49 of 2013) which are of significant economic or social importance which are to be given priority for approval and implementation to ensure the development goals of the State. The new railway yard is instrumental to one such goal, 'unlocking the northern mineral belt of the Waterberg as a catalyst' by creating rail capacity to Mpumalanga and Richards Bay. The connotation between the railway yard and this goal has been motivated under Section 6.1.

7 PROJECT CONTEXT

7.1 Project Scope

The scope of the project comprises the development of a new railway yard along the existing single track Lephialale-Thabazimbi railway line. The new railway yard goes beyond Transnet servitude and requires approximately 22 hectares of land to be acquired.

The yard will be linear in design, 4km in length and will require a 60m wide strip of land south along the existing single track railway line. Refer to **Appendix A Site Plans**. The facilities to be developed would mainly comprise three buildings namely an office building, administration building (North Facility) and maintenance & repair building (South Facility) and 4 service tracks.

The railway yard will be developed in two phases. Phase 1, southern section, would require Transnet to build a bypass line [1]; towards the south of the existing railway line. This would enable an alternative route for trains whilst Transnet is building the new tracks. Phase 2, northern section, would include building the additional railway tracks [2]; the bulk earthworks and building the facilities.

[1] Southern section of the track development would include:

- Bypass line
- Decanting arrival/departure line
- Departure line

[2] Northern section of the track development would include:

- An arrival line
- Run around line
- Spare lines

The more detailed types of facilities and infrastructure to be developed as part of the yard would include:

- The construction of 4 new railway lines [1] & [2] of 4.8km (Phase 1= 4.8km and Phase 2 = 3.7km)
- Construction and extension of culverts from the existing single track railway line to the new tracks
- 3.7km, 7.4 metre wide tarred access road to the railway yard facilities which would end at the furthest facility on the west, the locomotive service area. (Lights would also be fitted along the site).
- 4 metre wide gravel service road north of the arrival line, to be located within the existing rail servitude. The service road will be the full length of the railway yard at 3.7km.
- Guard House with storage tank (20 000 litre/21m³ JoJo Tank) and septic tank
- Roads and carports at facilities
- North Facility (Office and administrative buildings)
 - North Provisional Facility
 - Staff amenities
 - Store room

- Administration Building
- Infra Crew Building
- 10 x 12 500 litre conservancy tanks will be used for the various facilities
- Water Reservoir (steel tank) with a volume of 260m³
- Diesel storage area
 - 2 x 300 000 litres diesel tanks and decanting slabs – There shall be four (4) rail decanting points and one road decanting point provided all at one location. The fuel storage volume is 600 000 litres. The pump rooms for decanting and refuelling shall be ventilated and contain fire protection as per the SANS requirements;
 - 1 x 500 litre diesel tanker in the fire pump room, and
- South Facility (Maintenance and repair building)
 - South Provisional Facility
 - Sanding Facilities (for sandbox container on locomotives-traction improvement);
 - 6720 litres of oil storage (32 drums of oil)
 - Parts storage room
 - Staff amenities
 - 2 x 12 500 litre conservancy tanks will be used for the facility
 - Effluent management (water/oil separator)
- Fire suppression systems which require a foam storage tank, water storage tank and foam pipelines;

7.2 Listed and Specified Activities triggered under NEMA

Before the project can be commissioned, Transnet is to obtain EA for the listed activities triggered by the project in terms of the EIA Regulations of 2014 (GNR. 326) under Section 24 (5) of NEMA under GNR. 324, 325 and 327.

Listed activities triggered by the project are listed in Table 6.

Table 6: All listed and specified triggered activities

Detailed description of listed activities associated with the project	
Listed activity as described in GN R 327, 325 and 324	Description of project activity that triggers listed activity
<p>GN 327, Listing Notice 1. Activity 24 The development of a road-</p> <ul style="list-style-type: none"> i. N/A ii. a road with a reserve wider than 13.5 meters, or where no reserve exists where the road is wider than 8 metres; <p>but excluding a road –</p> <ul style="list-style-type: none"> a) which is identified in activity 27 in Listing Notice 2 of 2014 b) where the entire road falls within an urban area; or c) which is 1 kilometre or shorter 	<p>A. Construction of a 3.7km in length, 7.4 meter wide tarred access road from entry of the yard to the furthest facility on the west, the locomotive service area.</p> <p>B. Construction of a 4 meter wide gravel service road north of the arrivals line, within the existing rail servitude. The service road will be the full length of the railway yard at 3.7km.</p>

<p>GN 327, Listing Notice 1. Activity 25</p> <p>The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15 000 cubic metres.</p>	<p>Wastewater will be collected in 12 x 12 500 litre conservancy tanks which will be serviced regularly.</p> <p>There will also be effluent management (water/oil separator) to deal with contaminated liquids on site. Once the water has passed through the oil separator and tested, it will then be drained to the sewer network.</p>
<p>GN 327, Listing Notice 1. Activity 64</p> <p>The expansion of railway lines, stations or shunting yards where there will be an increased development footprint, excluding-</p> <ul style="list-style-type: none"> i. railway line, shunting yards and railway stations in industrial complexes or zones; ii. underground railway lines in mines; or iii. additional railway lines within the railway line reserve 	<p>The development of the Lephalale Railway Yard would take place on the existing Lephalale / Thabazimbi single railway line. The single railway line will be expanded with 4 service tracks with the addition of the yard mainly comprise three buildings; office building, administration building and maintenance & repair building with associated infrastructure and 4 service tracks. The development of the Lephalale Railway Yard goes beyond Transnet servitude therefore requires approximately 22 hectares of land to be acquired.</p>
<p>GN 325, Listing Notice 2. Activity 4</p> <p>The development and operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres</p>	<p>A. The yard will include two 300 000 litre diesel tanks with decanting slabs. There shall be four (4) rail decanting points and one road decanting point provided all at one location. The total fuel storage volume is 600 000 litres. This meets the more than 500 cubic metres threshold of Activity 4.</p> <p>B. There will be 1 x 500 litre diesel tanker in the fire pump room</p> <p>C. 6720 litres of oil storage (32 drums of oil)</p>
<p>GNR 324 Listing Notice 3. Activity 2</p> <p>The development of reservoirs, excluding dams, with a capacity of more than 250m³.</p> <ul style="list-style-type: none"> (e) Limpopo (i) In a protected area identified in terms of NEMPAA, excluding conservancies (ii) Outside urban areas (dd) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans. 	<p>The yard will include a Water Reservoir (steel tank) with a volume of 260m³ for its bulk water supply.</p> <p>A. The reservoir will be positioned on the Remainder of the farm Geelhoutkloof 359LQ. The land parcel is also the Koedoe Private Nature Reserve declared in 1962.</p> <p>B. The reservoir will be positioned in a Critical Biodiversity Area (Ecological Support Area 1) in terms of the Limpopo Conservation Plan 2013.</p>
<p>GNR 324 Listing Notice 3. Activity 4</p> <p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p>	<p>The project site corresponds to a critical biodiversity area 2 and Ecological support Area 1 as per the Limpopo Conservation Plan 2012. The development includes construction of a 3.7km, 7 metre wide tarred access road from entry of the yard to the furthest facility on the west. It</p>

<p>(e) Limpopo (i) Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding disturbed areas; (ee) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans. (gg) Areas within 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas; or</p>	<p>also includes a 3.7km, 4 metre wide service road north of the existing railway line, within existing Transnet servitude. The western sections of the project site traversed by these proposed roads correspond to a Critical Biodiversity Area 2.</p> <p>The existing single railway line and proposed new Lephalale Railway Yard traverse one nature reserve namely Koedoe Nature Reserve as per the National Protected Areas Database.</p>
<p>GNR 324 Listing Notice 3. Activity 12</p> <p>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.</p> <p>In: (e) Limpopo: (ii) within critical biodiversity areas identified in bioregional plans</p>	<p>The project site corresponds to a critical biodiversity area 2 and Ecological support Area 1 as per the Limpopo Conservation Plan 2012.</p> <p>The project will require clearance of indigenous vegetation in a critical biodiversity area on the western portion of the project site to make way for the railway tracks and infrastructure. It is expected that more than 300 square metres of indigenous vegetation would be removed for these purposes.</p>

7.3 Plan which locates the proposed activities

The NEMA EIA Regulations of 2014 (GNR. 326) also requires that a Plan is provided showing the location and area of all listed and infrastructure to be placed on site. See **Appendix B** for a **Schematic Layout and Site Drawing**.

7.4 Main activities/processes to be undertaken at the railway yard

Main activities to be undertaken at the Lephalale railway yard:

- Office and administrative activities from two Transnet operating units.
- Crossing of 200 wagon trains (allow more trains to enter and exit Lephalale)
- Shunting: Split a maximum of 9 by 200 wagon diesel powered trains into 100 wagon trains and join 18 by 100 wagon trains in 200 wagon diesel powered trains per day;
- Switching crew of trains
- Dispatching trains to private sidings for loading (local mines)
- On track rolling inspections of stock to declare these ready and safe for the loaded journey;
- Service and maintenance of diesel locomotives such as sanding, refuelling and cleaning;

- Replacing and charging of telemeters;
- Transportation of water to site from municipal supply to fill the Water Reservoir
- Servicing of conservancy tanks on a regular basis;
- Receiving of bulk fuel for diesel locomotives;

7.5 Commodity/Stock to be transported

Coal is generally moved between Exxaro Grootgeluk Mine in Lephalale, to locations which include Richards Bay, Saldanha, New Castle, Biljkor, Cor-Delfos, Dwaalboom and New Brighton. The new Resgen mine at Boikarabelo, in the Lephalale area is also expected to come online shortly.

No stock would be loaded at the railway yard. Trains will be dispatched to the private sidings for loading at mines. Train wagons are/will not be covered with chutes.

7.6 Current and future train traffic (Produce of yard)

Currently 8 trains pass the existing Lephalale-Thabazimbi single railway line in both directions. 18 Trains will use the facility during the construction and operation of the Lephalale Railway Yard.

7.7 Railway yard design and infrastructure

7.7.1 Access Roads

A tar access road will be provided within the yard, 7.4 metres wide with a distance of 3.7km.

The tar road will extend through the yard and will tie up to an existing service road on the west of the yard. This will ensure that maintenance personnel have access to all locations within the yard and that there is an escape route through the yard in case of a fire emergency. An underpass (23°45'27.54"S 27°27'32.08"E) will be provided for the tar road to ensure no safety incidents associated with grade crossing. The road will have a combination of mountable and barrier kerbs and allow access and parking near facilities.

The yard design allows for fuel to be brought to site via rail however the tar road will also provide access to fuel tankers required to decant fuel within the yard. A turning circle will be provided for these operations.

A 4 metre wide gravel service road will also be provided north of the arrival line, to be located within existing Transnet servitude. The service road will be the full length of the yard at 3.7km.

7.7.2 Guard House

A Guard House will be development at entry to the railway yard equipped with a 21m³ JoJo Tank for water provision and septic tank. See Appendix B1 for Design Plan for Guard House.

7.7.3 Railway line and Construction and extension of culverts to new tracks

The 4 new railway tracks have been addressed under Section 6.1 and 7.1. Structural works at the new railway yard will further include new culverts, extension of existing reinforced concrete drainage structures and provision of concrete drifts – see Table 7 for the position of culverts and dimensions. See Appendix B2 for Design Plans for culverts.

Table 7: Lephale Yard culverts

NO	Description	GPS Coordinates
1	Culvert Extension - 3000 x 2800mm box culvert	23°45'6.02"S 27°28'4.28"E (South bypass line)
2	Culvert Extension - 3000 x 2800mm box culvert	23°45'29.69"S 27°27'24.70"E (North arrival line)
3	Culvert Extension - 3000 x 1800mm box culvert	23°45'31.45"S 27°27'25.96"E (south bypass line)
4	3000 x 1800mm box underpass extension	23°45'27.54"S 27°27'32.08"E (south bypass line)
5	New 2400 x 1200mm box culvert	23°45'36.23"S 27°27'13.84"E (North arrival line) 23°45'37.98"S 27°27'15.11"E (South bypass line)
6	Concrete drift	23°46'26.48"S 27°25'58.80"E (South bypass line)

7.7.4 North Facility

The north facility will mainly comprise office and administrative buildings to be located in the middle of the railway yard. For the extent and location of buildings see Table 8 below. See Appendix B3 for Design Plans of the North Facility.

Table 8: North Facilities extent and location

Description	Extent (approximates)	GPS Coordinates
North Provisional facilities	2000m ²	23°45'30.67"S 27°27'23.66"E
Infra Crew Building	370m ²	23°45'33.00"S 27°27'22.53"E
Staff Amenities	960m ²	23°45'29.68"S 27°27'25.98"E
Administration Building	1340m ²	23°45'28.78"S 27°27'27.63"E
10 x Conservancy Tanks	12 500 litre/tank	23°45'30.91"S 27°27'24.49"E
Store room	unknown	23°45'28.15"S 27°27'29.16"E

7.7.5 South Facility

The south facility will mainly comprise the maintenance and repair buildings to be located in 1.1km west of the north facility. For the extent and location of buildings see Table 9 below. See Appendix B3 for Design Plans of the South Facility.

Table 9: South Facilities extent and location

Description	Extent (approximates)	GPS Coordinates
South Provisional facilities (includes sanding facilities, oil storage, parts room, staff amenities, effluent management)	1200m ²	23°45'54.36"S 27°26'44.26"E
2 x Conservancy Tanks	12 500 litre/tank	23°45'54.12"S 27°26'45.65"E

7.7.6 Diesel Storage Area and Decanting Point

This has been addressed under Section 7.1. See Appendix B4 for Design Plans for the Diesel Storage area and decanting point.

7.7.7 Fence

The railway yard will be fenced off with controlled access via a Guard House at entry to the yard. For safety purposes Transnet may consider constructing a precast concrete wall / concrete palisade between the game/hunting farm south of the existing railway track and the new yard facilities. This will be confirmed during the EIA Phase of the project.

7.8 Service and Material requirements

See Appendix B4 for Design Plans for Steel Reservoir, Conservancy tanks, Oil Separator

7.8.1 Water Requirements

Water will be delivered to the site via truck and pumped into a 260m³ steel water reservoir, 500m west (23°45'41.84"S 27°27'6.28"E) of the North facility. Water will be reticulated via a 110mm upv pressurised pipe network to facilities. The Guard House will have a 21m³ JOJO tank.

7.8.2 Sewer and wastewater

Some facilities will have wash basins, toilets and showers. Wastewater will be collected in 12 conservancy tanks (10 x North facility; 2 x South facility) which will be serviced regularly. The Guard House will have a septic tank-see Table 10.

Table 10: Conservancy Tank size and dimensions

Tank size	Dimensions
12 500 litre conservancy tank	Diameter – 2800mm, Height – 2500mm, Lid – 450mm
5 000 litre conservancy tank	Height – 1260mm, Length – 2200mm, Width – 2380mm, Lid – 450mm

7.8.3 Waste Storage and Management

The railway yard will generate domestic waste, office waste. General/domestic waste produced at the yard will be collected and stored in a demarcated area at the South Facility. Sufficient waste collection points will be identified within the yard with adequate capacity and will be serviced frequently. Domestic waste will be removed by a contractor to a registered landfill site.

7.8.4 Electricity Requirements

The existing railway line is not electrified nor will the new railway tracks. Diesel locomotives will be used.

Planning is to source electricity from Eskom and develop a Mini-Substation 630kVA, 22kV/400V at the Administration building to cater for the North and South facility electricity requirements.

7.8.5 Storm water management

Drainage around the site will comprise table drains in cuttings, pipes, manholes and culverts. Stormwater is directed away from the tracks and buildings and drained to stormwater channels and low-lying areas.

Train wagons will not be covered resulting in fugitive coal dust settling along the railway yard. This will result in storm water contaminated with coal dust causing acidic stormwater. The stormwater management system will cater for acidic stormwater.

7.8.6 Effluent management

The provisional facilities and oil storage area could potentially have oil/fuel spilled/leaked. To cater for this, the facilities will have an oil separator to deal with the contaminated liquids onsite. Once the water has passed through the oil separator and tested, it will then be drained to the sewer network.

7.8.7 Spoil material

A railway yard needs to be level. The construction of the yard will therefore require extensive cutting of the existing topography and the management and approval requirements of Phase 1 spoil – 263027.31 – 32166271m³ and Phase 2, spoil – 308873.55 – 374163.11m³ of spoil. Possible uses for spoil material include:

- Berms and fill
- Rehabilitation of borrow areas

7.8.8 Borrow Pits / Fill material

The railway development will require two borrow pit areas in proximity to the new yard on the farms Kringgatspruit 318LQ and Buffelsjagt 317LQ. The extent of the borrow areas to be applied for at DMR would be 5 hectares or less per borrow area. The relevant applications and subject reporting would be submitted to the DMR.

7.8.9 Blasting

Based on the Geotechnical Investigation prepared by PD & E Geotechnical in 2017 for the railway yard, sporadically soft through to hard rock Sandstone Boulders and Bedrock were encountered in deep cuts (up to $\pm 10\text{m}$). In general soft excavations would be undertaken but blasting may be required. The full details of the Geotechnical Investigation will be included in the EIR.

7.9 Project labour requirements

7.9.1 Construction Phase

At this stage it is not possible to determine the number and level of jobs that will be created during the construction phase.

Labour will be sourced from the local area; no construction camp will be required. Local guest accommodation will be sourced for permanent construction staff. Transport will be provided for permanent workers during the construction phase.

7.9.2 Operational Phase

During the operation phase it is estimated that 50-100 people will work at the yard as the railway yard will provide facilities to two (2) different operating units of Transnet. Permanent staff will be sourced from the local area as far as possible.

A typical Yard will have the following Permanent positions:

- I. Operations:**
 - Area Manager
 - Section Manager
 - Yard Manager
 - Crew Manager
 - Safety Manager
 - Yard officials
 - Refuelling and sanding
- II. Infra Crew:**
 - 1x Track Master
 - 21 x Infra Workers
 - 3 x Flagmen
- III. Fire and hazmat: Fire Officials**
- IV. TE: Carriage & Wagon, Locomotive**

7.9.3 Operational hours

The construction of the railway yard will be undertaken from 7 am to 5pm during weekdays.

During the operational phase the railway yard will operate from 7am to 5pm, Monday to Saturday.

7.10 Project method statement

There are three phases relevant to the proposed project, namely;

- Construction: Phase 1 Southern Bypass line (12 months)
- Construction: Phase 2 Northern arrival line, earthworks, building facilities (18 months)
- Operational and Maintenance Phase

The total construction time for both phases will be 2 years 6 months.

7.10.1 Construction Phase 1:

Transnet will build a bypass line south of the existing railway line to enable an alternative route for trains whilst building the new tracks. The duration is addressed under Section 7.10. Phase 1 will involve the following:

- Clearing of vegetation for the development of the bypass line and perimeter fence.
- Topsoil removal
- Installation of perimeter fence line;
- Earth works to level terrain along bypass line, decanting line, departure line route
- Establish subgrade drainage and material preparation (railway sleepers, steel rails, rail fasteners)
- Construction of new/extension of culverts for bypass line
- Laying of bottom ballast, Installation of bottom anchorage
- Laying steel rails and top ballast
- Construction of an access road;
- Construction of fuel storage and handling areas
- Creation of laydown yards;

No construction camp will be required, local labour will be employed.

7.10.2 Construction Phase 2:

Phase 2, northern section, would include building the additional railway track (arrival line, run around line, spare lines), the bulk earthworks and building the facilities. The Phase 2 will involve the following:

- Clearing of vegetation and removal of topsoil
- Bulk of earthworks (cutting, filling and levelling of terrain).

- Soft excavations would be undertaken, blasting may be required in some instances, yet limited
- Transportation of borrow materials to site
- Establish subgrade drainage and material preparation (railway sleepers, steel rails, rail fasteners)
- Construction of new/extension of culverts, concrete drifts and overpass
- Building additional railway tracks
- Construction of gravel service road;
- Construction of facilities and services
- Construction of storm water management system

7.10.3 Operational Phase

The operation lifespan of the railway is not known at this stage. The operational phase activities have been addressed under Section 7.4.

SECTION C – NEED AND DESIRABILITY OF THE PROJECT

In terms of Appendix 2 of the EIA Regulations of 2014, the Scoping Report is to describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location.

As per the NEMA EIA Regulations IEM Guideline Series 9 for Determining need and desirability of a project, the concept of “need and desirability” relates to, nature, scale and location of the development being proposed, as well as the wise use of land. Need primarily refers to the time and desirability to place (e.g. The right time and is it the right place for locating the type of land use).

8 NEED AND DESIRABILITY OF THE PROJECT

8.1 Need

Unlocking the Waterberg area is a key priority in Government’s National Development Plan and has been identified as part of the SIP1 by the Presidential Infrastructure Coordinating Commission (PICC). Coal in particular, is driving the need for expansion in rail capacity in the Waterberg area and along the Waterberg Railway Corridor. It was identified as a strategic initiative and received much attention from Government and is considered a key driver for SA’s economy and goal to create five million new job opportunities by 2020.

Essentially, Transnet has in recent years received numerous requests from industry for an assessment and subsequent supply of long term rail network capacity from the Waterberg area to Richards Bay and Maputo for export and domestic market. The latest rail capacity demand is informed by mine expansion projects and proposed new mine developments. In line with these strategic priorities for the SA, Transnet has developed a programme for expansion of the railway infrastructure between Lephalale in the Limpopo Province and Ermelo, in Mpumalanga Province.

As part of the expansion programme planning, Transnet conducted feasibility studies to determine the main infrastructure requirements along the Waterberg Railway Corridor. It was found that terminals and change over yards were required at three locations based on increased tonnage levels according to demand. The need to address rail congestion (empty trains on tracks preventing loaded trains from exiting) in Lephalale received priority and Transnet opted to proceed with developing a Network Stability Facility (NSF) at Lephalale, the ‘Lephalale Railway Yard’.

The new railway yard forms part of the Waterberg rail expansion programme and will allow substantial quantities of coal to be transported to end consumers such as Eskom power stations in the Mpumalanga Highveld region. Coal mines in the eastern Highveld in Mpumalanga cannot meet the demand and can only supply medium to low grade coal, the Waterberg coal fields are unexploited and have high grade coal available.

8.2 Desirability

The guideline on Need and Desirability in terms of the EIA Regulations, 2014 requires that the nature, scale and location of the development being proposed be considered as well as the wise use of land. It primarily refers to the time and desirability to place (eg. The right time and is it the right place for locating the type of land use) - see Table 11 for the Need and Desirability for the project.

Table 11: Need and Desirability considerations for the Lephalale Railway Yard project

CONCERNS	RESPONSES
NEED ‘TIMING	
Is the proposed development in line with the projects and programmes identified as priorities within the credible IDP?	The project is a SIP1 identified by the PICC and main infrastructure requirement along the Waterberg Railway Corridor. The Lephalale IDP recognises the Transnet Railway Yard Project Phase 1 and 2 which is to increase rail capacity.
Should the development concerned, in terms of this land use occur here at this point in time?	Transnet determined that terminals and change over yards were required at three locations along the existing Waterberg Rail Corridor to accommodate demand. The need to address rail congestion in Lephalale through a NSF received priority. The current demand at Lephalale is to run a 65 slot timetable with future traffic comprising 200 wagon coal trains. To achieve this, a 200 wagon yard is required at Lephalale. Resgen is already constructing Phase 1 of the holding yard (100 wagon) adjacent to the position of the proposed Lephalale Railway Yard.
Is this project a societal priority? In terms of strategic and local level.	The development, expansion of railway lines and infrastructure is considered a national priority under SIP 1 to accommodate increased export of mineral in the Waterberg area.
Are the necessary services with adequate capacity available or must additional capacity be created to cater for the development?	Transnet aims to be self-sufficient. It will cater for most of the services required for the development. It proposes to install conservancy tanks at the respective buildings and a Steel Water Reservoir. The conservancy tanks will be serviced regularly by a contractor and water will be brought to site and pumped into the reservoir. Solid waste disposal will need to be accommodated by

	Lephalale Local Municipality.
Is this project part of a national programme to address an issue of national concern?	Yes, unlocking the Waterberg area is a key priority in Government's National Development Plan. Expansion of rail infrastructure is aimed at ensuring that mining industry is not constrained by transport logistics and costs to transport minerals from mines to ports. The project is a SIP 1 identified by PICC.
DESIRABILITY 'PLACING'	
Is this the best environmental option for this site?	The new yard will be developed south of the existing Thabazimbi to Lephalale single railway track. It will go beyond Transnet servitude and require 22 hectares of land south of the existing track. The site comprises indigenous vegetation. The potential impact of the development on the site will be assessed in detail in the EIA Phase. The Scoping Phase will try to scope the issues to be assessed to determine whether the project is the suitable at the selected site.
Would the approval of this application compromise the integrity of the existing approved municipal IDP and SDF as agreed by relevant authorities?	The project location corresponds to Environmental Management Zone 11 set out as a major infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities in terms of the Lephalale IDP/SDF. It is therefore in mainly in line with the municipal SDF. However the Lephalale Local Municipality, Planning Department will be consulted during the EIA Process and inputs will be solicited.
Will the approval of this application compromise the integrity of the existing environmental management priorities for the area, if so can it be justified its sustainability considerations?	No. In terms of the Waterberg District EMF the project areas falls within Environmental Management Zone 5 - a mining and industrial development focus area, Zone 11 a major infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities. Zone 2 represents areas of high natural, visual and cultural quality with the potential for development of nature and /or cultural based tourism. The potential visual impact, cultural and heritage impact, ecological impact as well as socio economic impacts that may arise as a result of the project will be assessed in detail through specialist investigations during the EIA Process to determine if the approval of this application will compromise the integrity of the priorities for the area.
Do location factors favour this land use at this place?	From an existing infrastructure point of view yes. The new railway yard is to be positioned south and alongside the existing Thabazimbi to Lephalale single track in a rural game farming area. It is an expansion of the existing single track with four new rail tracks and yard facilities. Boikarabelo Coal Mine has already started to construct the 1 st phase of the holding yard. From a land use point of view; the existing track has finite noise and vibration impacts, yet once the railway yard is development it will result in infinite noise levels. It is expected to impact on the surrounding land uses, especially sense of place. This question can therefore not be addressed until NEC has completed its full EIA Study to determine and quantify the environmental and social impacts.
How will the activity impact on sensitive natural and cultural areas?	The railway yard is proposed within in area of rural nature, situated amongst game/commercial hunting farms. Specialist investigations for ecology, heritage and cultural aspects will be undertaken as part of the EIA Study to determine the impact.
How will the development impact on people's health and	It is expected that the railway yard will result in finite increase in noise and vibration levels. There will be an impact on the visual

well-being? (noise, odours, visual character, sense of place)	<p>character and sense of place. The magnitude and significance is however yet to be established.</p> <p>The potential visual impact, noise and vibration impact and socio economic impact will be assessed in detail through specialist investigations during the EIA Process.</p>
Will the benefits of the development outweigh the negative impacts of it?	<p>To industry the benefits of the development will outweigh the negative impacts. The rail network at Lephalale is congested. The yard will serve as a NSF to decongest the network. The past decade has seen substantial growth in volume of high grade coal transported from Grootgeluk coal mine to end users in SA. Further coal mines are planned in Lephalale and additional freight capacity is required to supply the market demand for coal. It is expected that the economic benefits will outweigh the negative impacts.</p>
Will any person's rights be negatively affected by the proposed activity?	<p>No. Yet a thorough public participation process or public engagement process will be undertaken to ensure that no person's rights are negatively affected by the process or activity. Directly affected landowners will specifically be consulted in this regard including surrounding communities and local authorities. Where any issues and concerns are lodged the project team will consider the negative impact and advise on mitigations measures to stop, remedy or control any development impact that may result in any person rights being negatively affected to ensure a sustainable development</p>

SECTION D – CONSIDERATION OF ALTERNATIVES TO REACH THE PREFERRED

9 PROJECT ALTERNATIVES

Alternatives are different means of meeting the general purpose and need of a proposed activity, taking into account location or site alternatives, activity alternatives, processes or technology alternatives, temporal alternatives and the no-go alternative. Evaluation of alternatives also allows the relative impact of different project alternatives on the environment to be considered. (DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the EIA Regulations, 2006-IEM Guideline Series)

A quick questionnaire:

Why is this project being proposed by Transnet?

There is a need to expand the rail capacity in the Waterberg area along the Waterberg Railway Corridor. It's also a national priority and key driver for SA's economy.

Why propose this project now?

Transnet has received numerous requests from industry to supply long term rail network capacity from the Waterberg to Richards Bay port and domestic market. The current existing track is congested due to empty train wagons standing on the existing track prohibiting loaded trains to leave Lephalale.

In which specific area is the rail capacity required?

Over the past decade there has been a substantial growth in volume of high grade coal transported from Grootgeluk coal mine at Lephhalale to Exxaro clients in Limpopo, North West, Mpumalanga and Gauteng Province. The requirements to transport coal and coal products from Lephhalale to end users across SA and beyond have increased tremendously. Further coal mines are planned at Lephhalale. Resgen Boikarabelo coal mine is planned north-east of Lephhalale, Sekoko mine is located along the Botswana border. These projects will result in the need for coal transportation when mining commences. Priority appears to be at the most congested section at Grootgeluk Mine.

What future traffic does the Lephhalale – Thabazimbi railway track need to accommodate?

The only future traffic on this line will be the 200 wagon coal trains which will travel from Grootgeluk Mine and other new mines such as Boikarabelo, Sekoko etc southwards through Thabazimbi, towards the greater Gauteng area.

How many train trips along this route is Transnet expecting?

The current train schedule makes provision for 8 train slots/day/direction. The usable slots would differ from day to day based on the planning and customer demand, but are usually limited to 65%. Hence, the current number of trains would be limited to 5 trains/day/direction with lengths varying from 40 to 100 wagon trains.

The future train schedule will increase the capacity to a number of 16 train slots/day/direction. The useable slots would also be capped at 65% - 10/11 trains/day/direction. In the interim (Revised Waterberg Stage 2/3) the trains will be consisting of 6 x 100 wagon trains/day/direction with the other 4/5 trains varying from 40 to 80 wagon trains. The end state (Waterberg Stage 3-5) will consist of 6 x 200 wagon trains/day/direction with the other 4/5 trains also varying from 40 to 80 wagon trains.

What is required from Transnet to create this additional rail capacity and decongest/stabilise the rail traffic to accommodate the train schedule?

New yards are required as tonnage levels increase according to the demand. The major infrastructure requirement is a Network Stabilisation Facility (NSF), this means the extension of current yards and crossing loops to accommodate 200 wagon trains.

The demand for the rail transportation is high and Boikarabelo Mine has already started constructing the 1st phase of the holding yard to accommodate 100 wagon trains.

How does Transnet decide where to place this NSF?

Transnet conducts several stages of Feasibility studies to consider the options available and cost for implementation.

9.1 Activity (Technical) and Location of Alternatives

This 112km long section has one crossing loop in between Lephalale and Thabazimbi at Matlabas loop. The only future traffic on this line will be the 200 wagon coal trains which will travel from Grootgeluk Mine southwards through Thabazimbi, towards the greater Gauteng area.

The 65 slot timetable for this section has a train inter-departure time of 02:35 and consists of: 65 slots for 200 wagon coal trains.

Lephalale Distribution Network Options considered:

Preliminary Feasibility (FEL) work was done on the Lephalale distribution network options. In determining options for rail routes, the roads and the property boundaries were used as references for constructing rail lines. This is useful since roads are in existing public servitudes which should make land purchase easier than through farms. Furthermore, the land in this region is highly rich in coal deposits which the mines would not want to sterilise by constructing railway lines.

Client land areas were shaded for various known clients showing their relative positioning in the greater Waterberg area. Some sections that are not shaded are generally reserved for smaller miners, BEE miners and potentially future miners; however the research has not revealed them as definite future participants.

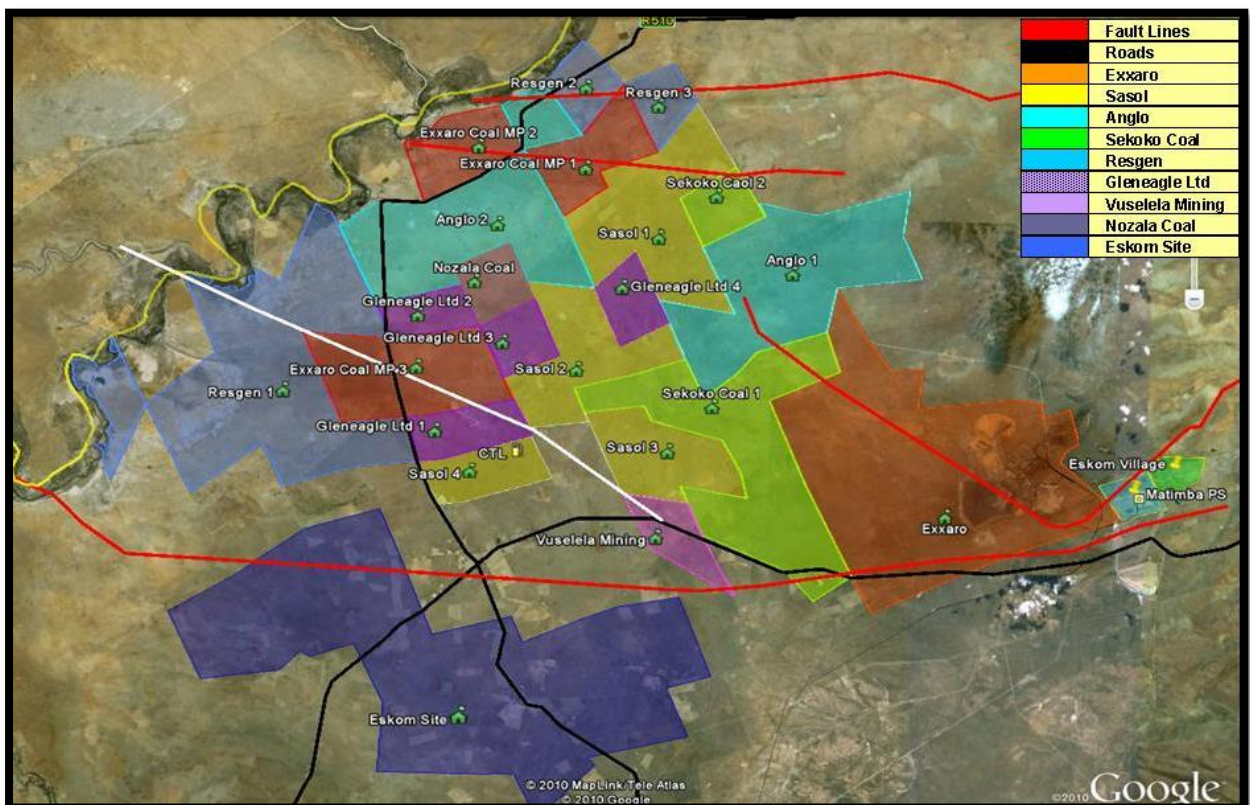


Figure 7: Lephalale distribution network options

Option 1: Ring Road Rail Distribution

The ring road concept is based on trains running uni-directionally from the consolidation yard off the main line to the loading sites. Operationally this method will be simple and will not require train crossings due to bi-directional train movements. Bypassing of trains may happen while trains are in the loading sidings. Standard operating rules will apply i.e. trains will not stop on the ring road for any extended period of time. This approach is similar to any main line operation.

Three loading sites have been envisaged that span and cover the majority of the mining area. Each of the loading sidings should be equipped with a Rapid load-out terminal (RLT) positioned on a balloon. Entry and exit into the balloon from the ring road will be enabled by a triangular take-off configuration. Further option characteristics are listed below:

Ring road track length 101 km (exclusive of balloons, which may vary due to positioning)

Ring road to be diesel operated and signalled for controlling train movements

3 RLT's on balloon rail track configurations

14 x 1:12 turn outs required (3 x 3 per triangle at take-offs and gathers, 3 x 1 for the RLT balloons, 1 take-off from the main line, and 1 for the ring road take-off). 6 x 1:9 run away sets also required at the balloons to protect the ring road

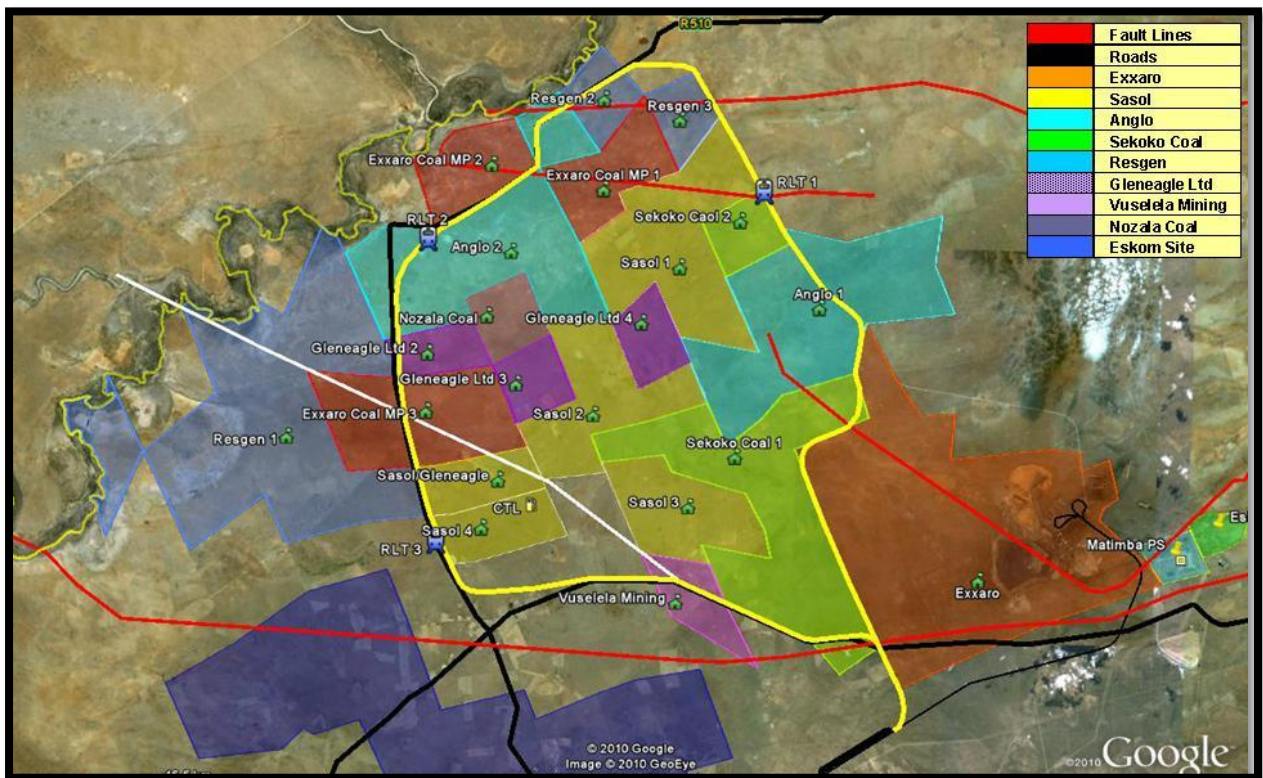


Figure 8: Option 1 Ring Road Rail Distribution

Option 2: Centralised Loading Terminals

The centralised loading concept has two loading sites which are communal to all the mines in the area. The intent is to create two areas that the mines can share the loading and stockpiling

facilities, making initial investment lower and improving minable land utilisation. Trains will run bi-directionally from the consolidation yard off the main line to the loading sites, thus crossing loops have been provided on the spur lines to cater for train crossings.

Each of the loading sidings should be equipped with a Rapid Load-out Terminal positioned on a balloon. Further option characteristics are listed below:

Access roads track length 65 km (exclusive of balloons). Two crossing loops also required, one on each spur line

Spur lines to be diesel operated and signalled for controlling train movements

2 RLT's on balloon rail track configurations

4 x 1:12 turn outs required (2 x 1 for the RLT balloons, 1 take-off from the main line, and 1 for the second access road take-off). 2 x 1:9 run away sets also required at the balloons to protect the spur lines

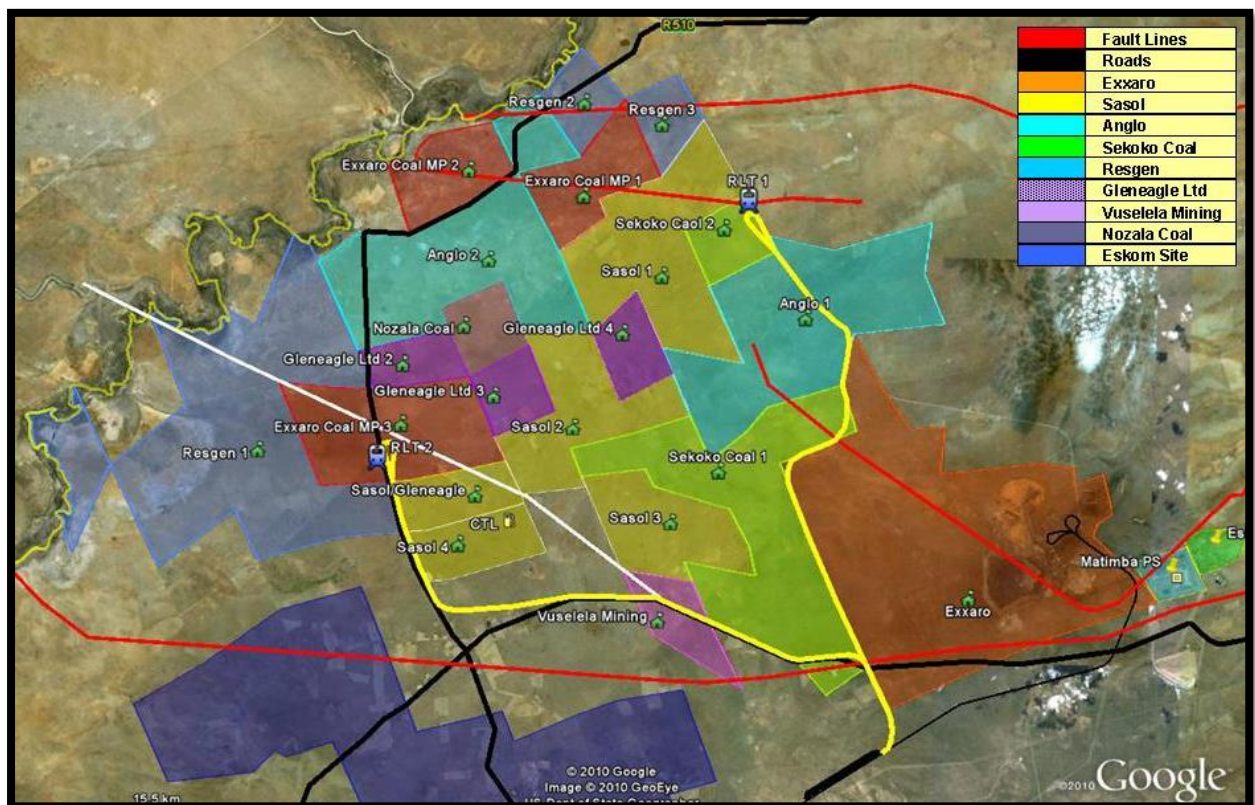


Figure 9: Option 2 Centralised Loading Terminals

Option 3: Private Sidings

The private loading sidings concept has two spurs that run to the mines with take-offs provided toward the mines. The loading sites and yards are private and are to be built by the mines at their own account. This option is not ideal for land utilisation due to the many rail lines required.

Trains will run bi-directionally from the consolidation yard off the main line to the loading sites, thus crossing loops have been provided on these spur lines to cater for train crossings. The option characteristics are listed below:

Access roads track length 80 km (exclusive of private sidings). The TFR owned line is up to and including the take-off turn-outs. Two crossing loops also required, one on each spur lines spur lines to be diesel operated and signalled for controlling train movements

Private loading sidings would be funded and supplied by the mines 12 x 1:12 turn outs required (10 for the take-offs to the private sidings, 1 take-off from the main line, and 1 for the second access road take-off)

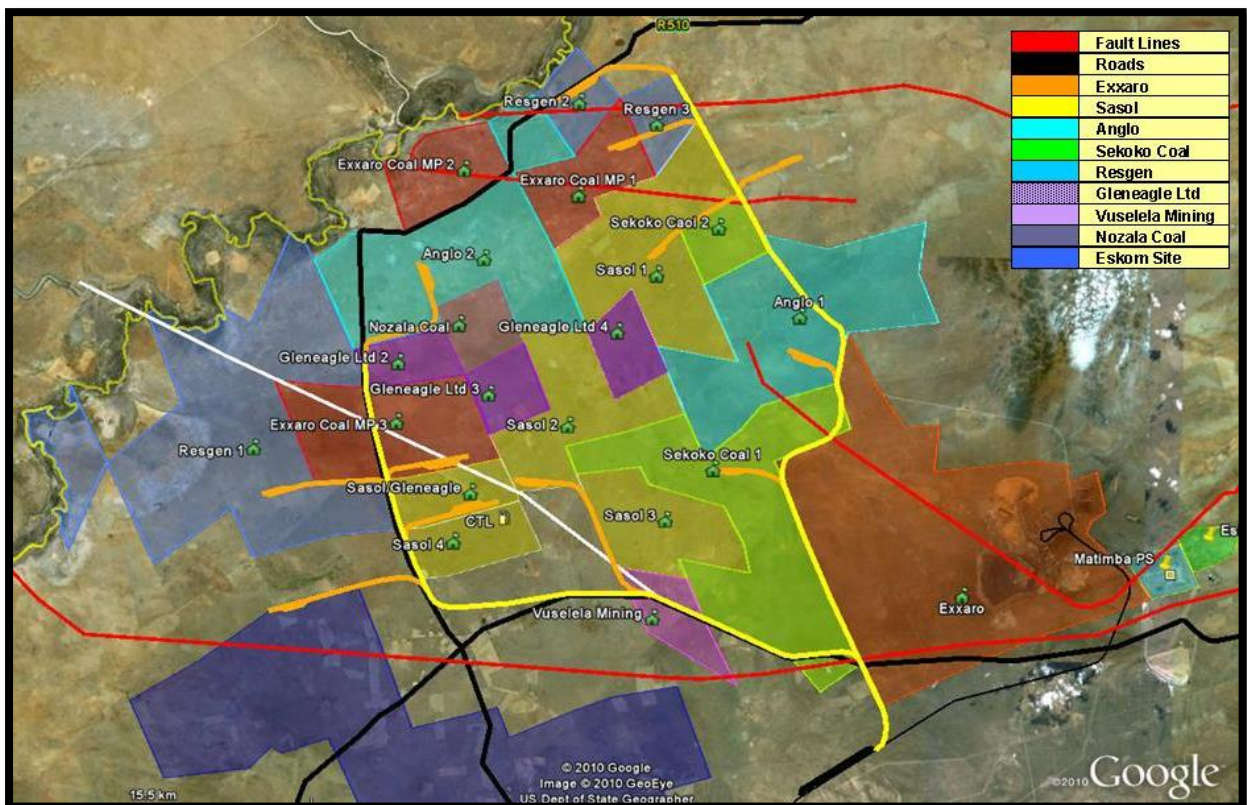


Figure 10: Option 3 Private Sidings

Option 4: Ring Road via Grootegeluk

In order to consider an option that maximised the use of the existing rail line in the Lephalale area, a further alignment option was considered within the study. It comprised an alternative route branching from the private siding to Grootegeluk mine to join to the northern edge of the proposed ring rail route. Two scenarios were investigated which considered alignment from different perspectives:

The western alignment focussed on the use of existing road reserves and linear features.

The eastern alignment focussed on matching the alignment to the topography.

The outcome of the two options was a trade-off between high cuts and fills for the western option versus additional route length for the eastern option.

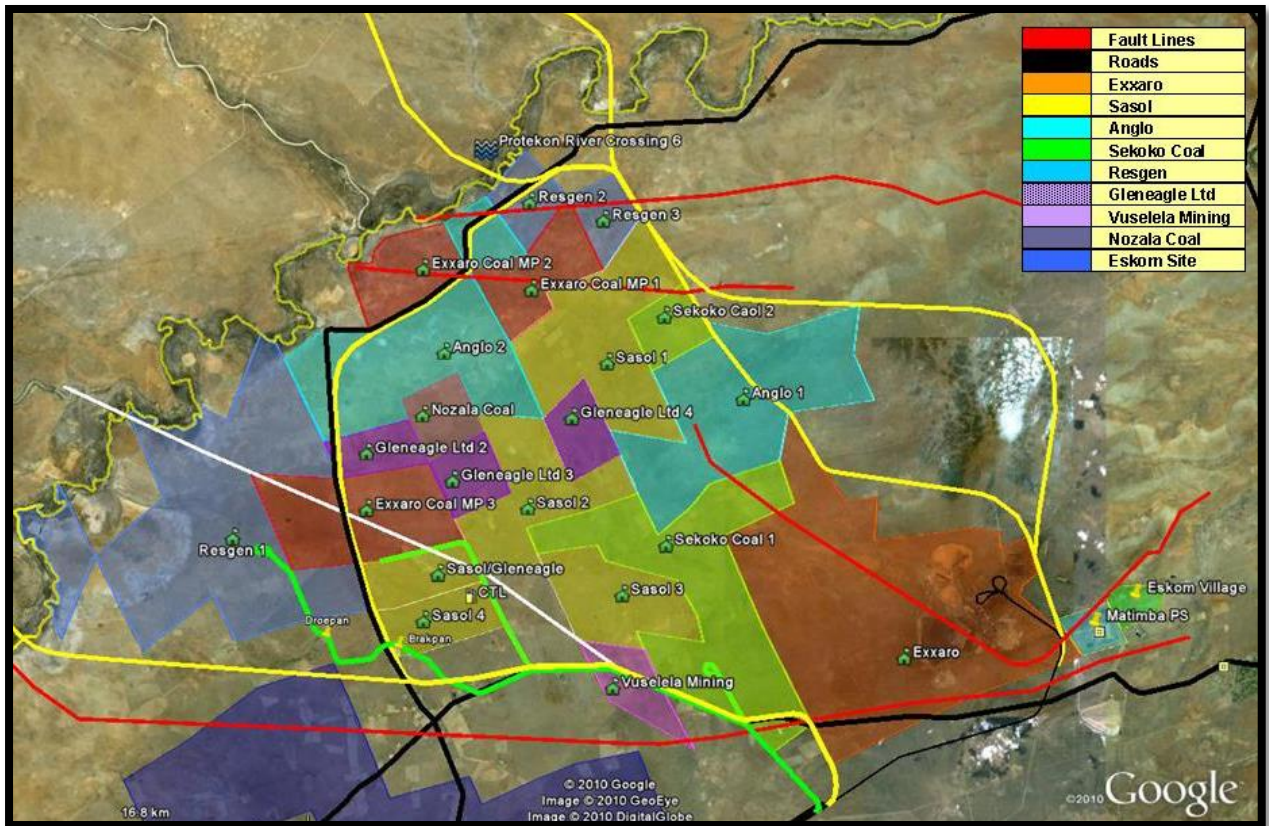


Figure 11: Option 4 Ring Road via Grootgeluk

Standard Gauge Options

Standard gauge railway infrastructure offers the railway operator the opportunity to use higher axle load capability to reduce rolling stock fleet size (wagons and locomotives), thus reducing the capital cost. Standard gauge rolling stock is considered as “off the shelf” items, since these are produced in greater numbers for the international market, than narrow gauge (cape gauge) rolling stock which has a limited demand

A train length of 230 wagons with 36 Tpa loading hauled by 4 x 800kN locomotives was used for the cost estimates.

In the case of F-type couplers being used and the coupler forces exceeding 1600kN it will be necessary to use distributed power (DP). In this case, not more than 2 x 800kN locomotives should be used for the head end locomotive consist. Furthermore ECP and WDP braking would be required for 36 ton axle load trains.

To operate electric locomotives with tractive effort higher than 400kN exceeds the installed 25kVA AC OHTE capacity. Using locomotives in excess of 400kN and the 800kN bracket, will require a different OHTE approach and system. Preliminary investigations suggest that this would be possible, but will require further development. Alternatively 800kN diesel locomotives are widely used and are readily available.

Based on the above, three standard gauge options were considered.

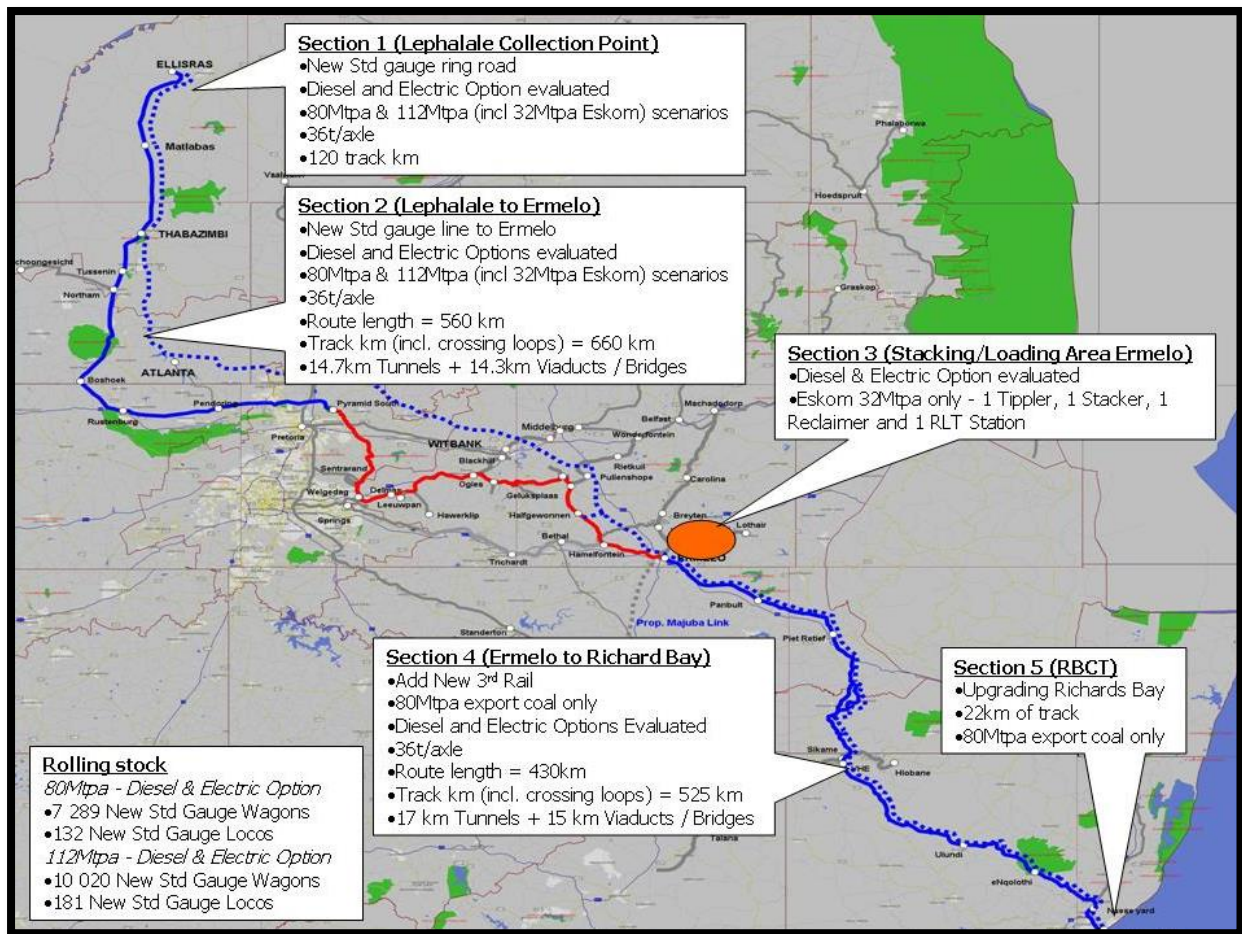


Figure 12: Standard Gauge Options

Option 1: Standard Gauge from Lephalele to Ermelo

Lephalele Collection Point - This option requires the construction and establishment of a standard gauge rail system in the Lephalele area. The option selected and the alignment followed would be the same for standard gauge as for narrow gauge.

Lephalele to Ermelo - A new servitude (or modifications to the existing servitude in places) will be required for the standard gauge railway route over the entire length of the line from Lephalele to Ermelo. The basis of this route is that it follows a similar alignment to that of the existing Lephalele to Thabazimbi section with some sections requiring more relaxed gradients compared to the existing railway alignment. From Thabazimbi the proposed route follows a new alignment taking it via Atlanta to Hammanskraal, and on to Ermelo. The line would be a single line with bi-directional signalling including passing loops (approximately 15km apart) along the length of the route (Lephalele to Ermelo).

New Terminal and Changeover Yards

In most cases, terminals and changeover yards were analysed from a zero base i.e. new yards would be required as tonnage levels increased according to the demand. It was found that new yards would be required in three locations depending on which option was selected, namely:

Lephalale, being a terminal yard, two options were evaluated i.e. a 100 wagon yard for the existing route option and a 200 wagon yard for the new route option

Thabazimbi yard, required for the phased expansion on the existing line option. Thabazimbi will further serve the need to change locomotive traction.

Pyramid South, similar to Thabazimbi it will be required for locomotive traction changes. Concept layouts were done for the yards, and were then priced and included in the expansion capital estimates.

Through a process of elimination the decision was made to opt for the development of a new Network Stability Facility / Holding yard and with private rail sidings to the respective mines. Lephalale existing route option was selected.

Lephalale - Existing Route Option

The arrivals and departure yard at Lephalale will initially be built as non-electrified for phases 1 to 5, and in phase 6 will be electrified. The average yard line length was estimated at 1750m with clearance of at least 1500m. Furthermore, as tonnages increase over time, so will the number of yard lines required as given below:

Phase 3 – 4 lines (1 arrival, 1 departure, 1 run around and a spare line)

Phase 5 – 2 additional lines added (1 arrival and 1 departure)

Phase 6 – the 6 lines and the remainder of the main line from Lephalale to Thabazimbi to be electrified

Double Line – a further 4 electrified lines are required in addition to the lines added during the phased expansion. A total of 10 yard lines will be able to handle up to approximately 50 x 100 wagon trains per day with trains not occupying a line for longer than 2 hours. **Error! Reference source not found.** shows the concept layout of the 100 wagon terminal yard below:

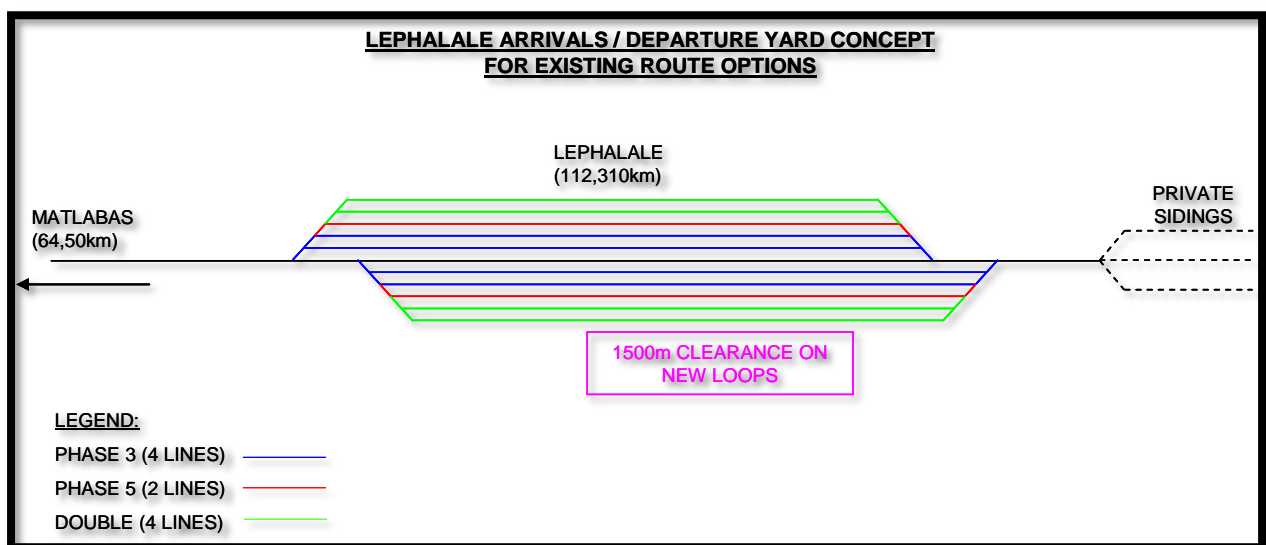


Figure 13: Lephalale Yard for Phased Expansion

Hence the process of selection and consideration of alternative activity and location has already been done and will not be further assessed / pursued through the EIA Process.

9.2 Yard Design and Layout

Different layout design options are expected to be investigated during the course of the EIA process. Final designs and locations of infrastructure will be based on the outcomes of specialist investigations and greatly by function within the yard. The design and layout must be set as to remain technically and economically feasible.

9.3 Operational Aspects of the Activity

Some of the yard facilities will have wash basins, toilets and showers. Wastewater will be collected in 12 conservancy tanks (10 x North facility; 2 x South facility) which will be serviced regularly (Honey suckers).

Through NEC's consultation with the DWS on 16 October 2018 a request was made to Transnet to consider alternative means of disposal of grey water from conservancy tanks during the operational phase of the railway yard. The Lephalale Wastewater Treatment Plant is overloaded and does not have capacity to accept additional grey water. Alternatively the yard design must cater for a small sewage treatment package plant to process grey water and reuse for irrigation of landscaped areas at the yard.

Alternative means of disposal of grey water from conservancy tanks will be considered and the most feasible option will be pursued.

9.4 No-go Option

The no-go option is for the current land use to continue and the rail network to remain congested. Existing and future industries will start using alternative means of transport, road freight. This has a major negative impact on the regional road network resulting in road deterioration, significant increase in traffic in the Limpopo, Gauteng, Mpumalanga and Natal Province and road safety concerns.

This expansion of rail capacity along the Waterberg Railway Corridor is a strategic infrastructure project and of national importance. It is instrumental to 'unlocking the northern mineral belt of the Waterberg as a catalyst'.

SECTION E – POLICY AND LEGISLATIVE REQUIREMENTS

10 POLICY AND LEGISLATIVE REQUIREMENTS

The EIA Regulations of 2014, Appendix 3 require that the Scoping Report include a description of the policy and legislative context within which the development is proposed including an identification of all legislative, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.

South Africa has sound environmental legislation aimed at achieving sustainable development, including laws that support public participation, impact assessment and environmental management. Mining companies also need to comply with a range of other laws which regulate mining impact on the environment. These include amongst others:

- National Legislation;
- Provincial Legislation;
- Biodiversity Conservation Plans, Environmental Management Frameworks;
- Municipal Planning Frameworks;
- Guideline Documents

The requirements of the applicable legislations or acts are outlined below.

10.1 National legislation

10.1.1 Constitution of the Republic of Southern Africa Act No 108 of 1996

The Constitution of South Africa is the supreme law of the country of South Africa. It provides the legal foundation for the existence of the republic, sets out the rights and duties of its citizens, and defines the structure of the government.

In terms of Section 24 of the Constitution:

- ✓ Every person has the right to an environment that is not harmful to their health or well-being and to have the **environment protected** through reasonable legislative measures.

Environmental protection is a practice of protecting the natural environment on individual, organizational or governmental levels, for the benefit of both the natural environment and humans. Due to the pressures of population and technology, the biophysical environment is being degraded, sometimes permanently. This has been recognized, and governments have begun placing restraints on activities that cause environmental degradation.

10.1.2 National Environmental Management Act 107 of 1998 (NEMA) and EIA Regulations of 2014

NEMA provides for the co-operative, environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote cooperative

governance and procedures for co coordinating environmental functions exercised by organs of state.

The Environmental Management principles set out in NEMA should guide decision making throughout the project life cycle to reflect the objective of sustainable development.

Section 24 (5) of NEMA provides for specific listed activities which require environmental authorisation prior to their commencement. GN 327, 325 and 324 under the NEMA EIA Regulations of 2014 (as amended by GNR 326) schedules listed activities which require EA. The project triggers activities under all the relevant notices and is subject to a full Scoping and EIA Process. The triggered listed activities relevant to the project have been addressed under Section 7.3 of this report.

Transnet is required to undertake a Scoping and EIA Process and submit a Scoping Report, EIR and EMPr, which describe the potential environmental impacts of the proposed railway yard development, how such impacts will be managed and detail the public participation process undertaken.

The decision making authority for the project is the DEA. The provincial authority, LEDET will be a commenting authority. The EIA Process is currently in the Scoping Phase therefore a Scoping Report has been prepared in accordance to Appendix 2 of the EIA Regulations 2014 (GNR 326). It is currently being distributed for public review before submission to the DEA which is to approve the approach to the EIA Phase.

Section 28 of NEMA is also of key importance and places “Duty of care and remediation of environmental damage” on the developer/applicant.

Section 28 (1) of NEMA states:

“Every person who causes has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.”

- 2) Without limiting the generality of the duty in subsection (1), the persons on whom subsection (1) imposes an obligation to take reasonable measures, include an owner of land or premises, a person in control of land or premises or a person who has a right to use the land or premises on which or in which-
 - a) any activity or process is or was performed or undertaken; or
 - b) any other situation exists, which causes, has caused or is likely to cause significant pollution or degradation of the environment.
- (3) The measures required in terms of subsection (1) may include measures to-
 - a) investigate, assess and evaluate the impact on the environment;
 - b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;
 - c) cease, modify or control any act, activity or process causing the pollution or degradation;

- d) contain or prevent the movement of pollutants or the causing of degradation;
- e) eliminate any source of the pollution or degradation; or
- f) remedy the effects of the pollution or degradation.”

Accordingly, Transnet is undertaking an EIA to investigate and evaluate the potential impacts associated with the proposed project and identify means to mitigate/contain negative impacts and prevent unacceptable impacts on the environment. Specialist evaluations and recommendations are sourced on all aspects of the biophysical and social environment to determine such. This is considered a “reasonable step” to prevent pollution or degradation of the environment which may result from the proposal.

10.1.3 National Water Act (Act 36 of 1998)

The principles and objectives of the NWA are to guide the protection, use, development, conservation, management and control of water resources in a sustainable and equitable manner for the benefits of all persons.

Section 19 of the NWA deals with prevention and remedying effects of pollution in particular where pollution of water resources occurs or might occur as a result of activities on land. The person who owns controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources. If these measures are not taken, the catchment management agency concerned may itself do whatever is necessary to prevent the pollution or to remedy its effects, and to recover all reasonable costs from the persons responsible for the pollution.

To give effect to the above Section 21 of the NWA calls for licensing of defined water uses. The project triggers Section 21, (c), (i) and (g) water uses under the NWA and requires a water use license from DWS – see Table 12 below.

Table 12: Triggered Section 21 water uses

Water Use	Activity	Applicability
Section 21 (c) & (i)	Impeding or diverting the flow of water in a watercourse & altering the bed, banks, course or characteristics of a watercourse	Construction and extension of culverts in proximity to drainage lines. Presence of drainage lines need to be confirmed by the Wetland Specialist. Construction and operation of railway yard infrastructure.
Section 21 (g)	Disposing of waste in a manner which may detrimentally impact on a water resource	12 x 12 500 litre conservancy tanks will be used at various at the South and North Facilities at the railway yard. Effluent management (water/oil separator). Construction of a Guard house septic tank.

Alternative sewage disposal methods are also being considered namely servicing conservancy tanks by honey suckers and disposing sewage at the municipal treatment works or alternatively setting up a small sewage treatment package plant to treat the effluent water. The preferred option will be stated in the EIA Phase. The treated effluent can be used for irrigation or landscaped areas at the yard or reused in the yard process. The water uses that may be triggered

by such alternatives include Section 21 (e) for irrigation with treated water or alternatively Section 21 (f), (c) and (i) if the treated water is discharged to the Sandloop River.

Transnet will submit a WULA forms Report and undertake a WULA Procedure followed by submission of a Water Use Technical Report to the DWS for decision making. The relevant applications and subject reporting would be submitted to the DWS Limpopo Province under the Limpopo Water Management Area in line with the Regulations for Procedural Requirements for Water Use License Applications and Appeals GNR 267 of 24 March 2017. The details of the application will be communicated through the EIA Process to stakeholders.

10.1.4 Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA)

The project will require fill material which will be obtained from two borrow pits. This requires authorization in terms of the MPRDA and its subsequent amendments of 2008, 2014 and the MPRDA Regulations R. 527. A Mining Permit Application in terms of Section 27 of the MPRDA read with Section 23 of the MPRDA amendment Act 2008 (Act 49 of 2008) will be lodged with the DMR.

Mining related activities are now also included in the NEMA EIA Regulations of 2014 (GNR. 326). The project also requires an EA in terms of EIA Regulations under GNR. 327 which schedule listed activities related to mining permits which require EA-see Table 13.

Table 13: Triggerred Listed Activities in terms of GNR 327 and 324

Listing Notice	Activity	Applicability
GNR 327 Listing Notice1 Activity 21	Any activity including the operation of that activity which requires a mining permit in terms of Section 27 of the MPRDA, including: b) Associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource	Mining of gravel from borrow pits for cut and fill requirements and road construction at the proposed railway yard.
GNR 327 Listing Notice1 Activity 27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – iii. Undertaking a linear activity; or iv. Maintenance purposes undertaken in accordance with maintenance management plan.	Mining Permits are submitted if the mining area in question does not exceed 5 hectares. The area for the required borrow pits may exceed one hectare and would require the removal of indigenous vegetation.

The project is subject to a Basic Assessment Process and submission of a Basic Assessment Report and Environmental Management Programme, which describe the potential environmental impacts of the proposed mining activities how such impacts will be managed and how the disturbed areas will be managed. The relevant applications for a mining permit, EA and subject reporting would be submitted to the DMR: Limpopo Regional Office.

10.1.5 National Environmental Management: Waste Act (Act 58 of 2008) (NEM: WA)

The NEMWA is the principal act governing waste management within South Africa since 2009. The objectives of the act involve the protection of health, wellbeing and the environment. It provides measures for to avoiding and minimising the generation of waste, reducing, recycling and recovering waste, and treating and safely disposing of waste. It further requires that all waste management activities must be licensed and are subject to a Basic Assessment or full EIA process.

The spoil material from cut and fill operations whilst developing the Lephalale Railway Yard are not considered waste/inert waste; it is not contaminated during any process. The project does not trigger any listed waste management activities; hence no authorisation is required in terms of NEMWA.

Further, Section 28 of the NEM:WA requires entities or industries to develop waste management plans for their industry. It is therefore assumed the waste management plan/s should be conducted in line with the regulations. Section 30 of NEM:WA specifies the information that must be included the industry waste management plan. Information that needs to be addressed for the Lephalale Railway Yard in terms of Section 30 (2) includes:

- the amount of waste that is generated;
- measures to prevent pollution or ecological degradation;
- targets for waste minimisation through waste reduction, re-use, recycling and recovery;
- measures or programmes to minimise the generation of waste and the final disposal of waste;
- measures or actions to be taken to manage waste;
- the period that is required for implementation of the plan;
- methods for monitoring and reporting; and
- any other matter that may be necessary to give effect to the objects of the Act.

A Waste Management Plan will be prepared for the Lephalale Railway Yard.

10.1.6 National Forest Act, (Act 84 of 1998)

The purpose of the Forest Act is to protect natural forests and woodlands as it forms an important part of that environment and need to be conserved and developed according to the principles of sustainable management. Plantation forests play an important role in the economy and have an impact on the environment and need to be managed appropriately.

There are several protected tree species identified within the project site namely *Sclerocarya birrea* (Marula) and *Boscia albitrunca* (Shepherd's Tree). Other protected tree species may also be present at the site. A protected tree survey will therefore be required and highly likely also a permit application. *Sclerocarya birrea* (Marula) and *Boscia albitrunca* (Shepherd's Tree) are not Threatened species but are protected.

Section 15(1) of the National Forest Act states no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or

in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Protected Tree Permits will be obtained from the Department of Forestry and Fisheries (DAFF) prior to removal of such within the footprint areas of the yard.

10.1.7 National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEM:BA)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

A list of threatened and protected species, categorised as critically endangered (CR), endangered (EN), and vulnerable (VU) or protected has been issued in terms of Section 56 (1) of the NEMBA. South Africa also uses the internationally endorsed World Organisation-International Union for Conservation of Nature (IUCN) IUCN Red List Categories and Criteria in the Red List of South African plants. NEMBA will be considered in this application and occurrence of species on site will be determined through Ecological Impact Assessment field investigations.

NEM: BA is also the most recent legislation pertaining alien invasive plant species. Gazette No 78 of 2014 provides a list of Alien Invasive Species and Gazette No 37886 of 2014 is the 'Alien and Invasive Species Regulations' which calls for Category 1 alien invasive plant species to be removed and /or controlled. It further states no land user shall allow Category 2 species to occur within 30m of the 1: 50 year flood line of a river, stream, spring, natural channel, dam or wetland. It also prohibits Category 3 species from occurring within close proximity of a watercourse.

A list of threatened and protected ecosystems has been gazetted in 2011 in terms of Section 52 (1) of the same act. The ecosystems are categorised as critically endangered (CR), endangered (EN), and vulnerable (VN) or protected.

Clearing of vegetation will be required for the new railway yard and associated infrastructure.

An Ecological Impact Assessment will be undertaken for the project site to survey for protected species and determine the impact of the project on ecology. If any protected species are identified within project site, a licence to disturb protected flora will be obtained from the LEDET. As per Section 8.1.6 permits for removal of protected tree species will be obtained from DAFF.

The NEMBA 2011 listed ecosystems have been studied through SANBI BGIS. The project site does not fall within a nationally threatened and or protected ecosystem.

10.1.8 National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEMPAA)

NEMPAA provides 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.

A Register of Protected Areas has been established in terms of the Section 10 of the Act. The register is available through an interactive map and database on the DEA website <http://mapservice.environment.gov.za/PAR/map.aspx>. Based on the Register the remainder of the farm Geelhoutkloof 359LQ is registered as 'Koedoe Private Nature Reserve.

Section 49 of the act places restriction of activities in protected areas described in Section 86. Section 86 indicates the Minister may make regulations regarding prohibiting or restricting activities that have an adverse effect in protected areas and land uses in protected area that are harmful to the environment.

In the case of this project there is already an existing railway line through the 'Koedoe Private Nature Reserve' and the area is set out by the local authority and district level in term of environmental zones as major infrastructure corridor under Zone 11. DEA Protected Areas Directorate would be consulted during the public participation process to determine measures and authorisation requirements to permit the railway yard development within the Koedoe Nature Reserve.

10.1.9 National Heritage Resources Act (Act 25 of 1999) (NHRA)

NHRA protects all structures and features older than 60 years (Section 24), archaeological sites and material (Section 35) and graves and burial sites (Section 36). Section 38 indicates that any person intending on undertaking any form of development which involves the activities listed below must, at the earliest stage of initiation, notify the South African Heritage Resources Association (SAHRA):

- Construction of road, wall, power line, pipeline, canal/similar form of linear development / barrier exceeding 300m in length;
- Any development or other activity which will change the character of the site-
 - Exceeding 5000m² in extent or
 - Involving 3 or more existing erven / subdivision thereof or;
 - The re-zoning of a site exceeding 10 000m² in extent; or
 - Any other category of development provided for in regulations by SAHRA / provincial heritage resources agency.

Based on preliminary field investigations conducted by NEC no sites of cultural or heritage significance is located on the project site. Nonetheless, a Heritage Impact Assessment (HIA) Study will be undertaken as part of the EIA Process to confirm the presence of any such features.

10.1.10 Noise Control Regulations (R154 GG 13717 10 January 1992) (NCR)

The NCR was promulgated in terms of the Environmental Conservation Act. It defines nuisance noise as; “any sound which disturbs/impair the convenience/piece of any person” and “any noise level which exceeds the zone sound level / or a noise level which exceeds the ambient sound level at the same measuring point by 7dBA or more”.

The South African National Standards (SANS 10103:2008) provide the guidelines for the different recommended prevailing ambient noise levels and how to evaluate when a specific operation or activity is creating a noise disturbance and what reaction can be expected if a noise disturbance is created. SANS 10210 of 2004 is the national standard applied to determine or project road traffic noise which is associated with a new development.

The recommended noise level for a noise sensitive area is 55.0dBA during the day and 45.0dBA during the night (World Bank, 2005).

The railway yard operations will result in noise and vibration effects. A Noise and Vibration Impact Assessment Study will be commissioned as part of the EIA Process. The environmental noise survey will be done during the day and the night time periods so as to determine the baseline noise levels which will be used to identify possible noise intrusion levels at the abutting noise receptors. This will assist in the management of the project in terms of noise mitigatory measures and management principles for implementation during the construction and operational phases of the project.

10.1.11 Key Decision Making Authorities

DEA is the decision making authority for the environmental authorisation application. The WUL application will be submitted to DWS and the mining permit with associated environmental authorisation application to the DMR. The applications and its submission to the key authorities is summarised in Table 14.

Table 14: Authorisation Processes, legislation and key authorities

No	Authorisation Processes	Relevant Legislation	Competent Authority
A	Environmental Authorisation (EA subject to Full Scoping and EIA Process)	NEMA and NEMA EIA Regulations of 2014	DEA
B	Water Use License subject to WULA Procedure	NWA and NWA WULA Regulations of 2017	DWS
C	Mining Permit & Environmental Authorisation subject to Basic Assessment Process	MPRDA NEMA and NEMA EIA Regulations of 2014	DMR
D	Protected Tree Permits for removal	Section 15 (1) of National Forest Act 84 of 1998	DAFF

10.2 Strategic national plans

10.2.1 Infrastructure Development Bill (B49 of 2013)

The Infrastructure Development Bill is to provide for the facilitation and coordination of public infrastructure projects which is of significant economic or social importance which are to be given priority for approval and implementation to ensure the development goals of the State.

Schedule 1 of the Bill lists development of railways as projects of strategic importance to be given priority for approval and implementation. The railway yard is instrumental to the goal and forms part and will increase the rail capacity at Lephalale.

10.2.2 National Infrastructure Plan 2012 (NIP)

SA Government adopted a National Infrastructure Plan in 2012. With the plan it aims to transform SA's economic landscape while simultaneously creating significant numbers of new jobs, and strengthen the delivery of basic services. The plan also supports the integration of African economies.

The National infrastructure Plan (NIP) seeks to promote:

- re-industrialisation through manufacturing of inputs, components and machinery;
- skills development aimed at critical categories;
- greening the economy; and
- empowerment.

The NIP comprises 18 identified Strategic Integrated Projects (SIPs) which integrate multiple infrastructure plans into a coherent package.

SIP 1 refers to 'Unlocking the northern mineral belt with Waterberg as the catalyst' (with an emphasis on investment on heavy haul rail links to Richards's Bay).

- Unlock mineral resources.
- **Rail**, water pipelines, energy generation and transmission infrastructure.
- Thousands of direct jobs across the areas unlocked.
- Urban development in Waterberg - first major post-apartheid new urban centre will be a "green" development project.
- **Rail capacity to Mpumalanga and Richards Bay.**
- Shift from road to rail in Mpumalanga.
- Logistics corridor to connect Mpumalanga and Gauteng.

The new Lephalale Railway Yard is instrumental to one such goal, 'unlocking the northern mineral belt of the Waterberg as a catalyst' by creating rail capacity to Mpumalanga and Richards Bay. The connotation between the railway yard and this goal has been motivated under Section 5.1.

The Lephalale Railway Yard is thus of strategic importance and in line with the development goals of the NIP.

10.3 Provincial legislation and management plans

10.3.1 Limpopo Environmental Management Act No 7 of 2003 (LEMA)

LEMA was written to consolidate and amend the environmental management legislation of the Province. It includes Regulations which call for the protection of indigenous plants, animals which require a permit from provincial authority, LEDET for its pick, sell, removal, donate, in and or export in the province.

The lists of plants and animals are itemized under Schedule 8, 11 and 12 of the act. The lists of species will be considered and included in the Ecological Impact Assessment (Fauna and Flora) that will be commissioned as part of the EIA Process.

10.3.2 Limpopo Conservation Plan 2013

LEDET is the custodian of the environment in the Limpopo Province and primary implementing agent of the Limpopo Conservation Plan version 2. The conservation plan informs land use planning, environmental assessments, land and water use authorisations as well as natural resource management, undertaken by a range of sectors whose policies and decisions impact on biodiversity. This is done by providing a map of biodiversity priority areas, referred to as Critical biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), with accompanying land use planning and decision making guidelines.

The biodiversity priority areas inform land use planning guidelines. Its intent is to provide guidance on what types of land-use activities are compatible with biodiversity management objectives for each CBA map category.

The project site corresponds to two priority biodiversity areas namely:

- Ecological Support Area 1 (ESA 1);
- Critical Biodiversity Area 2 (CBA 2)

Land use guidelines for the above biodiversity areas corresponding to the project site are discussed in Table 15. The guideline indicates compatible and incompatible land-uses which aid planners to identify appropriate zones to impose on CBA's and ESA's when developing Spatial Development Frameworks, Environmental Management Frameworks, and Land-use management schemes. It also gives evaluators of EIA an indication of appropriate land-use with each area.

Table 15: Project area biodiversity Priority Areas land use guidelines

CBA Map Category	Description	Land Management Objective	Land Management Recommendations	Compatible land use
CBA (2)	Best design selected site. Selected to meet biodiversity pattern/ecological	Maintain in natural state with limited to no biodiversity loss.	Avoid conversion of agricultural land to more intensive land uses which may negatively impact on	Agricultural practices (arable, intensive&extensive animal production, game and ecotourism

	process targets.	Maintain current agricultural activities. Land use should not be intensified. Minimise impact on threatened species	threatened species / ecological processes.	(populations of threatened species maintained and ecological process which support them).
ESA (1)	Natural, near natural and degraded areas supporting CBA's by maintaining ecological processes.	Maintain ecosystem functionality and connectivity allowing for limited loss of biodiversity pattern	Implement appropriate zoning and land management guidelines to avoid impacting ecological processes. Avoid intensification of land use and fragmentation of natural landscape.	Conservation and associated activities. Extensive game farming and eco-tourism operations. Extensive livestock production. Urban Open Space System. Low density rural residential, small holdings, resorts where development design and overall densities allow maintenance of ecological functioning.

In terms of the LCP, the project is a deviation from the land-use planning objectives for the affected biodiversity priority areas. Rail infrastructure is not mentioned as compatible land use for either biodiversity units.

The general recommendations for CBA2 areas are = KEEP IN NATURAL STATE

Loss of natural habitat should be minimized i.e. land in this category should be maintained as natural vegetation cover as far as possible;

- o These areas of land can act as possible biodiversity offset receiving areas;
- o Control of illegal activities (such a hunting and dumping), which impact biodiversity should be prioritized in CBA areas.

Where development proposals other than the preferred biodiversity compatible land uses are submitted in terms of the NEMA: EIA regulations or Land Use Planning Ordinance (LUPO)/SPLUMA:

- o A Screening Exercise should be undertaken by an Ecologist to verify the CBA map category on site;
- o If the site is verified as a CBA, developments other than the preferred land uses, should be investigated in detail and the mitigation hierarchy applied in full;
- o If the application is pursued they should be informed by a specialist biodiversity assessment

An Ecological Impact Assessment Study will be commissioned as part of the EIA Process.

The general recommendations for ESA1 areas are – Maintain in an ECOLOGICALFUNCTIONAL STATE.

Similar as for CBA 2, if an application is pursued in terms of NEMA for an inconsistent land use other than specified the EIA study should be informed by a specialist biodiversity assessment.

10.3.3 Waterberg District Environmental Management Framework (Waterberg District EMF)

The Environmental Management Framework (EMF) is an initiative of the national DEA in partnership with LEDET and Waterberg District Municipality (WDM). The EMF supports decision making in the WDM area to facilitate appropriate and sustainable development. The EMF integrates policies and frameworks and aligns government mandates to streamline decision-making and to improve cooperative governance. The EMF has a number of objectives, which include identifying the status quo, development pressures and trends in the area and a development decision support system to ensure environmental attributes, issues and priorities are taken into account.

Based on the Waterberg District EMF the project areas falls within Environmental Management Zone 5 set out as a mining and industrial development focus area, Zone 11 a major infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities.

The project is in line with the land use planning for Zones 5 and 11 but not inline with Zone 2. Zone 2 represents areas of high natural, visual and cultural quality with the potential for development of nature and /or cultural based tourism.

The potential visual impact, cultural and heritage impact, ecological impact as well as socio economi impacts that may arise as a result of the project will be assessed in detail through specialist investigations during the EIA Process. Comments will also be solicited from LEDET and the WDM during the public participation process.

10.4 Municipal planning frameworks

10.4.1 Lephalele Spatial Development Framework (SDF)

The Lephalele SDF is a core component of Lephalele Local Municipality's economic, sectoral, spatial, social, institutional, environmental vision, a tool to achieve the desired spatial form of the Municipality.

The Lephalele SDF echoes the Waterberg District EMF in its land use planning objectives. Based on the Lephalele SDF the project site corresponds to Environmental Management Zone 11 set out as a major infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities.

The adherence and further investigation into the land use planning aims for the environmental management zones and potential impact of the project on these zones have been addressed under Section 8.3.3.

10.4.2 Lephale Integrated Development Plan (IDP)

The IDP is a process through which the municipalities prepare strategic development plans for a five-year period. An IDP is one of the key instruments for local government to cope with its new developmental role and seeks to arrive at decisions on issues such as municipal budgets, land management, promotion of local economic development and institutional transformation in a consultative system and strategic manner.

The IDP recognises the development of Transnet's Rail Project Phase 1 and Phase 2.

The 1st project is to increase rail capacity of the existing Lephale-Thabazimbi-Rustenburg-Pyramid rail line from the current 4mta to 23mtpa. The project aims to increase passing loops on the existing single lane and replacing sleepers to increase the loading

The 2nd Phase of the rail improvement is aimed at increasing export from the Waterberg coal fields and includes doubling the Lephale-Thabazimbi rail line. This will result in the increase in mining activity in the Waterberg coal fields between Lephale and Botswana Border.

10.5 GUIDELINE DOCUMENTS USED FOR EIA PROCESS AND PUBLIC PARTICIPATION PROCESS

The DEA, other provincial government departments, including DWS have formulated guideline documents to assist applicants, authorities and environmental assessment practitioners on the requirements of considering various aspects in the EIA process. Guidelines consulted during the preparation of the Scoping Report include:

- Western Cape: DEA&DP Involving specialists in EIA (2013)
- DEA IEM Guideline Series 11: Criteria for determining alternatives
- DEA: Integrated Environmental Management Guideline 7: Public Participation in the EIA Process (2012) (read due regard of Regulation 41-44 of NEMA EIA Regulations 2014)

SECTION F –**DESCRIPTION OF THE BIOPHYSICAL AND SOCIAL ENVIRONMENT**

11 DESCRIPTION OF BIOPHYSICAL ENVIRONMENT

The content of the draft Scoping Report is outlined under Section 21 (3) and Appendix 2 of the NEMA Regulations of 2014 (GNR 326). It is indicated that a description of the environment that may be affected by the activity and the manner in which the activity may affect the environment should be considered. The receiving environment consists of different component such as the biophysical, social, economic, heritage and cultural aspects.

Information pertaining to the receiving environment and its social surroundings has been sourced through initial site investigations, preliminary specialist inputs, desktop analysis and use of tools such as Geographic Information Systems. NEC conducted a site visit on 13 June 2018 to the study site.

Any preliminary specialist inputs that have been made available during the Scoping Phase of the EIA Study are attached to the Scoping Report under Appendix C.

11.1 Existing land use

Existing services encountered on site include the non-electrified Thabazimbi–Lephalale railway line, along with a gravel service road located on the southern side and level crossings and several culverts. Boikarabelo Coal Mine is constructing the first phase of the holding yard. There is also an 11-33kV Eskom distribution power line south of the railway line which would need to be relocated for the purposes of the new railway yard.

Eskom Distribution will be engaged through the public participation process to determine the specifications and requirements for the relocation of the 11-33kV existing power line.

See Appendix C1 for Site Photographs/ Photolog

11.2 Surrounding land use

Game farms border the existing railway line on either side of the track. All affected and surrounding properties are zoned for agricultural purposes and used as commercial game hunting farms as well as commercial cattle grazing.

The rail yard would require approximately 22 hectares of the land south of the existing railway line for the yard development. The railway yard will require a 60 metre wide strip of land for 4km along the existing railway track. This will impact on game farm infrastructure and activities.

11.3 Climate

The regional climate is characterised by semi-arid climate with low to moderate rainfall, hot dry summers and high evaporation rates. The closest weather station to the project site is Lephalele Airport weather station, 22km east of the project site

11.3.1 Temperature

The project site is located at approximately 940m above sea level. The maximum temperatures during summer months exceed 30 °C and the maximum winter temperatures average at 23 °C-see Table 16.

The temperature averages were taken from the <https://www.worldweatheronline.com/ellisras-weather-averages/limpopo/za.aspx> for the period January 2017 to December 2017 taken at the Lephalele Airport weather station.

Table 16: Maximum and Minimum recorded temperatures for period January 2017- December 2017

° C	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Max	31	31	31	25	23	22	24	26	29	29	29	30
Min	23	23	21	18	12	9	11	14	19	21	21	22

11.3.2 Mean Annual Precipitation

The average mean annual precipitation (MAP) for the area is 650mm/annum. 80% of the regions rain falls between October to March with peak rainfall being in January-see Table 17.

Table 17: Long term mean annual precipitation for Lephalele

mm	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
MAP	121	104	80	42	14	6	4	5	13	50	99	112	650

11.3.3 Prevailing Wind Direction

Analysis of the wind records for the area, taken from Lephalele Airport Statistics (www.windfinder.com), indicates the main prevailing winds blow from the northeast at an average of 2 metres/second. The wind statistics are based on observations taken in the period of 12/2011 to 05/2018 daily from 7am-7pm-see Table 18.

Table 18: Wind statistics for Lephalele Airport for 1 year (averages period 12/2011 – 05/2018)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Wind direction	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	ENE	NE	NE
Wind speed (m/s)	2	2	2	2	2	2	2	2	3	3	3	2

Figure 15 below is a wind rose of Lephalele Airport weather station. This wind rose reveals a prevailing wind direction of Northeast.

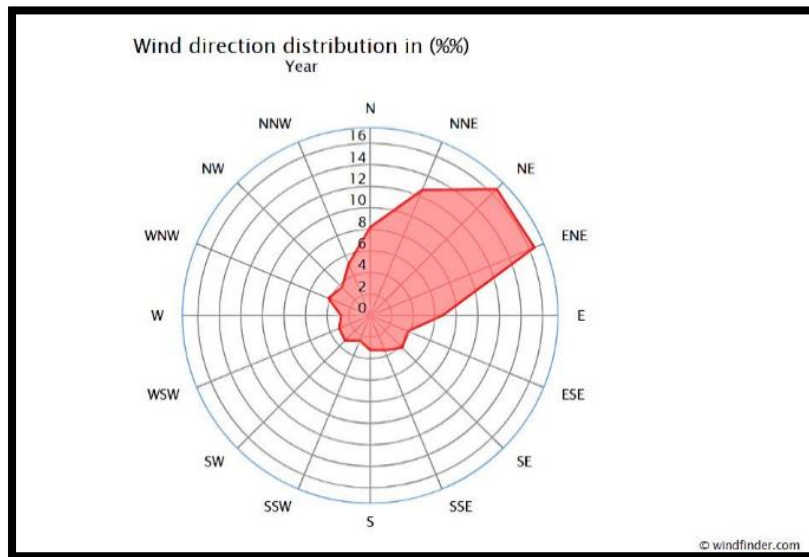


Figure 14: Wind Rose for Lephalele

The prevailing wind direction would be pivotal information to determine noise propagation and windblown dust from site.

11.4 Topography

The project site is located 940m above sea level. The site is generally flat and slightly undulating with the highest points on the eastern and western perimeters, sloping gently towards the centre-see Figure 16.

Rail yards require level tracks and terrain. Extensive cutting of the existing topography will be required as well as management of spoil material. The existing formation level along the existing railway line’s alignment over this new length is located on fills (embankments of up to approximately $\pm 4.0\text{m}$ in height) with sections at grade and cuts (maximum depth in the order of $\pm 10.0\text{m}$). (See Appendix C2 - Geotechnical Investigation prepared by J. Viljoen, October 2017).

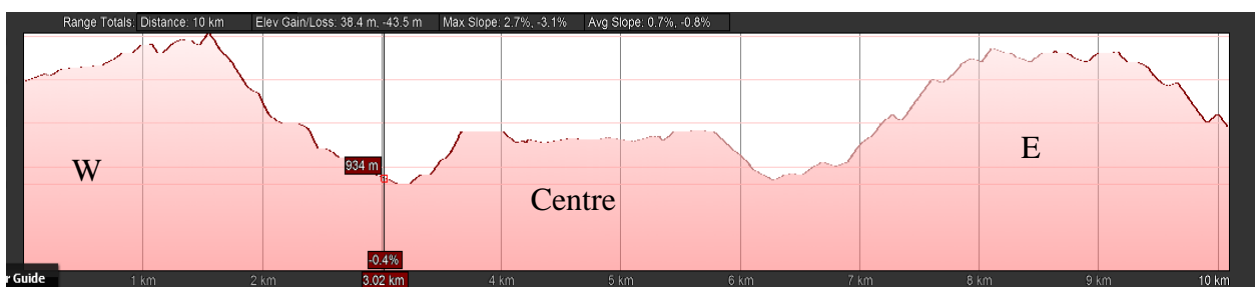


Figure 15: Elevation Profile of the project site from west to east (image from Google Earth Elevation Profile)

11.5 Geology and Soils

The project area falls within the 1: 250 000 Geological Map series of South Africa – Sheet 2326, Ellisras (Council of Geoscience). It lies on the Waterberg sandstone just south of the Eenzaamheid fault-see Figure 17. The dominant parent material of the area is a sedimentary rock of the Waterberg Group comprising of sandstone and conglomerates. The various rock types are generally covered by a wide range of materials such as residual soils, and/or pedogenic soils overlain by transported soils and occasional fill. The layer thicknesses are highly variable (J. Viljoen, October 2017).

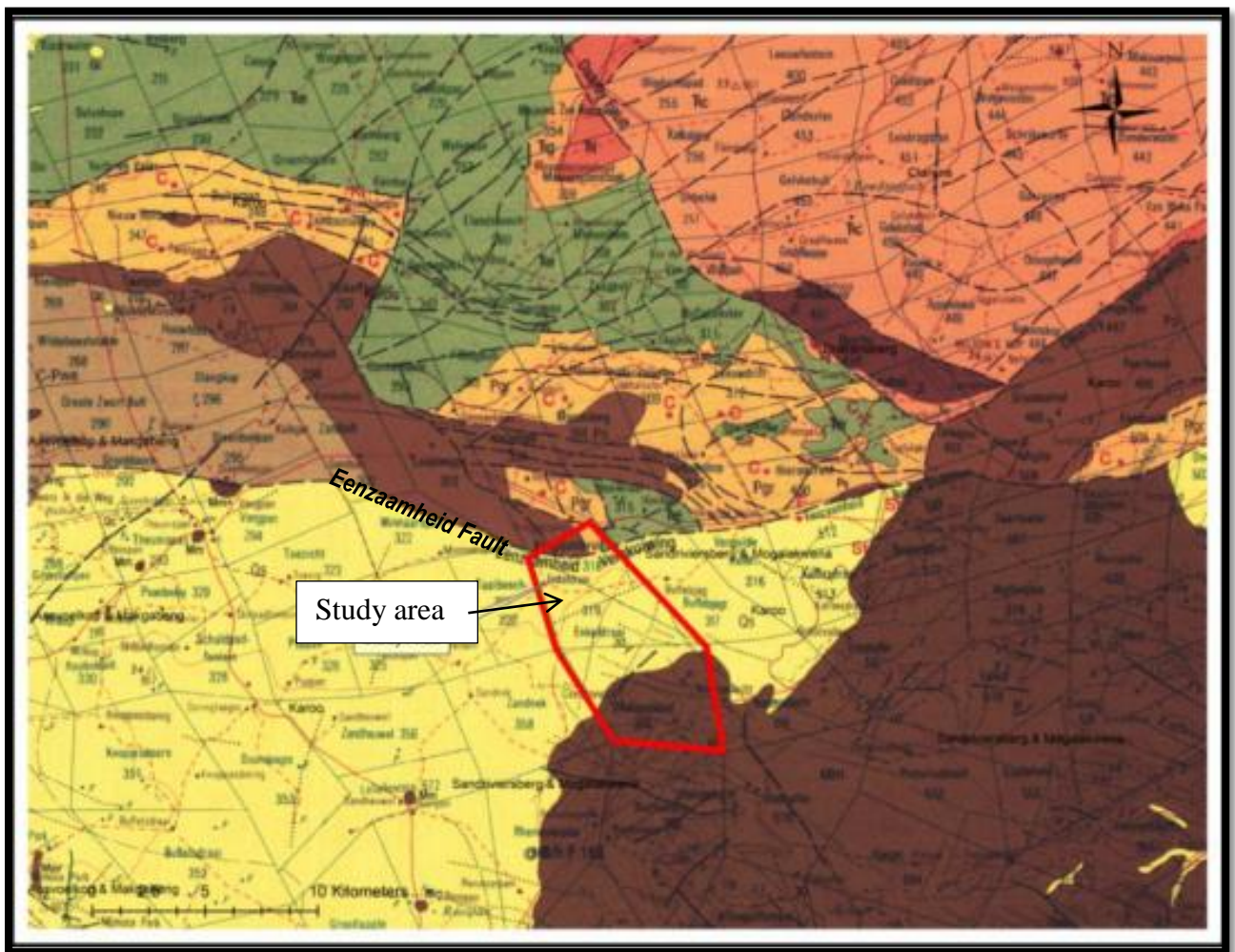


Figure 16: Regional Geological Setting

Soil types on site comprise orange, brown, well drained sandy soils with high base status. There also appears from aerial imagery to be red, yellow and greyish soils present. Refer to Figure 18 for the National Soil types covering the project site.

Based on the geotechnical investigation’s summary of results of particle size distribution from tests pits it is evident that the soils comprise in majority sand with low clay content which can

classify the soil erodibility as moderate to high. Good management of soils for erosion and compaction will be essential.

Extensive cutting of the existing topography would be required for development a level track and yard paired with excavations. Borrowing of material would also be required to develop service roads and as required for the yard development. General cut and fill procedures would also be carried out for founding of proposed structures.

The soils and geology are of importance to the development as suitable geology and soils are required for the founding of structures.

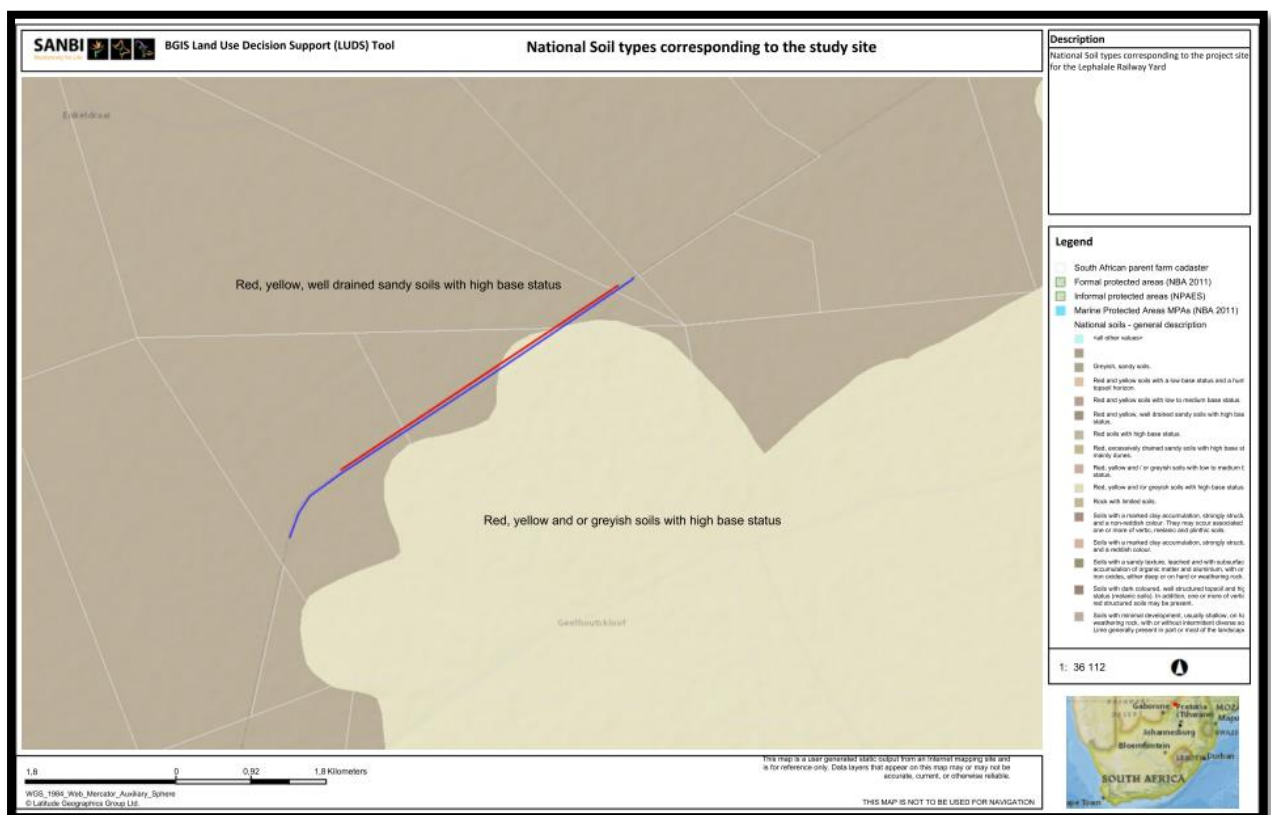


Figure 17: National Soil Types covering the project site

11.6 Agricultural Potential

The vegetation types present on site is suitable for game farming practices. Its land capability could be considered as grazing. The land does not qualify as wetland or appear to be arable land. The land supports a stand of native grass species and forage plants usable by livestock or game animals.

11.7 Groundwater

The project site falls within the A42J quaternary catchment area in the Waterberg coalfields. The study site is underlain by rocks of the Waterberg Group, diabase sills and dykes occur through the area, the strike is predominantly east, north and north-east. If dykes and sills are ignored, the groundwater potential of the Waterberg Group is generally low with majority of yields <2 litres/second. The Waterberg group is considered a poor aquifer due to limited faulting, but where dykes and sills occur higher yields can be found.

Two distinct and superimposed groundwater systems may be underlying the site, namely upper weathered aquifer and fractured rock. The weathered aquifer system is recharged by rainfall, less than 60% of water recharged to the weathered zone eventually emanates in streams. The fractured aquifer system (15-40m) does not allow significant water flow. Groundwater movement occurs along fractures, cracks and joints in the rock, mainly present in sandstone and quartzite, hence better yielding properties of the latter rock type (Naledzi Waterworks 2018).

The average ground water levels measured in the study area is 20.345 mbgl. From the available groundwater flow data, the inferred groundwater flow is likely eastwards and towards the non-perennial Sandloop River-See Figure 19. Groundwater in the investigation area is mainly used for domestic and stock watering purposes, with no irrigation use visible.

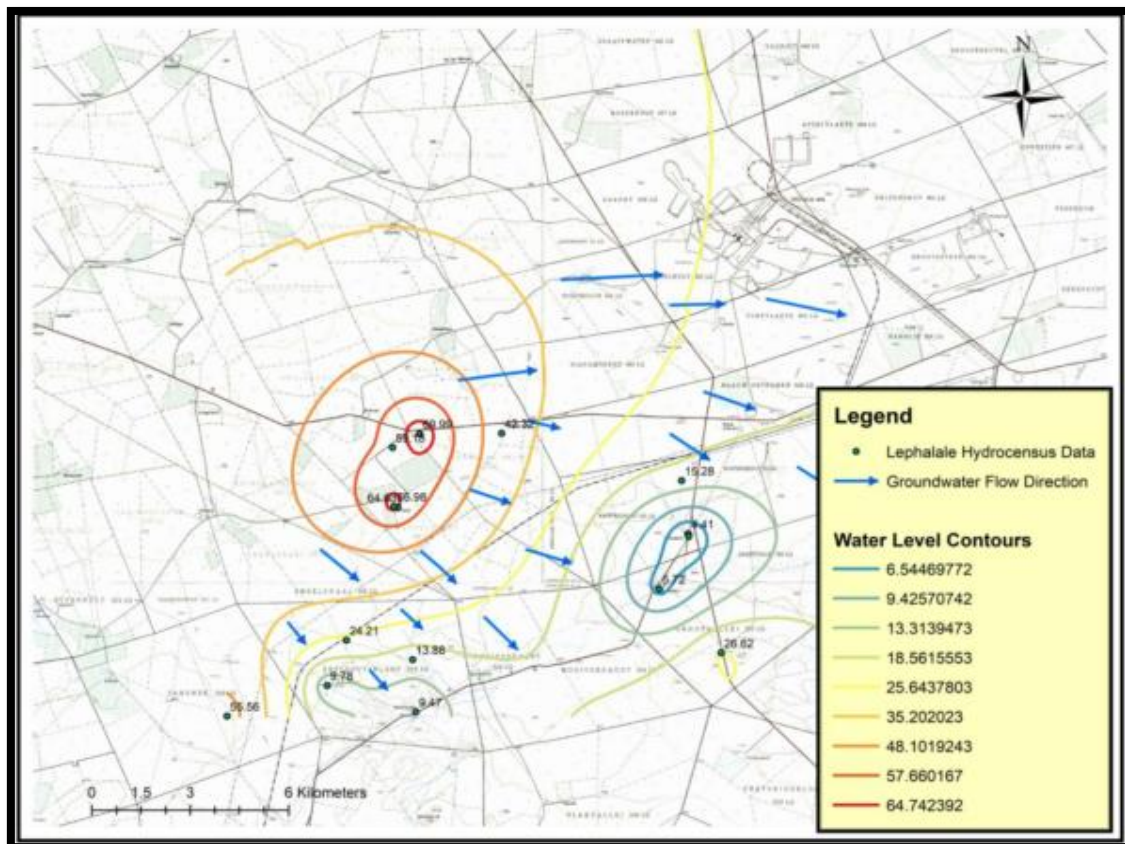


Figure 18: Piezometric surface map of the project area (ground water flow)

No groundwater seepage or surface water was encountered on site. Yet, the occurrence of a shallow perched water table can be expected during periods of heavy and or continuous rainfall since some geotechnical test pits from the Geotechnical Investigation contained ferruginised nodules, which generally develops when a fluctuating shallow perched water table is present. (J. Viljoen, October 2017).

From a regional perspective substantial geohydrological data has been captured for the Medupi Flue Gas Desulphurisation Plant in February 2018, which is just east of the project site. The study included a hydrocensus of surrounding boreholes in the area and included the proposed rail yard location. Six boreholes were considered relevant to the proposed rail yard project and are tabled in Table 19 below and their locations relative to the project site illustrated in Figure 20. Borehole BH01 is closest to the rail yard position. The recorded groundwater level at BH01 was 24.21 meters below ground level.

Table 19: Hydrocensus boreholes recorded on farms Geelhoutkloof and Zandnek

Site name	Borehole number	GPS coordinates	Mbgl	Use	Condition
Geelhoutkloof	BH01	23°45'56.09"S 27°26'45.71"E	24.21	Stock watering	Working
Geelhoutkloof	BH02	23°46'37.81"S 27°26'26.70"E	9.78	Domestic/All purpose	Working
Geelhoutkloof	BH03	23°46'13.91"S 27°27'51.01"E	13.88	Unused	Open
Zandnek	BH04	23°47'6.11"S 27°24'47.59"E	55.56	Domestic/All purpose	Working
Geelhoutkloof	BH05	23°47'1.61"S 27°27'47.09"E	9.17 windmill	Unused	Broken
Geelhoutkloof	BH06	23°47'2.29"S 27°27'54.22"E	9.47	Domestic/All purpose	Working

The water quality in borehole BH01 and BH03 is unpolluted and representative of pristine background water quality.

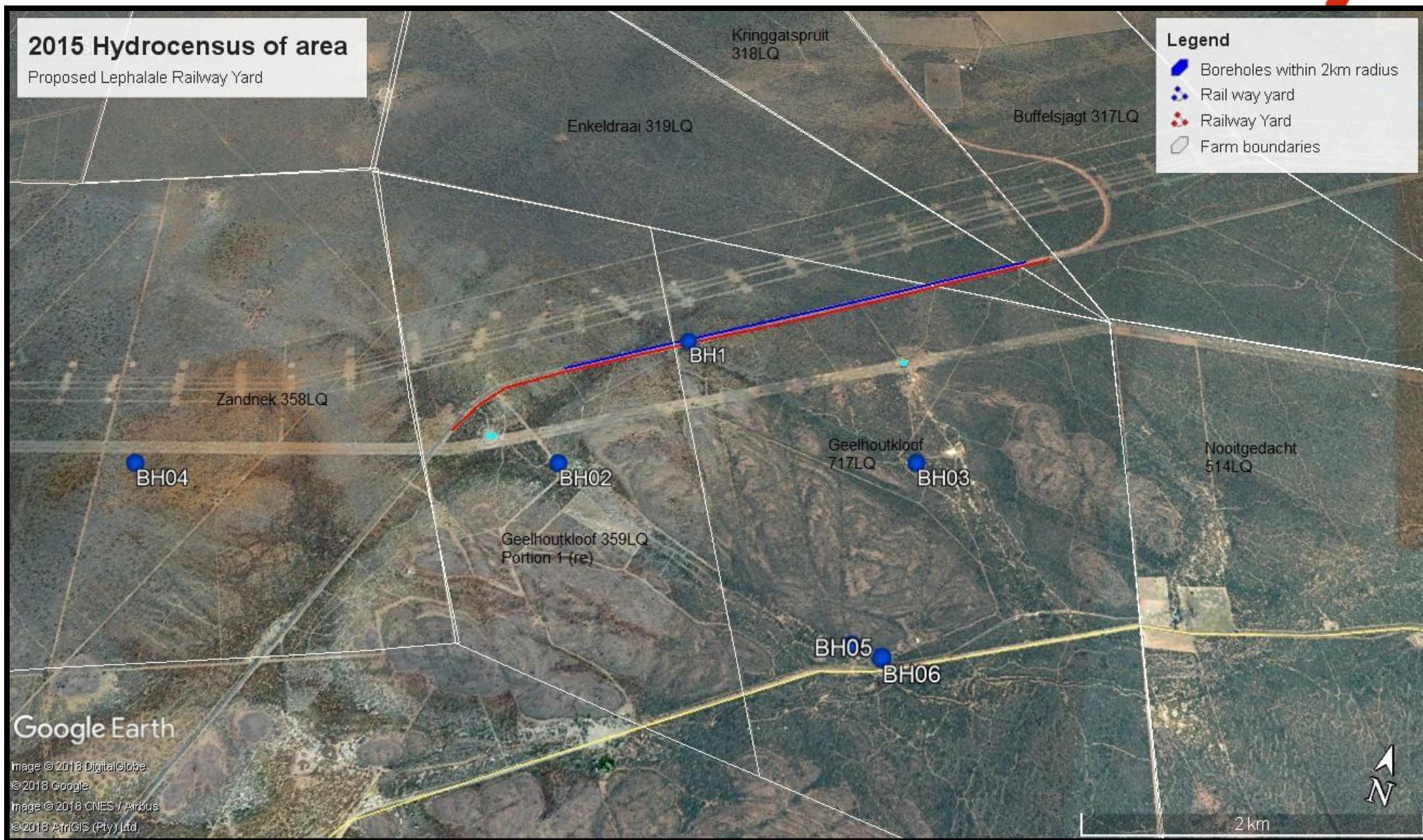


Figure 19: Location of 2015 Hydrocensus boreholes in relation to the project site

It is anticipated that the project will have a low to medium risk on the surrounding groundwater regime. The potential for groundwater contamination may result due to:

- Fuel and hydrocarbon spillages (fuel/oil) from transporting vehicles;
- Oil spillages from Storage Drums;
- Fuel and hydrocarbon spillages from diesel tanks;
- Septic / conservancy tank leakages

The impact on the surrounding groundwater regime has been investigated through a Preliminary Geohydrological Investigation inclusive of a Hydrocensus of a 2km radius attached as Appendix C3.

11.8 Surface water

No surface water was encountered at the project site during the site visit of 13 June 2018.

The project site is located in the Limpopo Water Management Area in the Mokolo quaternary catchment of A42J. The water resource in the vicinity of the project site includes:

- Sandloop – 4km north east from site;
- Small depressions /dams– south of project site located on bordering game farms (250m south)

The rivers and streams in the area are non-perennial, only flow after floods.

The general drainage direction from the project site is in a south east to easterly direction into an unnamed drainage feature carrying drainage from the study area to the Sand loop River which is evident from various depressions south east and further east of the proposed rail way yard site.

The potential presence and identification of natural drainage features at the project site need to be further investigated through a Hydrological Assessment Study.

The project has the potential to carry pollutants into surface water sources in the surrounding area as a result of potential spillages of hazardous substances from refuelling areas, oil storage areas, wash bays, workshops. Improper storm water management may also carry polluted storm water (coal dust, oil and fuel contaminated water to nearby surface water resources and onto adjacent farming areas.

Below is Figure 21 representing the study area in relation to the catchment areas and rivers present in the area.

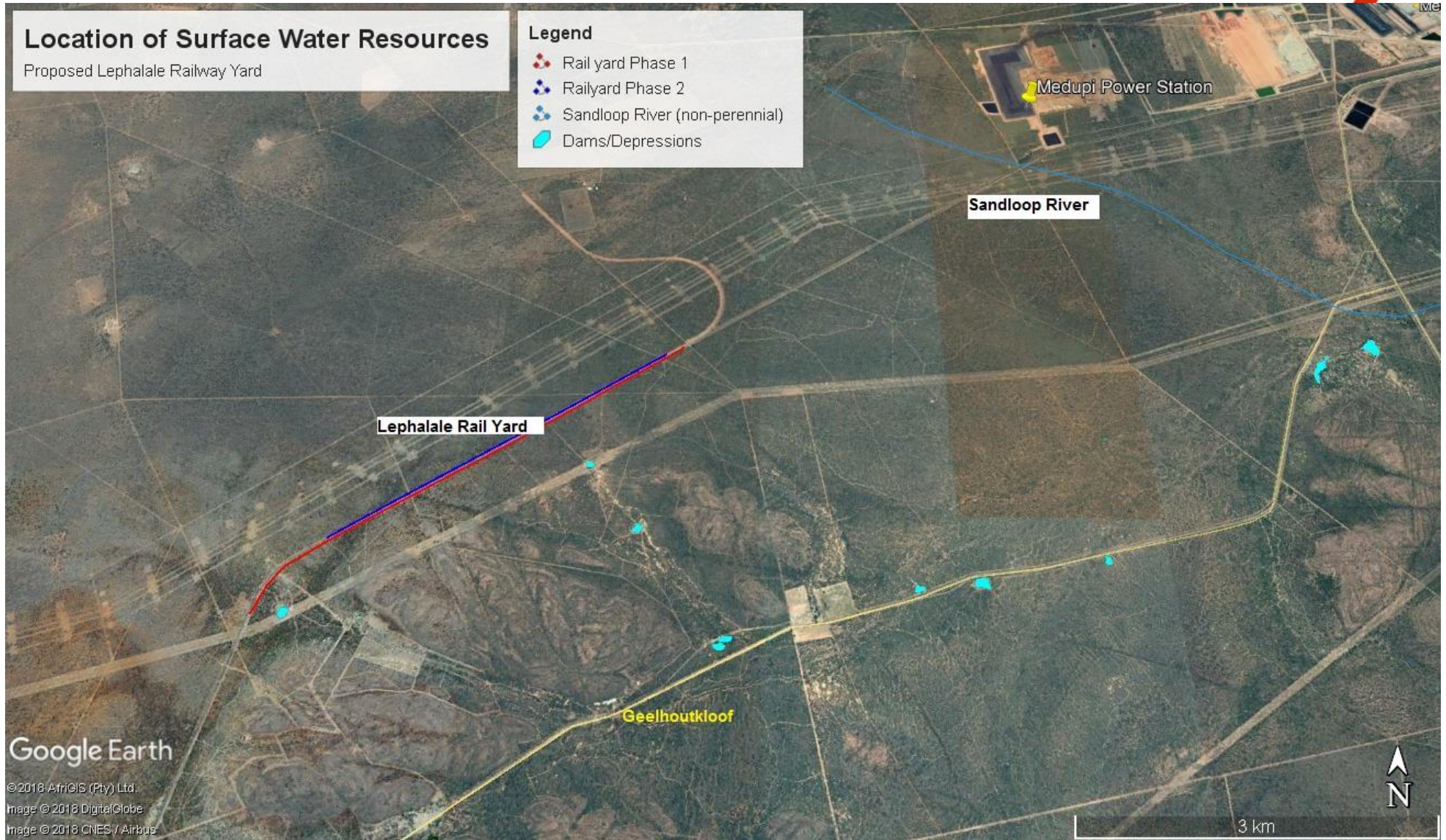


Figure 20: Project site in relation to catchment area and rivers

11.9 Land use Cover

The land cover class of the project site in terms of the South African National Land cover indicates the following:

- woodland / open bush
- low shrub land (refer to Figure 22 for the land cover classes covering the site)

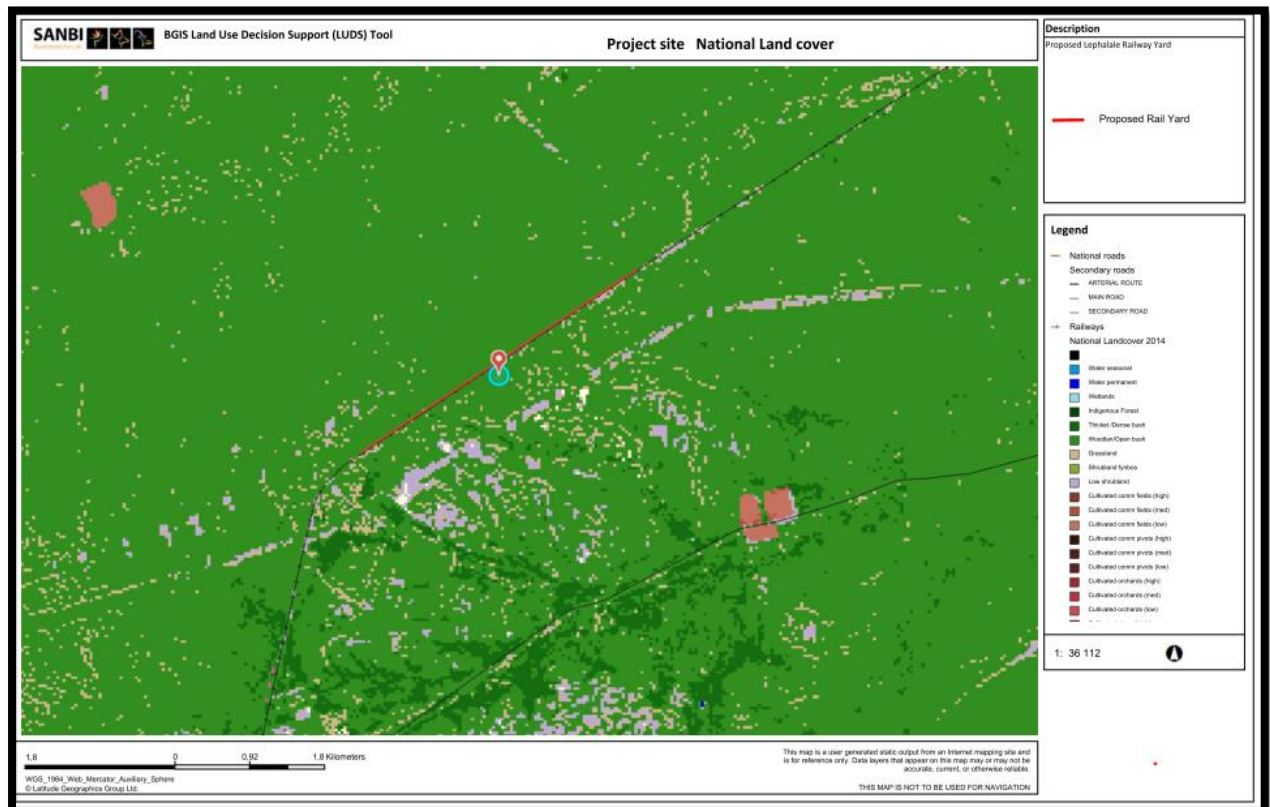


Figure 21: Land cover classes covering the project site

11.10 Biodiversity / Flora and Fauna

11.10.1 Vegetation / Flora

The proposed project site covers two vegetation types, which are the Limpopo Sweet Bushveld and the Western Sandy Bushveld respectively.

The Limpopo Sweet Bushveld vegetation type extends from the lower reaches of the Crocodile and Marico Rivers down to the Limpopo River valley and into Botswana on the other side of the border. It is predominantly located on extensive plains that are irregularly interspersed by tributaries of the Limpopo River. It is short, open woodland dominated by *Acacia mellifera* and *Dichrostachys cinerea* as well as taller tree species such as *A. erioloba*, *A. nigrescens* and *Terminalia sericea*. The high palatability of the graminoid composition makes this vegetation type very suitable for game farming practices. The Limpopo Sweet Bushveld is Least Threatened and extensive in geographic coverage. It is however poorly conserved (e.g. D’Nyala

Nature Reserve) even though it straddles many privately owned game farms. It is transformed by cultivation, but future threats include the mining of coal. Refer to Table 20 for a list of characteristic plant species of the vegetation type.

The Western Sandy Bushveld is typical of the sandy flats and undulating plains west of the Waterberg Mountains and north towards Steenbokpan. The vegetation structure varies from tall; open to low woodland dominated by broad-leaved and microphyllous species on soils underlain by arenite and sandstone. Noteworthy species include *Acacia erubescens* and *Combretum apiculatum*, with *Terminalia sericea* on areas comprising of deep sandy soils. The Western Sandy Bushveld is also Least Threatened with about 6 % statutorily conserved in the Marakele National Park. Refer to Table 21 for a list of characteristic plant species of the vegetation type and to Figure 23 for a map indicating the vegetation types covering the project site.

Table 20: List of characteristic plant species for Limpopo Sweet Bushveld

Limpopo Sweet Bushveld Vegetation Type	
Layer	Species
Woody Layer	<p>TREES: <i>Acacia robusta</i>, <i>Acacia burkei</i>, <i>Acacia erubescens</i>, <i>Acacia fleckii</i>, <i>Acacia nilotica</i>, <i>Acacia Senegal</i> var. <i>rostrata</i>, <i>Albizia anthlemintica</i>, <i>Boscia albitrunca</i>, <i>Combretum apiculatum</i>, <i>Terminalia sericea</i>.</p> <p>TALL SHRUBS: <i>Catophractes alexandri</i>, <i>Dichrostachys cinerea</i>, <i>Phaeoptilum spinosum</i>, <i>Rhigozum obovatum</i>, <i>Cadaba aphylla</i>, <i>Combretum hereroense</i>, <i>Commiphora pyracanthoides</i>, <i>Ehretia rigida</i> subsp. <i>Rigida</i>, <i>Euclea undulate</i>, <i>Grewia flava</i>, <i>Gymnosporia senegalensis</i>.</p> <p>LOW SHRUBS: <i>Acacia tenuispina</i>, <i>Commiphora Africana</i>, <i>Gossypium herbaceum</i> subsp. <i>Africanum</i>, <i>Leucosphaera bainesii</i>.</p>
Forb layer	<p>SUCCULENTS: <i>Kleinia fulgens</i>, <i>Plectranthus neochilus</i></p> <p>NON-SUCCULENTS: <i>Acanthosicyos naudini</i> subsp. <i>Transvaalense</i>, <i>Hemizygia elliottii</i>, <i>Hermestaedia odorata</i>, <i>Felicia muricata</i>, <i>Indigofera daleoides</i>.</p>
Grass layer	<p><i>Digitaria eriantha</i> subsp. <i>eriantha</i>, <i>Enneapogon cenchroides</i>, <i>Eragrostis lehmanniana</i>, <i>Panicum coloratum</i>, <i>Schmidtia pappophoroides</i>, <i>Aristida congesta</i>, <i>Cymbopogon nardus</i>, <i>Eragrostis pallens</i>, <i>Eragrostis rigidior</i>, <i>Eragrostis trichophora</i>, <i>Ischaemum afrum</i>, <i>Panicum maximum</i>, <i>Setaria verticillata</i>, <i>Stipagrostis uniplumis</i>, <i>Urochloa mosambicensis</i>.</p>

Table 21: List of characteristic plant species of Western Sandy Bushveld vegetation type

Western Sandy Bushveld Vegetation Type	
Layer	Species
Woody Layer	<p>TREES: <i>Acacia erioloba</i>, <i>Acacia nigrescens</i>, <i>Sclerocarya birrea</i> subsp. <i>Caffra</i>, <i>Acacia erubescens</i>, <i>Acacia melifera</i> subsp. <i>Detinens</i>, <i>Acacia nilotica</i>, <i>Acacia tortilis</i> subsp. <i>Heteracantha</i>, <i>Combretum apiculatum</i>, <i>Combretum imberbe</i>, <i>Terminalia sericea</i>, <i>Combretum zeyheri</i>, <i>Lanea discolor</i>, <i>Ochna pulchra</i>, <i>Peltoporum africanum</i>.</p> <p>TALL SHRUBS: <i>Combretum hereroense</i>, <i>Euclea undulate</i>, <i>Coptosperma supra</i> – <i>axillare</i>, <i>Dichrostachys cinerea</i>, <i>Grewia bicolor</i>, <i>Grewia flava</i>,</p>

	<i>Grewia monticola</i> .
Forb layer	<i>Blepharis integrifolia</i> , <i>Chamaecrista absus</i> , <i>Evolvulus alsinoides</i> , <i>Geigeria burkei</i> , <i>Kyphocarpa angustifolia</i> , <i>Limeum fenestratum</i> , <i>Limeum viscosum</i> , <i>Lophiocarpus tenuissimus</i> , <i>Monsonia angustifolia</i> , <i>Clerodendrum ternatum</i> , <i>Indigofera filipes</i> , <i>Justicia flava</i> .
Grass layer	<i>Anthehora pubescens</i> , <i>Digitaria eriantha</i> subsp. <i>eriantha</i> , <i>Eragrostis pallens</i> , <i>Eragrostis rigidior</i> , <i>Schmidtia pappophoroides</i> , <i>Aristida congesta</i> , <i>Aristida diffusa</i> , <i>Aristida stipitata</i> subsp. <i>graciliflora</i> , <i>Eragrostis superba</i> , <i>Panicum maximum</i> , <i>Perotis patens</i> .

11.10.2 Red Listed, Important, Endemic and Protected Plant Species

Areas comprising natural vegetation are considered suitable habitat for presence of conservation important species. The land north and south of the existing railway line is natural. The consideration of plants of conservation concern and importance is based on the following legislative sets:

- National Forest Act (84 of 1998)
- Limpopo Environmental Management Act (7 of 2003)

(a) Red Listed Plant Species

The project site is located within Quarter Degree square 2327 CD. According to the Plants of South Africa database (SANBI) no threatened, near-threatened or any rare and declining species as listed by the TSP are expected to occur at the proposed study site. It also indicates Red Data Species are absent from the quarter-degree grid square corresponding to the study site.

(b) Protected Species

Trees: Several protected tree species were observed on site on 13 June 2018. Plant species listed as protected under Schedule 12 of the Limpopo Conservation Act (Act 7 of 2003) which are likely to occur on site are listed below:

- Marula (*Sclerocarya birrea* subsp. *Caffra*), Hardekool/Leadwood (*Combretum imberbe*), Shepards Tree (*Boscia Albitrunca*) and Tamboti (*Spirostachys Africana*)

A permit is required to remove or disturb a protected tree. Permits for removal of protected tree species would need to be obtained from DAFF for removal of any listed nationally protected tree species found within the footprint areas.

The above four tree species appear on the national list of protected tree species as promulgated by the National Forest Act, 1998 (Act 84 of 1998). The main reasons for this list are to provide strict protection of certain tree species while others require control over harvesting and utilisation.

(c) Endemic or Near Endemic Species

Suitable habitat may exist on the project site for an important central bushveld endemic found within this region, the *Piiranthus atrosanguineus*, a succulent stapeliad. It is distributed long the Limpopo River valley from Gaborone in Botswana eastwards to Zeerust and northwards to Lephalale, and into areas north of the Soutpansberg (Bruyns, 2005). It has been located in Acacia-Grewia bushveld.

11.10.3 Red Listed, Important, Endemic and Protected Faunal Species

Threatened, near threatened and conservation important bird species that may occur at the project site include Tawny Eagle (vulnerable), Kori Bustard (vulnerable), Red-Billed Oxpecker (near threatened), White-backed Vulture (Vulnerable), Marabou Stork (Near threatened), Martial Eagle (Vulnerable), Bateleur (Vulnerable) and the Lapped-faced Vulture (Vulnerable)

Conservation important reptiles that may occur include the South African Python (vulnerable). Mammals of conservation importance that may occur at the project site include the Bushveld South African Hedgehog (near threatened), Pangolin (vulnerable), Brown Hyaena (near threatened), Serval (near threatened), and Honey Badger (near threatened).

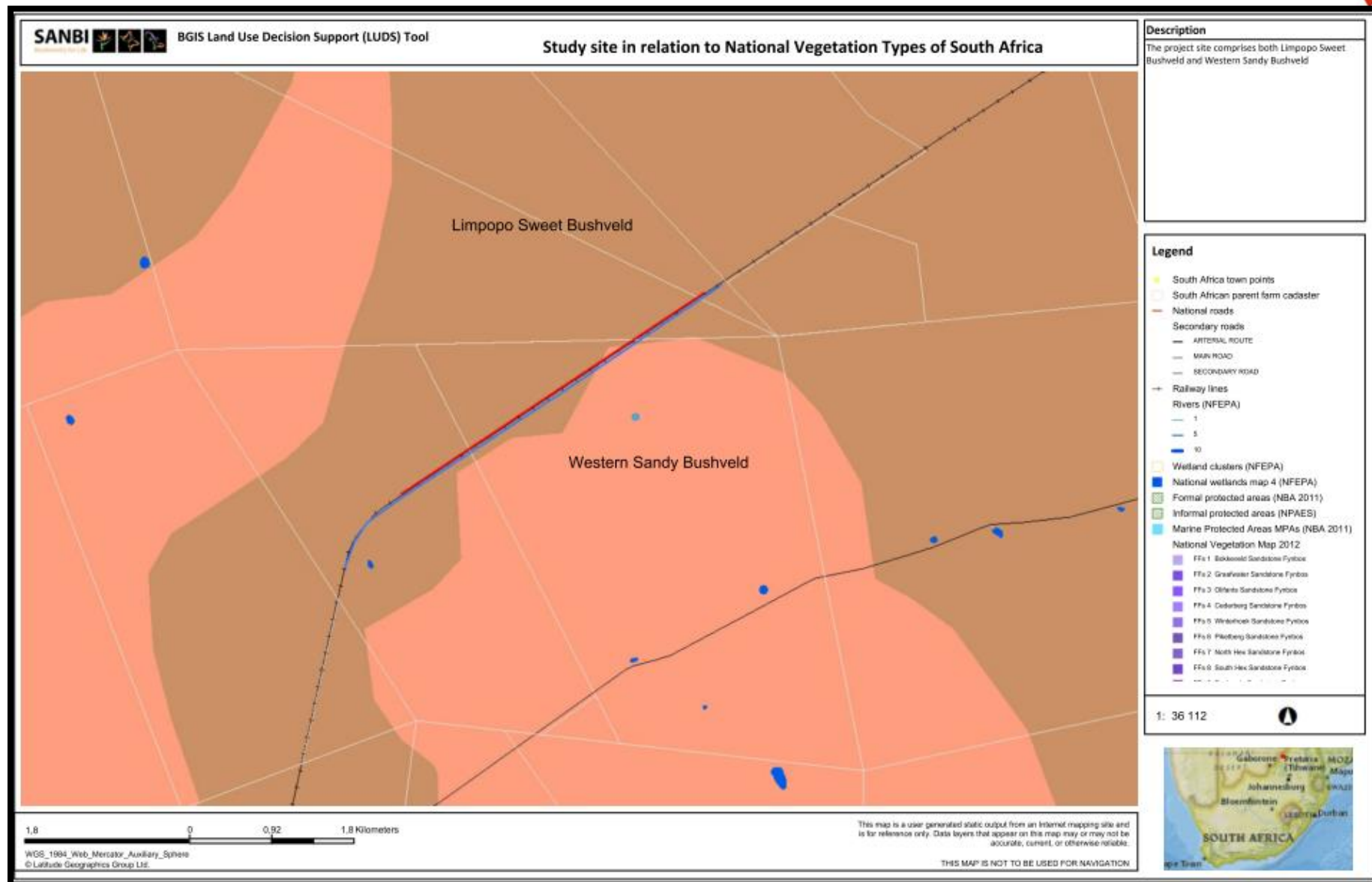


Figure 22: Vegetation types coinciding with the project site

11.11 Conservation and Protected Areas

Based on the National Register of Protected Areas the project site corresponds to Koedoe Nature Reserve declared in 1962 and coincides with the Remainder of the farm Geelhoutkloof 359LQ. Refer to Figure 24 which shows the position of the proposed project in relation to the nature reserve.

Of note is many of the surrounding farms are utilised as game and hunting farms which support an abundance of free roaming game namely Impala, Kudu, Warthog, Rooihartbees potentially Blouwildebeest and other game species.

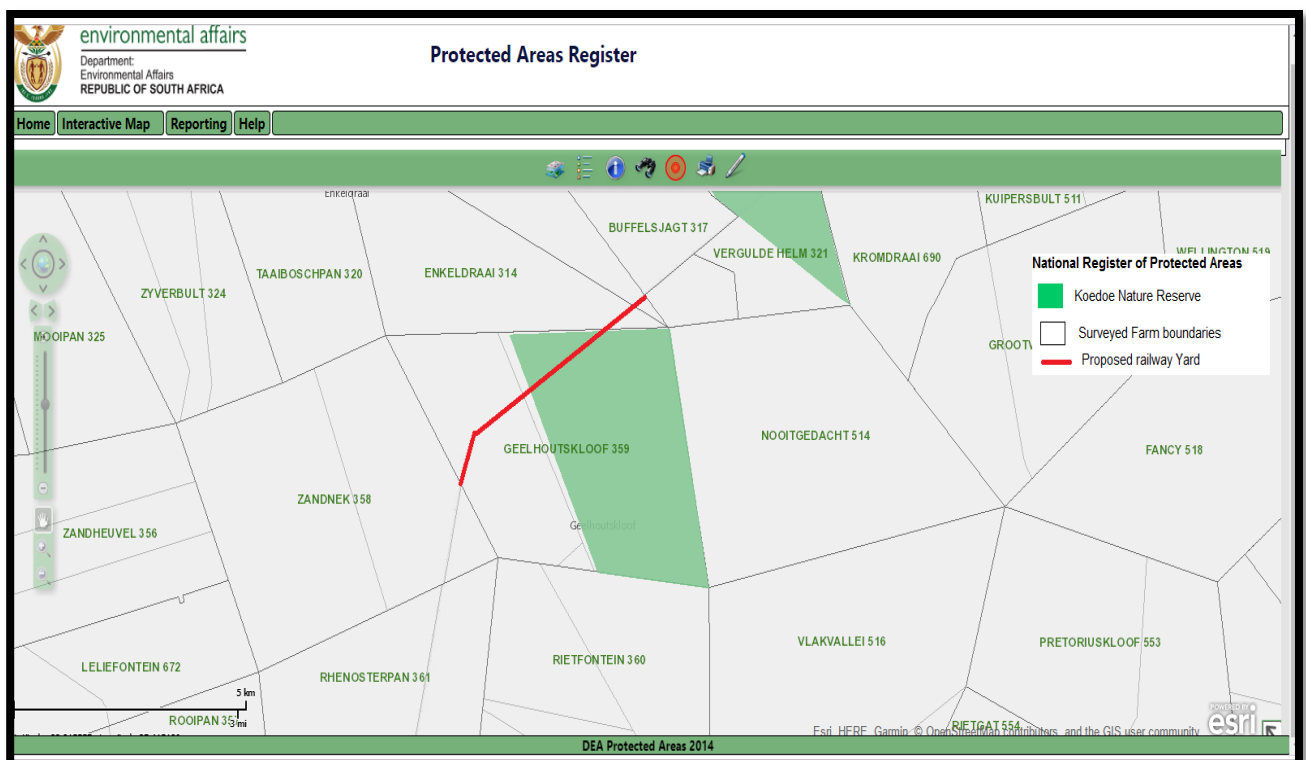


Figure 23: Project site corresponding to Koedoe Nature Reserve according to the National Register of Protected Areas, DEA 2014

11.12 Important Biodiversity Areas

Provincial Conservation Plan: In terms of the Limpopo Conservation Plan of 2013 the project site corresponds to at least two priority biodiversity areas, which are Ecological Support Area 1 (ESA 1) and Critical Biodiversity Area 2 (CBA 2).

(See Figure 26 overleaf for the location of project site overlaying biodiversity priority areas).

District: Based on the Waterberg District EMF the project areas falls within Environmental Management Zone 5 set out as a mining and industrial development focus area, Zone 11 a major

infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities.

The project is in line with the land use planning for Zones 5 and 11 but not inline with Zone 2. Zone 2 represents areas of high natural, visual and cultural quality with the potential for development of nature and /or cultural based tourism.

The potential visual impact, cultural and heritage impact, ecological impact as well as socio economi impacts that may arise as a result of the project will be assessed in detail through specialist investigations during the EIA Process. Comments will also be solicited from LEDET and the WDM during the public participation process.

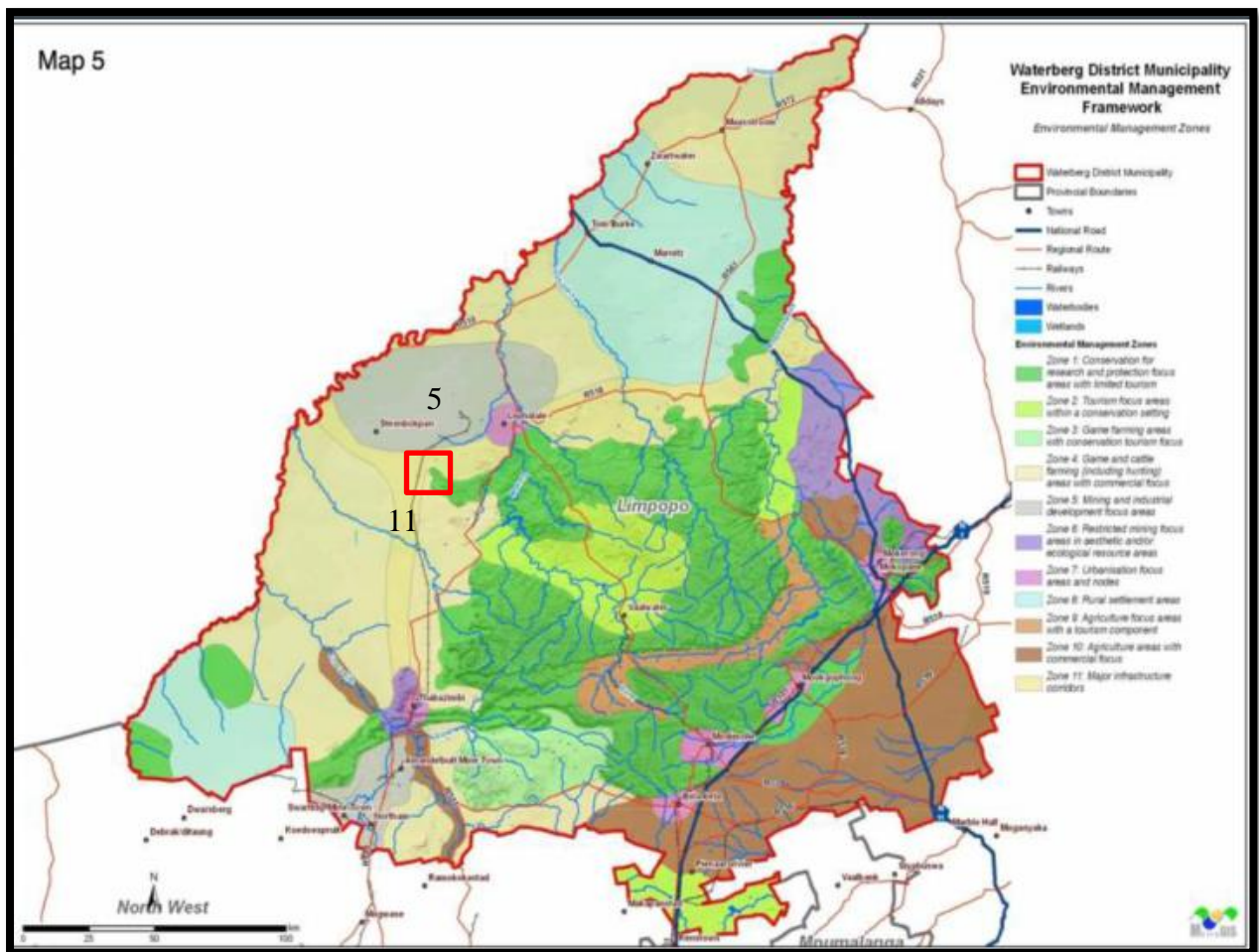


Figure 24: Location of project in relation to Waterberg District EMF Environmental Management Zones

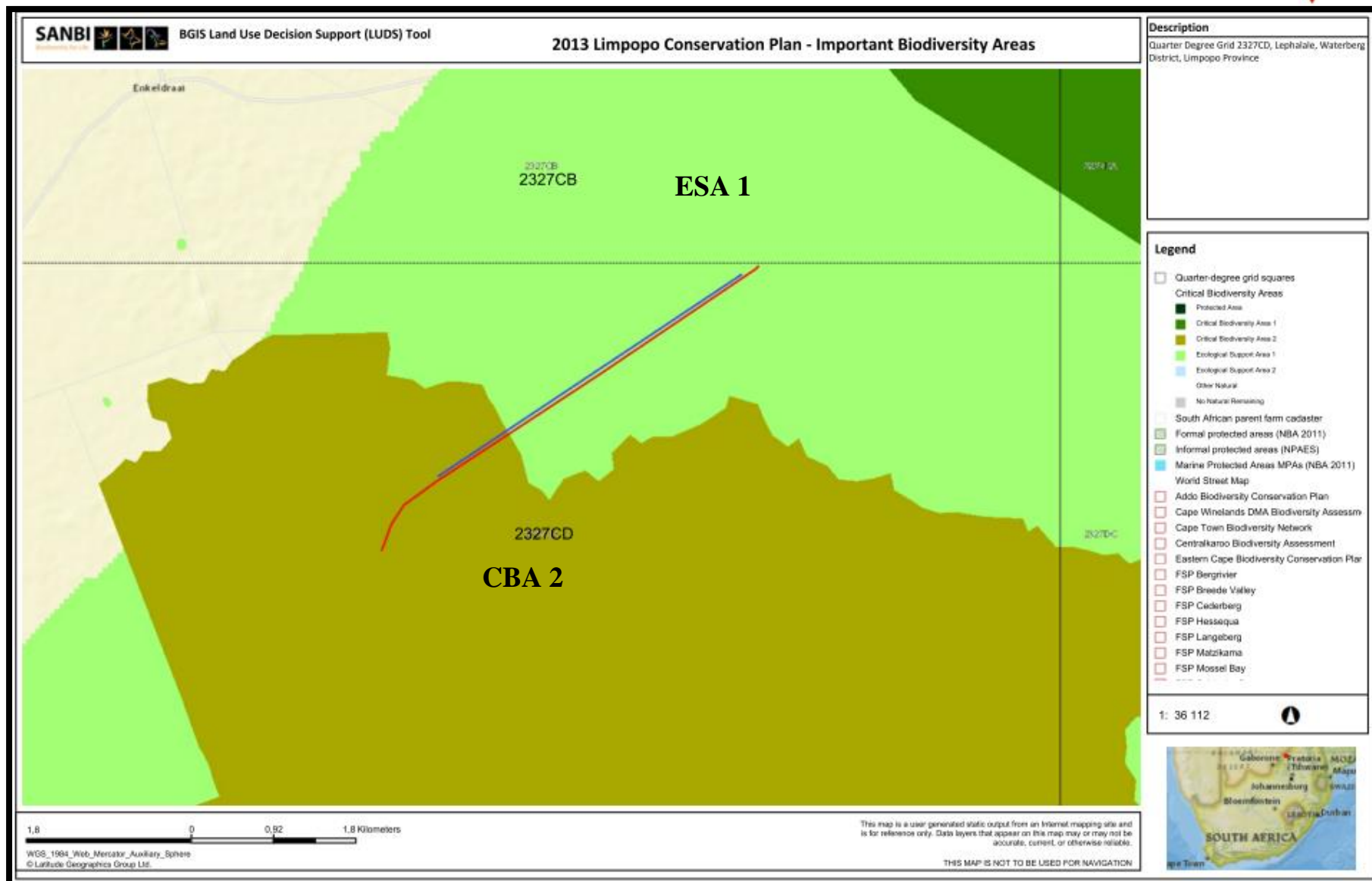


Figure 25: Proposed railway yard development corresponding to important biodiversity areas as set out in the Limpopo Conservation Plan 2013

Municipal: The Lephhalale SDF echoes the Waterberg District EMF in its land use planning objectives. Based on the Lephhalale SDF the project site corresponds to Environmental Management Zone 11 set out as a major infrastructure corridor and to a lesser extent in Zone 2 which is set out for nature and cultural tourism activities.

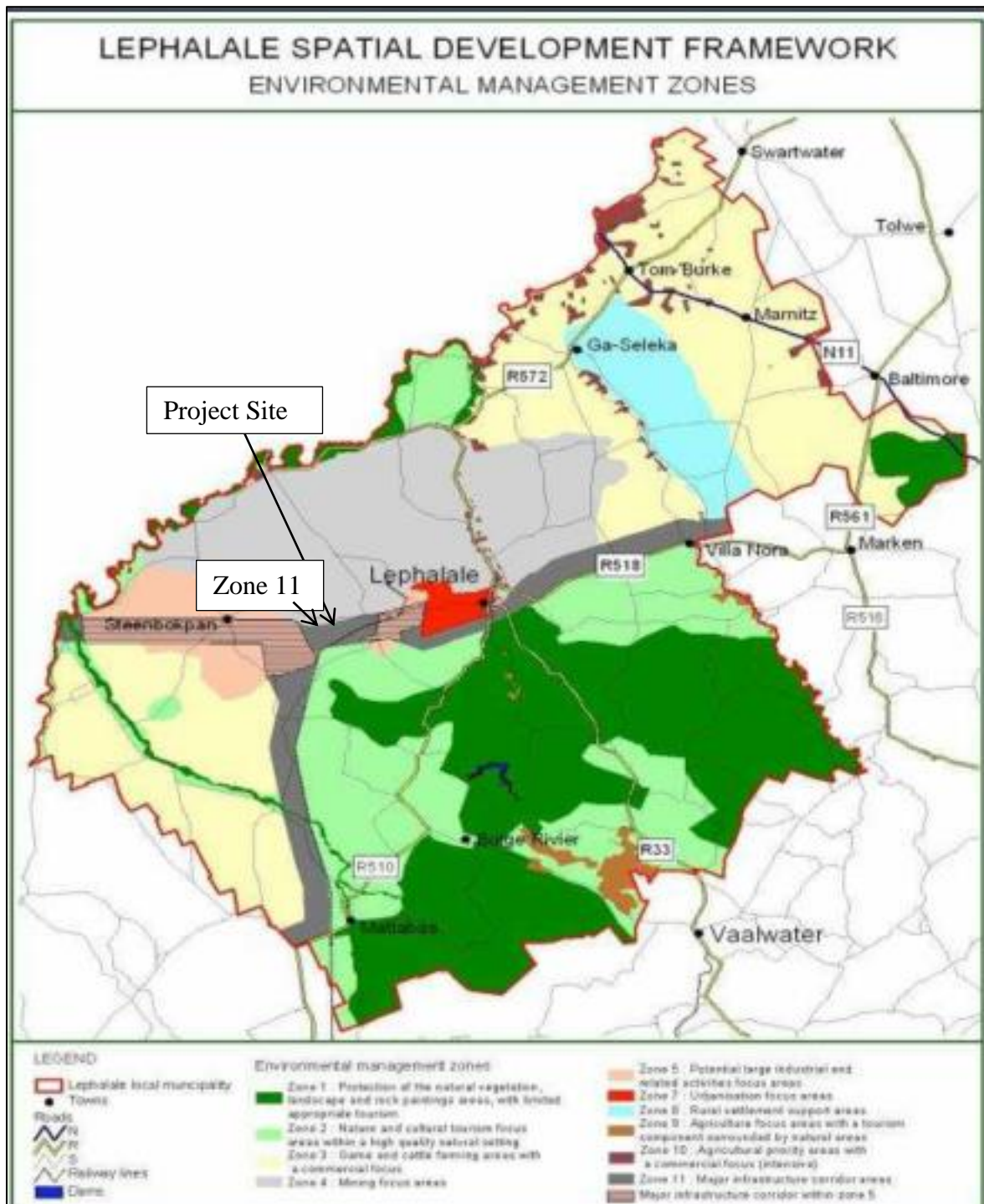


Figure 26: Project site in relation to Lephhalale SDF Environmental Management Zones

National Freshwater Ecosystem Priority Areas: The project site is further located in a National Freshwater Ecosystem Priority Area (NFEPA) in the sub catchment area of Matlabas/Mokolo sub water management area. The function or purpose of this NFEPA is however not specified on the SANBI online LUDS tool. Please refer to Figure 28 indicating the position of the project site within the NFEPA within the Matlabase/Mokolo sub water management area.

Important Bird Area: The project site is not located within an important bird area. The Waterberg Biosphere Reserve is an Important Bird Area located 30km east from site.

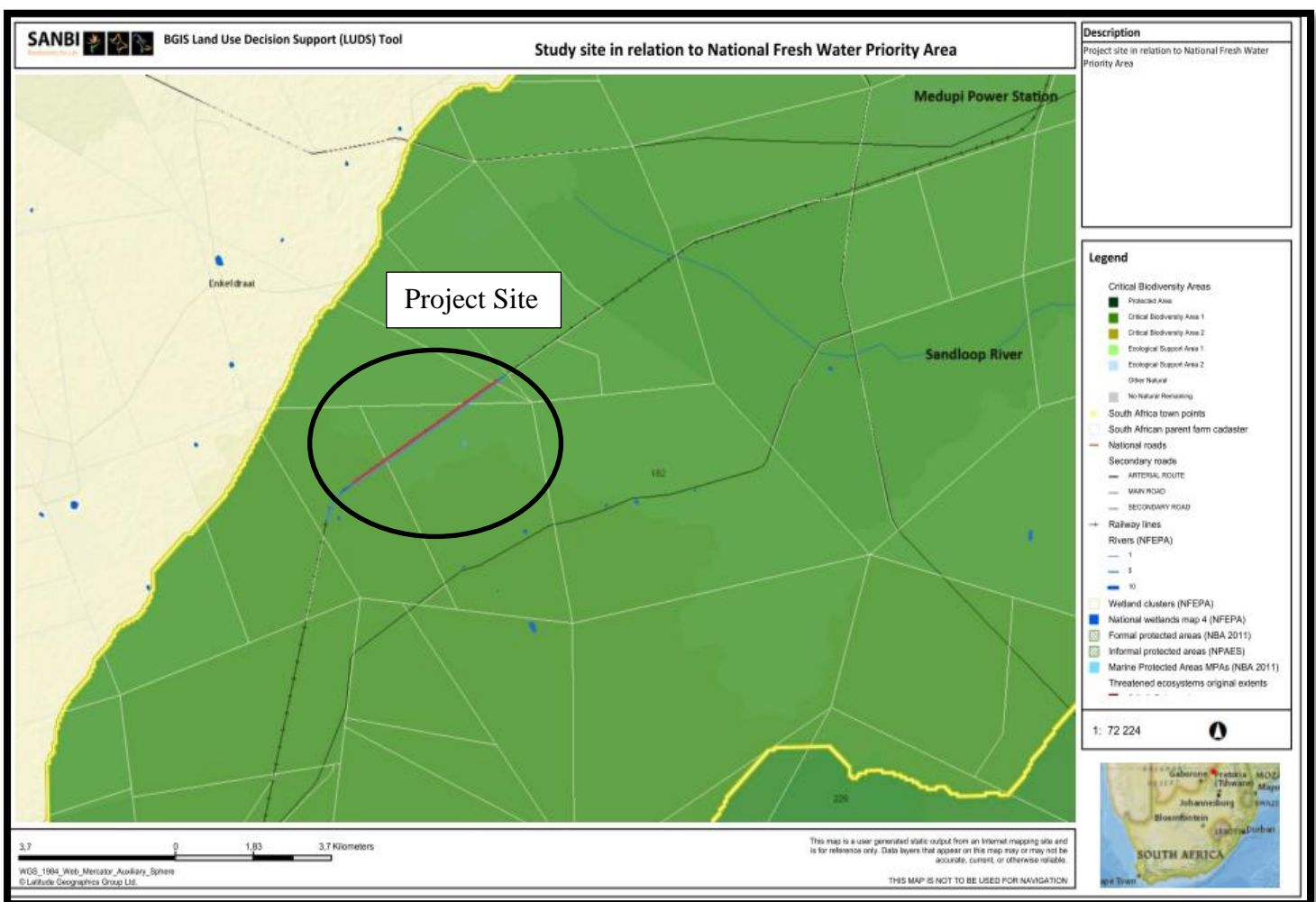


Figure 27: Project site located within the NFEPA of Matlabas/Mokolo sub catchment area

11.13 Air Quality

The Waterberg District Municipality forms part of the Waterberg-Bojanala Priority Area with the DEA establishing ambient monitoring stations as part of the AQMP development for the priority area. There is currently no existing major air pollution problem in the area; there are indications that government recognises the potential for a problem to occur. Lephalale is the major contributor to industry emissions at approximately 96% of emissions in the Waterberg District. Matimba power station and Grootgeluk Coal Mine are the main contributing sources in Lephalale. Lephalale is also a significant contributor to vehicle emissions at 24%.

The ambient air quality in the Lephalale area is affected by the following existing source types:

- Matimba and Medupi power stations and ash dumps
- Coal mining operations
- Household fuel combustion,
- Infrequent veld fires
- Wind blow dust from open areas
- Vehicle exhaust releases and road dust entrainment along paved and unpaved roads in the area

The railway yard site is situated distant from any sensitive receptors. During the construction of the railway yard increased dust is anticipated due to vehicle entrained dust along service roads, windblown dust from exposed surfaces, spoil piles and borrow areas.

During the operation phase there would be coal dust blown from train wagons (wagons not covered with chutes) and emissions from diesel locomotives (carbon monoxide, hydrocarbons, soot, nitrogen oxide, sulphur dioxide).

11.14 Noise and Ground Vibration

Barend van den Merwe from dBAcoustics prepared a Noise and Vibration Scoping Report for the project dated August 2018. The report is attached under Appendix C4. Based on the report the project study area comprises two regional land uses namely game farming (rural) and industry.

There is no ambient noise data of the study area and existing noise reports for previous noise studies done in the vicinity of the study area was used. In the vicinity of Thabametsi mine the ambient noise levels are 40.0dBA during the day and 35.0dBA during the night.

There is an existing power station and existing mining operations in the vicinity of the proposed rail yard which will contribute to the prevailing ambient noise levels of the study area. The noise sources that prevail in the vicinity of the project area include:

- Mine activities and processing plant;
- Traffic: hauling vehicles, busses and motor-vehicles along the abutting feeder roads;
- Medupi power station
- Game farming activities

There are individual farmsteads in the vicinity of the new railway yard which are considered the noise receptors to these noise sources.

Based on preliminary 'rural' noise readings taken at Geelhoutkloof 359LQ during July 2018, the prevailing ambient noise level during the night is below 30.0dBA at a distance of 908m from the existing rail track. Once the train passes enroute to Grootgeluk mine there is a definite increase in noise up to 55dBA which lasts up to 4 minutes. This is considered a finite type of noise.

It was found that the prevailing ambient noise level closer to Medupi power station was 45.0dBA which will make the impact during train movement less.

The proposed noise to be generated at the railway yard will be infinite (depending on the activities scheduled at the yard). The main sources of noise from the railway yard will include:

- During construction preparation and provision of infrastructure (potentially also blasting) may have a cumulative impact on the environment;
- During the operational phase it will be shunting, train activities, hooting which may have a cumulative impact on the abutting noise receptors;

The full Noise and Vibration Impact Assessment will be conducted as part of the EIA Study. The noise survey will be done during the day and the night time periods as to determine the baseline noise levels which will be used to identify possible noise intrusion levels at the abutting noise receptors. This will assist in the management of the project noise during construction and operation.

11.15 Visual Impact / Characteristics

Visual character is based on human perception and the observer's response to the relationships between and composition of the landscape, the land uses and identifiable elements in the landscape.

The project site is relatively flat and slightly undulating. The land cover is open bush and low shrub land. It has a rural natural character comprising commercial game farms (nature and tourism activities) with mines (Grootgeluk Exxaro) and power stations (Matimba and Medupi) forming the development hub within the landscape.

The regional visual quality is impacted by a significant infrastructure corridor crossing the project area (power lines, existing railway track, new rail siding), mining and plants.

Irrespective of the industry landscape backdrop and infrastructure corridor, the area has a high visual quality, based on its natural character and surrounding game farms.

Sensitive visual receptors to the development will include game farm owners/landowners, tourists (game hunters) as the new yard site is nestled amid the game farms.

It is anticipated that a moderate visual impact may result from this development as a result of clearance of bushveld vegetation and change of surface cover. The operational phase will see an alternative land use which may alter the bushveld character in the immediate area.

For some stakeholders their sense of place may change. It is mostly not possible to mitigate impacts on the sense of place. Input should be obtained from current landowners.

A Visual Impact Assessment will be conducted as part of the EIA Process to determine the potential impact on sensitive receptors, the landscape character, internal hunters/tourists and landowners. This will assist in the management of the project visual impact during construction and operation.

11.16 Traffic

The railway yard development will influence the following existing external road network in the study area:

- R 510 Thabazimbi / Lephale Road
- Nelson Mandela Drive (between Lephale and Grootgeluk Mine)
- Afguns Road

The development will generate traffic along these routes during construction and operation. This includes:

- Trips generated by construction crew vehicles and Transnet transportation vehicles to and from site during peak time traffic (morning and late afternoon- no construction camp is allowed for);
- Trips generated by construction machinery;
- Trips generated by 50-100 staff members working at the yard during the operational phase;
- Water trucks delivering water for domestic purposes to site during the operational phase;
- Fuel brought to site by truck;
- Service providers collecting and removing waste or servicing infrastructure.

Based on the Lephale IDP, Mandela Drive is becoming congested with traffic due to abnormal freight to the mines, power stations including commuting workers during peak time traffic and off peak time traffic. A Traffic Impact Assessment Study will be conducted as part of the EIA Study.

11.17 Cultural and Heritage Landscape

Millenium Heritage Consultants CC, Eric Mathotho has conducted a Heritage Impact Assessment for the project site attached under Appendix C5. The findings of the report states that generally, this area is known for sparsely distribution of archaeological sites, ranging from Khoi- San rock art, Iron Age and recent past periods including burial sites (Huffman 2007).

There is no evidence of archaeological materials remains on the proposed railway yard. There is no indication of graves or burial sites within the proposed area.

However excavations and site clearance may unearth sites of heritage and cultural significance. In terms of Section 38 of the National Heritage Resources Act, 1999 (Act 25 of 1999) and necessary mitigations need to be implemented on change finds.

11.18 Socio-Economic Environment

Equispectives Research & Consulting Services prepared a Social Scoping Report for the project. Information included in this section has been abstracted from the Social Scoping Report attached under Appendix C6.

The project is located in Ward 3 of the Lephapale Local Municipality that is located in the Waterberg District Municipality in the Limpopo Province. The Waterberg region is regarded as a strategic growth node for various activities within the Mining and Minerals sectors. The proposed site is located approximately 30 km west of the town of Lephale, in the rural area of Steenbokpan.

The Lephale Local Municipality is the largest municipality in the Waterberg District and covers an area of 13 794 km². It had a population of 115,767 in 2011 and 136,626 in 2016. It had 29, 880 households in 2011 and 42, 073 households in 2016. The population in the municipality showed an increase of about 18% between 2011 and 2016, while the number of households has increased with just over 40%. Together with the increase in construction and mining activities in the area, this suggests an increase in the number of migrant workers in the area, which is also supported by the high proportion of households that consists of one or two members.

The main economic sectors in the municipal area are mining, electricity and agriculture. Hunting and tourism are the main tourism activities and there are a number of hunting farms in the Steenbokpan area. Agriculture is the sector that employs the largest part of the workforce, followed by community services in the municipal area. Tourism forms an important part of the economy of the area and is a potential future growth area. Hunting and ecotourism are the main tourism activities.

Ward 3

Population: Over two thirds of the population in Ward 3 belongs to Black population groups (68.4%) and a quarter to White population (28.6%). Ward 3 has a lower proportion of people belonging to the Black population group than on local or district level.

The average age in Ward 3 is 30.66 years. The majority of people in the ward are aged 25 – 34 years (23.1%), followed by 15 – 24 years (22.4%) and 35 – 49 years (20.6%).

Dependency ratio: Ward 3 has a total dependency ratio of 27.77, youth dependency of 22.85, aged dependency of 4.92 and employed dependency of 49.07 which is much lower than the local, district or provincial level. The low employed dependency (people dependent on people who are employed) is likely to the high incidence of farms in the ward where people reside at their place of employment with at least one household member being employed and the high incidence of urban areas in the ward.

Gender Distribution: The gender distribution in Ward 3 consists of 55.5% males and 44.5 % females. This can most likely be attributed towards economic and employment activities in the area such as mining, construction and agriculture that tends to favour males.

Language: Afrikaans is the home language of almost a third of the population in Ward 3, while almost a quarter has Setswana as home language. Almost a fifth of the population on Ward 3 has Sepedi as home language. The language profile in Ward 3 is very different from the profiles on local, district or provincial level where more than half of the population has Sepedi as home language.

Education Level: About a fifth of the people in Ward 3 aged 20 years or older have completed an education higher than Grade 12, which is much higher than on local, district or provincial level. Just over half of the population in the Ward has not completed secondary schooling (Grade 12 or equivalent). This is a lower proportion than on local, district or provincial level.

Employment: About two thirds of people aged between 15 -65 years in Ward 3 are employed, more than 70% of this group being employed in the formal sector. The level of employment on ward level is much higher than on local, district or provincial level.

Despite the apparent increase in economic activity in the area, levels of poverty have increased. Potential reasons for this are that the people who migrated to the area by far outnumber the available employment opportunities, or that contract workers who are only in the area for a relatively short period of time start families, which they leave behind when they move to the next contract, and the family that stays behind then struggles without their financial contribution. Another possible reason is price increases due to a high demand for certain items.

The majority of the population in the municipality belong to the Black population group, but in the ward there is a high proportion of people belonging to the White population group. This suggests that the ward is culturally more diverse than the municipal area as a whole. People in the ward tend to be older, and as such can be expected to be in a different life stage than the average municipal resident. The main languages spoken in the ward are Afrikaans, Setswana and Sepedi, making the ward culturally different from the municipal area.

Education levels on ward level are higher than on municipal level and unemployment levels are lower. The household income level on ward level is higher than on municipal level and suggests a greater variety of skills levels. There is a high demand for rented accommodation, and this is supported by the relatively high proportion of households that rent their dwellings as well as the high incidence of informal dwellings (in backyards and informal settlements) on municipal and ward level.

Due to the high incidence of mining and construction activities, as well as education levels, it is likely that a variety of the required skills would be available on local level.

Housing for contractors may not be freely available, and might be costly if available. Consideration should be given in advance to the accommodation of construction workers and employees.

The Social Scoping Report states that potential impacts expected from the project include:

Planning and Design Phase:

- Expectations regarding creation of opportunities (Jobs etc.)

During the Construction Phase:

- Impacts of traffic on people – dust, noise, safety, increase in traffic – from a social and nuisance perspective;
- Impacts on livelihoods – of landowners;
- Safety of community – possible increase in crime due to increased number of strangers in community;
- Negative community relations due to conduct of contractors/ representatives of Transnet.

- Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc;
- Creation of jobs and other economic opportunities;
- For some stakeholders their sense of place may change
- Change in property values

During Operational Phase:

- Negative community relations due to conduct of contractors/ representatives of Transnet.
- Creation of jobs and other economic opportunities
- For some stakeholders the sense of place will change
- Change in quality of living environment due to environmental nuisance such as noise, increased traffic and light
- Change in tourism potential
- Safety of community – possible increase in crime due to increased number of strangers in community.
- Change in property values

SECTION G: IDENTIFIED IMPACTS BASED ON ENVIRONMENTAL ATTRIBUTES

12 PRELIMINARY IDENTIFIED IMPACTS AND RISKS

Appendix 2 of the EIA Regulations of 2014 (as amended by GNR 326) requires that the impacts and risks which have informed the identification of each alternative, including nature, significance, consequence, extent, duration and probability of such identified impacts including degree to which impacts can be reversed, may cause irreplaceable loss of resources, be avoided managed or mitigated must be stated.

12.1 Potential impacts and Risk identified

The potential impacts on environmental and socio-economic resources and receptors arising from the railway yard project are linked to the different stages of the project which are identified as construction, operation and decommissioning. Preliminary impacts have been detailed based on the environmental attributes of the project site and sensitive receptors stated in Section F, 11.

Environmental Attributes on site which may be affected by development include:

- Biodiversity (Fauna, Flora, important biodiversity areas)
- Protected area (Koedoe Nature Reserve)
- Topography
- Geological features and soils;
- Surface and Groundwater
- Air Quality
- Ambient noise levels
- Visual characteristics

Social attributes on site and close to site that may be affected by the new railway yard:

- Road infrastructure – Increased traffic along local (Mandela Drive, Afguns road) and regional roads (R510)

- Direct and surrounding land uses
- Social environment (sensitive receptors, affected and adjacent landowners, tourists)
- Cultural and heritage sites

Below is a description of the potential impacts that may derive from this project. These impacts were compiled based on the onsite observations, desktop analysis, limited specialist input and impacts related to the type of development on a preliminary layout plan. The potential impacts and risks may change once detailed specialist impact assessments have been completed and inputs from the public and authorities have been considered.

It is likely that many of these impacts can be adequately addressed through the implementation of appropriate mitigation and management measures, but requires further specialist investigation as part of the EIA Phase. Please refer to the table below for a description of potential impacts.

Aspect	Rating	Description
Planning and Design Phase		
Social impact	Neutral	The proposed development will create expectations regarding job opportunities.
Construction Phase		
Noise and Vibration	Negative	<p>The project is located adjacent to the existing railway line and therefore noise generated by the movement of trains already exists and is not entirely out of place given the status quo. However the existing track has a finite type of noise generated in a rural area. The proposed railway yard will generate infinite noise levels in an area with an ambient noise level below 30 dBA.</p> <p>During the construction phase increased noise levels will be experienced. Vehicles including delivery trucks and excavation equipment may produce increased noise levels along access and service road, including civil and infrastructure construction and potential blasting. Impacts during construction are likely to be low to moderate considering the rural location of the site and there are few farm dwellings between 1km to 3km from the new yard site.</p>
Air quality and Dust impact	Negative	Limited dust generation may occur during construction due to vegetation clearance, transportation of materials, construction of the yard, windblown dust from spoil piles and due to vehicle entrained dust along service roads. Since sensitive receptors are distant from the site the increase in dust is not likely to be a significant.
Visual impact	Negative	During the construction phase activities will be visible to directly adjacent landowners and potential hunters/tourists. Scarring of local area (clearing of vegetation and change of surface cover) will take place to make way for tracks and the yard. The impact is considered of moderate significance.
Impact on Fauna, Flora and Habitats	Negative	<p>The railway yard will be developed on land comprising indigenous bushveld vegetation cover and several protected tree species. The surrounding farms also support an abundance of free roaming game. It also coincides with important biodiversity areas (ESA, CBA). Several construction activities may impact on the fauna and flora. During the construction phase vegetation will be cleared for tracks, roads, buildings which could resulting in:</p> <ul style="list-style-type: none"> ▪ General loss of habitat for fauna and loss of sensitive faunal species, habitats and ecosystems ▪ Impact on protected trees, listed plants species and high-biodiversity plant communities; ▪ There is also an increased risk for soil erosion due to vegetation clearance; ▪ Construction machinery can result in trampling of vegetation and generate noise resulting in game to vacate the sections of game farms bordering the project site due to noise; ▪ The increased human presence can lead to poaching, illegal plant harvesting or fire; ▪ Habitat can also become fragmented due to the presence of the rail infrastructure and its

		ancillary structures.
Impact on Conservation Areas	Negative	The existing railway line cuts across the Koedoe Nature Reserve. The reserve is privately owned and operated as a game hunting/eco-tourism farm. The construction of further rail facilities within the reserve will result in the loss of a further 22 hectares of conservation area.
Generation/storage and disposal of waste	Negative	During the construction phase construction waste will be generated and spoil material.
Impact from Surface and Groundwater	Negative	No surface or groundwater was encountered on site. Fuel and hydrocarbon spillages from construction vehicles have a low risk of impacting on shallow water table.
Impact on soil resources	Negative	Displacement of soil and compact soil and exposed soil pose a risk for erosion.
Social environment	Negative and Positive	During the construction phase impacts that may be experienced include: <ul style="list-style-type: none"> ▪ Impacts from traffic on people such as dust, noise, safety, increased traffic may post a nuisance to landowners. ▪ The industrial type activity in this rural setting may also impact on the adjacent land uses and impact on the livelihoods of landowners. ▪ Crime may increase in the area due to increased number of strangers in the community. ▪ Negative community relations may prevail due to conduct of contractors of Transnet. ▪ Influx of people ▪ For some stakeholders their sense of place may change and property values; ▪ Jobs will be created and other economic activities (positive)
Cultural and Heritage Resources	Neutral	No sites of cultural or heritage resources were identified on the project site. No impacts as foreseen.
Traffic	Negative	There will be an increase in traffic during construction along Mandela Drive, Afguns road due to trips generated by construction crew vehicles and Transnet transportation vehicles to and from site during peak time traffic (morning and late afternoon- no construction camp is allowed for), transportation of infrastructure, equipment and earth-moving vehicles. The impact is anticipated to be of low significance during construction.
Health and Safety	Negative	The risk for injury will be mainly limited to subcontractors as Transnet servitude/development area is secured to avoid free movement of the public into the development site.
Operational Phase		
Noise and Vibration	Negative	There are individual farmsteads in the vicinity of the new railway yard. Increased noise levels are anticipated during the operational phase from use of railway infrastructure by trains, workshop activities, shunting and hooting which will have a significant impact on the abutting noise receptors.
Air Quality and Dust	Negative	The railway yard will not load and offload stock (coal). Handling will be conducted at the coal mines.

		<p>The railway yard will inspect rolling stock. The train wagons will not be covered. During the operation phase it anticipated that windblown coal dust from train wagons can be expected and will settle in the rail yard and potential in the immediate area.</p> <ul style="list-style-type: none"> ▪ Emissions from diesel locomotives (carbon monoxide, hydrocarbons, soot, nitrogen oxide, sulphur dioxide)
Visual impact	Negative	<p>There are a number of existing man-made features such as power lines, the existing railway track and a service road on site and in the local area. The area represents an area of high natural and visual quality with the potential for development of nature and /or cultural based tourism. The development of the railway yard will result in the alternation of the landscape character and moderate visual intrusion. It is anticipated that the Steel water reservoir will also rise above the tree canopy and be visible from a distance. Further during night time lighting from the rail yard may impact on surrounding landowners. The presence of the railway yard is anticipated to have a moderate visual impact on sensitive receptors and on the bushveld character.</p>
Impact on fauna, flora and habitat	Negative	<p>The existing railway line is already operational at the new yard site yet the new yard will generate infinite noise resulting in fauna to evacuate the area which could result in habitat fragmentation. This impact is however anticipated to be moderate to low considering the servitude is already fenced off on either side. Maintenance activities such as clearing of vegetation may result in edge effects and impact on indigenous plants and result in the spread of alien invasive species. There are also several protected tree species namely Marula, Leadwood, Shepards Tree and Tamboti present along the railway line and at the project site and loss of individual protected tree species will be unavoidable. Impacts from the operations phase can be itemised as:</p> <ul style="list-style-type: none"> ▪ Risk for alien plant invasion post construction disturbance; ▪ Increased risk for erosion due to loss of vegetation cover ▪ Disruption of dispersal of fauna is anticipated to be minimal since the railway track servitude is already fenced off on either side. The new railway yard will require a 60m wide strip of land 4km along the existing railway track.
Generation/storage and disposal of waste	Negative	<p>During the operation phase waste generated will include:</p> <ul style="list-style-type: none"> ▪ fuels and greases including storage and treatment of oily water runoff using a separator; ▪ Disposal of waste oil and coolant residues (collected and stored in demarcated area). ▪ Infrastructure component waste such as scrap metal ▪ Domestic waste generated at offices; ▪ Sewage collected in conservancy tanks to be serviced regularly. Disposal to a registered facility may pose an issue due to municipal system overload and alternative disposal methods such as a

		package plant would need to be considered.
Impact on surface and groundwater	Negative	<p>No surface or groundwater was encountered on site. Based on the Geohydrological Study the development poses a low to medium risk for impacting on the surrounding groundwater regime. Impacts that may potential occur include:</p> <ul style="list-style-type: none"> ▪ Fuel and hardocarbon spillages from transport vehicles have a low risk of impacting on shallow water table; ▪ Oil spillages from storage drums may pose a medium risk for contamination to a shallow water table; (storage facilities would be lined) ▪ Fuel spillages from Diesel tanks have a medium risk for contamination of the a shallow water table. ▪ Septic spillages may pose a medium risk for impact on the groundwater quality of dependant surrounding groundwater users; ▪ Coal dust and rainfall seepage from locomotives/wagons may / will result in acidic stormwater which need to be catered for in the stormwater management plan.
Impact on soil resources	Negative	<ul style="list-style-type: none"> ▪ Fuel spillages may result in soil contamination; ▪ The potential for increased erosion caused by increase runoff from concreted surfaces
Social impact	Negative	<ul style="list-style-type: none"> ▪ Negative community relations may prevail due to conduct of representatives of Transnet; ▪ For some stakeholders the sense of place will change; ▪ Stakeholders may feel in a change in quality of living environment due to environmental nuisance such as noise, increased traffic and light; ▪ The project may affect the tourism potential of the direct area and property values; ▪ A possible increase in crime may prevail due to increased strangers in the community
Traffic	Negative	<p>There will be a significant increase in traffic along Mandela Drive and Afguns road during the operation phase of the railway yard. Trips will be generated by 50-100 staff members working at the yard during the operational phase, trucks delivering water for domestic purposes to site, fuel brought to site by truck including service provides collecting and removing waste or servicing infrastructure.</p> <p>The impact will be further assessed during the EIA Phase and a Traffic Impact Assessment Study will be conducted as part of the EIA Study.</p>
Health and Safety	Negative	<p>Game hunting is undertaken on farm Geelhoutkloof 359LQ south of the existing railway line where the new yard is proposed. A landowner concern was raised stating the current activities at the track are limited to trains passing by; the yard will include increased human activity. There is a safety risk for employees at the railway yard that need to be considered in the yard design eg. Boundary wall at</p>

		infrastructure/buildings.
Decommissioning Phase		
Social impact	Negative	Once the yard is decommissioned it will result in the loss of jobs and associated income.
Soil, Surface and Groundwater	Negative	Potential soil pollution from hydrocarbon spillages, waste disposal practice , soil compaction during removal of infrastructure.
Fauna and flora	Negative	<ul style="list-style-type: none"> ▪ Poor vegetation re growth post decommissioning and rehabilitation of project site could lead to degradation of the ecology ▪ Establishment of alien vegetation during re-vegetation of disturbed areas
Air Quality and Dust	Negative	Dust emissions from decommissioning and rehabilitation activities removal infrastructure, ripping of disturbed areas(vehicle entrained dust)

12.2 Preliminary Construction Phase Impacts and Risk

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
CONSTRUCTION PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Noise and Vibration															
Increased noise levels will be experienced. Vehicles including delivery trucks and excavation equipment may produce increased noise levels along access and service road, including civil and infrastructure construction and potential blasting.	Negative	3	1	2	3	18	Moderate	Negative	3	1	2	1	12	Low	Control
Air Quality and Dust Impact															

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
CONSTRUCTION PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Dust generated due to vegetation clearance, transportation of materials, construction of the yard, windblown dust from spoil piles and due to vehicle entrained dust along service roads	Negative	3	1	2	2	15	Moderate	Negative	2	1	2	1	8	Low	Control
Visual Impact															
Alter the landscape character: Scarring of local area (clearing of vegetation and change of surface cover) will take place to make way for tracks and the yard. The yard will be located in an area of high visual quality	Negative	3	2	4	2	24	Moderate	Negative	3	2	3	1	18	Moderate	Modify
Visual impact on neighbouring landowners - clearing of bushveld vegetation and change of surface cover	Negative	3	2	3	2	21	Moderate	Negative	2	2	3	1	12	Low	Modify
Impact on Faun, flora and Habitat (Ecological Impact)															
Spread of alien invasive species	Negative	3	1	3	2	18	Moderate	Negative	2	1	3	1	10	Low	Control
Loss of indigenous vegetation, flora and faunal habitat due to site establishment	Negative	3	2	4	2	24	Moderate	Negative	2	1	3	1	10	Low	Modify

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
CONSTRUCTION PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Increased human activity can lead to poaching, illegal plant harvesting and fire	Negative	2	2	2	4	16	Moderate	Negative	1	2	2	1	5	Low	Stop
Loss of species of conservation concern (protected tree species, high biodiversity plant species)	Negative	3	1	4	2	21	Moderate	Negative	3	1	3	1	15	Moderate	Modify
Habitat fragmentation due to presence of rail infrastructure	Negative	3	1	4	1	18	Moderate	Negative	2	1	4	1	12	Low	Modify
Impact on conservation important area (Koede Nature Reserve)- loss of species, vegetation, habitat, importantly protected trees	Negative	3	1	3	2	18	Moderate	Negative	2	1	3	1	10	Low	Modify
Surface and Groundwater															
No surface water or groundwater was encountered onsite. Fuel and hydrocarbon spillages have a risk on impacting on shallow water table	Negative	1	1	2	1	4	Very Low	Negative	0	1	1	0	0	Very Low	Control & Remedy
Impact on soil resources															
Displacement of soil and compacting of soil pose a risk for erosion	Negative	3	1	3	1	15	Moderate	Negative	2	1	2	1	8	Low	Control & Remedy

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
CONSTRUCTION PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Heritage and Cultural Impact															
No heritage or cultural sites were found on the project site. It is unlikely that excavations could unearth any cultural or heritage resources	Negative	1	1	5	0	6	Low	Negative	1	1	5	0	6	Low	Remedy
Social Impact															
Impacts from traffic on people such as dust, noise, safety, increased traffic may pose nuisance to landowners	Negative	2	2	2	3	14	Moderate	Negative	2	2	2	2	12	Low	Control
Impact on the livelihoods of landowners	Negative	2	2	2	3	14	Moderate	Negative	2	1	2	1	8	Low	Remedy
Crime may increase in the area due to increased number of strangers in the community	Negative	2	2	2	3	14	Moderate	Negative	1	2	2	1	5	Low	Control & Remedy
Negative community relations may prevail due to conduct of contractors of Transnet.	Negative	2	2	3	3	16	Moderate	Negative	1	1	2	0	3	Very Low	Control & Remedy
Influx of people to project area	Negative	2	2	2	3	14	Moderate	Negative	2	2	2	0	8	Low	Control & Remedy
For some stakeholders their sense of place may change.	Negative	3	2	2	3	21	Moderate	Negative	3	2	2	3	21	Moderate	Remedy

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
CONSTRUCTION PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Change in property values	Negative	2	2	2	4	16	Moderate	Negative	1	1	2	1	4	Very Low	Remedy
Creation of jobs and other economic opportunities.	Positive	3	3	2	2	21	Moderate	Positive							
Traffic															
Increased traffic along Madela Drive, Afguns road due to transportation of infrastructure, equipment and earth moving vehicles	Negative	3	3	2	2	21	Moderate	Negative	2	3	2	1	12	Low	Control
Health and Safety															
Risk of injury limited to subcontractors and Transnet servitude	Negative	2	1	1	4	12	Low	Negative	1	1	1	0	2	Very Low	Stop

12.3 Preliminary Operational Impact risks

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
OPERATIONAL PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Noise and Vibration															
Increased noise levels are anticipated during the operational phase from use of railway infrastructure by trains, workshop activities, idling of diesel locomotives, shunting and hooting which will have a significant impact on the abutting noise receptors, specifically the farm Geelhoutkloof 359LQ	Negative	3	3	5	4	36	High	Negative	3	2	5	3	30	High	Modify
Air Quality and Dust Impact															
Windblown coal dust from train wagons expected to settle in rail yard and cause a nuisance in the immediate area	Negative	3	1	5	2	24	Moderate	Negative	2	1	4	2	14	Moderate	Control
Emissions from diesel locomotives (soot)	Negative	2	1	5	1	14	Moderate	Negative	1	1	4	1	6	Low	Control
Visual Impact															
Alter the landscape character: Negative impact on visual quality of landscape: Operational phase introduce alternative landuse, altering existing bushveld character. The quality of landscape will be altered.	Negative	3	2	5	2	27	High	Negative	3	2	5	1	24	Moderate	Modify

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
OPERATIONAL PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Visual impact on neighbouring landowners - loss of vegetation cover and sense of place	Negative	3	1	5	2	24	Moderate	Negative	2	1	5	1	14	Moderate	Modify
Impact on Faun, flora and Habitat (Ecological Impact)															
Risk of alien plant invasion post construction disturbance	Negative	2	1	4	3	16	Moderate	Negative	1	1	2	3	6	Low	Control & Remedy
Increased risk for erosion due to loss of vegetation cover	Negative	2	2	3	2	14	Moderate	Negative	1	1	3	3	7	Low	Control & Remedy
Disruption of dispersal of fauna	Negative	2	2	4	2	16	Moderate	Negative	1	2	3	2	7	Low	Modify
Surface and Groundwater															
Fuel and hydrocarbon spillages have a risk on impacting on shallow water table	Negative	1	1	2	0	3	Very Low	Negative	0	1	1	0	0	Very Low	Remedy
Oil spillages from Storage Drums may cause groundwater contamination	Negative	3	1	2	3	18	Moderate	Negative	1	1	2	2	5	Low	Remedy
Fuel & hydrocarbon spillages from Diesel tanks may cause groundwater contamination	Negative	3	1	2	2	15	Moderate	Negative	1	1	2	2	5	Low	Remedy
Coal dust and rainfall seepage result in acidic stormwater may impact on groundwater	Negative	2	1	4	3	16	Moderate	Negative	1	1	2	2	5	Low	Control

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
OPERATIONAL PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
Septic leakages may impact on groundwater quality of groundwater dependant surrounding users	Negative	3	2	2	2	18	Moderate	Negative	1	2	2	3	7	Low	Remedy
Impact on soil resources															
Fuel spillages may result in soil contamination and there is a potential for increased erosion caused by increase runoff from concreted surfaces	Negative	2	1	2	3	12	Low	Negative	1	1	2	2	5	Low	Remedy
Social Impact															
Negative community relations may prevail due to conduct of representatives of Transnet.	Negative	2	2	2	3	14	Moderate	Negative	1	2	2	1	5	Low	Control
For some stakeholders the sense of place will change	Negative	3	2	5	4	33	High	Negative	3	2	5	4	33	High	Modify
Stakeholders may feel a change in the quality of living environment due to environmental nuisance such as noise, increased traffic, light	Negative	3	2	5	3	30	High	Negative	3	2	4	1	21	Moderate	Control
Project may affect the tourism potential of the direct area and property values	Negative	2	2	4	2	16	Moderate	Negative	1	2	4	1	7	Low	Control & Remedy

	SIGNIFICANCE PRE-MITIGATION							SIGNIFICANCE POST MITIGATION							MITIGATION TYPE
OPERATIONAL PHASE															
Aspect, Activity & Potential Impact	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
A possible increase in crime may prevail due to increased strangers in the community	Negative	2	2	2	3	14	Moderate	Negative	2	2	2	0	8	Low	Control & Remedy
Traffic															
Significant increase in traffic along Mandela Drive and Afguns road is anticipated. 50-100 staff members would generate trips to the railway yard on a daily basis	Negative	2	3	4	2	18	Moderate	Negative	2	3	2	1	12	Low	Modify
Health and Safety															
Safety risk for yard employees due to game hunting activities on farm Geelhoutkloof 359LQ	Negative	2	1	2	4	14	Moderate	Negative	1	1	2	0	3	Very Low	Stop

12.4 Preliminary Decommissioning Phase risks

	SIGNIFICANCE PRE-							SIGNIFICANCE POST							MITIGATION TYPE
	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	Status	Probability	Extent	Duration	Intensity	Significance Score	Risk	(Modify, Remedy, Control, Stop)
DECOMMISSIONING PHASE															
Aspect, Activity & Potential Impact															
Impact on soils, surface and groundwater pollution															
Potential soil and pollution from hydrocarbon spillages, waste disposal practice	Negative	2	1	2	2	10	Low	Negative	1	1	2	2	5	Low	Control & Remedy
Social impact															
Loss of jobs and associated income	Negative	3	2	3	2	21	Moderate	Negative	2	2	2	1	10	Low	Modify
Fauna and Flora Impact															
Poor vegetation re growth post decommissioning and rehabilitation of target areas could lead to degradation of the ecology	Negative	2	1	3	3	14	Moderate	Negative	1	1	2	2	5	Low	Control & Remedy
Establishment of alien vegetation during re-vegetation of disturbed areas	Negative	2	1	3	3	14	Moderate	Negative	1	1	2	2	5	Low	Control & Remedy
Air Quality & Dust															
Dust emissions from decommissioning and rehabilitation activities removal of infrastructure, ripping of disturbed areas(vehicle entrained dust)	Negative	3	1	2	1	12	Low	Negative	2	1	2	1	8	Low	Control
Impact on Traffic															
Increased heavy vehicle traffic along Mandela and Afguns road when equipment is removed and transported off site. There after traffic will decrease substantially one the yard no longer operates	Negative	2	3	1	1	10	Low	Neutral	1	3	1	1	5	Low	Control

12.5 Possible mitigation measures that could be applied and level of residual risk;

As stated under Section 12.1 it is likely that many of above tabled impacts can be adequately addressed through the implementation of appropriate mitigation and management measures, but requires further specialist investigation as part of the EIA Phase. Several preliminary identified impacts are of low and moderate significance and can be adequately addressed.

The most significant impacts will prevail during the Operational Phase of the new railway yard. The anticipated impacts of high significance during operation will include:

- Noise and vibration (idling locomotives, shunting, hooting, trains using tracks and yard)
- Visual (altering landscape character and visual impact on adjacent landowners);
- Social impact (Stakeholders sense of place will change including quality of living due to nuisance impacts from noise, lighting and increased traffic).
- Traffic due to two administrative units operating at the yard at 50-100 employees (moderate significance).

12.5.1 Possible mitigation measures that can be applied

Noise and Vibration
<p>A Noise and Vibration Impact Assessment will be conducted as part of the EIA Phase to define the risks and appropriate mitigations measures.</p> <p>Construction Phase:</p> <ul style="list-style-type: none"> - Construction activities will be limited to day time; - All machinery and excavation equipment will be well maintained; - Employees will be provided with earplugs to protect their ears (PPE); - Landowners will be notified of any blasting activities in advance - Landowners will be notified where they can lodge a noise complaint prior to commencement of construction activities; - Generators will be switched off when not in use; - Regular maintenance of vehicles and equipment will be undertaken. Broken equipment will be attended to. <p>Operational Phase:</p> <p>This is a suggestion that requires careful consideration in terms of costs, land availability and best practicable option to address the impact, to be further investigated during the EIA Phase: An earth berm can be established on the southern border of the railway yard on Geelhoutkloof 359LQ to lower the noise impact from the yard activities on adjacent properties. Engagements with landowners in this regard will continue throughout the EIA Process.</p> <p>During decommissioning the same mitigations can be applied as for construction, accept for blasting.</p>
Air Quality and Dust Impact
<p>Construction Phase:</p> <ul style="list-style-type: none"> - Wet dust suppression will be applied where necessary to manage dust emissions from vehicle movement - Vehicle speeds will be controlled along unpaved roads 40km/hour. - Spoil piles will be reused in berm and fill / rehabilitation of borrow areas to reduce spoil heights and windblown dust; <p>Operation Phase:</p> <ul style="list-style-type: none"> - Coal dust monitoring for PM₁₀ and PM_{2.5} on adjacent properties will be considered and further assessed.

Decommissioning Phase:

- Wet dust suppression will be undertaken to manage dust emissions from vehicle movement as necessary.
- Vehicle speeds will be controlled along unpaved roads 40km/hour.

Visual Impact

A Visual Impact Assessment will be conducted as part of the EIA Study to define the preliminary impacts and recommend suitable mitigation measures to be implemented for the implementation of the project.

Construction Phase:

- Keep the project site and construction layout down areas neat, clean and organised in order to portray a tidy appearance;
- Remove rubble off site as soon as possible or place it in a container in order to keep the site free from additional unsightly elements
- During night time direct light sources away from adjacent farms and roads
- Rehabilitate or revegetate disturbed areas as soon as practically possible after construction. This should be done to restrict long stages of exposed soil and possible erosion that will result in indirect landscape and visual impacts;

Operational Phases:

- Direct light sources along the railway yard away from adjacent farms and roads
- The consideration of the earth berm precast concrete wall between the yard and the neighbouring farm Geelhoutkloof 359LQ may address the visual exposure to landowners. This is to be further assessed and investigated during the EIA Phase.

Impact on Faun, flora and Habitat (Ecological Impact)

A Biodiversity Impact Assessment (Fauna, Flora, Avifauna, and Wetland) will be conducted as part of the EIA Study which will define the impacts and recommend suitable mitigation measures. Preliminary management measures that can be applied include:

Construction Phase:

- A qualified Ecologist will be appointed prior to removal of any fauna and flora, protected tree species to identify species of conservation concern within the development footprint area destined for removal;
- Protected Tree Permits will be obtained from the Department of Forestry and Fisheries (DAFF) prior to removal of such within the footprint areas of the yard.
- Plant removal permits for conservation important plants will be obtained from LEDET;
- During the construction phase, workers must be limited to areas under construction and access to the undeveloped areas must be strictly controlled.
- The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area;
- Exotic and invasive plant species must not establish onsite;
- No trapping or hunting of fauna is to take place. Access control must be implemented to ensure that no illegal trapping or poaching takes place

Operational Phase:

- No trapping or hunting of fauna is to take place. Control must be implemented to adjacent properties to ensure that no illegal trapping or poaching takes place;
- Disturbed areas must be rehabilitated immediately after construction has been completed in that area by planting appropriate indigenous plant species;
- Disturbed areas must be rehabilitated immediately after construction has been completed in that area by planting appropriate indigenous plant species.
- Edge effects of all phases, such as erosion and alien plant species proliferation, which will affect faunal habitats adjacent to the development area, need to be strictly managed. This can be achieved through the chemically and mechanically removing alien invasive vegetation within the yard footprint.

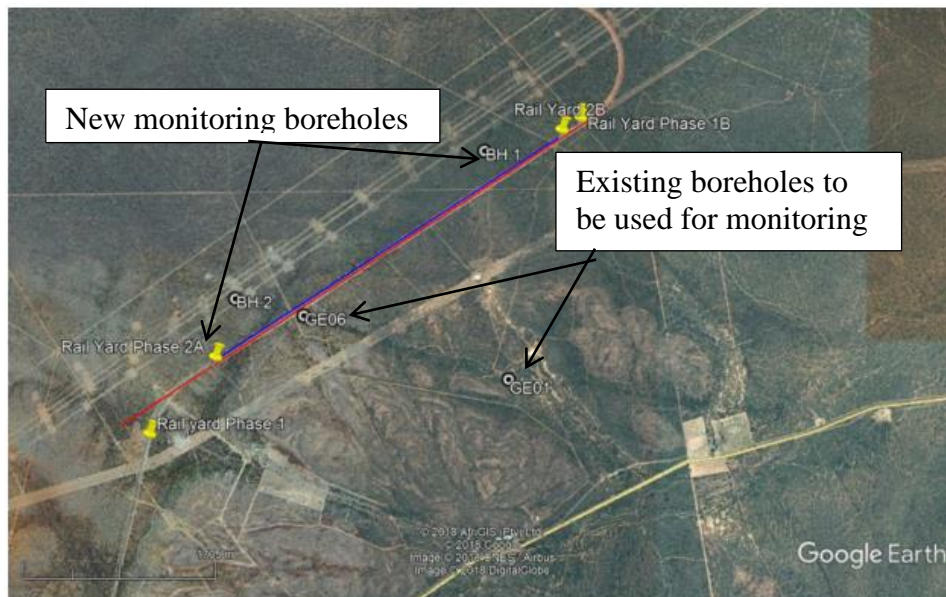
Decommissioning:

- Revegetation of disturbed areas immediately after decommissioning;
- Monitor re vegetated areas
- Remove all alien vegetation from the site which has established on newly exposed soils;
- Eradicate alien vegetation during the lifecycle of the project and monitor post-rehabilitation;

Surface and Groundwater - Mitigation

A Preliminary Hydrogeological Impact Assessment has been conducted as part of the EIA study for the railway yard. The mitigation measures proposed for construction and the operational phase are as follows:

- Drainage around the site will comprise table drains in cuttings, pipes, manholes and culverts. Stormwater will be directed away from the tracks and buildings and drained to stormwater channels and low-lying areas;
- The provisional facilities and oil storage area could potentially have oil/fuel spilled/leaked. To cater for this, the facilities will have an oil separator to deal with the contaminated liquids onsite. Once the water has passed through the oil separator and tested, it will then be drained to the sewer network.
- Immediate clean up after accidental spillages will take place and reported to the relevant department;
- The storage facility will be lined and monitoring of groundwater will be undertaken
- The stormwater management plan will cater for acidic stormwater from the railway tracks and yard;
- Minimize spillage or wastage of any hazardous material in or at the storage tanks or plant area;
- An alternative sewage disposal system, small package plant, is being considered for the railway yard, since the Lephalele Sewage treatment plant is overloaded.
- Thoroughly clean up any leaks, spills or wastage that do occur
- Implement a regular monitoring program and management actions as required in the event of a significant spill of hazardous material from the plant or storage tanks.
- General waste from the proposed activities should be stored in designated containment areas until removed from the site. These designated areas should be lined surfaces or in the correct storage bins.
- General waste should be handled in a Proper Waste Management procedures;
- Sampling and analysis of two boreholes on site will be conducted at least bi-annually, namely towards the end of the dry and wet season. The total organic carbon analysis should continue but additional indicator parameter analyses such as Oil/Soap/Grease analysis is also recommended;
- For overall impact recognition and effects from nearby industries, inorganic analysis of at least macro element parameters is also strongly recommended at the same time.
- With the mineral oils being mostly in the LNAPL phase, it is recommended that the sampling be conducted from the surface of the water in the boreholes. Different sampling equipment should be used for each borehole to prevent cross-contamination since the hydrocarbons are often only present in very low concentrations.



Impact on soil resources - Mitigation

Construction and Operation Phase:

- Implement good stockpiling practice and storm water control to avoid soil erosion
- Ensure that topsoil is at no time buried, mixed with spoil or subjected to compaction by vehicles or machinery.
- Eradicate alien vegetation which colonise on topsoil stockpiles
- Contaminated soil must be removed and the affected area rehabilitated.
- Ensure that spoil material is stored in such a way and in such a place that it will not cause erosion gulleys or wash away;
- Store spoil in low heaps, not exceeding 2m in height.

Decommissioning Phase:

- All fuel storage tanks will be emptied prior to removal to minimise the risk of soil contamination;

Heritage and Cultural Impact - Mitigation

No heritage or cultural sites were found on the project site based on the Heritage Impact Assessment conducted for the project. It is unlikely that excavations could unearth any cultural or heritage resources. Should this incident occur the following measures are recommended:

- Cease work in the vicinity of the heritage feature find;
- Demarcate the area with barrier tape/other visible means;
- Report the find to the South African Heritage Resources Agency (SAHRA) and Limpopo Provincial Heritage Resources Agency (LIHRA) immediately;
- Accredited archaeologist (ASAPA registered) must be commissioned to assess the find and determine the mitigation measures.

Social Impact - Mitigation

A Social Impact Assessment will be conducted as part of the EIA Study to define the impacts and recommended mitigation measures.

Construction Phase:

- Heavy vehicles should travel during off peak times and should be clearly marked. Relevant mitigation proposed in the biophysical studies should be adhered to.
- Sense of place and the visual landscape are crucial components of the hunting and eco-tourism sectors. Transnet should take this into consideration in their planning and designs and adhere to the mitigation of the bio-physical studies,

- Contractors should wear some form of identification that will make them easily recognizable as representatives from Transnet. Transnet should liaise with the communities to draft an action plan against potential crime.
- A protocol must be put in place that stipulates how contractors / representatives of Transnet should conduct themselves when they move around in the area, especially when they need to perform tasks on private property. This would include finding out what the community will expect of them, for example making appointments, being clearly identifiable, etc. The protocol should also state the consequences of not adhering to the rules.
- Develop and implement an Influx Management Strategy as per IFC Guidelines on Influx Management
- It is mostly not possible to mitigate impacts on the sense of place. Input should be obtained from current landowners.
- It is difficult to mitigate changes in property values as it is an external process which is affected by numerous variables. This impact cannot be mitigated by Transnet, but adhering to mitigation measures of the bio-physical studies should assist in minimising this impact.
- Contractors should be required to make use of a certain proportion of local labour – it is acknowledged that not all skills will be available locally. Jobs should be advertised in a way that is accessible to all members of society and labour desks should be established in accessible areas

Operational Phase;

- A protocol must be put in place that stipulates how contractors / representatives of Transnet should conduct themselves when they move around in the area, especially when they need to perform tasks on private property. This would include finding out what the community will expect of them, for example making appointments, being clearly identifiable, etc. The protocol should also state the consequences of not adhering to the rules.
- Sense of place cannot be mitigated. Social change is a natural process that will occur over time regardless of whether the project proceeds or not and the presence of the project will just accelerate this process.
- Mitigate these impacts according to the recommendations of the bio-physical studies, such as noise, light and visual.
- This impact cannot be mitigated by Transnet, but adhering to mitigation measures of the bio-physical studies would assist in minimising the impacts. It is difficult to mitigate changes in property values as it is an external process which is affected by numerous variables. This impact cannot be mitigated by Transnet, but adhering to mitigation measures of the bio-physical studies should assist in minimising this impact.
- Contractors should wear some form of identification that will make them easily recognizable as representatives from Transnet. Transnet should liaise with the communities to draft an action plan against potential crime.

Decommissioning Phase:

- Planning for closure and portable skills training for employees.

Traffic - Mitigations

A Traffic Impact Assessment will be conducted as part of the EIA Study to define impacts and confirm identified risks and to recommend suitable mitigation measures to address the impacts. These mitigations are specialised based on existing infrastructure and capacity and require specialist inputs.

Construction Phase:

- Limit unnecessary vehicle movement
- Transportation and movement of construction machinery must not be undertaken during peak traffic times

Operation Phase:

- Necessary intersection upgrades may be required along the Afguns Road and off Mandela Drive;
- Signature must be placed along Mandela Drive and Afguns Road which indicate turnoffs;
- Additional road traffic management measures may be required along Afguns road to allow safe turnoff of vehicles to the railway yard

<p>Decommissioning Phase:</p> <ul style="list-style-type: none"> - Limit unnecessary vehicle movement
<p>Health and Safety - Mitigations</p>
<p>All relevant Health and Safety Protocols of Transnet need to be adhered to by contractors. Health and Safety mitigation measures will be assessed in detail during the EIA Phase and mitigation measures will be provided in the EIR and EMPr to adequately address identified health and safety impacts.</p>
<p>Waste Management - Mitigations</p>
<p>A Waste Management Study will be conducted as part of the EIA Study to determine waste types to be generated, methods of storage, handling and transportation and disposal will be investigated. The study will prescribe measures to prevent pollution or ecological degradation. It will also set targets for for waste minimisation through waste reduction, re-use, recycling and recovery and describe a system of record keeping for tracking of each waste stream from point of generation to final disposal, measures or actions to be taken to manage waste, the period that is required for implementation of the plan and methods for monitoring and reporting.</p>

12.6 Cumulative Impacts

Cumulative impacts are defined as the combination of multiple impacts from existing projects, the proposed project, and/or anticipated future projects that may result in significant adverse and/or beneficial impacts that would not be expected in case of a stand-alone project.

An assessment of cumulative impacts therefore considers the proposed project within the context of other similar land uses, in the local study area and greater regional context.

The cumulative impacts to be considered during the EIA Phase:

- increase in traffic on local and regional road network
- noise and vibration impact from the Boikarabelo siding and new railway yard;
- cumulative visual impact from the existing railway track, power line servitudes, Boikarabelo siding and new railway yard subsequent impact on sense of place;
- positive socio-economic impact from demand for equipment, building material and labour;
- Changes in agricultural land (loss of)
- Increased poaching of fauna in the Steenbokpan area (currently a major challenge in the area)

The cumulative impacts of the project will be qualitatively assessed in the EIR.

12.7 Methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;

The list of preliminary identified impacts for the project has been evaluated by considering several rating scales as listed below. These ratings include: extent, duration, intensity,

significance, status of impact, probability. The type of mitigation proposed for each impact has also been specified. The significance of impacts will be calculated as follows:

Table 22: Assessment Methodology

Criteria: EXTENT		
“Extent” defines the physical extent or spatial scale of the potential impact		
RATING		DESCRIPTION
1	Site specific	Impacts extending only as far as the activity, limited to the site and its immediate surroundings
2	Local	Impacts extending within 5km from site boundary
3	Regional	Impacts extending to the district (20km from boundary of the site) of Lephalale/Waterberg District
4	Provincial	Impacts extending to provincial scale eg. Limpopo Province / Mpumalanga Province
5	National	Impacts extending to within the country i.e. South Africa.
6	International	Impacts extending beyond international border / the borders of South Africa

Criteria: INTENSITY			
“Intensity” establishes whether the impact would be destructive or benign.			
Status	RATING		DESCRIPTION
Negative	0	Negligible	Where impacts do not really affect the environment and no mitigation is required
	1	Low	Where impacts will result in short term effects on the social and/or natural environment. These impacts are not deemed largely substantial and are likely to have little real effect. (marginally affected)
	2	Medium	Where impacts will result in medium term effects on the social and/or natural environment. These impacts will need to be considered as constituting a fairly important and usually medium term change to the environment, these impacts are real but not substantial. Impacts are fairly easy to mitigate
	3	High	Whereby effects will be long term on social, economic and/or bio-physical environment. These will need to be considered as constituting usually long term change to the environment. Mitigation is considered challenging and expensive
	4	Very High	Where impacts should be considered as constituting major and usually permanent change to the environment, and usually result in severe to very severe effects. Mitigation would have little to now effect on irreversibility

Criteria: INTENSITY		
Status	RATING	DESCRIPTION
Positive	0	Negligible Where impacts affect the environment in such a way that natural, cultural and social functions and processes are not greatly and in instances no mitigation measures will be required. (environment not really affected)
	1	Low Minor improvement are anticipated over a short term on the social and/or natural environment.
	2	Medium Where moderate improvements are anticipated over a medium- to long-term on the social and/or natural environment.
	3	High Where large improvements are anticipated over a long term on social, economic and/or bio-physical environment.
	4	Very High This results in permanent improvements of the social/or natural environment.

Criteria: STATUS		
“Status of impact” - describes whether the impact would have a negative, neutral or positive effect on the affected environment		
RATING		DESCRIPTION
+	Positive	Benefit to the environment
=	Neutral	Standard / impartial
-	Negative	cause damage to the environment

Criteria: PROBABILITY		
“Probability” describes the likelihood of the impact occurring.		
RATING		DESCRIPTION
0	Improbable	Where the possibility of the impact occurring is low.
1	Probable	Where there is a distinct possibility that the impact will occur.
2	Highly probable	Where it is most likely that the impact will occur.
3	Definite	Where the impact will occur regardless of any prevention measures.

Table 23: Criteria for assessing duration and significance

Criteria: DURATION		
"Duration" defines the temporal scale		
RATING		DESCRIPTION
1	Immediate	Less than 1 year
2	Short term	1-5 years
3	Medium term	6-15 years
4	Long term	Between 16 – 30 years
5	Permanent	Over 30 years. Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.
Criteria: SIGNIFICANCE		
<p>“Significance”- attempts to evaluate the importance of a particular impact with mitigation measures included and also excluded. The significance was calculated using the following formula: Significance = (Extent + Duration + Intensity) X Probability</p>		
RATING		DESCRIPTION
0-4	Very Low	Where the impacts will not influence the development, social , cultural or natural environment
5 -12	Low	Where impacts will result in short term effects on the social and / or natural environment. The impacts merits attention however are not deemed largely substantial are likely to have little real effect
13-25	Medium	Where impacts will have a medium-term effect on the social and/or natural environment. These impacts need to be considered as constituting a fairly important and usually medium term change to the environment, these impacts can be mitigated by implementing effective mitigation measures.
26-44	High	Whereby effects will be long term on social economic and or bio-physical environment. The impacts could have a major effect on the environment. This may bring forth the consideration of no-go areas/open areas on the development land regardless of mitigations implemented. Mitigation is however possible.
45	Very High	Whereby effects will be permanent on the social economic and or bio-physical environment. Such impacts cannot be mitigated.

Criteria: MITIGATION TYPE	
RATING	DESCRIPTION
Control & Remedy	In stances where two approaches of mitigation area required. To control the impact/regulate and correct the impact
Modify	to reduce or lessen in degree or extent; moderate; soften
Remedy	Something that corrects the impact of any kind.
Control	to control the impact/regulate
Stop	to restrain, hinder, or prevent

12.8 Motivation for not considering any alternative locations for the activities

Location alternatives were considered by Transnet SOC Limited through their Preliminary Feasibility work on the Lephalale distribution network option. Several stages of feasibility studies followed to identify the required infrastructure to address the required rail expansion capacity requirements. The Feasibility studies identified that a NSF was required and that it was required at Lephalale at Grootgeluk since most congestion was felt in this section of the Waterberg Railway Corridor. This is addressed under Section D under point 9. Hence the EIA Process is conducted on the preferred feasible option. The opportunity for investigating alternatives lies within the design and layout of the railway yard and operational aspects.

Different layout design options area expected to be investigated during the course of the EIA process based on the outcomes of the specialist investigations.

An alternative sewage disposal method will also be considered for the railway yard since the Lephalale Wastewater Treatment Plant is overloaded and does not have capacity to accept additional grey water. Alternatively the yard design will investigate the option of using a small sewage treatment package plant to process grey water and reuse for irrigation of landscaped areas at the yard.

At this point in time the sewage treatment package plant is the only feasible option based on DWS recommendations.

12.9 Statement indicating the preferred alternatives, including preferred location of the activity

Only one location is being considered through the EIA Process for the location of the railway yard which is substantiated by several prefeasibility studies provided by Transnet in which the process to reach the preferred site is stated in detail. The process of elimination followed to reach the preferred site is addressed in Section D under point 9.

There are some significant environmental consideration to the preferred location and significant impacts which are known to railway yards. The preferred site and its surroundings is a very quiet area with an ambient noise level of below 30dBA at night (dBAcoustics, 2018), with finite noise increase to 55dBA for a period of 4minuts when a train passes by. The railway yard will result in an infinite increase in noise levels above the ambient levels due to idling diesel locomotives,

shunting, and hooting, rail traffic along the existing track, additional lines and further also the Boikarabelo holding yard. The most significant impacts prevailing through the scoping is noise and vibration and impact on sense of place. Further inputs from specialists, as detailed in this report, is required to carefully assess the impact risks, plan and investigate feasible mitigation measures which can be implemented at the yard to address these impacts.

SECTION H: PUBLIC PARTICIPATION PROCESS

13 PUBLIC PARTICIPATION PROCESS

The Public Participation Process forms the corner stone for detailing the Scoping Report. The process identifies potential I&APs on the project and solicits inputs and comments pertaining to the matter/activity proposed from such parties. Public Participation allows the public to contribute to the project and provides for better decision making by collective inputs from stakeholders, organs of state and specialists. In terms of the EIA Regulations 2014 (GNR. 326), Appendix 2 (h) (ii), a Scoping report must contain details of the public participation process undertaken for the project.

The public participation process is conducted in accordance to Regulation 41 to 44 of Government Notice R326 of the NEMA Regulations. The process provides the public access to necessary information on the project throughout the scoping and EIA phase of the study. It provides sufficient, transparent and accessible information to I&APs in an objective manner in a phased approach as per the EIA process conducted. The objectives are outlined per phase below.

Table 24: Objective of consultation during different phases of the EIA Process

Scoping Phase	Impact Assessment Phase	Decision Making Phase
<ul style="list-style-type: none"> ▪ Provide comments and inputs; ▪ Verify that issues have been recorded ▪ Assist in identifying reasonable alternatives ▪ Contribute local information and knowledge to help identify environmental impacts 	<ul style="list-style-type: none"> ▪ Contribute information and local knowledge to the impact assessment ▪ Verify that issues have been considered in the Environmental Impact Report & EMPr ▪ Comment on the findings of the Environmental Impact Report 	<p>Provide I&APs with the outcome of the environmental authorisation (DEA decision), how the decision can be appealed</p>

13.1 Public Participation Process followed

The public participation process identifies potential interested and affected parties (I&APs) on the project and solicits inputs and comments pertaining to the activities from such parties. This section summarises the public participation process followed during the Scoping Phase of the EIA study.

The Scoping Phase public engagement commenced on 23 July 2018 and lapsed on 28 August 2018. The results of the consultation tasks have been incorporated in the Scoping Report. All public participation process proofs are attached to the report under Appendix D.

13.2 Identification and Registration of I&APs

What is an interested and affected party?

- Any party interested and or affected by the activity
- Organs of state who have jurisdiction in respect of the activity

In terms of Regulation 40, 41 -44 of the EIA Regulations of 2014 of NEMA the Environmental Assessment Practitioner (EAP) managing the application must:

1) Provide access to information to all information that reasonably has or may have the potential of influence any decision and must include consultation with-

- The competent authority
- Every state department that administers a law relating to a matter affecting the environment relevant to an application for environmental authorisation;
- All organs of state which have jurisdiction in respect of the activity;
- All potential, or, where relevant registered interested and affected parties
- Registered landowners;
- Occupiers of the proposed application site;
- Person in control of the proposed application site;
- Owners, persons and occupiers of land adjacent to the site where the activity is to be undertaken;
- Municipal ward councillor for the project area, ratepayers organisation representing the community in the area;
- Municipality in which jurisdiction the application falls;

As per the requirements of regulations an Interested and affected party database was opened for the project and landowners, organs of state, occupiers of the land, adjacent land owners, local and district authorities including organs of state were pre-identified and registered on the project database during the week of 16 – 20 July 2018.

A project announcement newspaper advertisement called for registration of I&APs from 23 July to 28 August 2018. During this period the I&AP database was maintained and updated. The I&AP database is included in this draft Scoping Report.

Project information notifications and documents for review forming part of the EIA process were distributed to registered I&APs only.

The I&AP Database is attached under **Appendix D1**.

Key identified I&APs for the project include:

- Affected registered landowners (HJH Hills Boerdery, Enkeldraai Trust, Resgen South Africa)
- Land rights holders under lease agreements (Assis Pontes, Debbie Vermaak)
- Eskom SOC Limited (Eskom Generation – Medupi and Matimba power stations)
- Eskom Distribution : Limpopo Region
- Grootgeluk Exxaro Coal Mine
- Sekoko Coal Mine
- Boikarabelo Coal Mine (Resgen South Africa)
- Surrounding landowners (Taaiboschpan 320LQ, Nooitgedacht 514LQ, Mooipan 325LQ, Zyferbulk 324LQ, Steenbokpan)
- Lephallale Local Municipality
- Lephallale Local Municipality - Ward 3 Councillor
- Lesedi Location (Steenbokpan)
- Waterberg District Municipality
- Department of Environmental Affairs (Environmental Impact Management, Protected Areas and Biodiversity and Conservation Divisions)
- Limpopo Department of Economic Development, Environmental Tourism (Environmental Impact Management, Protected Areas and Biodiversity and Conservation Divisions)
- Department of Water and Sanitation
- Department of Mineral Resources: Limpopo Regional Office
- Limpopo Department of Rural Development and Land Reform
- Limpopo Department of Agriculture Forestry and Fisheries
- Limpopo Heritage Resources Agency
- South African Heritage Resources Agency
- Local Media (Mogol Pos)
- Lephallale Business Chamber
- Lephallale Development Forum
- Steenbokpan Safety and Security Form
- Steenbokpan Farmers Association

- South African Civil Aviation Authority
- South African National Defence Force

The following methods were implemented to announce and notify Interested and Affected Parties about the project:

13.3 Pre-Application meeting with DEA

A Pre-Application Meeting was held with the DEA on 27 July 2018 to discuss the project scope, potential triggered listed activities, and information requirements for the EIA Process including confirmation on specialist studies required for the project. The minutes and attendance register is attached as Appendix D2.

13.4 Public involvement during the Scoping Phase

The opportunity to participate in the Scoping and EIA study and register as an interested and affected party was announced on 20 July 2018.

▪ Newspaper advertisement

A newspaper advertisement was published in the Mogol Post on 20 July 2018 in English to notify the public of the EIA Process and requested I&APs to register on the project database, submit comments and review the available Background Information Document (BID). I&APs were given the opportunity to register and raise comments within 30 days of the advertisement. (See Appendix D3 for the Mogol Post Tear sheet);

▪ Site Notices

Site notices and posters were placed in Lephalale town, Marapong and the Steenbokpan area on 20 July 2018. Site notices placed at the following venues:

- Lephalale Square, Pick and Pay along Nelson Mandela Drive
- Lephalale Mall, Checkers along Nelson Mandela Drive
- Lephalale Public Library (Douwater Road)
- Lephalale Local Municipality – Rates & Taxes Pay Point (c/o Dagbreek & Douwater Road)
- Lephalale Superspar (Dagbreek Road)
- Marapong Public Library (Phukubye Street)
- Marapong Superspar
- Gravel road entry point from Afguns Road
- Entry point to Transnet Servitude road along existing Lephalale/Thabazimbi single railway line
- Farm Gate at entry point to farm Buffelsjagt
- Farm Gate at entry point to farm Kringgatspruit
- Confluence of farm gate entry points to farms Taaiboschpan and Enkeldraai

Photographs were taken of the site notices placed in the area. (Appendix D4 – Proof of Onsite notice placement);

▪ **Direct Stakeholder Notification**

A BID and Stakeholder Notification Letter was prepared and distributed to I&APs on the project and served as notification to organs of state. The BID and Notification letter was presented in English. The BID was sent to pre-identified I&APs via email on 19 July 2018 and hand delivered to organs of state and local authorities on 20 – 23 July 2018. The BID was placed at the Lephalale- and Marapong Public Libraries on 20 July 2018 and was uploaded onto the Naledzi website www.naledzi.co.za/publicdocuments for download by the public for purposes of review and comment. (See Appendix D5 for the signed BID Delivery List and Letters)

▪ **Maintain I&AP Database**

The I&AP Database remained open for the duration of the public registration and comment period and was updated after the lapse of the registration period.

13.5 Summary of Issues received from I&APs

All comments, issues and responses received from I&APs during the public registration period whether written or verbal would be incorporated in an Issues and Response Report (IRR) and included in this Scoping Report. Copies of the written comments would also be included in the IRR.

The Issues and Response Report will consist of versions.

- Version 1 – IRR appended to draft Scoping Report made available for public review
- Version 2 – IRR appended to the final Scoping Report. It will record issues and responses received from I&APs during the public review period of the draft Scoping Report and from public engagement sessions and will be submitted to DEA as part of the finalised Scoping Report
- Version 3 – IRR appended to the Draft EIR
- Version 4 – IRR appended to Final EIR

The current Issues and Response Report (IRR) Version 1 which accompanies the draft Scoping Report reflects comments received during the public registration and review period from 23 July to 28 August 2018. (Refer to Appendix D6 for the IRR Version 1)

13.6 Public review of the draft Scoping Report

The draft Scoping Report has been prepared and is currently out for public review and comment for a period of 30 calendar days from 29 October to 27 November 2018. Electronic versions of the report and comment sheets are available on the following website: <http://www.naledzi.co.za/public-documents-naledzi.php>. Hard copies of the Scoping Report have also been made available at the following public venues for public review and comment:

- Lephalale Public Library
- Marapong Public Library
- Lesedi Thukudu Thusong Centre
- It is also available for download on the Naledzi website <http://www.naledzi.co.za/public-documents-naledzi.php>.

I&APs can comment on the draft Scoping Report by completing the comment sheet (available on above website and or at above mentioned locations), writing a letter, sending an email or contacting the appointed independent environmental consultant as per the below given details. I&APs should submit their comments together with their name, contact details to the contact person indicated below **on or before 27 November 2018**.

The availability of the Scoping Report is announced in the Mogol Post and through the distribution of Stakeholder Notification letters. Electronic and hard copies of the Scoping Report have been submitted to organs of state including local and district authorities.

13.7 Public Meetings

Two public information sessions have been scheduled for **13 November 2018** at Lephalale, **Mogol Golf Club in the Grootgeluk Conference Room from 2pm – 4pm and 6pm-8pm**.

The meetings will take place during the public review and comments period of the draft Scoping Report to solicit comments from I&APs on the project and to provide I&APs the opportunity to obtain further project information and gain clarity on issues.

The proceedings of the meetings will be recorded and distributed to attendees for review for a period of 7 calendar days, after which the minutes will be finalised and the recorded issues will be included in the IRR Version 2.

13.8 Submission of Final Scoping Report

NEC will capture the comments and issues received from the public during the draft Scoping Report public review period and include it in an updated IRR Version 2. The IRR Version 2 will be appended to the final Scoping Report and submitted to DEA for approval.

13.9 Public Consultation during the EIA Phase

Interested and Affected Parties will be notified of the commencement of the EIA Phase once all specialist investigations have been undertaken. I&APs will be given the opportunity to review the findings of the EIA which is presented in a Draft EIR and EMP. The draft EIR will indicate the potential positive and negative impacts and measures to enhance positive impacts and reduce negative impacts.

As part of the assessment, an EMPr is compiled. The EMPr is a requirement as per the EIA Regulations 2014. The EMPr recommends how to develop and implement the project. I &APs will receive a notification letter announcing the availability of the Draft EIR. The report will be distributed for public review and comment for a period of 30 calendar days.

An information session will be arranged to present the findings of the EIR to I&APs and stakeholders. Details thereof would be available during the EIA Phase.

All comments and issues received during the public review period of the Draft EIR and EMPr will be captured in a Final EIR and submitted to DEA for review and ultimately approval. I &APS will receive notification of the submission and will as per the scoping phase have the opportunity to request copies of the final report.

13.10 Public Consultation during the Decision-making Phase

During this phase DEA will review the Final EIR and consult with any other key organs of state before granting or refusing an environmental authorisation.

The environmental authorisation will be made available for public review for a period of 20 consecutive calendar days. This provides I &AP's with an opportunity to verify that the decision taken have considered their comments and concerns raised. I&Aps are also then informed of the appeal procedure, should they have a reason to appeal.

SECTION I: PLAN OF STUDY FOR EIA PHASE

14 PLAN OF STUDY FOR EIA PHASE

The Plan of Study is required in terms of Appendix 2 (h) of the NEMA EIA Regulations 2014 of GN R326. The plan of study is to form part of the content of the Scoping Report to set the approach to the Environmental Impact Assessment of the application. The Plan of Study must include:

- i. A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
- ii. A description of the aspects to be assessed as part of the EIA Process;
- iii. Aspects to be assessed by specialists
- iv. A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;
- v. A description of the proposed method of assessing duration and significance;
- vi. An indication of the stages at which the competent authority will be consulted;
- vii. Particulars of the public participation process that will be conducted during the environmental impact assessment process; and
- viii. A description of the tasks that will be undertaken as part of the environmental impact assessment process;
- ix. Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

The Plan of Study for EIA is intended to provide a summary of the key findings of the Scoping Phase and to describe the activities to be undertaken during impact assessment.

14.1 Description of alternatives to be considered and assessed within the preferred site

The EIA Phase and EIR will consider alternative yard design, layout and operational aspects.

Different layout design options are expected to be investigated during the course of the EIA process. Final designs and locations of infrastructure will be based on the outcomes of specialist investigations and greatly by function within the yard. The design and layout must be set as to remain technically and economically feasible.

Alternative means of disposal of grey water from conservancy tanks are being considered as part of the operational aspects of the yard and the most feasible option will be pursued. The current alternative proposed by DWS is a small sewage treatment package plant.

14.2 Aspects to be assessed as part of the EIA Process

The following aspects are to be assessed further as part of the EIA:

- Biodiversity (flora and fauna)
- Heritage and archaeology;
- Visual;
- Noise and Vibration;
- Hydrology and Geohydrology
- Waste Management
- Traffic
- Socio-economic impact

14.3 Aspects to be assessed by Specialists

Aspects to be assessed by specialists are described in Table 25.

Table 25: Aspects to be assessed by specialists

Specialist Study	Specialist	Aspect
Biodiversity Impact Assessment	Holistic Environmental Services – Renier Terblanche	Fauna and Flora Wetland features
Heritage and archaeology Impact Assessment	Millennium Heritage Group –Eric Mathoho	Cultural and Heritage aspects
Visual Impact Assessment	To be appointed	Visual
Noise and Vibration Impact Assessment	dBAcoustics – Barend van der Merwe	Noise and Vibration
Hydrogeological Impact Assessment Study	Naledzi Waterworks – Duncan Munyai	Surface and Groundwater
Socio-Economic Impact Assessment	Equispectives Research and Consulting Services	Socio-Economic
Traffic Impact Assessment	To be appointed	Traffic
Waste Management Plan	GCS Environmental Engineering – Pieter De Coning	Waste management

14.4 A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists

14.4.1 Method of assessing the environmental aspects

The methodology for assessing environmental aspects and risks are addressed under Section 12.6 of the Scoping Report.

14.4.2 Aspects to be assessed by specialists

A. Biodiversity Impact Assessment - Ecologist

- Literature study;
- Red Data species assessment;
- Terrain and soil survey;
- Fauna and Flora assessment (winter and summer);
- Avi-fauna assessment;
- Wetland Assessment;
- Ecological sensitivity and health survey;
- Identification of potential impacts on the applicable environment;
- Measures for the mitigation of impacts on the applicable environment; and
- Compiling ecological assessment report.

B. Heritage and Archaeological Assessment – Archaeologist

- Desktop study to identify any known heritage sites and significance;
- Consult archaeology reports filed on SAHRIS
- Research reports and academic publications
- Conduct an overview of relevant legislation
- Conduct field investigation to identify and georeference any heritage and or cultural finds;
- Conduct an assessment of impacts and recommend effective mitigation measures

C. Visual Impact Assessment

- Conduct a baseline survey and field investigation
- Describe the landscape character and quality and map by field survey and aerial photography (nature of land)
- Describe sense of place and visual resource
- Describe the visual characteristics of the components of the project and determine potential visual issues to be addressed in the EIA Phase
- Determine visual intrusion, visibility and visual exposure
- Determine the visual impact (intrusion, visibility, exposure, sense of place) and quantify the significance of the impact;
- Recommend mitigation and management measures

D. Noise and Vibration Impact Assessment

- Conduct an initial baseline noise measurement survey to determine existing ambient noise levels at the proposed site and affected parties;
- Predict the future noise regime outside the boundaries of the proposed site;
- Noise modelling
- Describe and assessment potential impacts
- Recommend mitigation and management measures

The environmental noise survey will be done during the day and the night time periods so as to determine the baseline noise levels which will be used to identify possible noise intrusion levels at the abutting noise receptors. This will assist in the management of the project in terms of noise mitigatory measures and management principles for implementation during the construction and operational phases of the project.

E. Hydrogeological Impact Assessment

- Review existing relevant data and reports compiled for the project area the surrounding properties;
- Conduct a site visit and Hydrocensus of a 2km radius, sampling of active boreholes;
- Identify through a sensitivity analysis areas on the project with a high risk for impact on groundwater;
- Compile a baseline hydrogeological condition based on the existing data and site observation;
- Develop a conceptual hydrogeological model
- Assess any potential impacts
- Recommend mitigation and management measures

F. Socio-Economic Impact Assessment

- Provide a baseline description of the social environment to identify preliminary impacts;
- Conduct fieldwork to obtain additional information and communicate with key stakeholders through in-depth interviews, participatory rural appraisal, in-the-moment discussion groups, focus groups and immersions. Field notes will be kept of all interviews and focus groups. Initial meetings have been conducted.
- A full Social Impact Report will be prepared and will focus on current conditions, providing baseline data. Each category will discuss the current state of affairs, but also investigate the possible impacts that might occur in future.
- The impacts identified in the scoping report will be revisited and rated accordingly. New impacts that have not been identified will be added to the report.
- Recommendations for mitigation will be made.

Information obtained through the public processes will inform the writing of the final SIA and associated documents.

G. Traffic Impact Assessment (TIA)

- Manual intersection/roadway traffic count survey within study area;
- Source recent traffic data from the SANRAL and Limpopo Roads Agency and other sources for use in the study area;
- Source traffic numbers for implementation/construction and operational phases;

- Assess existing / planned road network and associated infrastructure features and conditions through a site visit and desktop study
- Describe and assess the project / terminal layouts from traffic/transport perspective, expected traffic to be generated during construction and operational phases
- Conduct a capacity analysis at access and relevant intersections. Assess extent of internal and external road upgrades required to support development and mitigate its external road way and intersection impacts;
- Prepare concept access and intersection layout plans following detailed intersection capacity analysis/modelling
- Public Transport Assessment (staff transport)
- Non-motorised transport assessment
- Prepare comprehensive TIA with findings, conclusions and recommendations.

H. Waste Management Plan

- Determine the waste types and quantity of waste to be generated;
- Methods of storage, both onsite and offsite, handling, transportation and disposal will be investigated;
- Prescribe measures to prevent pollution or ecological degradation;
- targets for waste minimisation through waste reduction, re-use, recycling and recovery;
- Describe a system of record keeping for tracking of each waste stream from point of generation to final disposal;
- The above information will be obtained by conduct a literature review/obtaining available information from the client;
- measures or actions to be taken to manage waste;
- the period that is required for implementation of the plan;
- methods for monitoring and reporting; and

14.5 Cumulative and Residual impacts

Cumulative impacts are defined as the combination of multiple impacts from existing projects, the proposed project, and/or anticipated future projects that may result in significant adverse and/or beneficial impacts that would not be expected in case of a stand-alone project.

An assessment of cumulative impacts therefore considers the proposed project within the context of other similar land uses, in the local study area and greater regional context.

Residual impacts are those impacts that remain significant following the application of mitigation measures. The specialist studies to be conducted as part of the impact assessment phase of EIA will identify and provide an assessment of both the cumulative and residual impacts which are likely to occur as a result of the proposed project.

The cumulative impacts to be considered during the EIA Phase:

- increase in traffic on local and regional road network
- noise and vibration impact from the Boikarabelo siding and new railway yard;
- cumulative visual impact from the existing railway track, power line servitudes, Boikarabelo siding and new railway yard subsequent impact on sense of place;

- positive socio-economic impact from demand for equipment, building material and labour;
- Changes in agricultural land (loss of)

14.6 Stages at which the competent authority will be consulted

The DEA will be consulted on various stages of the EIA Process namely:

- A draft Scoping Report together with the Application will be submitted to the DEA for review and comments from 29 October to 27 November 2018;
- NEC will consider the comments and develop responses. The finalised Scoping Report will be submitted to DEA for approval early December 2018;
- A draft EIR will be made available to DEA for review and comment end of March 2019;
- The final EIR & EMPr will be submitted to DEA for decision making end of May 2019;

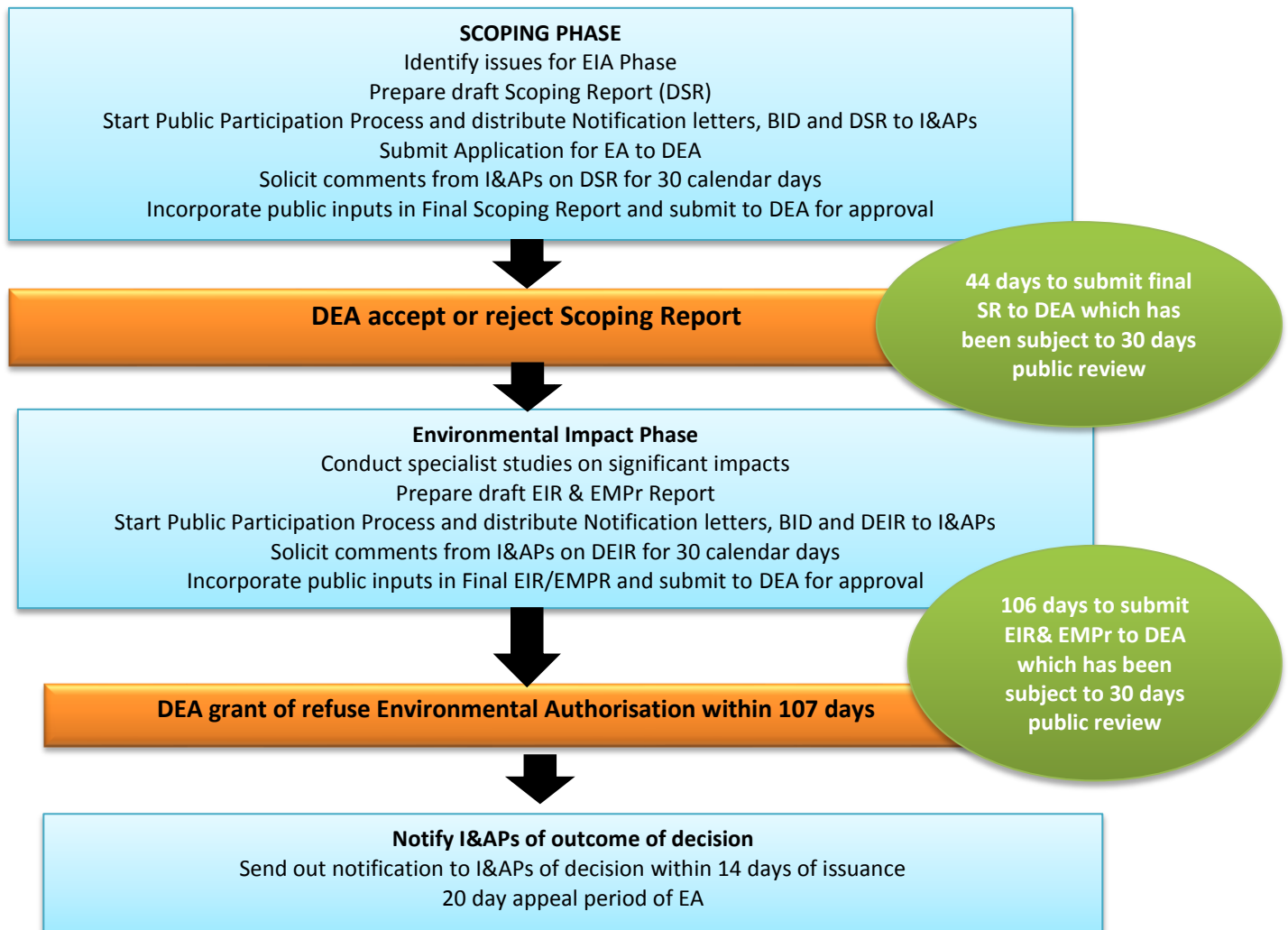
14.7 Public Participation Process during the EIA Process

- a) The following engagement process will be followed to consult the public and convey project details of the EIA study findings;
 - Hand delivering, emailing notification letters to pre-identified and registered I&APs ranging from stakeholders, organs of state, local and district authorities including the ward councillor;
 - I&APs will again be provided with an opportunity to register on the project database and to obtain project information;
 - A newspaper advertisement will be published in the Mogol Post to announce the start of the EIA Phase and availability of the draft EIR for commenting including a scheduled public meeting;
 - Placing site notices in the application area and within publically frequented areas (Lephalale, Marapong, Steenbokpan, Lesedi location)
 - The EIR and EMPr prepared as part of the EIA Process will be made available for public review and comments through hard copy distribution and availability of the Naledzi website www.naledzi.co.za/publicdocuments;
 - Comments and inputs on the environmental reports will be facilitated by conducting a public meeting at the same venue as used during the first round of public engagement. During the meeting the findings of the EIA Study and significant environmental impacts will be discussed;
 - I&APs will be notified of the decision made by the DEA on the application for environmental authorisation for the project.

- b) Description of information to be provide to I&APs

The EIR and EMPr is the most important document of the EIA Process. It forms the basis for decision making and is a tool for communicating the findings of the EIA Study with I&APs. It will be subject to a 30 day public review period. The public and registered I&APs will be notified of the availability of the EIR & EMPr for comment and electronic- and hard copies of the reports will be made available to organs of state, key stakeholders, lawful occupiers of land and the public.

14.8 Tasks to be undertaken for the EIA Process



14.8.1 Prepare draft EIR and EMPr

The draft EIA Report and EMPr will be prepared as per Appendices 3 and 4 of the EIA Regulations of 2014 (as amended by GNR 326) and will include input from the specialist studies.

The Draft EIR and EMPr will be developed in which the findings of the specialist studies would be consolidated to inform the assessment. Issues raised by I&APs and the potential impacts from the development on the physical, biophysical and social-economic environment will be examined in detail.

As part of the assessment, an EMPr is compiled. The EMPr is a requirement as per the EIA Regulations. The EMPr recommends how to operate and implement the project. The EIR would contain the following:

- An assessment of the biophysical and social environment encompassed by the development and direct surroundings and consider the impacts of the development thereon and vice versa
- Identify and assess the significance of potential impacts the development may have on the dual environments
- Provide mitigation measures to curb negative impacts and enhance positive impacts
- Provide an environmental statement of findings of the assessment to the authorising authority for decision making

The content of the draft EIR is regulated in Appendix 3 of the EIA Regulations of 2014 and will include:

- Details and expertise of the EAP;
- Location of the Activity;
- A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;
- A description of the scope of the proposed activity;
- A description of the policy and legislative context within which the proposed development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;
- A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location;
- A motivation for the preferred development footprint within the approved site;
- A full description of the process followed to reach the proposed development footprint within the approved site;
- A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity;
- An assessment of each identified potentially significant impact and risk including (i) and (vii) as per the Regulations;
- A summary of the findings and recommendations of specialist reports;
- Environmental Impact Statement inclusive of (i) to (iii) as per the Regulations;
- Recommendations from the specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;
- The final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;
- Aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;
- A description of any assumption, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;
- A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
- The period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

- The undertaking under oath by the EAP in relation to (i) and (iv) as per the regulations;

An indication of any deviation from the approved Scoping Report, including the Plan of Study including (i) and (ii) as per the Regulations;

The content of the EMPr is regulated by Appendix 4 of the EIA Regulations of 2014 and will include:

- An EMPr must comply with Section 24N of the Act and include - details of the EAP who prepared the EMPr; and the expertise of that EAP to prepare an EMPr, including curriculum vitae;
 - A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
 - 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 any areas that should be avoided, including buffers;
 - A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including (i) to (v) of the EIA Regulations of 2014 as amended;
 - A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated above will be achieved, and must, where applicable, include actions as indicated on (i) to (iv) of the EIA Regulations 2014.
 - The method of monitoring the implementation of the impact management actions contemplated above;
 - The frequency of monitoring the implementation of the impact management actions contemplated above;
 - An indication of the persons who will be responsible for the implementation of the impact management actions;
 - The time periods within which the impact management actions contemplated above must be implemented;
 - The mechanism for monitoring compliance with the impact management actions contemplated above;
 - A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;
 - An environmental awareness plan describing the manner in which-
 - the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
 - risks must be dealt with in order to avoid pollution or the degradation of the environment; and
- Any specific information that may be required by the competent authority.

14.8.2 Draft EIR & EMPr available for public review and comment

The Draft EIR and EMPr will be available for public review/comment for a period of 30 calendar days. The availability of the Draft EIR will be advertised in a local newspaper. It is anticipated that the Draft EIR and EMPr would be compiled during February 2018. The public review period on the reports is anticipated to be during April to May 2019. The report would be available at venues which are easily accessible to the public on the Naledzi website.

Upon the lapse of the public review period the reports would be finalised by incorporating any additional comments received from I&APs. A Final EIR and Draft EMPr would be submitted to DEA for review and decision making. The anticipated date for submission is during the end of May 2018.

14.8.3 Issues and Response Report

Comments, issues and concerns raised by organs of state, landowners and interested and I&APs are recorded in an Issue and Response Report (IRR). The report contains responses to the issues raised by the respective parties. The IRR will be updated from Version 2 to Version 3 to incorporate inputs received during the public review period of the draft EIR into the final EIR.

14.8.4 Public Engagement

The engagement of the public during the EIA phase is pivotal to convey and represent the findings of the EIR and EMPr for the project. Joined inputs on consideration of the impact of a project assist in informed decision making by the competent authority.

Tasks to be completed under this process include:

- Notification letters to I&APs to announce the commencement of the EIA Phase
- Notification to I&APs of the availability of the Draft EIR and EMPr in the local newspaper;
- Placement of Draft EIR at venues accessible by the public in the study area and on the Naledzi website;
- Providing a public review period and comment for a period of 30 calendar days;
- Notification of a Public Meeting to present the findings of the EIR to I&APs and stakeholders;
- Notification to I&APs that final reports have been submitted and copies are available for on the Naledzi website;
- Notification to I&APs and stakeholders of the issue of an environmental authorisation. This provides I&AP's with an opportunity to verify that the decision taken considered their comments and concerns raised.
- I & APs are also informed of the appeal procedure, should they have reason to appeal

The key objective of public participation during this phase is to provide stakeholders and I&AP's with sufficient and transparent information on an on-going basis. Information contained in the Scoping Report is elementary to the content of the EIR. The process therefore allows for comment and review of the Draft EIR. The inputs received during the comment period would be included and assessed in a Final EIR.

14.8.5 Preparation of final EIR and EMPr and submission to DEA

All comments and issues received during the public review period of the Draft EIR and EMPr will be captured in a Final EIR and submitted to DEA for review and ultimately approval.

14.8.6 Public Participation during the Decision-making phase

During this phase DEA will review the Final EIR and consult with any other key organs of state eg. the Department of Water & Sanitation (DWS) before granting or refusing an environmental authorisation.

The environmental authorisation will be made available for public review for a period of 20 consecutive calendar days. This provides I &AP's with an opportunity to verify that the decision taken have considered their comments and concerns raised. I&APs are also then informed of the appeal procedure, should they have a reason to appeal.

14.9 Suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

The aspects that will be assessed have been identified and their potential impacts and mitigation measures are indicated on Sections 12.1, 12.2 and 12.3. The proposed method of assessing environmental aspects is included on Section 12.7 above.

SECTION J: OTHER INFORMATION REQUIRED BY CA

Where applicable, any specific information required by the competent authority; and (1) any other matter required in terms of section 24(4)(a) and (b) of the Act. (2) Where a government notice by the Minister provides for any protocol or minimum information requirement to be applied to a scoping report, the requirements as indicated in such notice.

Section 24 (4)(a) and (b) of the Act states the following:

4. Procedure for the investigation, assessment and communication of the potential impact of activities must ensure, as a minimum, with respect to every application for an environmental authorisation –
 - a) Investigation of environment likely to be significantly affected by the proposed activity and alternatives thereto;
 - b) Investigation of potential impact of the activity and its alternatives on the environment and assessment of significance of that potential impact.

No specific information required by the authority; should it be required it will be included accordingly. Any other potential impacts identified during the public participation review period (by organs of state, public) of the Scoping Phase, will be considered and the report will be updated accordingly.

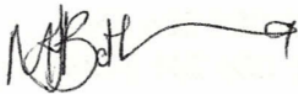
SECTION K: EAP OATH

In undertaking the draft and final Scoping Phases of the project the EAP has taken into consideration the requirements stipulated in the EIA Regulation of 2014 (as amended by GNR

326), as well as other relevant Acts and Regulations. The EAP hereby confirm that with the information available at the time of preparing the Scoping Report and the reports prepared by the specialists, the following has been taken into account in preparing this report:

- The correctness of the information provided in the report;
- The inclusion of comments and inputs from stakeholders and interested and affected parties; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;
- An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;

I, Marissa Ilse Botha, herewith undertake that the information provided in the foregoing report is correct and that the comments and inputs from stakeholders and I&APs have been correctly recorded in the report.

A handwritten signature in black ink, appearing to read "M. Ilse Botha", with a horizontal line extending to the right.

SIGNATURE OF EAP

DATE: 19/10/2018

15 NEXT STEP IN THE EIA PROCESS

The draft Scoping Report will be finalised and updated with any additional comments received from I&APs on expiry of the public review period. The Final Scoping Report and Plan of Study for the EIA will be presented to the authorities for acceptance and approval to continue with the EIA Phase for project.