

Final Environmental Impact Report

EIA for the Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

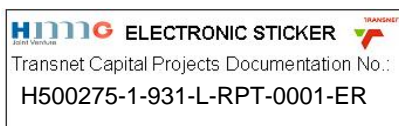
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*Final Environmental Impact Report:
EIA for the proposed upgrade of the
Transnet railway line between Hotazel
and the Port of Ngqura*

July 2009

Reference 0085088

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For and on behalf of Environmental Resources Management
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Position: Partner _____
Date: 17 July 2009 _____

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ACRONYMS

°C	Degrees Celsius
AC	Alternating Current
BID	Background Information Document
CAPCO	Chief Air Pollution Control Officer
COLTO	Committee of Land Transport Officials
DC	Direct Current
DEAET	Department of Economic Affairs, Environment and Tourism
DEAT	Department of Environmental Affairs and Tourism
DM	District Municipality
DSR	Draft Scoping Report
DTEC	Department of Tourism, Environment and Conservation
DWAF	Department of Water Affairs and Tourism
EC	Eastern Cape
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Plan
EPCM	Engineering, Procurement, Construction and Management
ERM	Environmental Resources Management
FSR	Final Scoping Report
GDP	Gross Domestic Product
GIS	Geographic Information Systems
HMGJV	Hatch - Mott MacDonald - Goba Joint Venture
I&APs	Interested and Affected Parties
IDZ	Industrial Development Zone
IEM	Integrated Environmental Management
ISO	International Standardization Organization
Mtpa	Million Tonnes per Annum
NEMA	National Environmental Management Act
NEMAQA	National Environmental Management: Air Quality Act
NHRA	National Heritage Resources Act
NWA	National Water Act
NMMM	Nelson Mandela Metropolitan Municipality
NC	Northern Cape
OHTE	Overhead Traction Equipment
SABS	South African Bureau of Standards
NSBA	National Spatial Biodiversity Assessment
SAHRA	South African National Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency Limited
SANS	South African National Standards
TFR	Transnet Freight Rail

GLOSSARY

Alternative - A possible course of action, in place of another, that would meet the same purpose and need (of the proposal). Alternatives can refer to any of the following but are not limited to: alternative sites for development, alternative projects for a particular site, alternative site layouts, alternative designs, alternative processes and alternative materials.

Ballast - Coarse, crushed stone laid to form a bed for the sleepers and rails.

Bulk material - This material is used for earthworks within the rail prism before the construction of the structural sub-ballast layers (see *sub-ballast* below). The bulk material is comprised of material found in-situ and some fill material from elsewhere, if required.

Culvert - A metal or concrete pipe/structure placed below a road or railway to allow natural drainage systems to function as naturally as possible.

Cumulative impact - The combined effects of more than one development (past, present or in the foreseeable future) within the same geographical area or affecting the same receptors.

Cutting - To keep a road or railway line straight and/or flat, and where the comparative cost or practicality of alternate solutions (e.g. diversion) is prohibitive, a section of a hill or mountain is cut away to make way for the development.

Embankment - To keep a road or railway line straight and/or flat, and where the comparative cost or practicality of alternate solutions (e.g. diversion) is prohibitive, the land over which the road or rail line will travel is built up to form a large mound or embankment. Embankments are often constructed using material obtained from a cutting.

Environment - The surroundings within which humans exist and that are made up of:

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, social, cultural, historical and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental Assessment - The generic term for all forms of environmental assessment for projects, plans, programmes or policies. This includes

methods/tools such as environmental impact assessment, strategic environmental assessment, sustainability assessment and risk assessment.

Impact - The positive or negative effects on human well-being and / or on the environment.

Interested and Affected Parties - Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Lead Authority - The environmental authority at the national, provincial or local level entrusted in terms of legislation, with the responsibility for granting approval to a proposal or allocating resources and for directing or coordinating the assessment of a proposal that affects a number of authorities.

Level crossing - A level crossing is an at-grade crossing (without recourse to a bridge or tunnel) of a railway line by a road or path.

Loop - A passing loop or crossing loop is a place on a single line railway where trains in opposing directions can pass each other. A passing loop is usually double ended and connected to the main track at both ends of the station.

Mitigate - The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

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

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

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

Sub-base material - This material is used to construct the top layers of the rail prism onto which the ballast is then placed.

Turnouts - A turnout is a structure along the railway line where a single track divides into two tracks and is used to divert trains from one track to another.

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E1 INTRODUCTION

E1.1 PURPOSE OF THIS DOCUMENT

This executive summary of the Final Environmental Impact Report (EIR) for the proposed upgrade of the railway line between the Port of Ngqura and Hotazel has been prepared by Environmental Resources Management Southern Africa (Pty) Ltd (hereafter referred to as ERM). The purpose of this document is to provide a stand alone and accessible summary of the Final EIR.

A summary of key aspects of the EIR, including the background and context, project rationale, the legally required steps in the Environmental Impact Assessment (EIA) process, the project description, the identification of impacts and key findings are included below.

E1.2 BACKGROUND AND CONTEXT

Transnet Limited (hereafter referred to as Transnet) has a mandate from government to contribute to the national competitiveness and growth of the economy by delivering essential freight transportation services and in this way help to reduce the cost of doing business in South Africa. As such, Transnet has embarked on an infrastructure expansion programme of all the major ports and rail commodity lines in South Africa. Transnet remains committed to following the necessary environmental authorisation processes in order to ensure that any biophysical and socio-economic impacts and benefits resulting from the infrastructure expansion programme are adequately addressed.

One of Transnet's objectives in terms of the above programme is to increase the volume of containers and commodities such as manganese and iron ore that it transports on the existing 1 100 km railway line between Port Elizabeth, the new Port of Ngqura and Hotazel (see *Figure E1.1* and *Figure E1.2*). The containers are transported by rail between Port Elizabeth and Kimberley, from where they are diverted to Gauteng. The capacity of the railway line between Kimberley and Gauteng is sufficient to cater for the proposed increased container traffic and thus does not require any expansion, although some refurbishment of this existing railway line is to be undertaken. The capacity of the railway line between the Port of Ngqura and De Aar however, needs to be upgraded by the extension of existing loops ⁽¹⁾ and the construction of new loops and some support infrastructure where necessary to safely accommodate the expected increased volumes.

(1) A passing loop or crossing loop is a place on a single line railway where trains travelling in opposite directions can pass each other. A passing loop is usually double ended and connected to the main track.

ERM has been appointed by HMGJV ⁽¹⁾, on behalf of Transnet Freight Rail (previously Spoornet), a division of Transnet responsible for rail infrastructure network, to act as the independent environmental consultant to undertake the required Environmental Impact Assessment (EIA) process for this proposed rail upgrade project, with the aim of facilitating a decision (whether positive or negative) from the competent authority, the Department of Environmental Affairs and Tourism (DEAT).

(1) Hatch, Mott MacDonald and Goba Joint Venture

Figure E.1 Locality map: Hotazel to De Aar

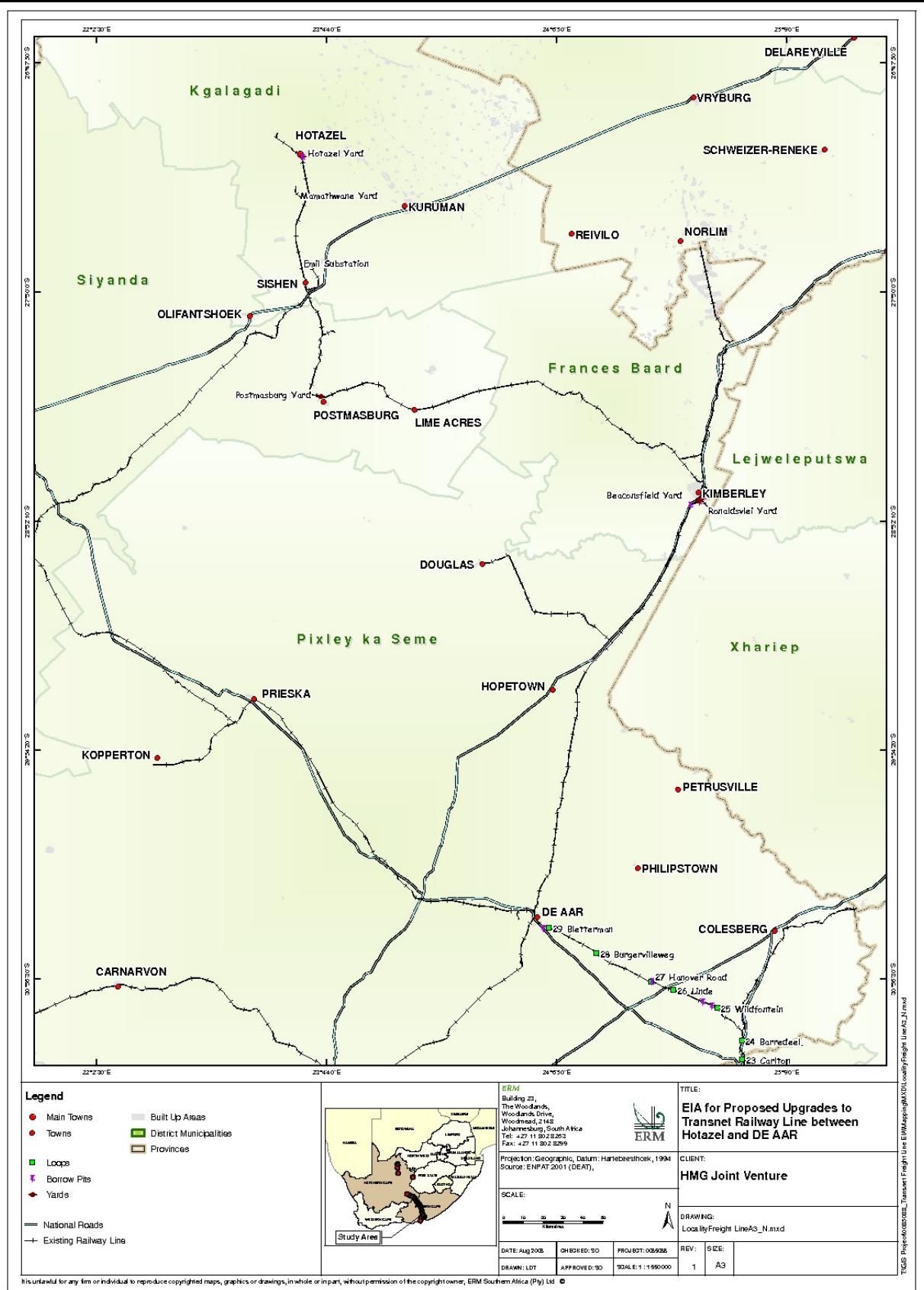
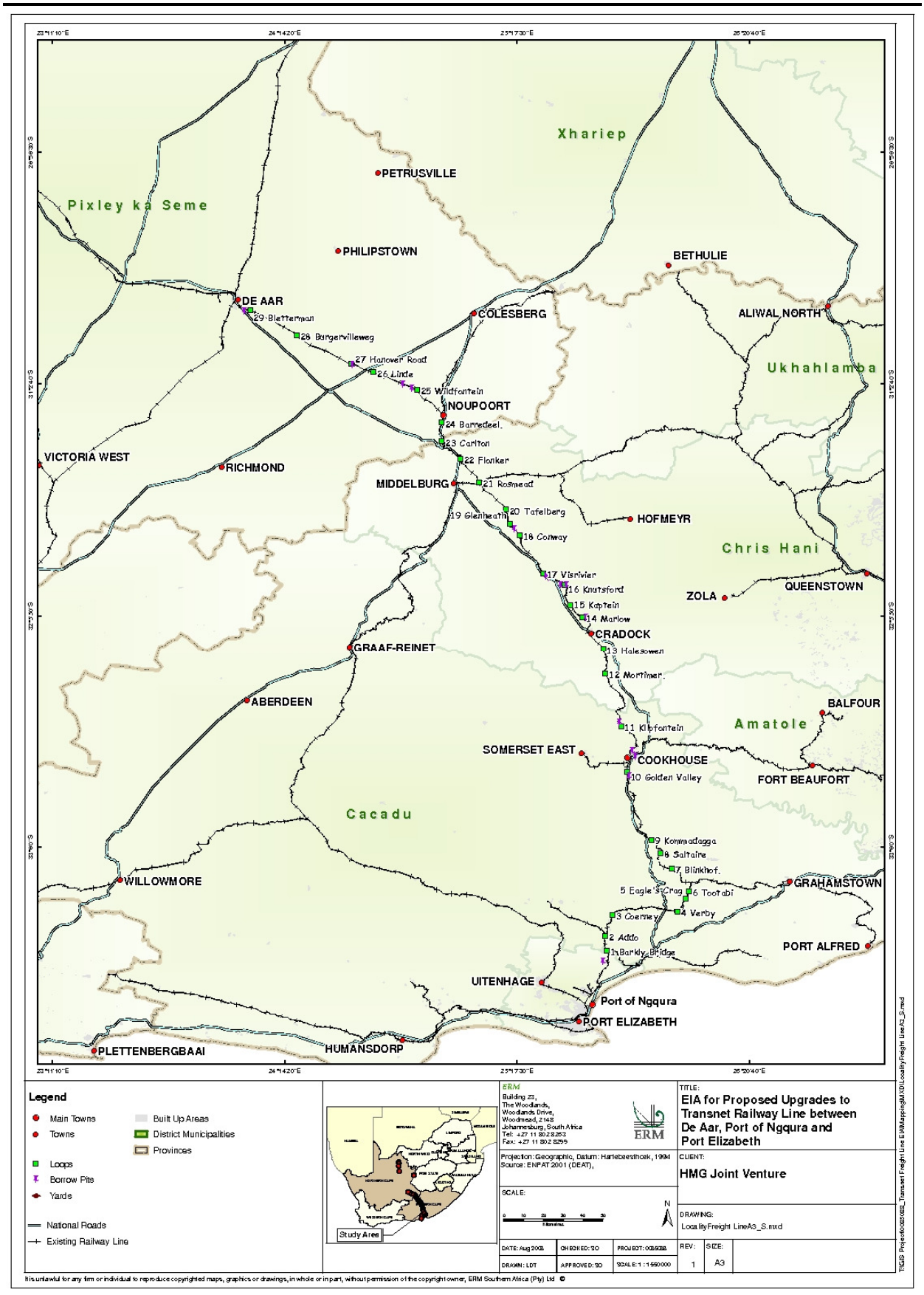


Figure E.2 Locality map: De Aar to Port Elizabeth



Transnet Freight Rail has redefined its strategic intent, which it aims to achieve by reducing the cost of doing business, building capacity, operating safely and improving efficiency. One of its specific goals includes reducing the cost of doing business by transferring freight traffic from road to rail and improving freight logistics.

The company's growth vision relies heavily on optimising rail corridors in collaboration with its customers. Transnet Freight Rail argues that this will result in winning back market share from road haulers, while integrating with the country's overall logistics chain. The majority of the demand for the various commodities (containers, vehicles etc) is rail friendly and hence the focus to shift from road to rail.

In order to achieve high levels of efficiency associated with improved turnaround times, Transnet Freight Rail will inject capital to the value of R35bn by 2012. Ninety percent of the expenditure is allocated to the rehabilitation and renewal program for locomotives, wagons and infrastructure.

The existing railway infrastructure between the Port of Ngqura, De Aar and Hotazel is currently not being fully optimised for container and manganese traffic, hence there is scope to increase the volumes transported along this line. Rail is regarded as a better option compared to road transport, as the latter alternative poses increased risks and adds additional traffic to an already over-burdened road network. In addition, there is a need for greater operational efficiency both at the loading points and at the discharge points, as well as in the utilization of the line itself.

Transnet is currently building a new container terminal at the Port of Ngqura near Port Elizabeth. Authorisation for this project was obtained in 2002 and again in 2007 for the expansion of the terminal (DEAT reference A24/16/3/56 and 12/12/20/690 respectively). Effective operation of the container terminal requires the upgrading of the railway line to allow for an increased number of containers to be transported to and from the port. This need was already identified early in the authorisation process for the Port of Ngqura. In addition, the need was identified for buffer storage of containers, due to the difference between the numbers of containers offloaded from the larger vessels and the capacity of the rail line.

Transnet currently also transports manganese ore from mines near Hotazel along the railway line to the existing manganese terminal at Port Elizabeth, from where it is exported. There is a growing demand for manganese internationally. This increase in world demand means that there is a need for larger volumes of manganese ore to be transported along the railway line to the port at Port Elizabeth and possibly to the Port of Ngqura in the future. The CDC observed that in the long term, the present Manganese loading facility in PE is not sustainable and that future manganese exports are likely to be through the Port of Ngqura. The CDC also emphasised the importance of having additional rail capacity so as not to compromise the Ferrous-metals

cluster in the Industrial Development Zone and its associated beneficiation imperatives. It is also likely that this line will also carry other commodities in the future. The port of Ngqura will service the Coega Industrial Development Zone (IDZ), the Metro as well as the broader Eastern Cape and hence any commodity that requires to be transported in and out of the port via rail will place additional capacity demands on the current rail infrastructure.

The dual need to meet the demands from the mining and container sectors has led to Transnet's decision to refurbish the railway line between Kimberley and De Aar and to upgrade the railway line between the Hotazel and the Port of Ngqura.

The EIA process for the Project is being undertaken in terms of the EIA Regulations R385, R386 and R387 of 21 April 2006, issued in terms of the National Environmental Management Act (Act No. 107 of 1998), as amended. However, other legislative requirements are also applicable to the Project.

The Scoping/EIA process involves an assessment of the potential impacts and opportunities of a particular activity. The process takes place in three broad phases, namely;

- Project Initiation;
- Scoping; and
- Integration Assessment.

A brief summary of the tasks undertaken in each phase of the EIA process is provided below. An overview of the process is provided in the flow diagram in *Figure E.2.1*.

E2.1 PROJECT INITIATION PHASE

This phase included meetings between the consultant and client teams to confirm the project scope. It also included a meeting with DEAT to confirm the approach to the EIA, followed by the formal submission of the EIA Applications for Authorisation to initiate the EIA process.

Two EIA Applications were submitted to DEAT on 21 July 2008. The reason for submitting two applications is related to the timing and urgency of various components of the Project. Although two EIA applications were submitted, only one EIA process is being undertaken including one stakeholder engagement process and the production of one Scoping Report and one consolidated EIA Report.

DEAT agreed to this approach in a meeting on 1 July 2008.

E2.2 SCOPING STUDY PHASE

In this phase the project team aimed to identify potential environmental, economic and social issues, concerns and opportunities related to the proposed Project. This included engaging stakeholders to understand their views.

To facilitate the stakeholder engagement process, the Project was advertised in seven local newspapers and two regional newspapers in the Eastern Cape and Northern Cape provinces between the end of July and September 2008. A Background Information Document (BID) was distributed in English,

Afrikaans, isiXhosa and Setswana to approximately 300 stakeholders, from the start of August 2008. Stakeholders include landowners with property adjacent to the entire railway line and other Project sites, authorities, non-governmental and community organisations and others. The purpose of the BID was to convey information about the Project to potential stakeholders and to allow them to comment and/ or register as Interested and Affected Parties (I&APs). Site notices were also placed in 16 towns in the project area, to notify the public about the project and public meetings.

Eight public meetings were held at various locations within the project area between the 25 August and 22 September 2008. Four meetings were held in the Eastern Cape, at Paterson, Cookhouse, Cradock and Middelburg; and four meetings were held in the Northern Cape, including at De Aar, two in Kimberley and finally in Hotazel. The meeting minutes as well as the Issues and Responses Report summarising all comments received to date, are included in the EIR. *Table E2.1* contains a high level summary of the issues raised by stakeholders to date.

Table E2.1 *Issues raised by I&APs*

Broad categories	Issues raised
Socio-economic considerations	<p>How and when the recruitment process will be rolled out.</p> <p>Fairness of the tender process and the real opportunities for local labourers and smaller, local operators.</p> <p>Whether Transnet's primary contractor will use local subcontractors.</p> <p>Nature of employment, skill levels and numbers to be employed.</p> <p>Position of former Transnet employees with respect to getting guaranteed employment on the project.</p> <p>Training and capacity building with respect to unskilled labour.</p> <p>Concern over health and safety of workers who may be exposed to manganese dust.</p> <p>Sanitation and management of waste at labour camps.</p> <p>Social ills associated with labour camps including the spread of HIV.</p> <p>Effect of the project on the already strained electricity supply network.</p> <p>Safety at railway crossings and an increase in rail accidents.</p> <p>Long term community benefits of the project.</p> <p>Benefits to local businesses.</p> <p>Impact of manganese dust on people living adjacent to the line.</p> <p>Impact of potential increases in vibration on houses adjacent to the railway line.</p> <p>Increased rail capacity for the transport of products from Eastern Cape, Metro and Industrial Development Zone to Gauteng and growths of these areas.</p> <p>Assistance with beneficiation of country's mineral wealth at Coega.</p>
Biophysical considerations	<p>Loss of biodiversity and impact on endangered animals and birds as a result of increased rail traffic and construction activities.</p> <p>Impact on scarce water resources as a result of construction activities.</p>
EIA process	<p>Local specialists and experts should be used in the process.</p>
General	<p>Possible benefits to the grain industry from increased trains along the line in terms of transporting their goods to market.</p> <p>Heritage sites should be protected and local knowledge be used to identify important sites.</p> <p>A need to look at the big picture with respect to other projects, future demands and plans along the line, such as a likely future rail terminus at Coega, the future need for an intermodal facility, rail support and maintenance facilities.</p>

Broad categories	Issues raised
	Impact of the project on the demand for road transportation alternatives The process for land acquisition. The linkage between the railway line and passenger transportation during the 2010 Soccer World Cup. Possibilities for Public Private Partnerships.

Based on the work completed during the Scoping Study phase, the Draft Scoping Report (DSR), including a Plan of Study for EIA, which outlined how potential positive and negative impacts were to be assessed in the next phase of the EIA, was compiled and made available to I&APs for comment. The updated Final Scoping Report, including I&AP comments, was submitted to DEAT for approval, before the start of the next phase of the EIA process.

A number of specialist studies have been commissioned to provide information about the study area and to identify issues and potential impacts associated with the Project. Specialists who have been appointed are listed in *Table E2.2* below.

Table E2.2 *Key issues and specialist studies*

#	Specialist Study	Specialist	EIR Reference
1	Air quality impact assessment	uMoya-NILU Consulting (Pty) Ltd	See <i>Volume 2</i>
2	Noise assessment	Jongens Keet Associates	See <i>Volume 2</i>
3	Phase 1 archaeological and cultural heritage study	Archaic Heritage Project Management, University of Pretoria	See <i>Volume 2</i>
4	Social Impact Assessment	ERM Southern Africa	See <i>Volume 2</i>
5	Terrestrial ecology assessment	Natural Scientific Services	See <i>Volume 2</i>
6	Traffic impact study	ITS	See <i>Volume 2</i>
7	Vibration assessment	Department of Mechanical and Aeronautical Engineering, University of Pretoria	See <i>Volume 2</i>

E2.3 *INTEGRATION AND ASSESSMENT PHASE*

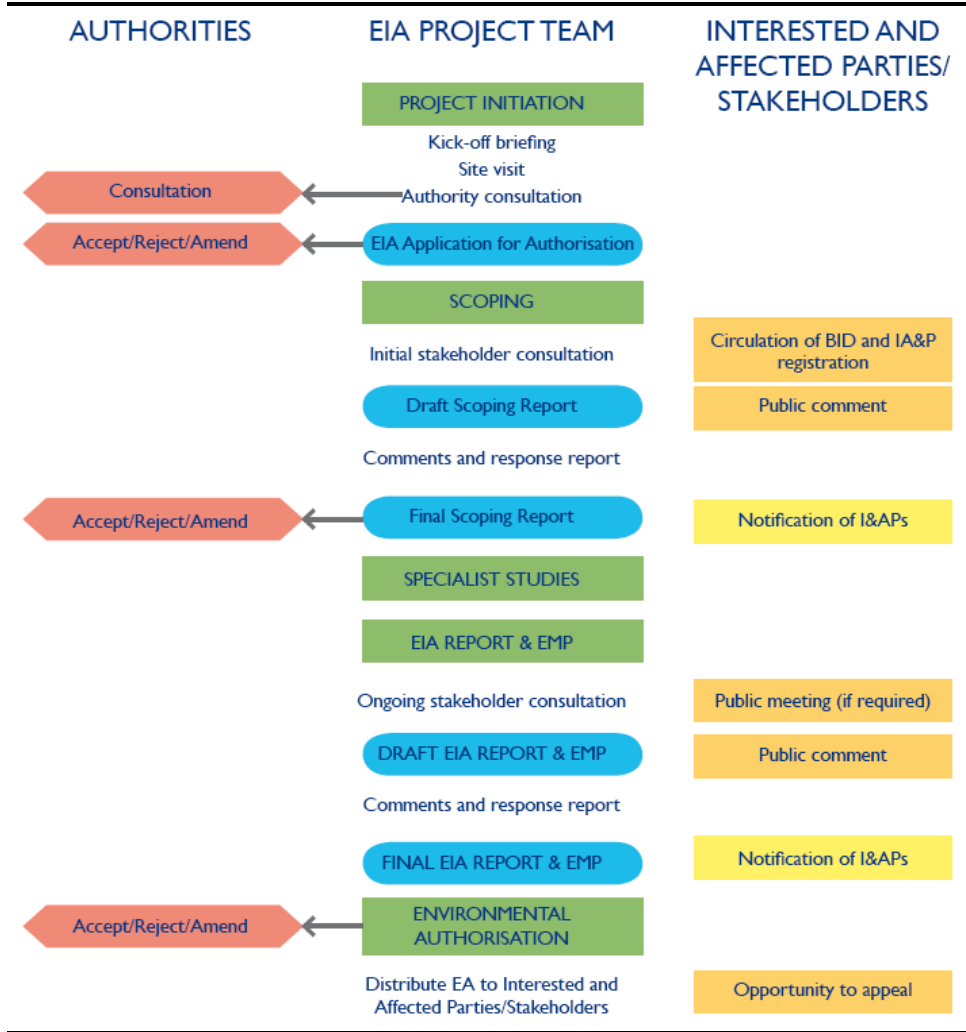
This phase was started after receiving approval from DEAT of the Final Scoping Report and Plan of Study for EIA. In this phase the project team undertook the following tasks:

- Investigating issues/opportunities and potential negative impacts and benefits identified in the Scoping Phase;
- Commissioned additional specialist studies, where required and/or expanded on the scope of studies undertaken during the Scoping phase;
- Assessed and determined the significance of the positive and negative impacts that have been identified; and
- Proposed ways in which the impacts can be mitigated and opportunities maximised.

This phase included the compilation of a Final EIR, including an Environmental Management Plan.

DEAT’s decision regarding the environmental decision (whether positive or negative) will be communicated to all I&APs who have been involved in the EIA process. Should anyone have any objections to the decision, there will be a formal opportunity to lodge an appeal.

Figure E2.1 EIA process flow diagram



E3 PROJECT DESCRIPTION

E3.1 PROJECT LOCALITY

The existing railway line that runs from Hotazel in the Northern Cape to the Port of Port Elizabeth in the Eastern Cape covers a distance of approximately 1100 km and passes through the major railway hubs of Kimberley and De Aar.

Of the twenty nine (29) proposed loop sites, twenty three (23) fall within the Eastern Cape while the remaining six (6) are located in the Northern Cape, south of De Aar. All five (5) railway yards to be refurbished as well as the new proposed substation are located between Hotazel and Kimberley in the Northern Cape.

Finally, the existing second rail line located between Kimberley and De Aar in the Northern Cape which has not been in used for some time, and which has fallen into disrepair, is to be refurbished and electrified.

E3.2 OVERVIEW OF PROPOSED PROJECT COMPONENTS

The proposed project can be divided into broad components associated with upgrade, construction or refurbishment of railway infrastructure, the refurbishment of the yards and upgrade of the related infrastructure, the acquisition of construction material, the construction of additional infrastructure and construction camps and laydown areas.

Table E3.1 summarises the proposed project activities according to these broad activity categories.

Table E3.1 *Proposed project components*

Broad project components	Description
Upgrade, construction or refurbishment of railway infrastructure and associated infrastructure	<ul style="list-style-type: none"> • Upgrade of 25 existing loops. In most cases the upgrading will entail extending the loops. • Construct 4 new loops to at least 1200 m in length. • Improve access roads and new or altered level crossings associated with existing loops. • Refurbish and electrify the existing second line between De Aar and Kimberley. • Relocation of signalling equipment and associated structures to allow a loop extension.
Refurbishment of station yards and upgrade of the related infrastructure	<ul style="list-style-type: none"> • Upgrade station yards at Hotazel, Mamathwane, Beaconsfield and Ronaldsvlei (both near Kimberley) and Postmasburg. • Upgrade of the wagon maintenance facilities at Postmasburg. • Provide additional locomotive staging facilities at Beaconsfield. • Install additional signalling between Emil and Hotazel.

Broad project components	Description
Acquisition of construction material	<ul style="list-style-type: none"> The construction process will also require the use of existing borrow pits close to the construction sites and the creation of new borrow pits (within the rail reserve) to obtain suitable fill material.
Construction of additional infrastructure	<ul style="list-style-type: none"> Construct a new electrical traction substation at Emil.
Construction of camps and laydown areas	<ul style="list-style-type: none"> Site offices, construction camps and laydown areas for the storage of raw materials will be established during the construction phase of the proposed project.

The CDC pointed out that consideration should also be given to the proposed future terminus at Coega and the required Intermodal Facility. Although this is a long term provision, the CDC is concerned that any decisions and actions now must not preclude such future opportunities. Transnet, however is confident that the proposed upgrade and refurbishment dealt with in this EIA would not preclude or compromise such future development.

E3.2.1 *Proposed loop developments*

The proposed loop developments consist of the extension and/or upgrade of 25 existing loops and the construction of four new loops to a minimum length of 1 200 m. It is expected that most of the extensions and the new loops will be inside the existing rail reserve with the exception of a few loops which may require small tracts of additional land as a result of the limited width of the railway reserve at specific locations. The exact locations and extent of land expropriation will only be confirmed following a topographic survey of the rail reserve boundaries at the loop sites. Transnet will commence negotiations with relevant landowners who may be affected by the need for additional land as soon as the locations are confirmed.

At some of the sites, temporary use of adjacent land will be necessary during the construction phase only (e.g. for equipment laydown areas or access roads).

The alignment of the loop developments will follow the existing railway line, which means that cuttings and embankments, where required, will be widened at the same track level. Culverts and drainage structures will be extended in the same positions, whilst maintaining the existing surface water drainage patterns.

New and Re commissioned Loops

“New Loops” refers to new and re commissioned loops, where the latter refers to loops that were previously decommissioned but will be restored as part of this Project. Only one brand new loop is proposed at Tootabi, near Alicedale in the Eastern Cape. *Table E3.2* summarises the length of the proposed new loops.

Table E3.2 *Length of new and recommissioned loops*

Loop name	Length of new loop (m)
Eastern Cape	
Tootabi (new)	1332
Klipfontein (recommissioned)	1363
Glenheath (recommissioned)	1432
Northern Cape	
Hanover Road (recommissioned)	1272

Extended loops

Twenty five existing loops will be upgraded as part of the proposed project, twenty in the Eastern Cape and five in the Northern Cape. *Table E3.3* summarises the existing loops to be upgraded.

Table E3.3 *Existing loops to be lengthened*

Loop name	Length of loop extension (m)
Eastern Cape	
Barkly Bridge	450
Addo	150
Coerney	1100
Verby	777
Eagle's Crag	716
Blinkhoff	593
Saltaire	439
Kommadagga	678
Golden Valley	372
Mortimer	548
Halesowen	840
Marlow	698
Kaptein	480
Knutsford	658
Visrivier	512
Conway	827
Tafelberg	712
Rosmead	730
Flonker	996
Carlton	1460
Northern Cape	
Barredeel	582
Wildfontein	324
Linde	698
Burgervilleweg	760
Bletterman	710

Eleven level crossings will be extended and five, with their associated roads, (Barkly Bridge, Kommadagga, Kaptein, Knutsford and Hanover Road) will need to be relocated.

E3.2.2 *Refurbishment of the Kimberley – De Aar section*

Although not a legal requirement in terms of the EIA Regulations, the scope of this EIA also includes the potential positive and negative impacts associated

with the refurbishment and electrification of an existing second line, approximately 230 km in length, between Kimberley and De Aar in the Northern Cape.

The implementation of this component of the Project may commence prior to the required authorisation from DEAT with respect to the rest of the project outlined above.

E3.2.3 *Yard upgrades*

As part of the proposed project, five yards will be refurbished/upgraded at Hotazel, Postmasburg, Mamathwane, Beaconsfield and Ronaldsvlei.

The upgrades will include the lengthening of some of the yards, electrification of new and extended railway lines within the yards, the construction of additional maintenance facilities and installation of additional safety equipment.

E3.2.4 *Acquisition of construction material*

The construction process will also require the use of existing borrow pits and the creation of new borrow pits, within the rail reserve, to obtain suitable fill material. Although the impacts associated with these activities have, as far as possible, been addressed in the EIA, it will also require a separate permitting process, which will be undertaken by Transnet.

A number of existing and new borrow pits will be utilised for both ballast and sub-base material during the construction period.

E3.2.5 *New substation at Emil*

A new 3 kV DC Transnet Freight Rail traction substation is proposed near Emil to provide the additional power required to handle more trains between Sishen and Wincanton Substations, on the line linking Hotazel to Kimberley. Emil is located approximately 6.5 km from Kathu and 35 km south of Mamathwane.

The substation will transform the power supplied by Eskom to 3 kV DC for traction purposes.

The 132 kV AC 3-phase supply will be provided via an Eskom distribution line. This line and the associated servitude registration process fall outside of the scope of this project and an approval from DEAT will have to be obtained through a separate EIA process undertaken by Eskom.

E3.2.6 *Site offices, construction of camps and laydown areas*

Three site offices will be established between Hotazel and the Port of Ngqura, at Hotazel, Kimberley and Cradock.

Construction camps will be established at each work site. The camps will typically be 50 m x 50 m (2 500 m²) in size and contain a dormitory, a mess with ablution facilities, a tuck shop, fuel tank(s) and a workshop. The construction camps will house the permanent construction staff. The general labour force will not be housed at the camps but will be sourced from surrounding areas.

Laydown areas will be established at every construction site and will typically be 60 m x 50 m (3 000 m²) in size. The laydown area will contain an office, chemical toilets and lock-up facilities for valuables. No fuel or oil will be stored within the laydown area of the construction site.

Special provision will be made in the construction and operation phase EMP to ensure that particular attention is given to engaging local communities at an early stage so as to obtain their inputs and buy-in to the planning and management of the proposed construction camps. Transnet may seek professional advice in this regard so as to maximise appropriate skills development and training, and labour stability.

E3.3 *JOB CREATION AND SKILLS DEVELOPMENT*

A number of jobs will be created during both the construction and operational phases of the project, with construction activities requiring both skilled and unskilled workers. An estimate of the numbers of jobs that could be generated as well as the type or skill level required is described below. However, these are not confirmed numbers and will also depend on the Principal Contractor appointed by Transnet to construct the new infrastructure.

E3.3.1 *Job creation*

A number of both temporary and permanent jobs will be created through both the construction and operation phase of this project. Skilled, semi-skilled and unskilled labour will be required. Skilled labour will be sourced nationally, including the Eastern and Northern Cape, and semi-skilled and unskilled labour will be sourced locally, where construction and manufacturing will take place.

Construction phase (temporary labour) - Each contract for the construction of between six and nine loops will require an estimated 75 skilled labourers and an estimated 100 unskilled labourers.

Skilled labourers will be required to operate machinery and equipment on site. Skilled artisans and supervisors will also be required. Unskilled workers will be used for manual labour tasks on site.

Operation phase (permanent labour) - The following types of personnel may be recruited for the operational phase of the Project, as the capacity of the line is increased over time: administrators, private secretaries, yard masters, yard

officials, yard foreman, sundry workers, section managers, chief shedmen, shed assistants, shedmen, train assistants, train control officers, service drivers, train drivers and general workers.

In addition, both temporary and permanent jobs may be created in the manufacture of wagons and equipment for the railway line.

The private sector and the Industrial Development Zone, the Metro and the Eastern Cape as well as the country in general will benefit from the increased capacity of the line. As a result, both the mining and shipping industry, for example, may also generate employment opportunities both locally and regionally.

E3.3.2 Skills development

In order to maintain a reliable train service between Hotazel and the Port of Ngqura, training programmes will be developed to ensure that both existing and new employees reach the required skill levels. Prior to recruitment and training, professional guidance will be sought to help identify suitable candidates and training programmes based on a thorough skills analysis. Induction training will be provided to all new employees whether they are contract or permanent staff.

E3.4 ALTERNATIVES

The consideration of alternatives is a legal requirement, as stipulated in the EIA Regulations, R385 of April 2006.

The different types of alternatives that may be relevant to the Project are briefly described in *Table E3.4* below. A more detailed description is provided in *Chapter 7* of the EIR.

TableE 3.4 Summary of applicable Project alternatives

Type of Alternative	Description of Alternative
Location and site alternatives	Loops - Loop locations that were too technically difficult (and thus too expensive to extend) or that posed environment risks were identified and excluded from further investigation. The remaining loops were then subjected to various scheduling scenarios to ensure that they would meet their purpose. Yards - The current yard infrastructure along the railway line from Hotazel to the Port of Ngqura is sufficient to deal with the increased rail traffic. However, some yards require moderate upgrades to improve their functionality. Hence, no yard selection process was undertaken as was the case with the loops. Substation – The site of the proposed new substation near Emil (Northern Cape) was dictated by a voltage undersupply between Sishen and Wincanton.

Type of Alternative	Description of Alternative
Design alternatives	Alternative designs were investigated with respect to the loops considered. The proposed loop extensions were designed such that no new bridges were required and only limited earthworks and relocation of existing roads and level crossings would be required.
Demand alternatives	Demand is driven by the international and local markets and as such the latest forecasted demand data was evaluated to determine present and future demands.
Activity alternatives	Activity alternatives relate to providing alternative ways of achieving the same objectives. In this Project, the objective is to increase the volume of containers and commodities transported. An activity alternative would, therefore, relate to transportation of these goods by road, rather than rail.
Process alternatives	Criteria include operating conditions, throughput needs and design requirements and/or restrictions. The best solution is achieved by streamlining the process and optimising the train length. Shorter trains would result in increased train frequency and fleet size, with the latter carrying a significant capital cost and the construction being associated with environmental impacts. However, the greater overall efficiency from a total logistics chain perspective would probably offset these impacts to a large extent.
Material alternatives	Due to the specialised nature of the material required for a project of this kind there are limited opportunities for considering material alternatives. Material requirements are dictated by axle loads and design requirements so as to safely operate a railway service of this nature.
Phasing alternatives	Various phasing alternatives were investigated namely 6, 8, 10 and 12 mtpa of manganese ore and six additional container trains (along this rail corridor).
The no-go alternative	Should the proposed loops, yards, traction substation and associated infrastructure not be constructed or upgraded then an increase in container and commodity capacity on the railway line between the Port of Ngqura and Hotazel will not be possible. This would have serious implications for South Africa's mining and container handling sectors and would affect our export capabilities. This suggests direct negative consequences for the provincial and national economy.

Based on the above descriptions of the alternatives considered during the feasibility study and during Scoping, it was the opinion of the Project team that the Project, as described in *Section E3* and more fully in Chapter 4 of the EIR, was the only feasible and practical option to take forward and assess during the EIA phase.

The purpose of impact assessment and mitigation is to identify and evaluate the significance of potential positive and negative impacts on identified receptors and resources according to defined assessment criteria; to develop and describe measures that will be taken to avoid, minimise, mitigate/ compensate for any potential adverse effects; and to seek opportunities to enhance potential benefits; and to report the significance of the residual impacts that remain following mitigation/compensation and/ or optimisation/ enhancement.

An impact is essentially any change (whether positive or negative) to a resource or receptor brought about by the presence of the project component or by the execution of a project related activity. There are a number of ways that impacts may be described and quantified.

Broadly, impacts can be described as positive or negative, direct, indirect or cumulative. The impacts are then assessed in terms of their significance. There is no statutory definition of 'significance' and its determination is, therefore, somewhat subjective. However, it is generally accepted that significance is a function of the **magnitude** of the impact and the **likelihood** of the impact occurring.

The following matrix (*Table E4.1*) can be used to determine the impact significance.

Table E4.1 Example of significance rating matrix

SIGNIFICANCE RATING					
	LIKELIHOOD	Negligible	Low	Medium	High
MAGNITUDE	Negligible	Negligible	Negligible	Minor	Minor
	Low	Negligible	Negligible	Minor	Minor
	Medium	Negligible	Minor	Moderate	Moderate
	High	Minor	Moderate	Major	Major

In *Table E4.2*, the various definitions for significance of an impact are given.

Table E4.2 Significance definitions

Impact significance	Definition
Major impact	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/ sensitive resource/ receptors. A goal of the EIA process is to get to a position where the Project does not have any major residual negative impacts (especially not those endured into the long term or extending over a large area) and major positive impacts are enhanced as far as possible. For some aspects, however, there may be major residual negative impacts after all practicable mitigation options have been

	<p>exhausted (i.e. ALARP has been applied). (e.g. visual impact of a development).</p> <p>It is then the function of regulators and stakeholders to weigh such negative impacts against the positive impacts in coming to a decision on the Project.</p>
Moderate impact	<p>An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the negative impact has been reduced to a level that is as low, or positive impact enhanced as far as reasonably practicable (ALARP). This does not necessarily mean that 'moderate' negative impacts have to be reduced to 'minor' impacts, but that moderate impacts are being managed effectively and efficiently. In the same way, moderate positive impacts may not be able to be enhanced to have major positive impact.</p>
Minor impact	<p>An impact of minor significance is one where an effect will be experienced, but the impact magnitude is small (with and without mitigation) and, for negative impacts, well within accepted standards, and/or the receptor is of low sensitivity/value.</p>
Negligible impact	<p>Negligible impact (or insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.</p>

Table 4.3 *Colour scale for significance ratings*

Negative ratings	Positive ratings
Negligible	Negligible
Minor	Minor
Moderate	Moderate
Major	Major

For a more in-depth description of the impact assessment methodology see *Chapter 3* of the EIR

E4.1.1 *Potential Construction Phase Impacts*

Table E4.3 summarises all the potential biophysical and socio-economic negative and positive impacts assessed for the construction phase of the Project. For a more detailed description of the impacts and relevant mitigation measures see *Chapter 7* of the EIR.

Table E4.4 *Summary of potential impacts associated with the construction phase (pre – mitigation)*

Project component	Impact significance	Impact description
Loops	1 major negative impact	Spread/colonisation of invasive alien species and weed taxa
	5 moderate negative impacts	Loss of vegetation communities.
		Loss of faunal diversity and richness.
		Loss of protected invertebrate species.
		Disturbance to riparian zone.

Project component	Impact significance	Impact description	
Yards		Noise disturbance.	
	6 minor impacts: 5 negative, 1 positive	Removal of declared invader and weed species (minor positive impact). Loss of or disturbance to sites of archaeological, paleontological or cultural significance. Soil erosion. Contamination of soil and groundwater resources. Potential contamination of surface water features. Dust nuisance.	
	3 negligible impacts	Vibration nuisance. Disruption to run-off/surface water flow affecting river systems. Traffic disruption and hazards.	
	No major negative or positive impacts	-	
	No moderate negative or positive impacts	-	
	No minor negative or positive impacts	-	
	4 negligible impacts	Contamination of soil and groundwater resources. Dust nuisance. Noise disturbance. Traffic disruption and hazards.	
	Substation near Emil	No major negative or positive impacts	-
		No moderate negative or positive impacts	-
		4 Minor negative impacts	Loss of vegetation communities. Loss of and disturbance to fauna. Dust nuisance. Noise disturbance.
3 negligible impacts		Establishment of invasive alien species and weed taxa. Soil erosion. Contamination of soil and groundwater resources.	
Refurbishment between Kimberley & De Aar	No major negative impacts	-	
	3 moderate negative impacts	Loss of or disturbance to sites of archaeological, paleontological or cultural significance.. Dust nuisance. Noise disturbance.	
	No minor negative impact	-	
Socio-economic	No negligible impacts	-	
	No major negative or positive impacts	-	
	3 moderate negative impacts	Increased pressure on infrastructure and services. Spread of HIV/AIDS and STIs. Increase in Social Ills.	
	1 minor positive impact	Potential employment and procurement opportunities.	
	No negligible impacts	-	

E4.1.2 Potential Operation Phase Impacts

Table E4.4 summarises all the potential biophysical and socio-economic positive and negative impacts assessed for the operation phase of the Project. For a more detailed description of the impacts and relevant mitigation measures see Chapter 7 of the EIR.

Table E4.5 Summary of potential impacts associated with the operation phase (pre-mitigation)

Project component	Impact significance	Impact description
Railway line from Hotazel to the Port of Ngqura	1 major negative impact	Impact from increased noise generation
	No moderate negative or positive impacts	-
	No minor negative or positive impacts	-
	3 negligible impacts	Impact of manganese dust. Impacts from increased vibration effects. Impact on public safety.
Yards and substation	No major negative or positive impacts	-
	No moderate negative or positive impacts	-
	No minor negative or positive impacts	-
	2 negligible impacts	Impact from increased noise generation. Contamination of soil and groundwater resources.
Socio-economic	No major negative or positive impacts	-
	1 moderate negative impact	Change in sense of place (noise, vibration, movement patterns).
	1 minor positive impact	Change in sense of place (minor positive impact - economic benefit, upliftment).
	1 negligible impact	Potential employment and procurement opportunities.

Other positive socio-economic impacts considered within the impact assessment are included below. Although the full assessment of these impacts fall outside of the scope of the EIA, these are important to note.

- Positive impacts of the proposed line related to the beneficiation of valuable raw products, transportation of these products in-land and general assistance with the growth of the Eastern Cape, Metro, Industrial Development Zone and the South African economy.
- The greater capacity on the rail line may also improve the feasibility of the future relocation of the manganese export terminal and tank farm.
- Increased rail capacity and transport efficiency is likely to result in reduction in long distance bulk commodity and container movements by road, which has a high negative impact on roads.

Potential decommissioning positive and negative impacts associated with the Project have not been assessed according to the assessment methodology owing to the long term nature of the Project, uncertainties in where decommissioning activities would take place; and when. The implication of the time lapse is that the baseline environmental and social conditions could be vastly different to that described in this report.

It is also expected that loops would not be decommissioned in isolation but that various sections of the line would be decommissioned; hence impacts are associated with the existing railway line (and access roads) as well. Borrow pits are not considered part of the scope of decommissioning by Transnet as these are third party owned and operated sites.

Table E4.6 outlines a number of potential negative and positive decommissioning impacts that are likely to be experienced in the event of the decommissioning of the railway line, yards and the substation. These impacts are very similar to those expected during the construction phase. Mitigation measures and opportunities for enhancement are therefore the same for the construction phase impacts, and are not repeated here.

Table E4.6 *Potential decommissioning phase impacts*

Impact Description	Railway Line (incl. loops, access roads but excl. borrow pits)	Yards and Substation (incl. access roads)
Loss of faunal diversity and richness.	Negative - Direct	Negative - Direct
Loss of protected invertebrate species.	Negative - Direct	Negative - Direct
Disturbance to the riparian zone.	Negative - Direct	N/A
Removal of alien invasive and weed species.	Positive - Indirect	Positive - Indirect
Disruption to river systems (water flow, contamination).	Negative - Indirect	N/A
Soil erosion.	Negative - Direct	Negative - Direct
Contamination of soil and groundwater resources.	Negative - Direct	Negative - Direct
Dust, noise and vibration nuisances.	Negative - Direct	Negative - Direct
Traffic disruption and hazards.	Negative - Direct	Negative - Direct
Loss of or disturbance to sites of archaeological, paleontological and cultural heritage significance.	Negative – Direct and Indirect	N/A
Creation of temporary local employment and procurement opportunities.	Positive - Direct	Positive – Direct
Increase in social ills and spread of disease associated with housing of labour in local towns.	Negative - Indirect	Negative – Indirect

E4.3 BORROW PIT IMPACTS

While there is no requirement under the environmental Regulations to assess the borrow pits as part of the scope of this project, the nature of the potential impacts associated with the excavation at these sites are discussed briefly below.

Authorisation for the use of borrow pit follows a separate process via the Department of Minerals and Energy. Broadly speaking, the process to gain authorisation involves application for a mining permit/mining right to open new and/or existing borrow pits. However, as Transnet is a parastatal organisation, it is deemed an "organ of state" as stipulated in Section 106 and is, therefore, exempted from certain provisions of the Act. Transnet will have to follow an abbreviated authorisation process for new/dormant borrow pits. Borrow material from within the rail reserve does not require authorisation.

Although not part of the assessment of this project, the borrow pit sites designated as possible sources of earthworks material for the construction phase of the project are likely to have a number of impacts associated with them. These impacts are discussed in detail in *Section 7.12 of Chapter 7* in the EIR.

E4.4 CUMULATIVE IMPACTS

Cumulative impacts can be regarded as the combined effects (whether positive and negative) of more than one development (past, present or in the foreseeable future) within the same geographical area or on the same receptor/resource.

Other developments which may, therefore, be influenced by this Project, include possible new mines or mining related developments in the Northern Cape and the construction of a new manganese export terminal. The potential impacts associated with these activities are outside the scope of this EIA process but would need to be considered through separate EIA's and/ or mine permitting processes, were they to realise.

The planned mining developments may wish to use the railway line for the transport of their products. As such, this could potentially result in an increase in the frequency of trains along the line, thereby exacerbating the operational impacts, such as noise disturbance.

The possible linkages and cumulative effects associated with a new manganese terminal are uncertain and unclear as the location of the new terminal (if proven to be feasible) has not been determined. However, it is expected that a new terminal (possibly at the Port of Ngqura or Port of Saldanha) may require some alteration or upgrade of the existing rail infrastructure, such as additional loops.

The no-go or do nothing alternative (i.e. the maintenance of the status quo) involves not extending/constructing the proposed loops or the traction substation and not upgrading the yards or refurbishing the Kimberley-De Aar section of the railway line.

The impact of not implementing the Project can be viewed as both positive and negative. The positive consequences include not causing impacts to the biophysical and social environment, particularly to sensitive ecological or social receptors, whereas the negative implications are associated with the direct loss of opportunities for local employment and procurement of goods and services at a provincial and national scale. The key negative consequence would, however, be lost opportunities and revenue associated with reduced manganese export and container handling. If the railway line and associated structures is not upgraded to handle the additional capacity, this would result in a negative, direct impact on generation of foreign income, which would affect the provincial and national economy. Negative, indirect impacts would also be experienced on the supply chain that services this sector of the economy.

It is a requirement of the EIA Regulations under NEMA that the independent environmental consultant provides a recommendation on whether the Project should be authorised or not. In our opinion, following the assessment of potential impacts and in developing the mitigation measures to be implemented by Transnet, we feel that the project may be authorised, keeping in mind the conditions described in detail in the EIR.

Furthermore, owing to the scale of development, the current economic climate and uncertainties around the full implementation of all the project activities, we would advise that the positive environmental authorisation, if granted by DEAT, be valid for five years.

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E1.1 DOEL VAN HIERDIE DOKUMENT

Hierdie uitvoerende opsomming van die Konsep Omgewings-
invloedbepalingsverslag (OIV) vir die voorgestelde opgradering van die
spoorlyn tussen die Hawe van Ngqura en Hotazel is opgestel deur
Environmental Resources Management Southern Africa (Edms) Bpk (hierna
genoem ERM). Die doel van hierdie dokument is om 'n onafhanklike en
toeganklike opsomming van die OIV te voorsien.

'n Opsomming van sleutel aspekte van die OIV, insluitende agtergrond en
konteks, die motivering vir die Projek, die wetlike vereistes soos bepaal deur
die proses van Omgewingsinvloedbepaling (OIB), die Projekbeskrywing, die
identifikasie van invloede, en sleutelbevindings word hieronder ingesluit.

E1.2 AGTERGROND EN KONTEKS

Transnet Bpk (hierna verwys as Transnet) het 'n mandaat van die regering om
'n bydrae te lewer tot die nasionale mededinging en groei van die ekonomie
deur middel van die verskaffing van noodsaaklike spoorvragdienste, om op
hierdie manier ook te probeer help om die koste van sake doen in Suid-Afrika
te verminder. As sulks, het Transnet begin met 'n program vir uitbreiding van
infrastruktuur van al die groot hawens in Suid-Afrika asook spoorlyne
waarop kommoditeite vervoer word. Transnet is egter verbind daartoe om die
nodige prosesse van omgewings-goedkeuring te volg om hierdeur te verseker
dat enige bio-fisiese en sosio-ekonomiese invloede en voordele as gevolg van
die program van uitbreiding aan infrastruktuur deeglik aangespreek is.

Een van Transnet se doelwitte kragtens bostaande program, is die uitbreiding
in die aantal houers asook die volume van kommoditeite soos mangaan- en
ystererts wat op die bestaande 1 100 km spoorlyn tussen Port Elizabeth en die
nuwe Hawe van Ngqura (sien *Figuur E1.1* en *Figuur E1.2*) vervoer word. Die
houers word per spoor vervoer vanaf Port Elizabeth na Kimberley, vanwaar
hulle weggekeer word na Gauteng. Die kapasiteit van die spoorlyn tussen
Kimberley en Gauteng is groot genoeg om te voldoen aan die voorgestelde
uitbreiding van die aantal houers en geen uitbreiding daarvan is dus nodig
nie. Die opknapping van sekere gedeeltes van hierdie bestaande spoorlyn sal
egter onderneem word. Die kapasiteit van die spoorlyn tussen die Hawe van
Ngqura en De Aar moet egter opgegradeer word deur die verlenging van die
bestaande uitwykspore¹ en die konstruksie van nuwe uitwykspore.

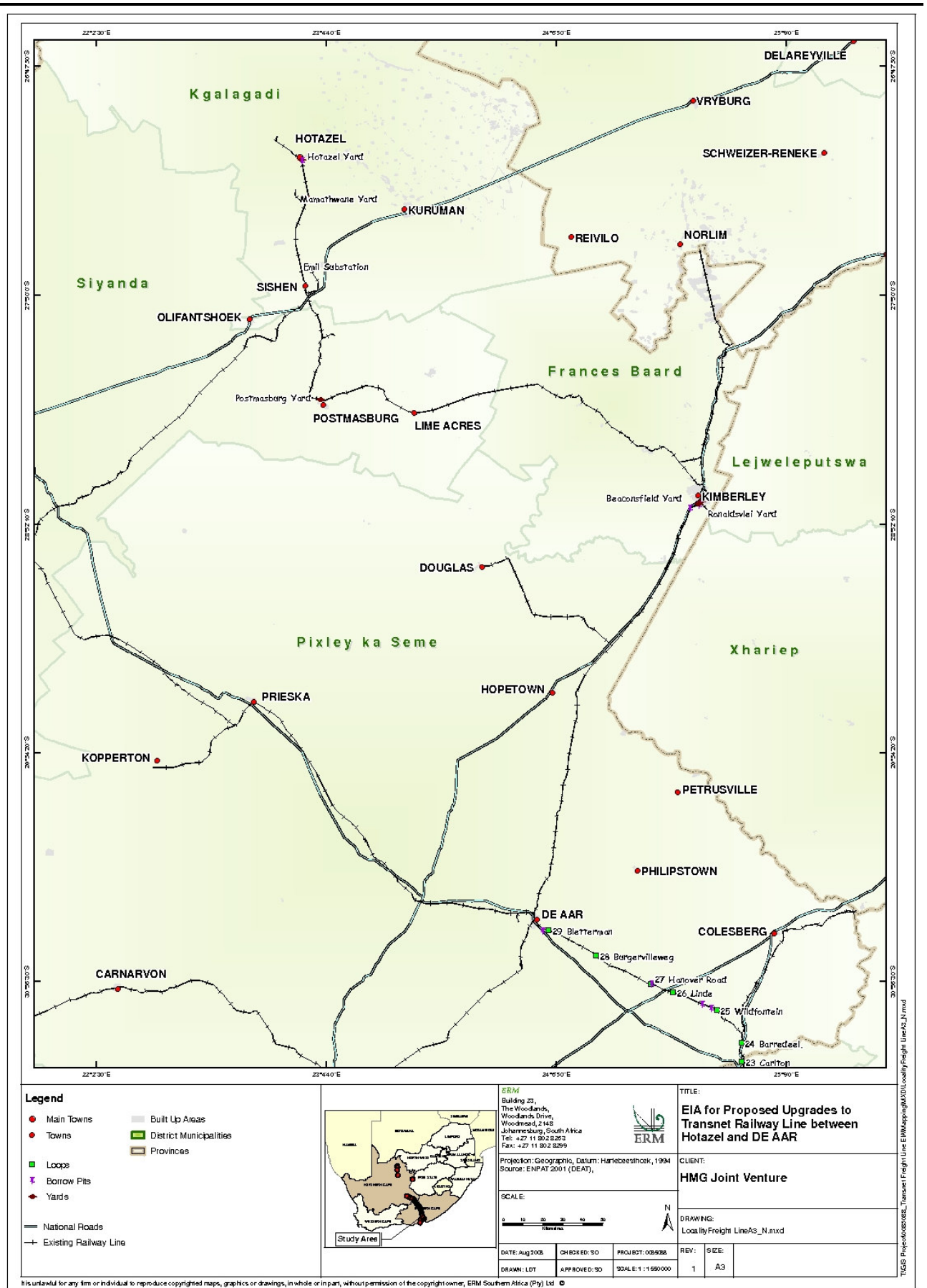
(1) 'n Uitwykspoor, verbygaande of kruisend, is 'n plek op 'n eenbaanspoorweg waar treine wat in teenoorgestelde rigtings
reis by mekaar kan verby beweeg. 'n Uitwykspoor wat verbygaande is, het gewoonlik twee eindpunte wat verbind is aan
die hoofspoor.

Sommige ondersteunende infrastruktuur sal ook aangebring word, waar nodig, om die verwagte vergrote spoorverkeer veilig te akkommodeer.

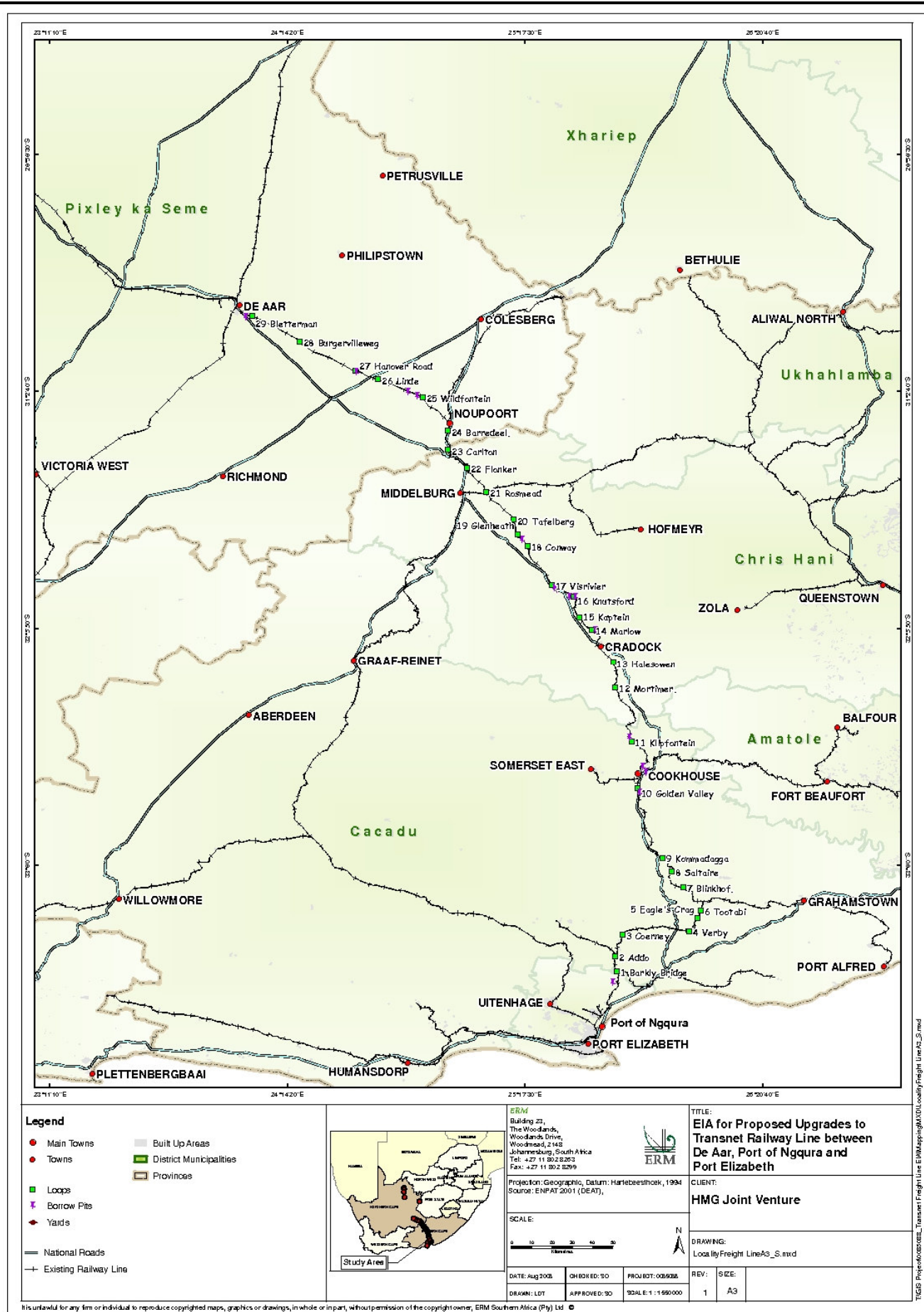
ERM is namens Transnet Freight Rail (voorheen Spoornet, 'n afdeling van Tansnet) aangestel deur HMGJV^[2] om op te tree as die onafhanklike omgewingskonsultant op hierdie projek. ERM se taak is om die vereiste proses van Omgewingsinvloedbepaling (OIB) vir hierdie Projek betreffende opgradering van 'n spoorlyn uit te voer, met die doel om 'n besluit (hetsy positief of negatief) deur die betrokke owerheid, Die Departement van Omgewingsake en Toerisme (DOT) te fasiliteer.

(2) Hatch, Mott MacDonald and Goba Gesamentlike Onderneming

Figuur E.1 Liggingskaart: Hotazel tot De Aar



Figuur E.2 Liggingskaart: De Aar tot Port Elizabeth



Transnet Freight Rail het sy strategiese voornemens opnuut gedefinieer, en is van plan om sy doelwitte te bereik deur vermindering van vervoerkoste, deur kapasiteit te skep, veilig te werk te gaan en doeltreffendheid te verbeter. Een van die spesifieke doelstellings sluit in kostevermindering vir doen van sake deur padverkeer om te skakel na spoorverkeer.

Die maatskappy se visie vir groei maak tot 'n groot mate staat daarop om in samewerking met kliënte, deurloopspoorlyne optimaal te benut. Transnet Freight Rail is van mening dat hierdie stap tot gevolg sal hê dat klante, wat tans sake doen met padkarweiers, terug gewen sal word, terwyl dit ook integrasie met die land se algehele logistieke ketting bewerkstellig. Die grootste deel van die aanvraag na die verskeie kommoditeite (houers, voertuie, ens.) is ingestel op vervoer per spoor, derhalwe het Transnet Freight Rail se fokus verander van vervoer op paaie - na vervoer per spoor.

Ten einde die hoë vlakke van doeltreffendheid wat met verbeterde spertye van dienslewering vereenselwig word te bereik, sal Transnet Freight Rail teen 2012 kapitaal ter waarde van R35 biljoen in die projek stort. Negentig persent van hierdie uitgawe is toegewys aan rehabilitasie en 'n vernuwingsprogram vir lokomotiewe, trokke, en infrastruktuur.

Die bestaande infrastruktuur van die spoorlyn tussen die Hawe van Ngqura, De Aar en Hotazel word tans nie ten volle benut vir vervoer van houers en manganen, gevolglik is daar ruimte om die hoeveelhede wat op hierdie spoorlyn vervoer word, te vermeerder. Spoorvervoer word beskou as 'n beter opsie vergeleke met padvervoer, aangesien laasgenoemde groter risiko's inhou en bykomende verkeer beteken op 'n padnetwerk wat alreeds oorlaai is. Daar is ook 'n behoefte aan groter operationele doeltreffendheid by die oplaai- en die aflaai-punte sowel as beter algemene benutting van die spoorlyn.

Transnet bou tans 'n nuwe houereindpunt by die Hawe van Ngqura naby Port Elizabeth. Magtiging vir hierdie Projek is in 2002 verkry en weereens in 2007 vir die uitbreiding van die eindpunt (respektiewelike DOT verwysings A24/16/3/56 en 12/12/20/690). Doeltreffende bedryf van hierdie houereindpunt verg die opgradering van die spoorlyn ten einde 'n groter aantal houers van en na die hawe te kan vervoer. Hierdie behoefte is reeds op 'n vroeë stadium van die goedkeuringsproses van die Hawe van Ngqura geïdentifiseer. Die behoefte is ook geïdentifiseer vir 'n buffer stoorgebied van houers om voorsiening te maak vir die verskil in die aantal houers wat vanaf die groter skepe afgelaai word en die beskikbare kapasiteit van die spoorlyn.

Transnet vervoer ook tans manganen vanaf myne naby Hotazel op die spoorlyn tot by die bestaande eindpunt vir manganen by Port Elizabeth, vanwaar dit per skip uitgevoer word. Daar is tans wêreldwyd 'n toenemende aanvraag na manganen. Hierdie wêreldwye toename in aanvraag beteken dat daar in die toekoms 'n behoefte sal wees vir groter hoeveelhede manganen om op die spoorlyn na die hawe by Port Elizabeth, en moontlik ook na die

Hawe van Ngqura, vervoer te word. Die Coega Ontwikkelingskorporasie (COK) het ook aangedui dat die bestaande aflaaifasiliteite vir mangaan in Port Elizabeth nie volhoubaar is op die langtermyn nie en dat toekomstige uitvoere van mangaan waarskynlik deur die hawe van Ngqura sal plaasvind. Die CDC het ook beklemtoon hoe belangrik dit is om addisionele spoor kapasiteit te hê om te verseker dat die Ferro- metaal komponent van die Coega Nywerheids Ontwikkelingsone (CIOS) en hul geasosieerde waardetoevoeginggeleenthede nie gekortwiek word nie. Hierdie spoorlyn sal waarskynlik in die toekoms ook gebruik word vir die vervoer van ander kommoditeite. Die Hawe van Ngqura sal diens verskaf aan die CIOS, die metropolitaanse gebied sowel as die breër Ooskaapgebied en gevolglik sal enige kommoditeit wat per spoor na en vanuit die hawe vervoer moet word, bykomende druk plaas op die kapasiteit van die huidige spoor-infrastruktuur.

Hierdie tweeledige behoefte om te voldoen aan die aanvraag van die myn- en houersektore het gelei tot Transnet se besluit om die spoorlyn tussen Kimberley en De Aar op te knap en om die spoorlyn tussen Hotazel en die Hawe van Ngqura op te gradeer.

Hierdie OIB proses word onderneem kragtens OIB-Regulasies R385, R386 en R387 van 21 April 2006 wat uitgereik is kragtens die Nasionale Omgewingsbestuurswet (Wet 107 van 1998), soos gewysig. Ander wetgewende vereistes is egter ook op hierdie projek van toepassing.

Die proses van Omvangsbepaling/OIB behels 'n bepaling van potensiële invloede en geleentheid van 'n besondere aktiwiteit. Dié proses vind plaas in drie breë fases, naamlik;

- Aanvang van Projek;
- Omvangsbepaling; en
- Integrasie en Invloedbepaling.

'n Kort opsomming van die take wat tydens elke fase van die OIB-proses onderneem word, verskyn hieronder. 'n Oorsig van die proses verskyn in die vloeddiagram in *Figuur E.2.1*.

E2.1

AANVANG VAN PROJEK

Hierdie fase het vergaderings tussen ERM en die klient se tegniese raadgewers ingesluit om die omvang van die Projek te bevestig. Dit het ook 'n vergadering met DOT ingesluit om die benadering tot die OIB te bevestig, gevolg deur die formele indiening van die OIB-aansoek vir Magtiging om die OIB-proses te loods.

Op 21 Julie 2008 is twee aansoekes by die DOT ingedien. Die rede waarom twee aansoekes ingedien is, hou verband met die tydsbepaling en dringendheid van sekere komponente van die Projek. Alhoewel twee OIB-aansoekes ingedien is, word slegs een OIB-proses gevolg, insluitende een proses van publieke deelname, en die uitreik van een Omvangsverslag en een gekonsolideerde OIB Verslag.

Die DOT het op 1 Julie 2008 tydens 'n vergadering toegestem tot hierdie benadering.

E2.2

OMVANGSBEPALING

Tydens hierdie fase was die Projekspan daarop gemik om potensiële omgewings-, ekonomiese- en sosiale kwessies, wat verband hou met die voorgestelde Projek, te identifiseer. Dit het betrokkeheid van belangegroepes ingesluit, sodat hulle standpunte beter verstaan kon word.

Ten einde die doeltreffende betrokkeheid van belangegroepes te verseker, is die Proses geadverteer in sewe plaaslike koerante en twee streekkoerante in die Oos-Kaap en die Noord-Kaap gedurende die periode vanaf die einde van Julie tot September 2008. 'n Agtergrond-inligtingsdokument (AID) in Engels, Afrikaans, isiXhosa en Setswana is vanaf die begin van Augustus versprei aan

ongeveer 300 belanghebbendes. Belanghebbendes sluit in grondeienaars met grond wat grens aan die spoorlyn en ander Projekterreine, owerhede, nie-regeringsinstansies en gemeenskapsorganisasies, asook ander belanghebbendes. Die doel van die AID was om inligting oor die Projek oor te dra aan potensiële belanghebbendes en om hulle toe te laat om kommentaar te lewer en/of te registreer as Belanghebbende en Geaffekteerde Partye (B&GP'e). Kennisgewings op terreine, om die publiek in kennis te stel van die Openbare Vergaderings, is in 16 dorpe in die Projekgebied aangebring. Agt Openbare Vergaderings is op verskeie plekke binne die Projekgebied gehou tussen 25 Augustus en 22 September 2008. Vier vergaderings is in die Oos-Kaap gehou by: Paterson, Cookhouse, Cradock en Middelburg. Vier vergaderings is in die Noord-Kaap gehou, insluitende een op De Aar, twee in Kimberley en die laaste in Hotazel. Die notules van hierdie vergaderings, asook die Verslag oor Kwessies en Reaksies rakende alle kommentaar wat tot op hede ontvang is, is ingesluit in die Konsep Omvangsinvloedbepalingsverslag (OIV). *Tabel E2.1* bevat 'n hoë-vlakopsomming van die kwessies wat deur belanghebbendes geopper is tot op hede.

Tabel E2.1 *Kwessies geopper deur B&GP'e*

Breë Kategorieë	Kwessies geopper
Sosio- ekonomiese oorwegings	Hoe en waar die werwingsproses vir indiensneming uitgevoer sal word. Regverdigheid van die tenderproses en die werklike geleentheid vir plaaslike arbeiders, asook kleiner, plaaslike sake-ondernemings. Of Transnet se primêre kontrakteur plaaslike subkontraakteurs sal gebruik. Aard van werkneming, vlakke van vaardighede en getalle wat in diens geneem sal word. Vorige werknemers van Transnet se posisie in verband met verkryging van gewaarborgde werk d.m.v. die projek. Opleiding en kapasiteitbou in verband met ongeskoolde arbeid. Besorgdheid oor gesondheid en veiligheid van werkers wat moontlik aan stof van mangaan blootgestel mag word. Gesondheidsmaatreëls en bestuur van afval by arbeidskampe. Sosiale siektes wat geassosieer word met kampe, insluitende die verspreiding van MIV. Projek se uitwerking op die netwerk vir elektrisiteit, wat alreeds ooreis is. Veiligheid by spooroorgange en 'n toename in spoorongelukke. Langtermynvoordele van Projek vir gemeenskappe. Voordele vir plaaslike sakeondernemings. Invloed van mangaanstof op mense wat naburig aan spoorlyn woon. Invloed van potensiële toenames in vibrasies op huise naasliggend aan die spoorlyn. Toename in die spoorkapasiteit vir die vervoer van produkte vanaf die Ooskaap, die metropolitaanse gebied en die Coega Nywerheidsontwikkelingsone na Gauteng en die gevolglike groei van hierdie gebiede Bydrae tot die waardetoevoeging te Coega, van die land se minerale rykdom
Biofisiese oorwegings	Verlies van biodiversiteit en invloed op bedreigde diere en voëls as gevolg van toename in verkeer op spoorlyn en konstruksieaktiwiteite. Invloed op skaars waterbronne as 'n gevolg van konstruksie-aktiwiteite.
OIB-proses Algemeen	Plaaslike spesialiste en deskundiges behoort in die proses gebruik te word. Moontlike voordele aan die graanbedryf betreffende vervoer van produkte na mark a.g.v. ekstra treine op die spoorlyn. Erfenisterreine behoort beskerm te word en plaaslike kennis moet gebruik word om belangrike terreine te identifiseer.

'n Behoefte om te kyk na die groter prent betreffende ander Projekte, toekomstige behoefte en planne vir ontwikkelings langs die spoorlyn. Dit sluit in 'n waarskynlike toekomstige spoorterminus by Coega, 'n toekomstige intermodale fasiliteite, spoor ondersteunings- en onderhoudsfasiliteite. Invloed van die Projek op die aanvraag na padvervoer alternatiewe Die proses vir verkryging van grond. Die reëlins vir vervoer van passasiers tydens die 2010 Sokker Wêreldbeker moet ingeskakel word. Moontlikhede vir Openbare Private Vennootskappe

Gebaseer op die werk wat tydens die Omvangstudiefase voltooi is, is die KOV, insluitende 'n Studieplan vir OIB wat aandui hoe potensiele positiewe en negatiewe invloede aangespreek sal word in die volgende fase van die OIB, saamgestel en beskikbaar gestel aan B&GP'e vir hul kommentaar.. Die bygewerkte Finale Omvangsverslag, insluitende kommentaar deur B&GP'e, is by DOT ingedien vir goedkeuring, voor die aanvang van die volgende fase van die OIB-proses.

Opdrag is gegee vir die uitvoer van 'n aantal spesialis-studies om inligting oor die studiegebied te bekom en om te help om kwessies en potensiele invloede wat met die Projek vereenselwig word, te identifiseer. Die lys spesialiste wat aangestel is, verskyn in onderstaande *Tabel E.2*.

Tabel E2.2 Sleutelkwessies en Spesialis studies

#	Gespesialiseerde Studie	Spesialis	OIV Verwysing
1	Invloedbepaling vir luggehalte	uMoya-NILU Consulting (Edms) Bpk	Sien <i>Volume 2</i>
2	Geraasbepaling	Jongens Keet Associates	Sien <i>Volume 2</i>
3	Fase 1 Argeologiese-en-kulturele-erfenis-studie	Argaïese Erfenis Projekbestuur, Universiteit van Pretoria	Sien <i>Volume 2</i>
4	Sosiale invloedbepaling	ERM Southern Africa	Sien <i>Volume 2</i>
5	Landelike ekologie bepaling	Natural Scientific Services	Sien <i>Volume 2</i>
6	Verkeersinvloedstudie	ITS	Sien <i>Volume 2</i>
7	Vibrasie-invloedbepaling	Departement van Meganiese en Lugvaartkundige Ingenieurswese, Universiteit van Pretoria	Sien <i>Volume 2</i>

E2.3

INTEGRASIE EN INVLOEDBEPALING

Hierdie fase het begin na ontvangs van goedkeuring deur DOT van die Finale Omvangsverslag en Studieplan vir OIB. Tydens hierdie fase het die Projekspan die volgende take uitgevoer:

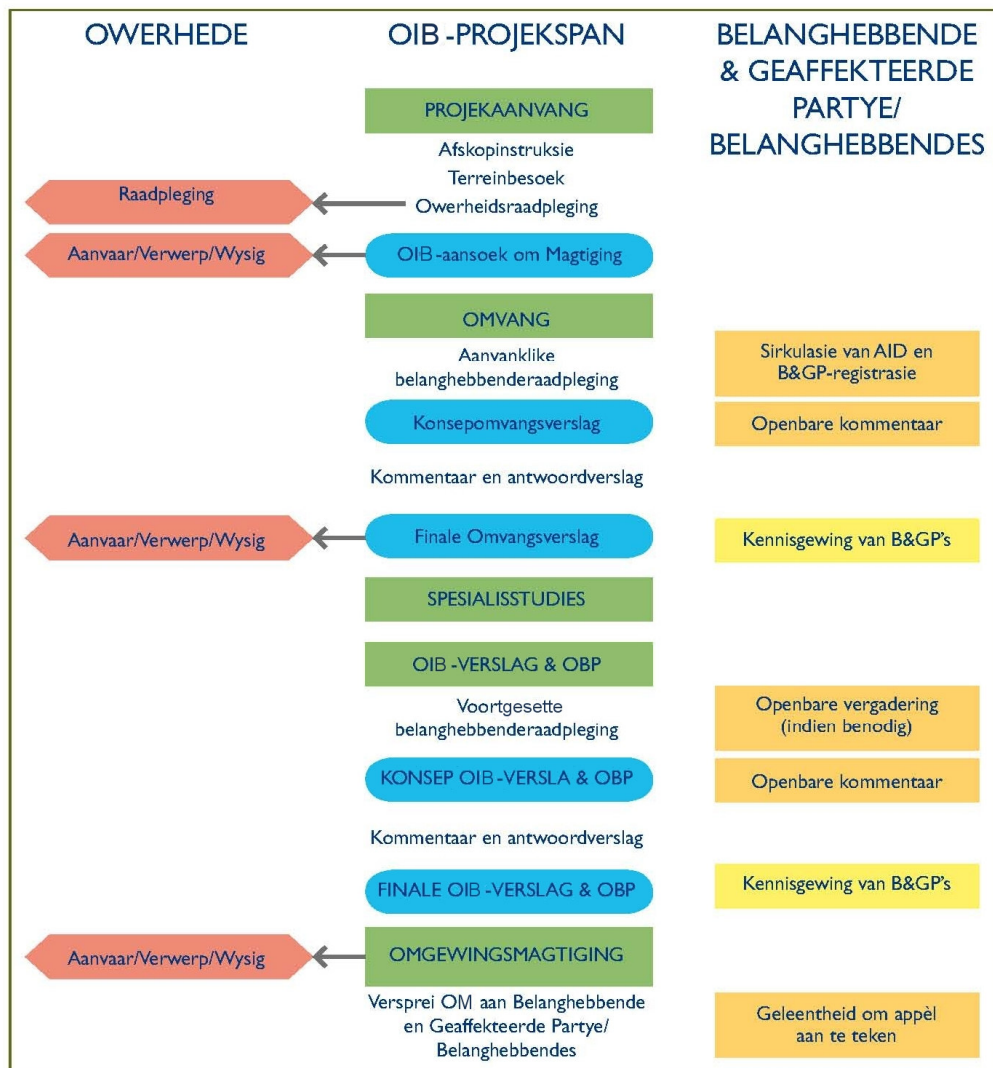
- Kwessies/ geleenthede en potensiele negatiewe invloede en voordele wat tydens die Omvangsfase geïdentifiseer is, te ondersoek;
- Opdrag is gegee vir bykomende studies deur spesialiste waar nodig en/of die omvang van studies wat tydens die Omvangsfase gedoen is, is vergroot;
- Evaluering en bepaling van hoe beduidend die positiewe en negatiewe invloede is wat geïdentifiseer is; en

- Die voorstel van maatreëls ter versagting van invloed, en die optimalisering van geleentheid.

Hierdie fase het ingesluit die samestelling van 'n Konsep Omgewingsinvloedbepalingsverslag, insluitende 'n Omgewingsbestuursplan.

Die DOT se besluit betreffende omgewingsmagtiging (positief al dan nie) sal gekommunikeer word aan alle B&GP'e wat by die OIB-proses betrokke was. Indien enige iemand besware teen dié besluit sou hê, sal daar 'n formele geleentheid wees om appèl aan te teken.

Figuur E2.1 OIB-proses vloeiagram



E3.1 PROJIEKGEBIED

Die bestaande spoorlyn wat vanaf Hotazel in die Noord-Kaap loop tot by die Hawe van Port Elizabeth in die Oos-Kaap dek 'n afstand van ongeveer 1 100 km en gaan deur die vername spoorwegmiddelpunte by Kimberley en De Aar.

Van die nege-en-twintig (29) voorgestelde uitwykspoorterreine, val drie-en-twintig (23) binne die Oos-Kaap terwyl die oorblywende ses (6) geleë is in die Noord-Kaap, suid van De Aar. Al vyf (5) spoorwegwerwe wat voorgestel is vir opknapping, asook die nuwe voorgestelde substasie, is tussen Hotazel en Kimberley in die Noord-Kaap geleë.

Laastens, die bestaande tweede spoorlyn geleë tussen Kimberley en De Aar in die Noord-Kaap, wat vir 'n geruime tyd nie in gebruik was nie, en onklaar geraak het, sal opgeknip en geëlektrifiseer word.

E3.2 OORSIG VAN VOORGESTELDE PROJIEK KOMPONENTE

Die voorgestelde Projek kan verdeel word in breë komponente wat vereenselwig word met die opgradering, konstruksie of opknapping van spoorweginfrastruktuur en opknapping van die werwe en opgradering van die verwante infrastruktuur, die verkryging van konstruksiemateriaal, die konstruksie van bykomende infrastruktuur en konstruksiekampe en neerleggingsgebiede.

Tabel E3.1 bied 'n opsomming van die voorgestelde Projek se aktiwiteite volgens hierdie breë kategorieë.

Tabel E3.1 Voorgestelde Projek komponente

Breë komponente van Projek	Beskrywing
Opgradering, konstruksie, of opknapping van spoorweg infrastruktuur en geassosieerde infrastruktuur	<ul style="list-style-type: none"> • Opgradering van 25 bestaande uitwykspore. In die meeste gevalle sal die opgradering verlenging van die uitwykspore behels; • Konstruksie van 4 nuwe uitwykspore tot 'n lengte van ten minste 1 200 m; • Verbeter toegangspaaie en nuwe of veranderde oorgange vereenselwig met bestaande uitwykspore; • Opknapping en elektrifikasie van bestaande tweede spoorlyn tussen De Aar en Kimberley. • Veranderde plasing van seintoerusting en verwante strukture om 'n uitwykspoorverlenging moontlik te maak

Opknapping van stasiewerwe en opgradering van die verwante infrastruktuur	<ul style="list-style-type: none"> • Opgradeer stasiewerwe by Hotazel, Mamathwane, Beaconsfield en Ronaldsvlei, (beide naby Kimberley) asook Postmasburg; • Opgradeer trokke se instandhoudingsgeriewe by Postmasburg;
Breë komponente van Projek	Beskrywing
Verkryging van konstruksiemateriaal	<ul style="list-style-type: none"> • Voorsien bykomende geriewe om lokomotiewe te vul by Beaconsfield; • Installeer bykomende seingeriewe tussen Emil en Hotazel; • Die konstruksieproses sal ook gebruik maak van bestaande leengroewe naby aan die konstruksiterreine (binne die grense van die spoorreserwe) om geskikte opvulmateriaal te bekom.
Konstruksie van bykomende infrastruktuur	<ul style="list-style-type: none"> • Konstruksie van 'n nuwe elektriese substasie by Emil.
Konstruksie van kampe asook neerleggingsgebiede	<ul style="list-style-type: none"> • Terreinkantore, konstruksiekampe en neerleggingsgebiede vir berging van rou materiaal sal gevestig word tydens die konstruksiefase van die voorgestelde Projek.

Die COK het uitgewys dat oorweging ook geskenk moet word aan die voorgestelde toekomstige terminus by Coega en die benodigde Intermodale Fasiliteit. Alhoewel hierdie 'n langtermyn voorsiening is, is COK bekommerd dat enige besluit of aksie wat nou geneem word nie sulke toekomstige geleenthede moet benadeel nie. Transnet is egter vol vertroue dat die voorgestelde opgradering en verbeterings wat in hierdie OIB aangespreek word nie sodanige toekomstige ontwikkeling sal kortwiek nie.

E3.2.1

Voorgestelde ontwikkeling van uitwykspore

Die voorgestelde uitwykspore bestaan uit die verlenging en/of opgradering van 25 bestaande uitwykspore en die konstruksie van vier nuwe uitwykspore tot 'n minimum lengte van 1 200 m. Dit word verwag dat die meeste van die verlengings en die nuwe uitwykspore binne bestaande spoorreserwes sal wees met die uitsondering van enkele uitwykspore, waarvoor klein stroke bykomende grond nodig sal wees, as gevolg van die beperkte wydte van die spoorreserwe op spesifieke plekke. Die presiese ligging en omvang van onteining van grond sal eers bevestig word nadat 'n topografiese opname van die spoorreserwes se grense by die uitwykspore gedoen is. Transnet sal onderhandelinge aanknoop met die betrokke grondeienaars wat geraak word deur hierdie behoefte aan bykomende grond, sodra die finale liggings bevestig is.

By sommige van die terreine, sal tydelike gebruik van aanliggende grond slegs tydens die konstruksiefase nodig wees (byvoorbeeld vir neerleggings-areas vir toerusting of toegangspaaie.)

Die rigtingslyn van die uitwykspore sal die bestaande spoorlyn volg, wat beteken dat deurgrawings en spoorwalte, waar nodig, op dieselfde spoorvlak verbreed sal word. Deurlope en strukture vir dreinerings sal in dieselfde

posisies verleng word, terwyl die bestaande dreineringspatrone vir bestaande oppervlakwater behou word.

Nuwe en Opnuut-ingebruikgeneemde Uitwykspore

“Nuwe Uitwykspore” verwys na nuwe uitwykspore en laasgenoemde na uitwykspore wat voorheen buite diens gestel is, maar wat weer as deel van hierdie Projek opgeknop en in gebruik geneem sal word. Slegs een splinternuwe uitwykspoor by Tootabi, naby Alicedale in die Oos-Kaap, word voorgestel. Tabel E3.2 bied ‘n opsomming van die lengtes van die voorgestelde nuwe uitwykspore.

Tabel E3.2 *Lengte van nuwe en opgeknopte uitwykspore*

Uitwykspoor se naam	Lengte van nuwe uitwykspoor (m)
Oos-Kaap	
Tootabi (nuut)	1332
Klipfontein (word weer eens in gebruik geneem)	1363
Glenheath (word weer eens in gebruik geneem)	1432
Noord-Kaap	
Hanover Road (word weer eens in gebruik geneem)	1272

Verlengde Uitwykspore

Vyf-en-twintig bestaande uitwykspore sal opgegradeer word as deel van die voorgestelde Projek, twintig in die Oos-Kaap en vyf in die Noord-Kaap. Tabel E3.3 bied ‘n opsomming van die bestaande uitwykspore wat opgegradeer word.

Tabel E3.3 *Bestaande spore wat verleng sal word*

Uitwykspoor se naam	Lengte van uitwykspoor se verlenging (m)
Oos-Kaap	
Barkly Bridge	450
Addo	150
Coerney	1100
Verby	777
Eagle’s Crag	716
Blinkhoff	593
Saltaire	439
Kommadagga	678
Golden Valley	372
Mortimer	548
Halesowen	840
Marlow	698
Kaptein	480
Knutsford	658
Visrivier	512
Conway	827
Tafelberg	712
Rosmead	730
Flonker	996

Uitwykspoor se naam	Lengte van uitwykspoor se verlenging (m)
Carlton	1460
Noord-Kaap	
Barredeel	582
Wildfontein	324
Linde	698
Burgervilleweg	760
Bletterman	710

Elf spooroorgange sal verleng word en dit is nodig om vyf spooroorgange, asook hulle bygaande paaie (Barkly Bridge, Kommadagga, Kaptein, Knutsford en Hanover Road), na ander plekke te verskuif.

E3.2.2 *Opknapping van die gedeelte tussen Kimberley en De Aar*

Alhoewel dit kragtens OIB-regulasies nie 'n vereiste is nie, dek die omvang van hierdie OIB die potensiele invloede wat vereenselwig word met die opknapping en elektrifikasie van 'n bestaande tweede lyn, met 'n lengte van ongeveer 230 km tussen Kimberley en De Aar in die Noord-Kaap. Die implimentering van hierdie komponent van die Projek mag reeds begin, voordat die vereiste magtiging deur DOT betreffende die res van die Projek, soos hierbo uiteengesit verkry is.

E3.2.3 *Opgradering van werwe*

As deel van die voorgestelde Projek sal vyf werwe opgeknop/opgegradeer word by: Hotazel, Postmasburg, Mamathwane, Beaconsfield en Ronaldsvlei.

Dié opgraderings sal die verlenging van sommige van die werwe, elektrifikasie van nuwe- en verlengde spoorlyne binne die werwe, die konstruksie van bykomende instandhoudingsgeriewe en installasie van bykomende veiligheidstoerusting, insluit.

E3.2.4 *Verkryging van konstruksiemateriaal*

Die konstruksieproses sal ook die gebruik van bestaande leengroewe vereis, asook uitgrawing van nuwe groewe binne die spoorwegreserwe, ten einde geskikte opvulmateriaal te bekom. Alhoewel die invloede wat met hierdie aktiwiteite vereenselwig word, so ver as moontlik in die OIB aangespreek sal word, sal 'n afsonderlike toestemmingsproses, wat deur Transnet onderneem sal word, ook nodig wees.

'n Aantal bestaande en nuwe leengroewe sal gebruik word vir beide klipballas- en subbasis-materiaal tydens die konstruksietydperk.

E3.2.5 *Nuwe substasie by Emil*

'n Nuwe 3kV GS (Gelykstroom) trekkragsubstasie word voorgestel naby Emil vir bykomende kraglewering om meer treine tussen Sishen en Wincanton

Substasies, op die lyn wat Hotazel verbind met Kimberley, te kan hanteer. Emil is sowat 6,5 km vanaf Kathu en 35 km suid van Mamathwane geleë.

Die substasie sal die krag wat deur Eskom voorsien word, omsit na 3 kV GS vir trekkragedoeleindes.

Die 132 kV WS (Wisselstroom) 3-fase voorsiening sal gelewer word deur 'n Eskom verspreidingskraglyn. Hierdie kraglyn en die gepaardgaande registrasieproses van 'n serwituit val buite die omvang van hierdie Projek en goedkeuring van DOT sal verkry moet word deur 'n afsonderlike OIB-proses, wat deur Eskom onderneem sal word.

E3.2.6 *Terreinkantore , konstruksie van kampe en neerleggingsgebiede*

Drie terreinkantore sal gevestig word tussen Hotazel en die Hawe van Ngqura, naamlik op Hotazel, Kimberley, en Cradock.

Konstruksiekampe sal by elke werkterrein opgerig word. Die kampe sal tipies 50 m x 50 m (2 500 m²) groot wees en sal slaapplek, 'n menasie met waskamers, 'n snoepwinkel, brandstoftenk(s) en 'n werkwinkel bevat. Die konstruksiekampe sal permanente konstruksiepersoneel huisves. Algemene arbeiders sal nie in hierdie kampe gehuisves word nie, maar sal uit omliggende gebiede bekom word.

Neerleggingsgebiede sal by elke konstruksierrein gevestig word en sal tipies 60 m x 50 m (3 000 m²) groot wees. Die neerleggingsgebied sal 'n kantoor, chemiese toilette en toesluitgeriewe vir waardevolle items bevat. Geen brandstof of olie sal binne die neerleggingsgebied van die konstruksiekamp gestoor word nie.

Spesiale voorsiening sal gemaak word in die konstruksie en operasionele fase van die OBP om te verseker dat spesiale aandag geskenk word om plaaslike gemeenskappe reeds op 'n vroeë stadium te betrek om sodoende hulle insette te kry en ondersteuning te werf tot die beplanning en bestuur van die voorgestelde konstruksiekampe. Transnet sal ook oorweeg om professionele advies in te win in hierdie verband om sodoende toepaslike ontwikkeling van vaardighede, opleiding en werker-stabiliteit te verseker.

E3.3 *WERKSKEPPING EN ONTWIKKELING VAN VAARDIGHEDE*

'n Aantal werksgeleenthede sal tydens beide die konstruksie- en bedryfsfase van die Projek geskep word met konstruksie-aktiwiteite, wat beide geskoolde en ongeskoolde werkers verg. 'n Skatting van die getal werksgeleenthede wat gegeneer kan word, asook die vlakke van vaardigheid wat benodig word, word hieronder beskryf. Hierdie is nie bevestigde syfers nie en sal ook afhang van die Hoofkontraakteur wat deur Transnet aangestel word vir die konstruksie van die nuwe infrastruktuur.

E3.3.1

Werkskepping

'n Aantal tydelike asook permanente werksgeleenthede, sal deur beide die konstruksie- en bedryfsfase van hierdie Projek geskep word. Geskoolde-, halfgeskoolde- en ongeskoolde arbeid sal benodig word. Geskoolde arbeiders sal landwyd bekom word, insluitende in die Oos- en Noord-Kaap, en halfgeskoolde arbeid sal plaaslik, waar konstruksie en vervaardiging plaasvind, bekom word.

Konstruksiefase (tydelike werksgeleenthede): Elke kontrak vir konstruksie van tussen ses en nege uitwykspore sal na raming 75 geskoolde arbeiders, asook 100 ongeskoolde arbeiders benodig.

Geskoolde arbeiders sal nodig wees om masjinerie en toerusting op die terrein te bedryf. Geskoolde vakmanne en toesighouers sal ook benodig word. Ongeskoolde werkers sal gebruik word vir take op die terrein wat hande-arbeid verg.

Operasionele fase (permanente werksgeleenthede): Die volgende tipes personeel sal waarskynlik gewerf word vir die bedryfsfase van die Projek, namate die kapasiteit van die spoorlyn mettertyd vergroot: administrateurs, privaat sekretaresse, werfmeesters, werfbeamptes, werfvoormanne, diverse werkers, seksiebestuurders, hoof-loodsmanne, loodsassistente, loodsmanne, treinassistente, treinkontrole-beamptes, diensdrywers, treindrywers en algemene werkers.

Daarbenewens kan beide tydelike- en permanente werksgeleenthede waarskynlik geskep word vir die vervaardiging van trokke en toerusting vir die spoorlyn.

Die vergrote kapasiteit van die spoorlyn kan ook voordelig wees vir die private sektor en die Nywerheidsontwikkelingsone, die metropolitaanse gebied en die Ooskaap in die algemeen. Gevolglik kan beide die myn- en die verskepingbedryf ook werkgeleenthede skep, beide plaaslik en op streekvlak.

E3.3.2

Ontwikkeling van vaardighede

Ten einde 'n betroubare treindiens tussen Hotazel en die Hawe van Ngqura daar te stel, sal programme vir opleiding ontwikkel word om te verseker dat beide huidige- en nuwe werknemers die vereiste vlakke van vaardigheid bereik. Professionele leiding sal voor werwing en opleiding bekom word om geskikte kandidate en programme vir opleiding, wat op 'n deeglike ontleding van vaardighede gebaseer is, te identifiseer. Induksie-opleiding sal voorsien word aan alle nuwe werknemers, ongeag of hulle kontrak- of permanente personeel is.

Oorweging van alternatiewe is 'n vereiste volgens wet, soos gestipuleer in die OIB Regulasies, R385 van April 2006.

Verskillende soorte alternatiewe wat van toepassing is op die Projek, word kortliks beskryf in onderstaande *Tabel E3.4*. 'n Beskrywing met fyner besonderhede word voorsien in *Hoofstuk 7* van die OIB.

Tabel E 3.4 Opsomming van toepaslike Projek-alternatiewe

Tipe Alternatief	Beskrywing van Alternatief
Ligging en terrein-alternatiewe	<p>Uitwykspore – Uitwykspore wat tegnies te moeilik was (en dus te duur om te verleng) of wat risiko's vir die omgewing inhou, is geïdentifiseer en nie verder ondersoek nie. Oorblywende uitwykspore is daarna onderwerp aan verskeie skedule scenarios om seker te maak dat hulle aan hulle doel sal voldoen.</p> <p>Werwe - Die huidige infrastruktuur van werwe langs die spoorlyn vanaf Hotazel tot by die Hawe van Ngqura is voldoende om tred te hou met toename in spoorverkeer. Nietemin, mag dit nodig wees om matige opgraderings te doen in sommige van die werwe om hulle funksionaliteit te verbeter. Gevolglik is geen keuringsproses van werwe toegepas soos in die geval van uitwykspore nie.</p> <p>Substasie – Die terrein van die voorgestelde nuwe substasie naby Emil (Noord-Kaap) is genoodsaak deur 'n onvoldoende voorsiening van krag tussen Sishen en Wincanton.</p>
Alternatiewe ontwerpe	<p>Alternatiewe ontwerpe is ondersoek ten opsigte van uitwykspore wat oorweeg word. Die voorgestelde verlengings van uitwykspore is só ontwerp dat geen nuwe bruë nodig is nie en slegs beperkte grondverskuiwings en verskuiwings van bestaande paaie en spooroorgange nodig sou wees.</p>
Aanvraag – alternatiewe	<p>Aanvraag word bepaal deur die internasionale en plaaslike markte en as sulks is die jongste data vir voorspelling van aanvraag geëvalueer om die omvang van huidige en toekomstige aanvraag te bepaal.</p>
Aktiwiteit - alternatiewe	<p>Aktiwiteitsalternatiewe hou verband met voorsiening van alternatiewe maniere om dieselfde doelwitte te bereik. In hierdie Projek is die doelwit om die getalle houers en die volume van kommoditeite wat vervoer word, te vergroot. 'n Aktiwiteits-alternatief sou derhalwe verband hou met vervoer van hierdie goedere per pad eerder as per spoor.</p>
Proses - alternatiewe	<p>Kriteria sluit in: bedryfsomstandighede; toevoerbehoeftes asook: ontwerpvereistes en/of beperkings. Die beste oplossing word verkry deur stroombelyning van die proses en die optimum lengte van die treine. Kortere treine sal 'n hoër frekwensie van treine en 'n groter aantal treine beteken. Laasgenoemde verg 'n gewigtige kapitaalkoste, asook konstruksie wat vereenselwig word met invloede op die omgewing.</p>
Materiaal - alternatiewe	<p>As gevolg van die gespesialiseerde aard van die materiaal wat nodig is vir 'n Projek van hierdie aard, is daar beperkte geleenthede om alternatiewe materiaal te oorweeg. Vereistes vir materiaal word bepaal deur asladinge en ontwerpvereistes ten einde 'n spoordiens van hierdie aard veilig te bedryf.</p>
Fasering - alternatiewe	<p>Verskeie alternatiewe vir fasering is ondersoek, naamlik 6, 8, 10 en 12 mtpj (Megaton per jaar) mangaanerts en ses bykomende houertreine (langs hierdie spoorgang)</p>

Tipe Alternatief	Beskrywing van Alternatief
Die afkeur - alternatief	Indien die voorgestelde uitwykspore, werwe, trekkragsubstasie, en verwante infrastruktuur nie gebou of opgegradeer word nie, sal 'n toename in houer- en kommoditeitkapasiteit op die spoorlyn tussen die Hawe van Ngqura en Hotazel nie moontlik wees nie. Dit sal ernstige implikasies hê vir Suid-Afrika se mynbou- en houerhanteringsektore en sou ons uitvoervermoëns affekteer. Dit dui op regstreekse negatiewe gevolge vir die provinsiale- en nasionale ekonomie.

Gegrand op bostaande beskrywings van die alternatiewe wat oorweeg is tydens die uitvoerbaarheidstudie, asook tydens die Omvangsbepaling, is dit die mening van die Projekspan dat die Projek, soos beskryf in *Seksie E3* en meer breedvoerig in Hoofstuk 4 van die OIV, die enigste uitvoerbare en praktiese opsie is om verder te voer en te evalueer tydens die OIB-fase.

Die doel van invloedbepaling en versagting is om daardie potensiële positiewe en negatiewe invloede wat beduidend is asook voordele op geïdentifiseerde ontvangers en hulpbronne te identifiseer volgens gedefinieerde kriteria vir bepaling; om maatreëls te ontwikkel en te beskryf wat geneem sal word om enige potensiële nadelige invloede te vermy, te minimaliseer, te versag, te vergoed; om geleenthede te soek om potensiële voordele te optimaliseer; en om verslag te doen oor die beduidenis van die oorblywende invloede wat volg op versagting/kompensasie en/of optimalisering/verbetering.

Daar is 'n aantal maniere waarop invloede /voordele beskryf en gekwantifiseer kan word. 'n Invloed (positief of negatief) is hoofsaaklik enige verandering in 'n hulpmiddel of ontvanger, wat teweeg gebring word deur die teenwoordigheid van die Projektkomponent of deur die uitvoer van 'n aktiwiteit betreffende 'n projek.

In die algemeen kan invloede beskryf word as positief of negatief, direk of kumulatief. Die invloede se omvang word dan gemeet kragtens hoe beduidend daardie invloed is. Daar is geen statutêre definisie van "beduidend" nie, en dit is dus ietwat subjektief om dié saak uit te maak. Nietemin, word dit algemeen aanvaar dat beduidend 'n funksie is van die **omvang** van die invloed, asook die **waarskynlikheid** dat die invloed mag voorkom.

Die volgende matriks (Tabel E4.1) kan gebruik word om te bepaal hoe beduidend 'n invloed is.

Tabel E4.1 Voorbeeld van matriks vir gradering van hoe beduidend 'n invloed is

BEPALING VAN HOE BEDUIDEND INVLOEDE IS					
	WAARSKYNNLIKHEID	Nietig	Laag	Middelmatig	Hoog
OMVANG	Nietig	Nietig	Nietig	Klein	Klein
	Laag	Nietig	Nietig	Klein	Klein
	Middelmatig	Nietig	Klein	Matig	Matig
	Hoog	Klein	Matig	Ernstig	Ernstig

In Tabel E4.2, verskyn verskeie definisies van hoe beduidend 'n invloed kan wees.

Tabel E4.2 Definisies van hoe beduidend 'n invloed is

Omvang van Invloed	Definisie
Groot Invloed	'n Groot invloed is een wat beduidend van aard is, en waar 'n aanvaarbare beperking of standaard oorskry kan word, of invloede

	<p>van uitermate groot omvang plaasvind in oorskryding van 'n aanvaarde perk of standaard vir sensitiewe hulpbronne/ontvangers van hoë waarde. 'n Doelwit van die OIB proses is om 'n posisie te bereik waar die Projek nie enige oorblywende ernstige negatiewe invloede het nie (sekerlik nie invloede wat langtermyn van aard is nie, of oor 'n groot area strek nie) en grootskaalse positiewe invloede sover moontlik ge-optimaliseer is. Nietemin, vir sommige aspekte mag daar ernstige oorblywende negatiewe invloede wees na alle praktiese versagende opsies uitgeput is, (bv. laag genoeg as wat prakties moontlik is.) 'n Voorbeeld kan wees die visuele invloed van 'n ontwikkeling. Dit is dan die funksie van owerhede en belanghebbendes om sulke negatiewe faktore op te weeg teen positiewe faktore soos die skep van werksgeleenthede.</p>
Matige invloed	<p>'n Invloed wat matig beduidend is het aanvaarbare perke en standaarde. Die klem vir matige invloede val op demonstrasie daarvan dat die negatiewe invloede verklein is tot 'n vlak wat só laag is, as wat prakties moontlik is en positiewe invloede sever moontlik vergroot is. Dit beteken nie noodwendig dat "matige negatiewe invloede" verminder moet word tot "klein" invloede nie, maar dat matige invloede doeltreffend en bekwaam bestuur word. Net so beteken dit nie noodwendig dat matige positiewe invloede tot ernstige positiewe invloede vergroot hoef te word nie.</p>
Klein invloed	<p>'n Invloed wat klein beduidend van aard is het 'n uitwerking wat ervaar sal word, maar die omvang van die negatiewe invloed is klein genoeg (met en sonder versagting) asook binne aanvaarbare standaarde, en/of die ontvanger het 'n lae sensitiwiteit/waarde.</p>
Nietige invloed	<p>'n Nietige invloed (onbeduidend) is wanneer 'n bron of ontvanger (insluitende mense) nie op enige wyse geaffekteer word deur 'n besondere aktiwiteit nie, of die voorspelde uitwerking word beskou as "Nietig" of "onmerkbaar" of kan nie van natuurlike variasies in die agtergrond onderskei word nie.</p>

Tabel E4.3 Kleurskema vir gradering beduidendheid

Negatiewe gradering	Positiewe gradering
Nietig	Nietig
Klein	Klein
Matig	Matig
Groot	Groot

Sien *Hoofstuk 3* van die OIV vir 'n meer omvattende beskrywing van die metodologie van invloedbepaling.

E4.1.1 Potensiële Invloede tydens die Konstruksiefase

Tabel E4.4 is 'n opsomming van die potensiële positiewe en negatiewe biofisiese en sosio-ekonomiese invloede vir die konstruksiefase. Sien *Hoofstuk 7* van die OIV vir 'n beskrywing waarin meer besonderhede oor die invloede en maatreëls ter versagting van negatiewe invloede /optimalisering van positiewe invloede verskyn.

Tabel E4.4 Opsomming van potensiële invloede met betrekking tot die konstruksiefase

Projekkomponent	Hoe beduidend die invloed is	Beskrywing van invloed
Uitwykspore	1 ernstige/ groot negatiewe invloed	Verspreiding/kolonisasie deur vreemde indringer spesies en onkruidgroepe
	5 matige negatiewe invloede	Verlies aan plantgemeenskappe. Verlies aan fauna; verskeidenheid en rykheid Verlies aan beskermde ongewerwelde spesies. Versteuring van oewersone. Versteurings a.g.v. geraas.
	1 Klein positiewe invloed	Verwydering van verklaarde indringerspesies en onkruidpesies (klein positiewe invloed).
	6 klein invloede (1 positief, 5 negatief),	Verlies aan of versteuring van terreine van argeologiese, paleontologiese of kulturele waarde. Erosie van grond . Besoedeling van grond en grondwaterbronne. Potensiële besoedeling van wateroppervlaktes Oorlas van stof.
	3 Nietige negatiewe invloede	Oorlas deur vibrasies. Versteuring van afvoer/oppervlakwater wat rivierstelsels affekteer. Versteuring deur verkeer en gevare daarvan.
Werwe	Geen ernstige negatiewe invloede nie	-
	Geen matige negatiewe invloede	-
	4 Nietige negatiewe invloede	Besoedeling van grond en grondwaterbronne . Oorlas a.g.v. stof. Versteurings deur geraas. Versteuring deur verkeer en gevare daarvan.
Substasie naby Emil	Geen ernstige negatiewe invloede nie	-
	Geen matige negatiewe invloede	-
	4 Klein negatiewe invloede	Verlies aan plantgemeenskappe. Verlies aan- en versteuring van fauna. Oorlas a.g.v. stof Oorlas deur geraas.
	3 Nietige negatiewe invloede	Vestiging van indringer spesies en onkruidspesies . Erosie van grond. Besoedeling van grond en grondwaterbronne.
Opknapping tussen Kimberley & De Aar	Geen ernstige negatiewe invloede nie	-
	3 matige negatiewe invloede	Verlies aan of versteuring van terreine van argeologiese, paleontologiese of kulturele waarde. Oorlas a.g.v. stof . Versteurings deur geraas.
	Geen klein negatiewe invloede nie	-
	Geen nietige invloede nie	-

Projekkomponent	Hoe beduidend die invloed is	Beskrywing van invloed
Sosio-ekonomiese	Geen ernstige negatiewe invloede nie	-
	3 matige negatiewe invloede	Verhoogde druk op infrastruktuur en dienste. Verspreiding van MIV/VIGS en Seksueel-oordraagbare siektes. Toename van Sosiale Siektes.
	1 klein positiewe invloed	Geleentheid vir potensiële werkskepping en indiensneming.
	Geen negatiewe invloede nie	-

E4.1.2 *Potensiële Invloede tydens Bedryfsfase*

Tabel E4.5 is 'n opsomming van al die potensiële biofisiese en sosio-ekonomiese invloede wat bepaal is vir die Projek se bedryfsfase. Sien Hoofstuk 7 van die OIV vir 'n beskrywing met meer besonderhede oor die invloede en maatreëls ter versagting.

Tabel E4.5 *Opsomming van potensiële invloede wat vereenselwig word met bedryfsfase*

Projekkomponent	Hoe beduidend die invloed is	Beskrywing van invloed
Spoorlyn vanaf Hotazel na die hawe van Ngqura	1 ernstige invloed	Invloed a.g.v. toename in geraas
	Geen matige invloede nie	-
	Geen klein invloede nie	-
	3 negatiewe invloede	Invloed van stof van mangaan. Invloed a.g.v. toename in vibrasies Invloed op Openbare veiligheid.
Werwe en substasie	Geen ernstige invloede nie	-
	Geen matige invloede nie	-
	Geen klein invloede nie	-
	2 negatiewe invloede	Invloed a.g.v. toename in geraas. Besoedeling van grond en grondwaterbronne.
Sosio-ekonomies	Geen ernstige invloede nie	-
	1 matige invloed	Verandering van gevoelservaring van die plek (geraas, vibrasie, bewegingspatrone).
	1 klein invloed	Verandering van gevoelservaring van die plek (klein positiewe invloed – ekonomiese voordeel, opheffing).
	1 negatiewe invloed	Geleentheid vir potensiële werkskepping en indiensneming.

Ander positiewe sosio-ekonomiese invloede wat gedurende die OIB geïdentifiseer is word hieronder gelys. Alhoewel die volledige bepaling van hierdie invloede buite die bestek van hierdie studie val, is dit nietemin belangrik om kennis te neem hiervan.

- Die positiewe invloed van die voorgestelde spoorlyn wat verband hou met die indirekte bydrae tot waardetoevoeging van waardevolle rou produkte, die vervoer van hierdie produkte binnelands en die algemene bydrae tot die groei van die Oos Kaap, die Metropolitaanse gebied, die Nywerheids-ontwikkelingsgebied en die Suid Afrikaanse Ekonomie.
- Die groter kapasiteit van die spoorlyn mag ook positief inwerk op die uitvoerbaarheid van die toekomstige hervestiging van die mangaan uitvoer terminaal en die tenkplaas by die Hawe van Port Elizabeth, met gepaardgaande voordele vir die Stad se toekomstige waterkant ontwikkeling
- 'n toename in die spoorkapasiteit en meer doeltreffende vervoer sal waarskynlik tot gevolg hê dat daar 'n afname sal wees in lang afstand grootmaat artikels en houer verkeer per pad. Hierdie verkeer het tans 'n groot negatiewe invloed op die paaie.

E4.2

INVLOEDE VAN SLUITING

Potensiële positiewe en negatiewe invloede wat geassosieer mag word met die sluiting of buite diens stelling van hierdie Projek, is nie volgens die metodologie van invloedbepaling vasgestel nie. Dit is vanweë, die langtermyn aard van die Projek en onsekerhede oor waar en wanneer sluiting sou plaasvind. Die implikasie van die tydsverloop is dat die basiese omstandighede betreffende omgewing en sosiale eienskappe grootliks sou verskil van dit wat in hierdie verslag beskryf word.

Dit kan ook verwag word dat uitwykspore nie in isolasie buite diens gestel sal word nie, maar dat verskeie seksies van die lyn buite diens gestel sou word; gevolglik word invloede vereenselwig met die bestaande spoorlyn (asook met die toegangspaaie). Leengroewe word nie beskou as deel van die omvang van sluiting deur Transnet nie, aangesien hierdie terreine aan 'n derde party behoort en deur die derde party bedryf word.

Tabel E4.6 skets 'n aantal potensiële positiewe en negatiewe invloede wat waarskynlik ervaar sal word in die geval van die sluiting of buite diens stelling van die spoorlyn, werwe en die substasie. Hierdie invloede is baie soortgelyk aan dié wat vir die konstruksiefase verwag word. Maatreëls ter versagting en geleentheid vir optimalisering is dus dieselfde as vir die konstruksiefase se invloede en word nie hier herhaal nie.

Tabel E4.6 *Potensiële invloede tydens sluiting*

	Spoorlyn, (insluitende uitwykspore, toegangspaaie , maar leengroewe uitgesluit)	Werwe en Substasie (insluitende toegangspaaie)
Verlies aan fauna verskeidenheid en rykheid.	Negatief - Direk	Negatief - Direk
Verlies van beskermde ongewerwede spesies.	Negatief - Direk	Negatief - Direk
Versteuring van die oewersone.	Negatief - Direk	N.v.t.. nie

	Spoorlyn, (insluitende uitwykspore, toegangspaaie , maar leengroewe uitgesluit)	Werwe en Substasie (insluitende toegangspaaie)
Verwydering van vreemde indringer plant- en onkruidsoorte.	Positief - Indirek	Positief - Indirek
Versteuring van rivierstelsels (vloei van water, besoedeling).	Negatief - Indirek	N.v.t.. nie
Gronderosie.	Negatief - Direk	Negatief - Direk
Besoedeling van grond en grondwaterbronne.	Negatief - Direk	Negatief - Direk
Stoornis a.g.v. stof, geraas en vibrasies	Negatief - Direk	Negatief - Direk
Versteuring van verkeer en gevare.	Negatief - Direk	Negatief - Direk
Verlies aan, of versteuring van terreine van argeologiese, paleontologiese of kulturele waarde.	Negatief – Direk en Indirek	N.v.t.. nie
Verbetering van estetika deur herbeplanting en landskapering.	Positief - Direk	Positief - Direk
Skepping van tydelike plaaslike werk en verkryging van geleenthede.	Positief - Direk	Positief – Direk
Verlies van permanente werke of herverspreiding elders binne die organisasie.	Negatief - Direk	Negatief - Direk
Toename in sosiale siektes en verspreiding van siektes wat vereenselwig word met behuising v ir arbeid in plaaslike dorpe.	Negatief - Indirek	Negatief – Indirek
Invloede op die ekonomie.	Negatief - Direk en Indirek	Negatief - Direk en Indirek

E4.3

INVLOED VAN LEENGROEWE

Alhoewel daar geen vereistes in die Omgewingsregulasies is om die leengroewe as deel van die omvang van die Projek te bepaal nie, volg slegs 'n kort bespreking van die potensiële invloede wat vereenselwig mag word met die uitgrawings by hierdie terreine.

Magtiging vir die gebruik van leengroewe vind plaas kragtens 'n afsonderlike proses via die Departement van Minerale en Energie. Oor die algemeen, behels die magtigingsproses , aansoek om 'n permit vir 'n myn/die reg om nuwe- en/of bestaande leengroewe te gebruik. Nietemin, aangesien Transnet 'n semi-staatsorganisasie is, word dit beskou as 'n "staatsorgaan" soos gestipuleer in Seksie 106 en is dus vrygestel van sekere bepalings van hierdie Wet. Transnet sal dus slegs aan 'n verkorte proses vir magtiging vir nuwe- /dormante leengroewe moet voldoen. Om materiaal vanuit binne die spoorreserwe te leen, verg nie magtiging nie.

Alhoewel hulle nie deel vorm van hierdie Projek nie, het die leengroewe wat aangewys is as moontlike bronne van materiaal vir grondwerke vir die konstruksiefase van die Projek, waarskynlik 'n aantal gepaardgaande invloede wat met hulle vereenselwig word. Hierdie invloede word in detail bespreek in *Seksie 7.12 van Hoofstuk 7* in die OIV.

Kumulatiewe invloede (positief of negatief) kan beskou word as die gekombineerde effek van meer as een ontwikkeling (uit die verlede, die hede of in die voorsienbare toekoms) binne dieselfde geografiese gebied, of op dieselfde ontvanger/bron.

Ander ontwikkelings wat derhalwe deur hierdie Projek beïnvloed mag word, sluit in: nuwe myne of ontwikkelings verwant aan die mynbedryf in die Noord-Kaap, asook konstruksie van 'n nuwe eindpunt vir die uitvoer van mangaan. Die potensiële invloede wat met hierdie aktiwiteite vereenselwig word, is buite die omvang van hierdie OIB-prosesse maar sou hierdie invloede realiseer moet hulle in ag geneem word deur middel van afsonderlike OIB - prosesse en/of prosesse ten opsigte van toestemming vir mynbou.

Die beplande mynbou-ontwikkelings mag egter van die spoorlyn gebruik maak vir die vervoer van hulle produkte. As sulks, kan dit moontlik tot gevolg hê dat die frekwensie van treine op die spoorlyn toeneem, en daardeur die bedryfsinvloede, soos geraas-stoornis, vererger.

Die moontlike skakeling en kumulatiewe effekte wat vereenselwig word met 'n nuwe eindpunt vir mangaan is onseker en nie duidelik nie, aangesien die ligging van die nuwe eindpunt (indien bewys as uitvoerbaar) nog nie bepaal is nie. Nietemin, word daar verwag dat 'n nuwe eindpunt (moontlik by die Hawe van Ngqura of by Saldanha Hawe) die een of ander verandering of opgradering van die bestaande spoorlyn se infrastruktuur, soos bykomende uitwykspore, mag benodig.

Die alternatief vir geen-aksie, of niks doen nie (m.a.w. behoud van die status quo.) behels geen verlenging van/konstruksie van die voorgestelde uitwykspore of die trekkragsubstasie en geen opgradering van werwe of die opknapping van die deel van die spoorlyn tussen Kimberley en De Aar.

Om nie hierdie Projek ten uitvoer te bring nie, kan beide as positief en negatief gesien word. Die positiewe gevolge sluit in geen negatiewe invloede op die biofisiese - en sosiale omgewing nie (veral nie op sensitiewe ekologiese - of sosiale ontvangers nie). Die negatiewe implikasies hou verband met die direkte verlies van plaaslike werkseleenthede en verlies aan die verkryging van goedere en dienste op provinsiale- en nasionale vlak. Die belangrikste negatiewe gevolge sou egter verlore geleenthede en verlies van inkomste wees, wat verband hou met verminderde uitvoer van mangaan en hantering van houers. Indien die spoorlyn en verwante strukture nie opgegradeer word om die bykomende kapasiteit te hanteer nie, sou dit tot gevolg hê dat daar 'n negatiewe, direkte invloed op die voortbrenging van inkomste uit die buiteland wees, wat die provinsiale- asook die nasionale ekonomie negatief sou affekteer. Negatiewe, indirekte invloede sal ook ervaar word op die leweringsketting wat diens lewer aan hierdie sektor van die ekonomie.

Dit is 'n vereiste van OIB-regulasies kragtens die Wet op Nasionale Omgewingsbestuur (WNOB) dat die onafhanklike omgewingskonsultant 'n aanbeveling doen of die Projek gemagtig moet word of nie. ERM se mening is dat na afloop van die bepaling van die potensiële invloede en die ontwikkeling van maatreëls ter versagting wat geïmplementeer moet word deur Transnet, die projek gemagtig mag word. Dit is egter onderhewig daaraan dat die voorwaardes wat in detail in die Omgewingsinvloedbepalingsverslag (OIV) verskyn, wel deuglik in gedagte gehou word.

Verder, as gevolg van die skaal van hierdie voorgestelde ontwikkeling, die huidige ekonomiese klimaat, en onsekerhede ten opsigte van die mate waartoe hierdie projek tot uitvoer gebring kan word, sou ERM aanbeveel dat positiewe omgewings- magtiging (OM), indien toegestaan deur die DOT, vir vyf jaar geldig behoort te wees.

Transnet Limited (hereafter referred to as Transnet) has a mandate from government to contribute to the national competitiveness and growth of the economy by delivering freight transportation services that reduce the cost of doing business in South Africa. As such, Transnet has embarked on an infrastructure expansion programme of all the major ports and rail commodity lines in South Africa. Transnet has appointed HMG Joint Venture⁽¹⁾ (HMGJV) as one of the Engineering, Procurement, Construction and Management (EPCM) contractors for large projects related to the programme.

One of these projects involves the upgrading of the railway line between Hotazel in the Northern Cape and the Port of Ngqura in the Eastern Cape (the Project). Environmental Resources Management Southern Africa (Pty) Ltd (hereafter referred to as ERM) has been appointed by HMGJV, on behalf of Transnet, to act as the independent environmental consultant to undertake the required Environmental Impact Assessment (EIA) process for this proposed Project, with the aim of facilitating an environmental authorisation (whether positive or negative) from the competent authority, the Department of Environmental Affairs and Tourism (DEAT).

Transnet plans to increase the volume of containers and commodities such as manganese that it transports on the existing 1 100 km railway line between Port Elizabeth, the new Port of Ngqura and Hotazel (see *Figure 1.1* and *Figure 1.2*). The containers are transported between Port Elizabeth and Kimberley, from where they are diverted to Gauteng. The line between Kimberley and Gauteng is beyond the scope of this study, however the capacity is sufficient to cater for the current and projected traffic volumes and thus does not require any expansion at present.

To reach their objectives, Transnet needs to expand existing infrastructure by the extension of existing loops and the construction of new loops, where necessary. The main focus of the Project is to construct or extend certain loops between the Port of Ngqura and De Aar.

1.1

NEED AND DESIRABILITY OF RAIL INFRASTRUCTURE

Transnet Freight Rail (previously Spoornet) is the division of Transnet responsible for the rail infrastructure network. Transnet Freight Rail has redefined its strategic intent, which it aims to achieve by reducing the cost of doing business, building capacity, operating safely and improving efficiency. One of its specific goals includes reducing the cost of doing business by transferring traffic from road to rail.

(1) () Hatch, Mott MacDonald and Goba Joint Venture

The company's growth vision relies heavily on optimising rail corridors in collaboration with its customers. This will result in winning back market share from road haulers, while integrating with the country's overall logistics chain. The majority of the demand for the various commodities (containers, vehicles etc) is rail friendly and hence the focus to shift from road to rail.

In order to achieve high levels of efficiency associated with improved turnaround times, Transnet Freight Rail will inject capital to the value of R35 billion by 2012. Ninety percent of the expenditure is allocated to the rehabilitation and renewal program for locomotives, wagons and infrastructure.

The existing railway infrastructure between the Port of Ngqura, De Aar and Hotazel is currently not being fully optimised for container and manganese traffic, hence there is scope to increase the volumes transported along this line. Rail is regarded as a better option compared to road transport, as this alternative poses increased risks and adds additional traffic to an already over-burdened road network.

1.2 *PROJECT RATIONALE*

Transnet is currently building a new container terminal at the Port of Ngqura near Port Elizabeth. Authorisation for this project was obtained in 2002 and again in 2007 for the expansion of the terminal (DEAT reference A24/16/3/56 and 12/12/20/690 respectively). Effective operation of the container terminal requires the upgrading of the railway line to allow for an increased number of containers to be transported to and from the port. This need was already identified early in the authorisation process for the Port of Ngqura. In addition, the need was identified for buffer storage areas of containers, due to the difference between the numbers of containers offloaded from the larger vessels and the capacity of the rail line.

Transnet currently also transports manganese ore from mines near Hotazel along the railway line to the existing manganese terminal at Port Elizabeth, from where it is exported. There is a growing demand for manganese internationally. This increase in world demand means that there is a need for larger volumes of manganese ore to be transported along the railway line to the port at Port Elizabeth and possibly to the Port of Ngqura in the future. The additional rail capacity is therefore important so as not to compromise the Ferrous-metals cluster in the Coega Industrial Development Zone (IDZ) and the associated beneficiation imperatives.

It is likely that this line will also carry other commodities in the future. The port of Ngqura will service the Coega IDZ, the Metro as well as the broader Eastern Cape and hence any commodity that requires to be transported in and out of the port via rail will place additional capacity demands on the current rail infrastructure.

The dual need to meet the demands from the mining and container sectors has led to Transnet's decision to upgrade the railway line between the Hotazel and the Port of Ngqura.

Figure 1.1 Locality map: Hotazel to De Aar

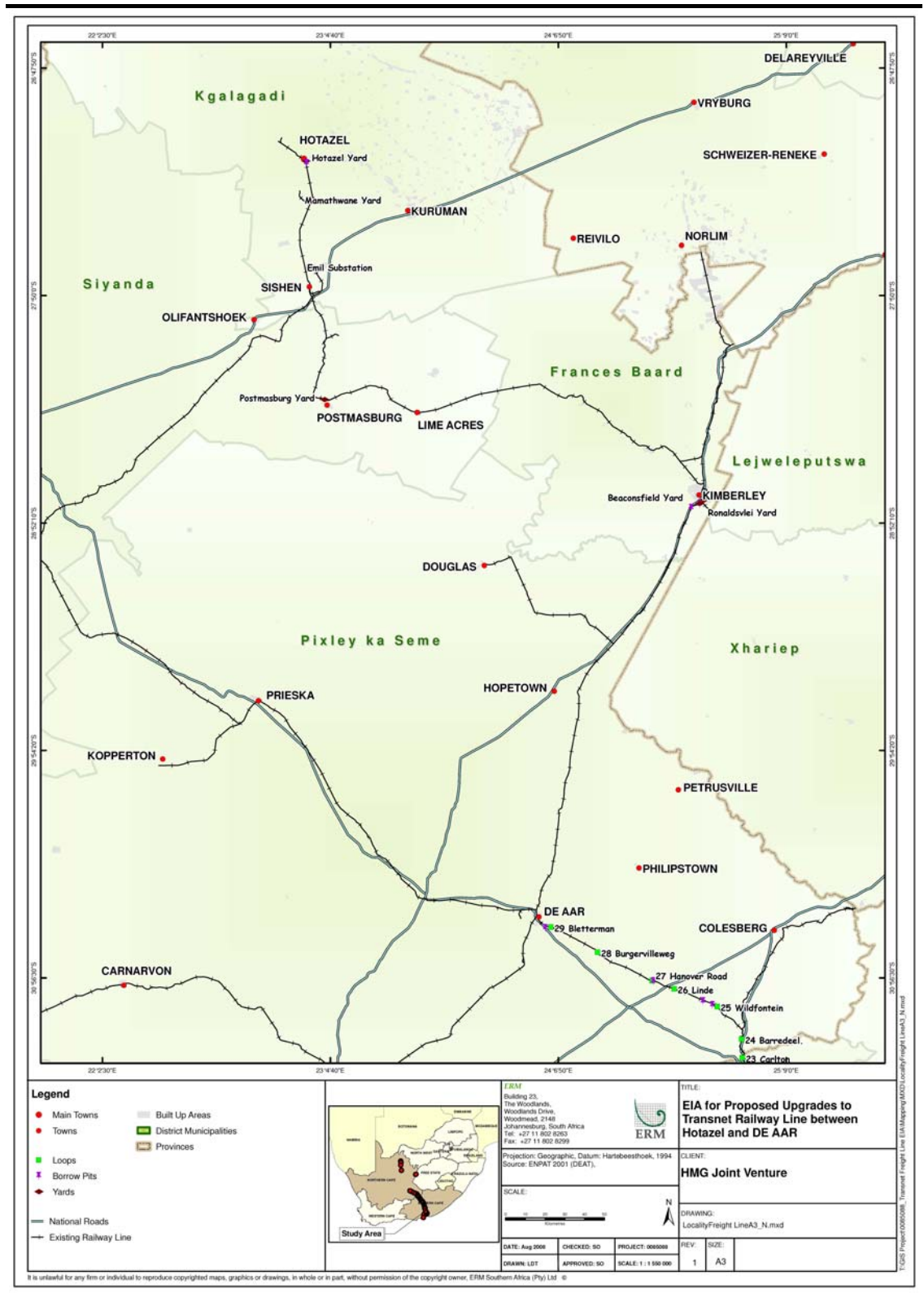
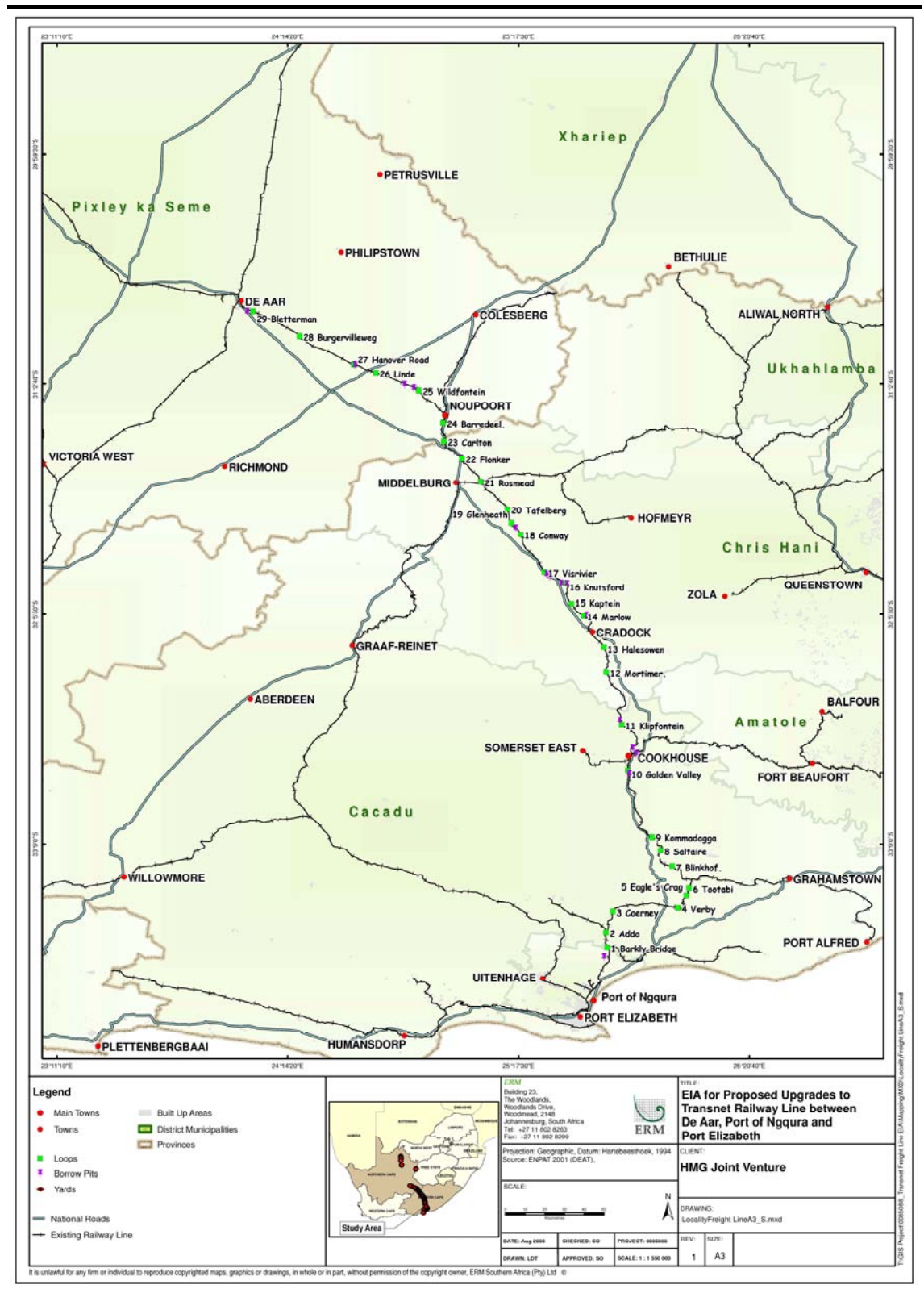


Figure 1.2 Locality map: De Aar to Port Elizabeth



The proposed rail upgrade Project will entail the following:

- Upgrade or expansion of 25 of the existing loops between the Port of Ngqura and De Aar. In most cases the expansion will entail extending the loops;
- Other improvements associated with existing loops including the upgrade or construction of access roads and new or altered level crossings;
- Constructing/recommissioning four loops of at least 1 200 m in length;
- The refurbishment / recommissioning of the existing second railway line between Kimberley and De Aar;
- Upgrading station yards at Hotazel, Mamathwane, Kimberley, De Aar and Postmasburg;
- Upgrading the Postmasburg wagon maintenance facilities;
- Providing additional locomotive staging facilities at the Beaconsfield yard in Kimberley;
- Building a new electrical substation near Emil; and
- Additional signalling between Hotazel and Emil and Kimberley and De Aar.

Construction camps and laydown areas for the storage of raw materials will be established during the construction phase of the proposed Project. The construction process will also require the use of existing borrow pits and if necessary the creation of new borrow pits, within the rail reserve, to obtain suitable fill material.

The Project will also include the re-commissioning and electrification of the existing double section of the railway line (approximately 230 km) between De Aar and Kimberley. Although this activity does not require an environmental authorisation in terms of the legislation, it is associated with a number of potential operational impacts and will, therefore, be assessed during the EIA process. However, the implementation of this component of the Project may commence prior to the required authorisation from DEAT, with respect to the rest of the project outlined above.

A detailed project description is provided in *Chapter 4*.

Before the proposed activities can commence, Transnet must obtain a positive authorisation in terms of the EIA Regulations from the competent /lead authority, namely, the Department of Environmental Affairs and Tourism (DEAT).

This Final Environmental Impact Report (EIR) has been compiled as part of the EIA process in accordance with the regulatory requirements stipulated in

the EIA Regulations promulgated in terms of Section 24(5) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended.

This Final EIR will provide a description of the following:

- The EIA process followed to date;
- The proposed project activities and alternatives;
- All issues, concerns and opportunities identified by the project team and/or raised by interested and affected parties (I&APs); and
- An outline of all the potential impacts and benefits of the proposed project and associated activities as well as comprehensive mitigation strategies to minimise these potential impacts and enhance benefits.

1.5 *STRUCTURE OF THIS REPORT*

The structure of the Final EIR is as follows:

Table 1.1 *Outline of Final EIR structure*

Chapter	Contents
Chapter 1 Introduction	Outlines the purpose of the report, introduces the EIA process and proposed Project and provides an outline of the report structure.
Chapter 2 Legislative, Administrative and Policy Framework	Describes the legislative, policy and administrative requirements applicable to the Project.
Chapter 3 EIA Approach and Methodology	Outlines the approach to the study and the EIA methodology used to assess the significance of impacts.
Chapter 4 Project Description	Includes a detailed description of the proposed activities and the alternatives.
Chapter 5 Environmental and Social Baseline	Describes the receiving environment including the biophysical and socio-economic aspects.
Chapter 6 Stakeholder Engagement	Summarises the stakeholder engagement process undertaken for the Project to date.
Chapter 7 Impact Assessment and Mitigation	Describes and assesses the potential impacts of the proposed project with respect to the different project components and provides mitigation measures to reduce negative impacts and enhance Project benefits.
Chapter 8 Project Environmental Specification (PES)	Describes the mitigation and management of those aspects of the project that are not included in Transnet's generic Environmental Management Plan (EMP) documents
Section 9 Conclusions and Recommendations	Outlines the conclusions of the EIA process recommendations going forward.
Section 10 References	Contains a list of references used in compiling the report.

This *Chapter* outlines the legislative, policy and administrative requirements relevant to the EIA for the Project.

2.1 LEGISLATIVE FRAMEWORK

The proposed Project, as outlined in *Chapter 4*, is subject to legislative requirements at a national, provincial and local level. The most relevant to the Project includes but is not limited to the following:

- National Environmental Management Act (Act No. 107 of 1998), as amended;
- NEMA EIA Regulations, 2006 (Government Notice No. R385, R386 and R387);
- National Environmental Management: Biodiversity Act (Act 10 of 2004)
- Conservation of Agricultural Resources Act (Act No. 43 of 1983);
- National Forest Act (Act No. 84 of 1998);
- National Water Act (Act No. 36 of 1998);
- Northern Cape Nature and Environmental Conservation Ordinance;
- Atmospheric Pollution Prevention Act (Act No. 45 of 1965);
- National Environment Management: Air Quality Act (Act No. 39 of 2004);
- National Heritage Resources Act (Act No. 25 of 1999);
- Environment Conservation Act (Act No. 73 of 1989); and
- Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)

A brief description of each of these is provided below.

2.1.1 *National Environmental Management Act (Act No. 107 of 1998)*

Section 24 (b) of the National Environmental Management Act (NEMA) gives effect to the South African Constitution, which states that all South African citizens have a right to an environment that is not harmful to their health or well being.

Key principles of NEMA are described in Chapter 2 of the Act and include the following:

- Development must be socially, environmentally and economically sustainable;
- Environmental management must be integrated;
- Decisions concerning the environment must take into account the needs, interests and values of all Interested and Affected Parties (I&APs);
- Community well-being and empowerment must be promoted through environmental education and awareness, and the sharing of knowledge and experience; and

- Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with law, etc.

The planning and implementation of the Project must, therefore, take these principles into account at all stages of the development.

Chapter 5 of NEMA deals with Integrated Environmental Management and focuses on promoting the use of appropriate environmental tools, such as Environmental Impact Assessment. Section 24 of NEMA requires that activities be investigated that may have a potential impact on the environment, socio-economic conditions, and cultural heritage (see *Section 2.1.2* below). The results of such investigation must be reported to the relevant authority, which in this case is the Department of Environmental Affairs and Tourism (DEAT). Procedures for the investigation and communication of the potential impact of activities require that:

- The potential impact, including the cumulative effects of the activity and its alternatives must be investigated;
- The significance of the potential impact must be assessed;
- Mitigation measures which minimise adverse environmental impacts must be investigated;
- The option of not implementing the activity must be considered;
- There must be public participation, independent review and conflict resolution in all phases of the investigation and assessment of impacts; and
- Where an activity falls within the jurisdiction of more than one organ of state, there must be co-ordination and co-operation between those organs of state in the consideration of assessments.

Chapters 2 and 5 of NEMA provide a basis for consideration of potential impacts associated with a proposed development by DEAT.

Section 28 of the Act is specific regarding “duty of care” for the environment and remediation of environmental damage. Accordingly, 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, continuing or recurring. The Act defines pollution broadly as any change in the environment caused by substances, radioactive or other waves, or emissions of noise, odours, dust or heat.

The environmental authorities may direct an individual or organisation to rectify or remedy a potential or actual pollution problem. If such a directive is not complied with, the authorities may undertake the work and recover the costs from the responsible party.

Section 28 would be relevant to the construction and operational phase of the proposed Project. The proponent is obligated, in terms of NEMA, to implement measures and take actions to prevent any form of pollution to air, water or land.

2.1.2

NEMA EIA Regulations, 2006 (Government Notice No R385, R386 and R387)

On 21 April 2006, EIA Regulations were promulgated in terms of Section 24(5) of NEMA. These regulations came into effect on 3 July 2006. The Minister of Environmental Affairs and Tourism has in terms of sections 24(2) (a) and (d) of NEMA, listed the activities which may have a detrimental effect on the environment in Government Notice R386 and R387. The Act requires that written authorisation is obtained from the Minister or his delegated authority, in this case DEAT, in respect of which the investigation, assessment and communication of potential impacts of these activities must follow the procedure as described in Regulations 27 to 36 of the EIA Regulations. Such authorisation, which may be granted subject to conditions, will only be considered once the regulatory requirements have been met. Government Notice R385 sets out the procedures and documentation that need to be complied with.

In terms of R386 and R387, the following listed activities could be applicable to the Project:

Table 2.1 *Relevant Listed Activities*

Relevant Notice	Activity Numbers (in terms of Relevant Notice)	Description of Listed Activity
GN R387, 21 April 2006	Activity 1 (s) Please note that this is the primary listed activity that is triggered.	(s) rail transportation, excluding railway lines and sidings in industrial areas and underground railway lines in mines, but including <ul style="list-style-type: none"> • railway lines; • stations; or • shunting yards;
GN R386, 21 April 2006	Activity 1(l)	(l) the transmission and distribution of electricity above ground with a capacity of more than 33 kilovolts and less than 120 kilovolts;
GN R386, 21 April 2006	Activity 1(m)	(m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including - <ul style="list-style-type: none"> • canals; • channels; • bridges; • dams; and • weirs;
GN R386, 21 April 2006	Activity 4	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.

Relevant Notice	Activity Numbers (in terms of Relevant Notice)	Description of Listed Activity
GN R386, 21 April 2006	Activity 7	The aboveground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less than 1000 cubic metres at any one location or site.
GN R386, 21 April 2006	Activity 8	Reconnaissance, prospecting, mining or retention operations as provided for in the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), in respect of such permissions, rights, permits and renewals thereof.
GN R386, 21 April 2006	Activity 9	In relation to permissions, rights, permits and renewals granted in terms of 8 above, or any other similar right granted in terms of previous mineral or mining legislation, the undertaking of any prospecting, or mining related activity or operation within a prospecting, retention or mining area, as defined in terms of Section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
GN R386, 21 April 2006	Activity 12	The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
GN R386, 21 April 2006	Activity 13	The abstraction of groundwater at a volume where any general authorisation issued in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be exceeded.
GN R386, 21 April 2006	Activity 14	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding <ul style="list-style-type: none"> • masts of 15 metres and lower exclusively used • by radio amateurs; or • for lighting purposes • flag poles; and • lightning conductor poles
GN R386, 21 April 2006	Activity 15	The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.

Before the proposed activities can commence, Transnet must obtain a positive authorisation in terms of the EIA Regulations from DEAT. Other permitting requirements such as the licensing of borrow pits and authorisation for water abstraction will be applied for separately to the relevant competent authority by Transnet. However, the impacts associated with these activities will be addressed in this EIA, as far as possible.

2.1.3 *National Environmental Management: Biodiversity Act (Act 10 of 2004)*

The Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) was legislated and published in the Government Gazette in June 2004 (Vol. 467; No. 26426). One of the objectives of this Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and to ensure the sustainable use of indigenous biological resources.

Chapter 4, Part 2 of the Act provides for listing of species that are threatened or in need of protection to ensure their survival in the wild, while regulating the activities, including trade, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. In February 2007, the Minister of Environmental Affairs and Tourism published a list of Critically Rare (CR), Endangered (EN), Vulnerable (VU) and Protected Species (PS), according to Section 56(1) of the Act.

Specialists were appointed to investigate the Project area to ensure that no species or habitats of ecological importance or conservation worthiness would be detrimentally affected by the proposed developments.

2.1.4 *Conservation of Agricultural Resources Act (Act No. 43 of 1983)*

In 1984, regulations in terms of the Conservation of Agricultural Resources Act (CARA, Act No. 43 of 1983) were passed, declaring about 50 species "weeds" or "invader plants". On March 30, 2001 the Minister of Agriculture promulgated an amendment to these regulations. This amendment contains a comprehensive list of species that are declared weeds and invader plants, dividing them into three broad categories. These categories are indicated in *Table 2.2* below.

Table 2.2 *Invader plant species categories*

Category	Description
1	Declared weeds that are prohibited on any land or water surface in South Africa. These species must be controlled, or eradicated where possible.
2	Declared invader species that are only allowed in demarcated areas under controlled conditions and prohibited within 30m of the 1:50 year floodline of any watercourse or wetland.

Category	Description
3	Declared invader species that may remain, but must be prevented from spreading. No further planting of these species is allowed.

In terms of the amendments to the regulations under CARA, landowners are legally responsible for the control of alien species on their properties. This has relevance to the Project as Transnet will have to ensure that weeds and alien invasive species are removed from the rail reserve during construction and that the spread of these species is controlled and managed during operations.

2.1.5 *National Forests Act (Act No. 84 Of 1998)*

The National Forests Act (Act No. 84 of 1998) legislates the protection of certain forests and tree species to promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

In terms of section 15(1) of the National Forests Act, 1998 ,forest trees or protected tree species may not be cut, disturbed, damaged, destroyed and their products may not be possessed, collected, removed, transported, exported, donated, purchased or sold – except under license granted by the Department of Water Affairs and Forestry (or a delegated authority).

Therefore, a Government Notice was issued in 2005 listing the protected trees within the borders of South Africa [Notice No. 767 Notice of List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 Of 1998) 5 August 2005]. The criteria used to select tree species for inclusion in the protected tree list are outlined below:

- Red List Status (rare or threatened species);
- Keystone Species Value (whether species play a dominant role in an ecosystem’s functioning);
- Sustainability of Use (whether a species is threatened by heavy use of its products such as timber, bark etc);
- Cultural or Spiritual Importance (outstanding landscape value or spiritual meaning attached to certain tree species); and
- Other Legislation (whether a species is already adequately protected by other legislation).

This Act is of relevance to the Project, as some protected tree species do occur within the project area. Should the Project require the removal, relocation or pruning of any protected plants as a result of construction activities, a permit will be required.

2.1.6 *Northern Cape Nature & Environmental Conservation Ordinance (No. 19 of 1974)*

The Nature & Conservation Ordinance of the Northern Cape Department of Tourism, Environment and Conservation (DTEC), was developed to consolidate and amend the laws relating to nature and environmental conservation and to provide for matters incidental thereto. This Ordinance established the Department of Nature as well as an Environmental Conservation and Advisory Committee. The ordinance also covers the administration and protection of nature reserves, miscellaneous conservation measures, the protection of wild animals other than fish, the protection of rhinoceroses, fish in inland waters, flora, professional hunters and hunting contractors.

2.1.7 *National Water Act (Act No. 36 of 1998)*

The National Water Act (NWA) is the primary legislative instrument for the control and management of South Africa's water resources. In addition to ensuring equitable access to and use of water, a key function of the NWA is to ensure the protection of the national water resource from pollution. The definition of "water resource" includes a watercourse, a surface water body, estuaries, groundwater and aquifers. The NWA would be applicable to activities involving the abstraction of water, alteration of water features, disposal of waste water and the contamination and remediation of polluted areas.

Section 19 of the Act deals with the prevention and remedying of the effects of pollution. It is the responsibility of an owner of land, a person in control of land or a person who occupies or uses that land to take all reasonable measures to prevent pollution of a water resource from occurring, continuing or recurring. If these measures are not taken the authorities may do whatever is necessary to prevent the pollution or remedy its effects and may recover all reasonable costs. This section covers pollution that may arise from project activities during both the construction and operation phases.

Section 20 deals with the control of emergency incidents. In this section, "incident" includes any incident or accident in which a substance –

- Pollutes or has the potential to pollute a water resource; or
- Has, or is likely to have, a detrimental effect on a water resource.

The reporting requirements in terms of this section are similar to the emergency reporting requirements in Section 30 of NEMA.

Section 21 of the Act deals with water use, which includes the following activities which may be relevant to the Project:

- Taking water from a water resource;
- Storing water;

- Impeding or diverting the flow of water in a watercourse;
- Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- Disposing of waste in a manner which may detrimentally impact on a water resource; and
- Altering the bed, banks, course or characteristics of a watercourse.

In general, a water use must be licensed unless subject to certain exemptions stipulated within the Act.

If water is to be abstracted from a water body for which the rights of use belong to a private landowner, it will be necessary to establish whether the landowners water use rights are valid in terms of the provisions of the NWA and then to negotiate with the relevant landowners to obtain a permit from DWAF. This is relevant to the Project as the project area traverses a water scarce environment, so borehole water may be needed for construction activities.

In terms of Section 3 of Government Gazette No. 20526 of 8 October 1999, regarding General Authorisations in terms of Section 39 of the NWA, discharges of wastewater to a water resource must meet the National General Discharge Standards. Should these limits be exceeded, an authorisation is required from the Department of Water Affairs and Forestry.

2.1.8 *Atmospheric Pollution Prevention Act (Act No. 45 of 1965)*

The Atmospheric Pollution Prevention Act (APPA) deals with control of noxious or offensive gases, smoke, dust and motor vehicle emissions. Responsibility for regulatory control is divided between the Chief Air Pollution Control Officer (CAPCO) in the Directorate of Air Pollution within DEAT and local authority inspectors. The local authorities are currently responsible for smoke, dust and vehicle emissions.

2.1.9 *National Environment Management: Air Quality Act, (Act No. 39 of 2004)*

The National Environmental Management: Air Quality Act (NEMAQA) replaces the Atmospheric Pollution Prevention Act (APPA) of 1965 (although this Act has not been fully repealed) and represents a complete paradigm shift in air quality management.

The NEMAQA came into effect on 11 September 2005, with the exclusion of the following sections: 21, 22, 36-49, 51(1) (e), 51(1) (f), 51(3), 60, and 61.

The objective of the Act is to:

- (a) to protect the environment by providing reasonable measures for-
 - (i) the protection and enhancement of the quality of air in the Republic;
 - (ii) the prevention of air pollution and ecological degradation; and

(iii) securing ecologically sustainable development while promoting justifiable economic and social development; and

(b) generally to give effect to section 24(b) of the Constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people.

The Second Schedule of the Act lists ambient air quality levels for pollutants of concern, including particulate matter (dust).

Proposed National Ambient Air Quality Standards in terms of Section 9(1) (a) and (b)

The proposed National Ambient Air Quality Standards, in terms of Section 9(1) (a) and (b) of NEMAQA can be applied to particulate matter and occupational exposure limits for manganese and used as benchmarks to assess whether ambient concentrations of particulates and manganese pose a risk to human health.

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

The protection and management of South Africa's heritage resources is controlled by the National Heritage Resources Act (NHRA), 1999 (Act No. 25 of 1999). The enforcing authority for this act is the South African National Heritage Resources Agency (SAHRA). The objective of the NHRA is to introduce an integrated system for the management of national heritage resources and to meet the following goals inter alia:

- To promote good government at all levels, and empower civil society;
- To nurture and conserve their heritage resources, so that they may be bequeathed to future generations;
- To lay down general principles governing heritage resources management throughout the Republic;
- To introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa;
- To set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance;
- To enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources; and
- To provide for the protection and management of conservation-worthy places and areas by local authorities.

The proposed loop developments are considered to be a listed activity under Section 38 of the NHRA. The following listed activity is considered to be relevant to the Project: Section 39(1) (a) *“the construction of a road, wall, powerline, pipeline, canal or similar form of linear development or barrier exceeding 300 m in length”*. As such, a Phase 1 Archaeology/Cultural Heritage and Paleontological Impact Assessment is required as part of the EIA, to assess the impact of the proposed development on sites of archaeological, cultural or paleontological importance.

Should the construction of the loops and associated infrastructure require that a grave or archaeological site be damaged or destroyed, a permit will be required from SAHRA.

2.1.11 *Environment Conservation Act, 1989 (Act No. 73 of 1989)*

In accordance with the Environment Conservation Act (ECA) of 1989 (Act No. 73 of 1989), two procedures exist for assessing and controlling road traffic noise:

- The procedures contained in the South African National Standards (SANS) 10328 of 2004 *“Methods for environmental noise impact assessments”*; and
- The procedures contained in the Noise Control Regulations of the ECA.

The Act makes no specific reference to rail transport and there are no South African noise standards containing noise impact criteria relating directly to rail transport. However, In accordance with SANS 10328, the impact of noise will be assessed in terms of SANS 10103 *“The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication”*.

In accordance with procedures contained in SANS 10328, the predicted impact that the noise emanating from a proposed development would have on occupants of surrounding land is assessed by determining whether the level of the predicted noise would exceed the *“acceptable”* and/or residual level of noise on that land and relating this excess to the probable response of a community to the noise.

No South African noise standards contain noise impact criteria relating directly to rail transport.

2.1.12 *Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)*

The excavation of new borrow pits and use of dormant pits is currently regulated by the requirements of the Mineral and Petroleum Resources Development Act (MPRDA) (Act No. 28 of 2002), as administered by the Department of Minerals and Energy (DME).

Broadly speaking, the process to gain authorisation involves application for a mining permit/mining right to open new and/or existing borrow pits.

However, as Transnet is a parastatal, it is deemed an "organ of state" as stipulated in Section 106 and is, therefore, exempted from certain provisions of the Act. Transnet will have to follow an abbreviated authorisation process for new/dormant borrow pits. Borrow material from within the rail reserve does not require authorisation. Authorisations for borrow material fall outside the scope of this EIA process.

2.2 *POLICY AND ADMINISTRATIVE REQUIREMENTS*

DEAT have produced a number of policy and guideline documents to guide EIA process in South Africa and to reflect best practice. These include the:

- DEAT Integrated Environmental Management Information Series; and
- DEAT EIA Guideline Documents, 2006.

The relevance and applicability of these documents to the EIA process followed for the Project are briefly discussed below.

2.2.1 *DEAT Integrated Environmental Management Information Series*

The DEAT Information Series of 2002 consists of 20 documents. The documents were drafted as sources of information on the concepts and approaches to Integrated Environmental Management (IEM). IEM is a key instrument of NEMA and provides the overarching framework for the integration of environmental assessment and management principles into environmental decision-making. The aim of the information series is to provide general information on techniques, tools and processes for environmental assessment and management. ERM have referred to these various documents for information on the most suitable approach to the environmental assessment process for the proposed development.

The report on Scoping is particularly relevant to this FSR as it outlines the approaches to and the objectives of Scoping.

2.2.2 *DEAT EIA Guideline Documents*

Following the promulgation of the revised EIA Regulations in April 2006, DEAT published a number of guideline documents to assist with the undertaking of EIA processes in South Africa.

The guidelines relate to the EIA process in general, the public participation process, the assessment of alternatives and environmental management frameworks.

These guidelines have been referred to in the compilation of this FSR to ensure that DEAT's requirements are being met.

A number South African National Standards (SANS), International Standardization Organization (ISO) standards and Committee of Land Transport Officials (COLTO) guidelines are applicable to this project, particularly with respect to the potential impacts of vibration. A comprehensive list of norms and standards can be found in the Vibration Impact Report (see *Volume 2* of the Final EIR). See *Section 2.1.11* and the Noise Impact Report in *Volume 2* of the Final EIR for references to applicable noise standards.

The approach to the EIA process for the Project, including the stakeholder engagement process undertaken to date, is outlined in this *Chapter*.

3.1 HIGH LEVEL SCREENING STUDY

In February 2008, ERM was appointed by HMGJV to undertake a High Level Screening Study as part of a larger feasibility study being undertaken for the proposed project. The aim of the high level study was to identify key environmental (and social) risks that would affect the development/expansion of loops between the Port of Ngqura and De Aar.

This preliminary study, which included desktop research, GIS mapping and a ground truthing exercise, formed the basis for determining the need and scope of the EIA.

3.2 EIA PROCESS

This EIA consists of the three following phases:

- Project Initiation Phase;
- Scoping Study Phase; and
- Integration and Assessment Phase.

These phases of the Project are briefly described below and are illustrated in the EIA process flow diagram provided in *Figure 3.1*.

3.2.1 Project Initiation Phase

The EIA kicked off in May 2008. The initiation phase included a number of meetings between the consultant and client teams to confirm the project scope. It also included a pre-application meeting with DEAT to confirm the approach to the EIA, followed by the formal submission of the EIA Applications for Authorisation to initiate the EIA process (DEAT Reference 12/12/20/1240 and 12/12/20/1241).

3.2.2 Scoping Study Phase

In this phase the project team aimed to identify potential positive and negative biophysical and socio-economic issues, concerns and opportunities related to the proposed Project. This included engaging stakeholders to understand their views. Details on the stakeholder engagement process can be found in *Chapter 6*.

A number of specialist studies were commissioned to provide baseline information about the study area and to identify potential positive and negative impacts associated with the Project. These studies included investigations on air quality, noise, vibration, traffic, ecology, archaeology and cultural heritage; and the social environment.

Based on this work, a Draft Scoping Report, including a Plan of Study for EIA, was compiled and made available to stakeholders for comment for a 30-day period starting on 6 October 2008 and ending on 7 November 2008. The updated Final Scoping Report, including an issues trail of all stakeholder comments received, was then submitted to DEAT for approval on 17 November 2008.

The issues raised by stakeholders during the Scoping Study provided a basis for identifying specialist studies and their terms of reference (TORs), as well as clarifying other issues that needed to be addressed in the EIA. The specialist studies that have been undertaken are listed below in *Table 3.1*. Copies of the specialist reports are included in *Volume 2* of the Final EIR.

Table 3.1 *Specialist Studies Undertaken*

#	Specialist Study	Specialist	EIR reference
1	Air quality impact assessment	uMoya-NILU Consulting (Pty) Ltd	See <i>Volume 2</i>
2	Noise assessment	Jongens Keet Associates	See <i>Volume 2</i>
3	Phase 1 archaeological and cultural heritage study	Archaic Heritage Project Management, University of Pretoria	See <i>Volume 2</i>
4	Social Impact Assessment	ERM Southern Africa	See <i>Volume 2</i>
5	Terrestrial ecology assessment	Natural Scientific Services	See <i>Volume 2</i>
6	Traffic impact study	ITS	See <i>Volume 2</i>
7	Vibration assessment	Department of Mechanical and Aeronautical Engineering , University of Pretoria	See <i>Volume 2</i>

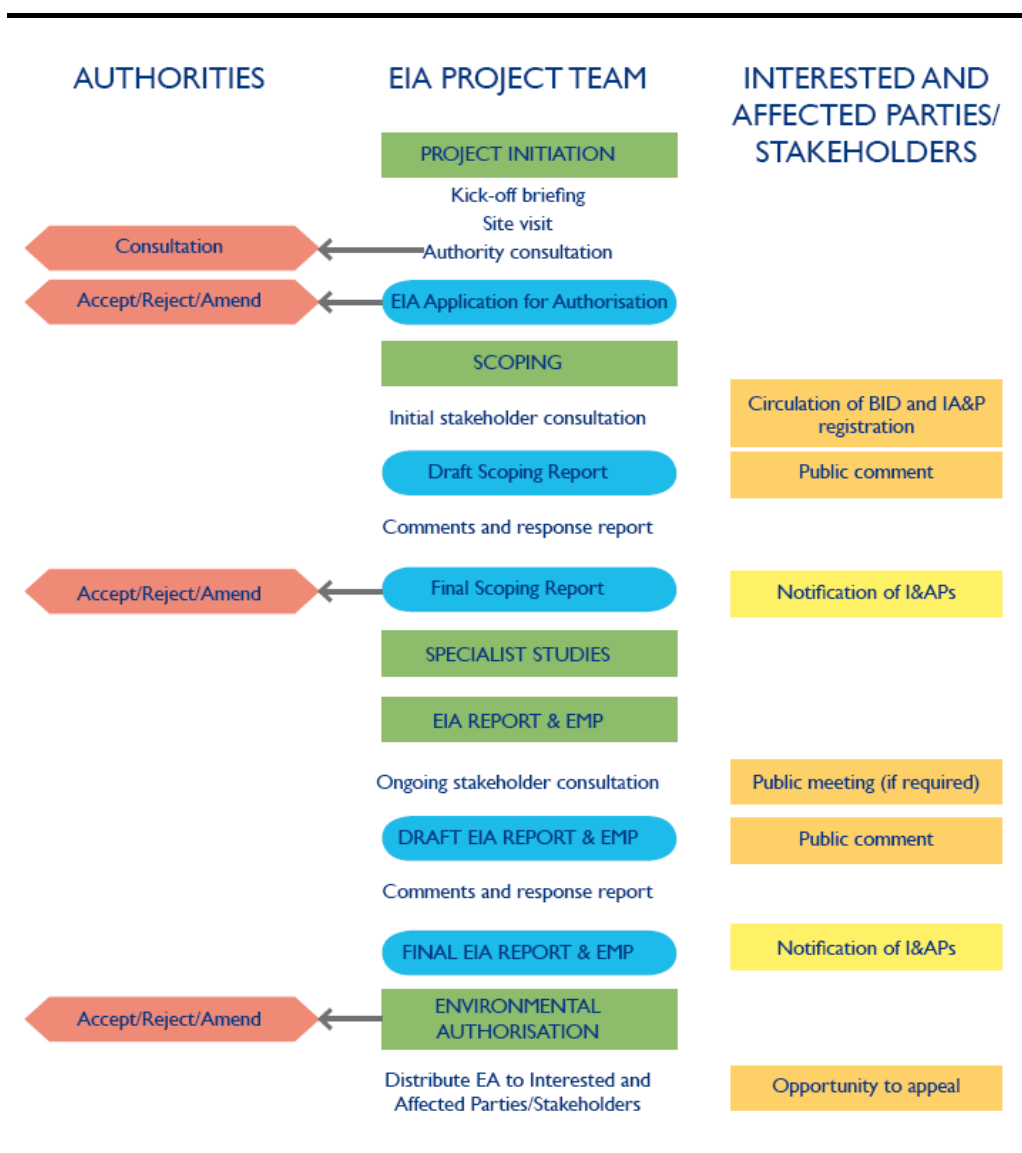
3.2.3 *Integration and Assessment Phase*

The aim of this phase is to bring together the findings of the specialist studies and the relevant available information into an EIA report and to once again elicit stakeholder comment on the proposed project and impact assessment process.

Relevant available information, including the findings of the specialist studies (see *Volume 2* of the Final EIR) and information regarding the characteristics and requirements of proposed alternatives, have been integrated by ERM to produce this Final EIR. The report focuses on the description, assessment and

evaluation of potential positive and negative biophysical and social impacts, as well as the identification of appropriate mitigation / enhancement measures for the construction and operational phases of the Project.

Figure 3.1 EIA process flow diagram



Environmental Management Plan

A Draft Environmental Management Plan (EMP) has been compiled in accordance with Section 34 of the EIA Regulations. This EMP is essentially a delivery mechanism for environmental and social mitigation measures, recommendations and commitments from the EIA Report for the proposed development ⁽¹⁾.

The Project EMP will consist of three documents, namely:

(1) Lochner, P. 2005. Guideline for Environmental Management Plans. CSIR Report No. ENV-S-C 2005-053 H.RSA, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

- A Construction EMP (CEMP);
- A Standard Environmental Specification (SES); and
- A Project Environmental Specification (PES).

Both the CEMP and SES are generic documents, approved by DEAT, and used for all Transnet projects. The PES, however, will include information specific to this project that is not documented in the CEMP or SES.

The EMP will stipulate mitigatory requirements (for construction impacts) that the contractors must adhere to; and will form the basis for their detailed method statements.

Operational impacts will be captured in the overarching Transnet operations Environmental Management System (EMS), which will be updated to include project specific considerations recommended in this EIA Report.

The Draft EMP provides the framework of requirements for environmental management and provision has been made for updating the Draft EMP once the detailed project design is complete. This framework specifies the management actions (e.g. mitigation) required and performance targets to be achieved. However, the specific requirements to implement these mitigation requirements will need to be developed during the detailed design and planning phase and as part of the bidding and sub-contracting process for the construction phase.

The Transnet generic EMP documents are included in *Annex A1*.

3.3

IMPACT ASSESSMENT METHODOLOGY

The purpose of impact assessment and mitigation is to identify and evaluate the significance of potential positive and negative impacts on identified receptors and resources according to defined assessment criteria; to develop and describe measures that will be taken to avoid, minimise, mitigate/ compensate for any potential adverse effects and enhance any potential positive impacts; and to report the significance of the residual impacts that remain following mitigation, compensation and/ or optimisation and enhancement.

There are a number of ways that impacts may be described and quantified. An impact is essentially any change (whether positive or negative) to a resource or receptor brought about by the presence of the project component or by the execution of a project related activity.

The types of impacts and terminology used in this assessment are outlined in the *Sections* that follow. *Table 3.2* describes the nature of the impact.

Table 3.2 *Impact assessment terminology*

Term	Definition
<i>Impact nature</i>	
Positive	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Negative	An impact that is considered to represent an adverse change from the baseline, or introduces a new undesirable factor.
Direct impact	Impacts that result from a direct interaction between a planned project activity and the receiving environment/receptors (e.g. between occupation of a site and the pre-existing habitats or between an effluent discharge and receiving water quality).
Indirect impact	Impacts that result from other activities that are encouraged to happen as a consequence of the Project (e.g. in-migration for employment placing a demand on resources).
Cumulative impact	Impacts that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and/or receptors as the Project.

Assessing significance

There is no statutory definition of ‘*significance*’ and its determination is, therefore, somewhat subjective. However, it is generally accepted that significance is a function of the **magnitude** of the impact and the **likelihood** of the impact occurring. The criteria used to determine significance are summarised in *Table 3.3*.

Table 3.3 *Significance criteria*

Criteria	Description
<i>Impact magnitude</i>	
Extent	<p>On-site – impacts that are limited to the boundaries of the rail reserve, yard or substation site.</p> <p>Local – impacts that affect an area in a radius of 20 km around the development site.</p> <p>Regional – impacts that affect regionally important environmental resources or are experienced at a regional scale as determined by administrative boundaries, habitat type/ecosystem.</p> <p>National – impacts that affect nationally important environmental resources or affect an area that is nationally important/ or have macro-economic consequences.</p>
Duration	<p>Temporary – impacts are predicted to be of short duration and intermittent/occasional.</p> <p>Short-term – impacts that are predicted to last only for the duration of the construction period.</p> <p>Long-term – impacts that will continue for the life of the Project, but cease when the Project stops operating.</p> <p>Permanent – impacts that cause a permanent change in the affected receptor or resource (e.g. removal or destruction of ecological habitat or upliftment and economic development of local communities) and that endure substantially beyond the Project lifetime.</p>

Intensity	<p>BIOPHYSICAL ENVIRONMENT: <i>Intensity can be considered in terms of the sensitivity of the biodiversity receptor (i.e. habitats, species or communities).</i></p> <p>Negligible – the impact on the environment is not detectable. Low – the impact affects the environment in such a way that natural functions and processes are not negatively affected, or these natural functions are enhanced to a small degree. Medium – where the affected environment is altered but natural functions and processes continue, albeit in a modified way, or are considerably improved. High – where natural functions or processes are altered to the extent that it will temporarily or permanently cease; or in the case of a positive impact, will be restored to close to its natural state in terms of functions and processes.</p> <p><i>Where appropriate, national and/or international standards are to be used as a measure of the impact. Specialist studies should attempt to quantify the magnitude of impacts and outline the rationale used.</i></p> <p>SOCIO-ECONOMIC ENVIRONMENT: <i>Intensity can be considered in terms of the ability of project affected people/communities to cope with or adapt to negative changes brought about by the Project, the degree to which their quality of life/well-being will be enhanced as a result of the socio-economic benefits.</i></p> <p>Negligible – there is no perceptible change to people’s quality of life. Low - People/ communities are able to cope with/ adapt to negative impacts with relative ease and maintain pre-impact quality of life/ well-being. People would marginally benefit from the proposed activity and would experience a relatively small improvement in quality of life/ well-being. Medium - Able to cope with/ adapt to negative impacts with some difficulty and maintain pre-impact livelihoods but only with a degree of mitigation support. People’s quality of life/ well-being are considerably improved as a result of benefits. High - Those affected will not be able to cope with/ adapt to negative changes and continue to maintain-pre impact quality of life/ well-being. People will have their quality of life/ well-being significantly improved.</p>							
	<p><i>Impact likelihood (Probability)</i></p> <table border="1"> <tr> <td>Negligible</td> <td>The impact does not occur.</td> </tr> <tr> <td>Low</td> <td>Impact may possibly occur i.e. occurs infrequently.</td> </tr> <tr> <td>Medium</td> <td>Impact is highly likely to occur i.e. occurs under most conditions.</td> </tr> <tr> <td>Definite</td> <td>Impact will definitely occur.</td> </tr> </table>	Negligible	The impact does not occur.	Low	Impact may possibly occur i.e. occurs infrequently.	Medium	Impact is highly likely to occur i.e. occurs under most conditions.	Definite
Negligible	The impact does not occur.							
Low	Impact may possibly occur i.e. occurs infrequently.							
Medium	Impact is highly likely to occur i.e. occurs under most conditions.							
Definite	Impact will definitely occur.							

Once a rating is determined for magnitude and likelihood, the following matrix can be used to determine the impact significance.

Table 3.4 Example of significance rating matrix

SIGNIFICANCE RATING					
	LIKELIHOOD	Negligible	Low	Medium	High
MAGNITUDE	Negligible	Negligible	Negligible	Minor	Minor
	Low	Negligible	Negligible	Minor	Minor
	Medium	Negligible	Minor	Moderate	Moderate
	High	Minor	Moderate	Major	Major

In Table 3.5, the various definitions for significance of an impact are given.

Table 3.5 Significance definitions

Significance definitions	
Negligible impact	Negligible impact (or insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be ‘negligible’ or ‘imperceptible’ or is indistinguishable from natural background variations.
Minor impact	An impact of minor significance is one where an effect will be experienced, but the impact magnitude is small (with and without mitigation) and, for negative impacts, well within accepted standards, and/or the receptor is of low sensitivity/value.
Moderate impact	An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the negative impact has been reduced to a level that is as low, or positive impact enhanced as far as reasonably practicable (ALARP). This does not necessarily mean that ‘moderate’ negative impacts have to be reduced to ‘minor’ impacts, but that moderate impacts are being managed effectively and efficiently. In the same way, moderate positive impacts may not be able to be enhanced to have major positive impact.
Major impact	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/ sensitive resource/ receptors. A goal of the EIA process is to get to a position where the Project does not have any major residual negative impacts (especially not those endure into the long term or extending over a large area) and major positive impacts are enhanced as far as possible. For some aspects, however, there may be major residual negative impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). (e.g. visual impact of a development). It is then the function of regulators and stakeholders to weigh such negative impacts against the positive impacts in coming to a decision on the Project.

The level of confidence in the findings and key uncertainties will be clearly identified, e.g. where information is insufficient to determine the impact significance, this will be clearly stated.

The impact rating will be summarised to reflect the significance of the impact with and without the incorporation of mitigation/enhancement measures.

The colour scheme used within this EIR to indicate the minor, moderate and high negative and positive impact ratings, is included *Table 3.6* below.

Table 3.6 *Colour scale for significance ratings*

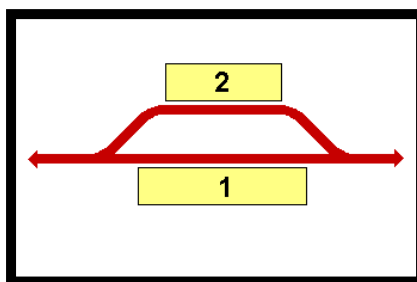
Negative ratings	Positive ratings
Negligible	Negligible
Minor	Minor
Moderate	Moderate
Major	Major

4.1 BACKGROUND AND RATIONALE

In response to an increase in the global demand for manganese ore (an essential component of iron and steel production as well as a fuel additive) and future container traffic handling capacity at the Port of Ngqura, twenty nine (29) loops have been identified for expansion and/or construction along the existing railway line between Hotazel, the new Port of Ngqura and the Port of Port Elizabeth. The loops (also called passing loops or crossing loops) would facilitate increased general freight container and commodities (such as manganese ore) traffic on the line by allowing trains approaching each other on a single line to pass each other safely.

Box 4.4.1 Definition: passing/crossing loop

A passing loop or crossing loop is a place on a single line railway where trains travelling in opposite directions can pass each other. A passing loop is usually double ended and connected to the main track at both ends.



In February 2008, ERM was appointed by HMGJV, on behalf of Transnet, to undertake a high level environmental and social screening exercise to highlight any potential key risks (“fatal flaws”) associated with the upgrade of a number of loops between the Port of Ngqura in the Eastern Cape and De Aar in the Northern Cape.

The high level screening study formed part of a larger feasibility study conducted by HMGJV to better understand the possible opportunities and constraints associated with the proposed railway upgrade. Once it was decided to proceed with the project, ERM was appointed as independent environmental consultants, to undertake the EIA.

In addition to the loops investigated in the high level study, a number of additional loops were identified for upgrading and construction. Furthermore, the scope also included five (5) yards to be refurbished at Hotazel, Postmasburg, Mamathwane, Beaconsfield and Ronaldsvlei (the latter two are both near Kimberley), a new substation to be constructed at Emil (near Sishen) and a second existing line between Kimberley and De Aar to be refurbished and electrified. Although the latter does not fall within the legal requirements for an EIA and does not need approval from DEAT, it does form part of the

overall upgrade of the railway line to facilitate increased traffic and is, therefore, considered as part of the scope of this EIA.

4.2 PROJECT LOCATION

The existing railway line that runs from Hotazel in the Northern Cape to the Port of Port Elizabeth in the Eastern Cape covers a distance of approximately 1100 km and passes through the major railway hubs of Kimberley and De Aar.

Of the twenty nine (29) proposed loop sites, twenty three (23) fall within the Eastern Cape while the remaining six (6) are located in the Northern Cape, south of De Aar. All five (5) railway yards to be refurbished as well as the new proposed substation are located between Hotazel and Kimberley in the Northern Cape.

Finally the existing disused second line to be refurbished and electrified is located between Kimberley and De Aar in the Northern Cape. See the locality map i.e. *Figure 1.1 in Chapter 1*.

4.3 OVERVIEW OF PROPOSED PROJECT COMPONENTS

The proposed project can be divided into broad activities associated with upgrade, construction or refurbishment of railway infrastructure, the refurbishment of the yards and upgrade of the related infrastructure, the acquisition of construction material, the construction of additional infrastructure and construction camps and laydown areas.

Table 4.1 summarises the proposed project activities according to these broad activity categories.

Table 4.1 *Proposed project components*

Broad project components	Description
Upgrade, construction or refurbishment of railway infrastructure and associated infrastructure	<ul style="list-style-type: none"> • Upgrade of 25 existing loops. In most cases the upgrading will entail extending the loops. • Construct 4 new loops to at least 1200 m in length. • Improve access roads and new or altered level crossings associated with existing loops. • Refurbish and electrify the existing second line between De Aar and Kimberley. • Relocation of signalling equipment and associated structures to allow a loop extension.
Refurbishment of station yards and upgrade of the related infrastructure	<ul style="list-style-type: none"> • Upgrade station yards at Hotazel, Mamathwane, Beaconsfield and Ronaldsvlei (both near Kimberley) and Postmasburg. • Upgrade of the wagon maintenance facilities at Postmasburg. • Provide additional locomotive staging facilities at Beaconsfield.

Broad project components	Description
	<ul style="list-style-type: none"> • Install additional signalling between Emil and Hotazel.
Acquisition of construction material	<ul style="list-style-type: none"> • The construction process will also require the use of existing borrow pits close to the construction sites and the creation of new borrow pits (within the rail reserve) to obtain suitable fill material.
Construction of additional infrastructure	<ul style="list-style-type: none"> • Construct a new electrical traction substation at Emil.
Construction of camps and laydown areas	<ul style="list-style-type: none"> • Site offices, construction camps and laydown areas for the storage of raw materials will be established during the construction phase of the proposed project.

Transnet is confident that the proposed upgrade and refurbishment dealt with in this EIA would not preclude or compromise future development of a terminus at Coega and the required Intermodal Facility.

4.4 *UPGRADE, CONSTRUCTION OR REFURBISHMENT OF RAILWAY INFRASTRUCTURE AND ASSOCIATED INFRASTRUCTURE*

The following sections provide further details on the various components of the Project.

4.4.1 *Proposed loop developments*

The proposed loop developments consist of the extension and/or upgrade of 25 existing loops and the construction of four new loops to a minimum length of 1 200 m. It is expected that most of the extensions and the new loops will be inside the existing rail reserve with the exception of a few loops which may require small tracts of additional land as a result of the limited width of the railway reserve at specific locations. The exact locations and extent of land expropriation will only be confirmed following a topographic survey of the rail reserve boundaries at the loop sites. Transnet will commence negotiations with relevant landowners who may be affected by the need for additional land as soon as the locations are confirmed.

At some of the sites, temporary use of adjacent land will be necessary during the construction phase only (e.g. for equipment laydown areas or access roads). Fences will be maintained in their current and/or temporary positions and reinstated to their original or new positions at the completion of the construction phase. Transnet will secure permission from the affected landowners before any fencing is removed.

The alignment of the loop developments will follow the existing railway line, which means that cuttings and embankments, where required, will be widened at the same track level. Culverts and drainage structures will be extended in the same positions, whilst maintaining the existing surface water drainage patterns.

Electrical equipment will be similar to the existing equipment and will consist of mast poles supporting the overhead traction wires feeding power to the locomotives. Colour light signals and relay rooms will be placed at the loops to control the train movements.

New and Recommissioned Loops

“New Loops” refers to new and recommissioned loops, where the latter refers to loops that were previously decommissioned but will be restored as part of this Project. Only one brand new loop is proposed at Tootabi, near Alicedale in the Eastern Cape. Table 4.2 summarises the length of the proposed new loops.

Table 4.2 *Length of new and recommissioned loops*

Loop name	Length of new loop (m)
Eastern Cape	
Tootabi (new)	1332
Klipfontein (recommissioned)	1363
Glenheath (recommissioned)	1432
Northern Cape	
Hanover Road (recommissioned)	1272

Extended loops

Twenty five existing loops will be upgraded as part of the proposed project, twenty in the Eastern Cape and five in the Northern Cape. Figure 4.1 shows the existing loop to be extended at Barkly Bridge.

Figure 4.1 *Existing loop to be extended at Barkly Bridge, Eastern Cape*

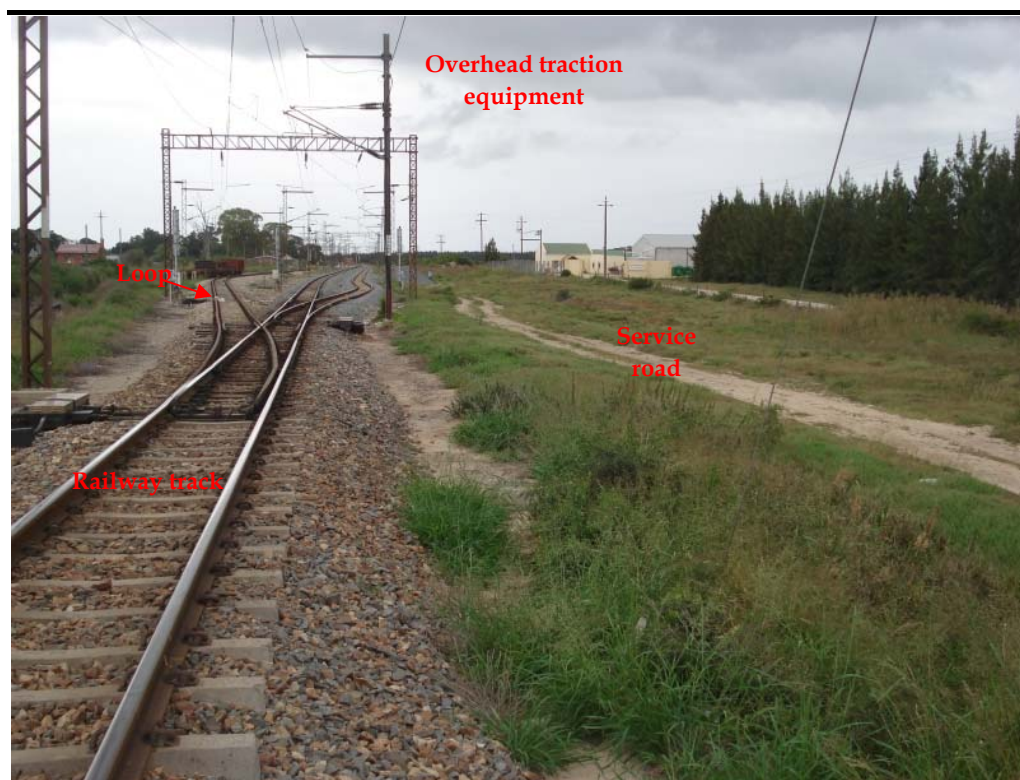


Table 4.3 summarises the existing loops to be upgraded.

Table 4.3 Existing loops to be lengthened

Loop name	Length of loop extension (m)
Eastern Cape	
Barkly Bridge	450
Addo	150
Coerney	1100
Verby	777
Eagle's Crag	716
Blinkhoff	593
Saltaire	439
Kommadagga	678
Golden Valley	372
Mortimer	548
Halesowen	840
Marlow	698
Kaptein	480
Knutsford	658
Visrivier	512
Conway	827
Tafelberg	712
Rosmead	730
Flonker	996
Carlton	1460
Northern Cape	
Barredeel	582
Wildfontein	324
Linde	698
Burgervilleweg	760
Bletterman	710

Construction methodology for new and upgraded loops

The typical loop construction methodology is outlined below. This is a generic methodology and some aspects may not be relevant to all of the proposed loop developments.

- Establish temporary offices, workshops, stores, shelters, mess toilets and ablution facilities;
- Relocate fences to new permanent or temporary positions as required for construction purposes;
- Clear land for site facilities within the rail reserve;
- Relocate existing electrical, communication and signal equipment where construction is necessary;
- Clear land, remove topsoil and stockpile within the rail reserve where loops are to be lengthened;
- Clear land, remove topsoil and stockpile outside the rail reserve where new roads and level crossings are to be constructed;
- Construct new roads and level crossings where required to the standards specified by the relevant road and rail authorities;

- Extend culverts;
- Excavate cuttings where required;
- Excavate material from borrow pits inside/outside the rail reserve and transport it by tipper lorry to the required site where it will be placed and compacted;
- Widen cuttings, where required, by blasting with commercial explosives;
- Erect temporary crushing plants on site;
- Build up banks and cuttings in layers and compact the final load-bearing gravel foundation to the required standard;
- Build a new maintenance road within the rail reserve;
- Dispose of excess material not used for fill or stockpiling;
- Lay skeleton track of sleepers and rails;
- Add ballast stone to hold and cushion the track and align it to the required level and horizontal placement;
- Erect the overhead traction equipment (OHTE) on masts mounted on a concrete foundation next to the track;
- Erect signals and install equipment in secure relay rooms;
- Rehabilitate the site using topsoil and natural vegetation and re-establish drainage patterns where water courses have been dammed or diverted during construction; and
- Reinstate fences where required.

Construction requirements will include raw materials, water and electricity. Raw materials will be sourced both locally and abroad. For example, rails and signalling equipment will be imported from Europe, while sleepers, fasteners, cement, steel reinforcing, electrification equipment, prefabricated culverts, ballast stone and fencing materials will all be sourced locally.

Water will be sourced locally or trucked in by road. In certain instances boreholes may be drilled with permission from the Department of Water Affairs and Forestry (DWAF). The location of the proposed boreholes has not yet been determined.

All electricity for work sites will be provided by mobile generators.

4.4.2

Associated infrastructure

New or upgraded construction, access and maintenance roads

All the proposed loop sites are accessible from the existing road network. However, temporary construction roads will be required at all the sites. Existing access roads will need to be widened at Verby, Eagles Crag, Tootabi, Blinkhoff, Saltaire and Klipfontein.

Maintenance roads will be widened and or relocated at Coerney, Kommadagga and Golden Valley while an access road to a borrow pit near Conway will need to be constructed.

See *Box 4.2* for a definition of these types of roads.

New or existing level crossings and associated roads

In order to accommodate the proposed new and extended loops a number of level crossings and associated roads will be affected. Eleven level crossings will be extended and five, namely, Barkly Bridge, Kommadagga, Kaptein, Knutsford and Hanover Road, will be relocated along with their associated roads (see *Figure 4.2*). Of the level crossings to be relocated, three are public level crossings (see *Table 4.4*).

Box 4.4.2 *Definitions for associated infrastructure*

Access road:	an access road is a temporary or permanent road that provides access to the railway.
Maintenance road:	a maintenance road is a single track road that runs parallel to the railway to allow easy access for maintenance.
Construction road:	a construction road is a temporary road used during the construction phase only.
Level crossing:	a level crossing is an at-grade crossing, without recourse to a bridge or tunnel, of a railway line by a road, path, or another railroad.

Figure 4.2 *Aerial photograph of level crossing to be moved at Barkly Bridge*



Table 4.4 summarises the proposed changes to the level crossings and associated roads at the loop sites.

Table 4.4 *Changes to level crossings and associated roads*

Loop name	Changes to level crossing (Y/N)	Changes to associated road (Y/N)	Additional notes
Eastern Cape			
Barkly Bridge	Y, relocate	Y, relocate	Relocate public road
Addo	N	N	
Coerney	Y, extend	N	
Verby	Y, extend	N	
Eagle's Crag	Y, extend	N	Private crossing
Tootabi	Y, extend	N	Private crossing
Blinkhoff	N	N	
Saltaire	Y, extend	N	
Kommadagga	Y, extend	Y	
	Y, relocate	Y	Relocate service road
Golden Valley	Y, extend	Y	
Klipfontein	Y, extend	Y	
Mortimer	N	N	
Halesowen	Y, extend	N	
Marlow	N	N	
Kaptein	Y, relocate	Y, relocate	Relocate service road
Knutsford	Y, relocate	Y, relocate	Relocate public road
Visrivier	Y, extend	N	
Conway	Y, extend	N	Private crossing
Glenheath	N	N	
Tafelberg	N	N	
Rosmead	Y	N	
Flonker	Y, extend	N	
Carlton	N	N	
Northern Cape			
Barredeel	N	N	
Wildfontein	N	N	
Linde	N	N	
Hanover Road	Y, relocate	Y, relocate	Relocate public road
Burgervilleweg	N	N	
Bletterman	Y, extend	N	

Relocation of signalling equipment

At some of the loop sites, signalling equipment and associated structures will have to be relocated to accommodate the expansion of the loop.

4.4.3 *Refurbishment of the Kimberley - De Aar section*

Although not a legal requirement in terms of the EIA Regulations, the scope of this EIA also includes the potential impacts associated with the refurbishment and electrification of an existing second line, approximately 230 km in length, between Kimberley and De Aar in the Northern Cape.

Approach to the refurbishment and electrification

The refurbishment will include, but is not restricted to, the following activities:

- Grinding of worn rails and rail bound crossings;
- Replacement of worn rails where required;
- Weld crossings and fix of skid marks;
- Adding of ballast where required;
- Replacement of missing and damaged fastenings;
- Replacement of wooden sleepers on certain turnouts or the upgrade of the turnouts using concrete sleepers;
- Clearing of cuttings to ensure proper drainage;
- Screening of dirty ballast (separating the soil from the rock) on site by manual labour and only where necessary;
- Replacement of cracked concrete sleepers;
- Replacement of certain types of sleepers;
- Screening and repair of mud holes formed in the foundation of the railway line;
- Installation of level crossing blocks on level crossings that are currently ballasted;
- Removal of trees and bushes within the track profile;
- Replacement of all rails and sleepers that were previously removed; and
- Alignment and tamping of the line once all the above has been completed.

The methodology for the electrification of the line will be as follows:

Augers will be used for drilling. These augers may be mounted on the wagons of a construction train. The wagons will also be loaded with masts and concrete. Once the holes have been drilled, a crane will lift and place the masts into the holes. The masts will then be stabilized using concrete. Holes that can not be drilled on-track, will be drilled off-track by hand and/or auger.

Once all the masts have been secured into position, trolleys will be used to unroll the overhead contact wire. The construction train equipped with a working platform will then lift the wire which will then be secured to the masts using swing cantilevers. Finally, height restriction indicators and the required road signs at the level crossings will be repositioned for safety.

The implementation of this component of the Project may commence prior to the required authorisation from DEAT with respect to the rest of the project outlined above.

4.5

REFURBISHMENT OF STATION YARDS AND UPGRADE OF THE RELATED INFRASTRUCTURE

This *Section* describes the proposed changes planned for various existing yards.

General approach to the yard upgrades

The yard upgrades will include, but are not restricted to, the following activities:

- Earthworks:
 - Preparation of the site: A grader is used to clean and grub the site. A front-end loader or bulldozer will then be used to remove excess/unsuitable material which will be taken off site by tipper Lorries.
 - Tipper Lorries will be used to bring any additional fill material to site which will then be spread by a grader and compacted by roller to the final level.

- Lay new/additional track:
 - Tipper lorries will deliver ballast materials which will be spread into position by a grader.
 - Sleepers will then be delivered by lorry and placed in position by hand using hand tools.
 - Rails will be brought to site by road and fixed in position on the sleepers by hand using hand tools.
 - Additional ballast will be delivered by lorry, boxed in and compacted and the track lifted to its final level and alignment by hand.
 - Finally the track will be compacted using a tamping machine which also ensures the correct alignment and level.

- Electrification of a new section of track:
 - Augers, used for drilling, will be mounted on the wagons of a construction train. The wagons will also be loaded with masts and concrete. Once the holes have been drilled, a crane will lift and place the masts into the holes. The masts will then be stabilized using concrete. Holes that can not be drilled on-track, will be drilled off-track by hand and/or auger.
 - Once all the masts have been secured into position, trolleys will be used to unroll the overhead contact wire. The construction train equipped with a working platform will then lift the wire which will then be secured to the masts using swing cantilevers.
 - Finally, height restriction indicators and the required road signs at the level crossings will be repositioned for safety.

4.5.2

Yard upgrades

As part of the proposed project, five yards will be refurbished/upgraded at Hotazel, Postmasburg, Mamathwane, Beaconsfield and Ronaldsvlei. Each yard is discussed briefly below.

Hotazel

The yard is located approximately 3 km south of Hotazel and is accessible from the R31 running adjacent to the railway line. The yard is currently in two sections and will require some alterations to connect these two sections and create a single yard. In particular, some of the existing tracks will have to be lifted to connect the two yards. The yard will be lengthened to a minimum of 1 300 m and an additional line on the western side of the yard will be

extended to accommodate 104 - 105 wagon trains. The extension will be electrified to 3 kV direct current (DC).

In addition, the third leg of the triangle junction, approximately 400 m north of the yard, will be tied into the existing line.

Mamathwane

The Mamathwane yard is located approximately 22 km south of Hotazel, adjacent to the Mamathwane mine which forms part of the Kalahari manganese fields.

The loop within the yard is to be extended south towards Kimberley and electrified to 3 kV DC.

Postmasburg

The yard is located approximately 3 km north west of the town of Postmasburg.

The yard requires additional maintenance facilities for wagons and refurbishment, including electrification of the line running to the locomotive/wagon repair workshop. The workshop itself may also need to be extended to accommodate an additional bay.

Ronaldsvlei and Beaconsfield

The Ronaldsvlei change-over yard and the Beaconsfield electric locomotive running shed are located approximately 5 km south of Kimberley. Change-over yards allow locomotives to change from direct current to alternating current (AC) and vice versa.

At the change-over yard, an additional loop may be added to the southern end of the yard and extra block joints ⁽¹⁾ will be installed to facilitate signal interlocked switching of the overhead electrification and thus improve safety in the yard.

Three additional staging lines are planned for electrical locomotives at the electric locomotive running shed.

(1) Block joints are an insulated joint between two lengths of rail that divide train routes up into signalling areas or "blocks", enabling the position of every train to be known and ensure smooth and safe running of the service.

4.6 ACQUISITION OF CONSTRUCTION MATERIAL

4.6.1 *New and existing borrow pits*

A number of existing and new borrow pits will be utilised for both ballast and sub-base material during the construction period. An explanation of the different material types is given in *Box 4.3*.

Box 4.3 *Materials that can be extracted from borrow pits*

Ballast – Coarse, crushed stone laid to form a bed for the sleepers and rails.

Bulk material – This material is used for earthworks within the rail prism before the construction of the structural sub-ballast layers (see *sub-base* below). The bulk material is comprised of material found in-situ and some fill material from elsewhere, if required.

Sub-base material – This material is used to construct the top layers of the rail prism onto which the ballast is then placed.

Figure 4.3 shows the existing borrow pit near the Barkly Bridge loop site.

Figure 4.3 *Proposed borrow pit south of Barkly Bridge, Eastern Cape*



The proposed borrow pit sites are listed in *Table 4.5*. Where new borrow pits have been identified, these are located on Transnet property (i.e. within the rail reserve).

Table 4.5 *List of borrow pits associated with the loops*

Loop name	Borrow pit required (Y/N)		Distance to off-site borrow pit
	Bulk material	Sub-base material	
Eastern Cape			
Barkly Bridge	Y, On site	Y, Off site	7.5km
Addo	N	N	
Coerney	Y, On site	Y, Off site	38km (from Barkly Bridge)
Verby	Y, On site	N	
Eagle's Crag	Y, On site	Y, On site	
Tootabi	Y, On site	Y, Off site	5km
Blinkhoff	Y, On site	Y, On site	
Saltaire	Y, On site	Y, On site	
Kommadagga	Y, On site	Y, On site	
Golden Valley	Y, On site	Y, Off site	15km
Klipfontein	Y, On site	Y, On site	
Mortimer	Y, On site	Y, On site	
Halesowen	Y, On site	Y, Off site	11km from Cradock
Marlow	Y, On site	Y, Off site	10km from Cradock
Kaptein	Y, On site	N	
Knutsford	Y, On site	Y, Off site	2km
Visrivier	Y, On site	Y, Off site	4km
Conway	Y, Off site	Y, Off site	4km, on Transnet property
Glenheath	Y, On site	Y, Off site	5km
Tafelberg	Y, On site	Y, Off site	5km
Rosmead	N	In situ	
Flonker	Y, On site	Y, On site	
Carlton	Y, On site	Y, On site	
Northern Cape			
Barredeel	Y, On site	Y, Off site	12km
Wildfontein	Y, On site	Y, Off site	3km
Linde	Y, On site	Y, Off site	10km
Hanover Road	Y, On site	Y, Off site	<50m
Burgervilleweg	Y, On site	Y On site	
Bletterman	Y, On site	Y, Off site	5km

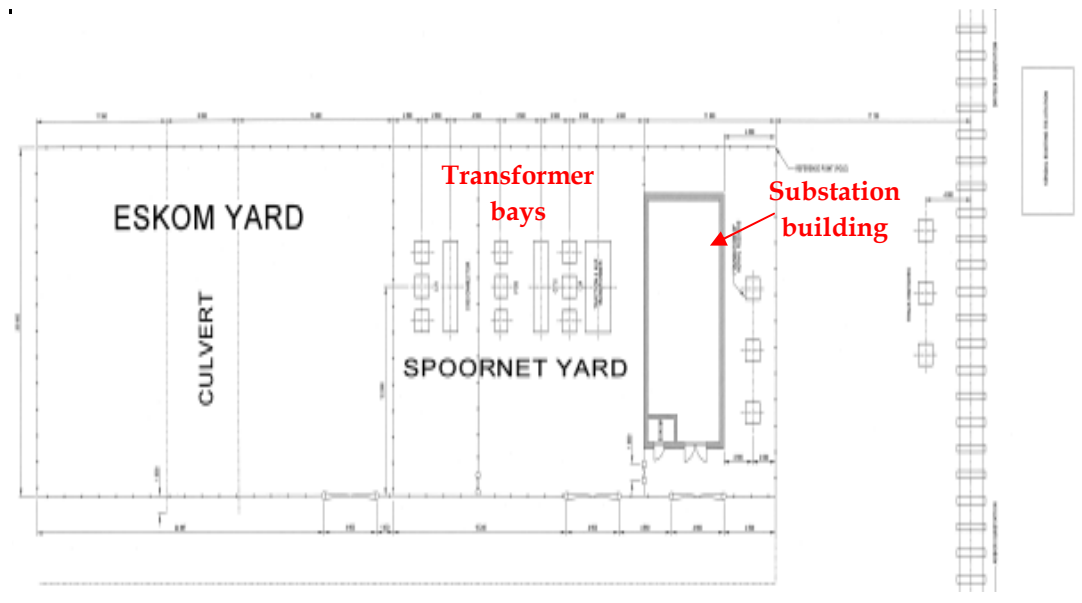
4.7 CONSTRUCTION OF ADDITIONAL INFRASTRUCTURE

4.7.1 *New substation at Emil*

A new 3kV DC Transnet Freight Rail traction substation is proposed at Emil to provide the additional power required to handle more trains between Sishen and Wincanton Substations, on the line linking Hotazel to Kimberley. Emil is located approximately 6.5 km from Kathu and 35 km south of Mamathwane.

An area of approximately 20 m x 43 m (860 m²) is required of which 20 m x 15 m will be allocated to Eskom for the installation of their outdoor equipment and the rest will be used for both indoor and outdoor railway related equipment. *Figure 4.4* below illustrates a typical substation layout.

Figure 4.4 *Typical substation layout*



The Eskom outdoor equipment (see *Figure 4.5*) will consist of isolating equipment and foundations and steelwork. Aerial cables will connect the substation equipment (positioned approximately 50 m from the track) to the overhead track equipment. The supply of Eskom power must still be negotiated but it is assumed that the supply will be a 132 kV 3-phase AC supply.

Figure 4.5 *Eskom outdoor equipment (Sishen Substation)*



The railway related indoor equipment will be housed in a building 7 m x 5 m in size (30 m²) (Figure 4.6). The indoor equipment will include high speed circuit breakers, a reactor coil, batteries and a battery charger, a rectifier, a positive isolator, an earth switch, control panels and protection equipment. The outdoor equipment for the railway will include the main traction transformer, auxiliary transformer, primary circuit breakers, surge arresters, disconnecting switches, foundations and steelwork.

Figure 4.6 *The railway related indoor equipment building (Sishen Substation)*



The Transnet Freight Rail substation will transform the power supplied by Eskom to 3 kV DC for traction purposes.

The 132 kV AC 3-phase supply will be provided via an Eskom distribution line. This line and the associated servitude registration process fall outside of the scope of this project and an approval from DEAT will have to be obtained through a separate EIA process undertaken by Eskom.

4.8 *SITE OFFICES, CONSTRUCTION CAMPS AND LAYDOWN AREAS*

Three site offices will be established between Hotazel and the Port of Ngqura, at Hotazel, Kimberley and Cradock.

Construction camps will be established at each work site. The camps will typically be 50 m X 50 m (2 500 m²) in size and contain a dormitory, a mess with ablution facilities, a tuck shop, fuel tank(s) and a workshop. Fuel will be stored in purpose-built, self-contained tanks. All electricity will be provided

by mobile generators. Electricity will be used for lighting, general household applications and industrial use such as welding and other electrical equipment. It is estimated that approximately 600 kg of non-hazardous domestic/household waste will be generated per week per site at each camp. The construction camps will house the permanent construction staff. The general labour force will not be housed at the camps but will be sourced from surrounding areas.

Laydown areas will be established at every construction site and will typically be 60 m X 50 m (3 000 m²) in size. The laydown area will contain an office, chemical toilets and lock-up facilities for valuables. No fuel or oil will be stored within the laydown area of the construction site.

Special provision will be made in the construction and operation phase EMP to ensure early engagement with local communities at an early stage in order to obtain their input (and buy-in if possible) to the planning and management of the proposed construction camps. Transnet may seek professional advice in this regard so as to maximise appropriate skills development and training, and labour stability.

4.9 PHASING OF LOOP CONSTRUCTION AND CAPACITY INCREASES

The following sections outline the planned timing for loop construction activities and the estimated increases in the tonnages to be transported along the line.

4.9.1 Phasing of loop construction

Construction will begin as soon as possible after approval for the Project has been granted by DEAT and the statutory appeal period has lapsed. Should approval for the Project be granted and no appeals lodged, it is expected that construction will begin at selected loop sites by around October 2009.

At the time of writing this report, the number of loops to be included in Phase 1 has not been finalised. However, all the loops to be constructed for Phase 1 of the project will be chosen from the loops submitted to DEAT as part of the application.

The phasing of loop construction is dependent on the respective demands of both manganese and container traffic. The phasing will be strategically reassessed at regular intervals during the construction and implementation phase of the Project.

4.9.2 Phasing of capacity increases and associated train frequency

The current capacity of the line between Hotazel, the Port of Ngqura and Port Elizabeth for manganese ore is 4.4 mtpa (2 trains/day) and for containers, three trains per day per direction. The proposed project will facilitate the

increase in manganese ore tonnage to approximately 6 mtpa (3 trains/day) in 2009 and thereafter to 8 mtpa (4 trains/day), 10 mtpa (5 trains/day) and 12 mtpa (6 trains/day) at various stages in the future as part of this project. The container trains will increase from the current three trains per day to six trains per day. The number of trains for both the manganese and the container traffic are given as per day per direction.

The number of trains per day depends on demand and no calculation of the maximum capacity of the line in terms of number of trains per day has been made.

4.10 ***JOB CREATION AND SKILLS DEVELOPMENT***

A number of jobs will be created during both the construction and operational phases of the project, with construction activities requiring both skilled and unskilled workers. An estimate of the numbers of jobs that could be generated as well as the type or skill level required is described below. However, these are not confirmed numbers and will also depend on the Principal Contractor appointed by Transnet to construct the new infrastructure.

4.10.1 ***Job creation***

A number of both temporary and permanent jobs will be created through both the construction and operation phase of this project. Skilled, semi-skilled and unskilled labour will be required. Skilled labour will be sourced nationally, including the Eastern and Northern Cape, and semi-skilled and unskilled labour will be sourced locally, where construction and manufacturing will take place.

Construction phase (temporary labour)

Each contract for the construction of between six and nine loops will require an estimated 75 skilled labourers and an estimated 100 unskilled labourers.

Skilled labourers will be required to operate machinery and equipment on site. Skilled artisans and supervisors will also be required. Unskilled workers will be used for manual labour tasks on site.

Operation phase (permanent labour)

The following types of personnel may be recruited for the operational phase of the Project, as the capacity of the line is increased over time: administrators, private secretaries, yard masters, yard officials, yard foreman, sundry workers, section managers, chief shedmen, shed assistants, shedmen, train assistants, train control officers, service drivers, train drivers and general workers.

In addition, both temporary and permanent jobs may be created in the manufacture of wagons and equipment for the railway line.

The private sector and the Coega IDZ, the Metro and the Eastern Cape, as well as the country in general will benefit from the increased capacity of the line. As a result, both the mining and shipping industry, for example, may also generate employment opportunities both locally and regionally.

4.10.2 Skills development

In order to maintain a reliable train service between Hotazel and the Port of Ngqura, training programmes will be developed to ensure that both existing and new employees reach the required skill levels. Prior to recruitment and training, professional guidance will be sought to help identify suitable candidates and training programmes based on a thorough skills analysis. Induction training will be provided to all new employees whether they are contract or permanent staff.

A need for training and skills development in the following areas has been identified with respect to this Project:

- Training in maintenance practices on existing locomotives to improve reliability and allow for possible expansion of the locomotive fleet;
- Training programmes for new locomotives based on the manufacturer's specifications;
- Training in wagon maintenance crews to accommodate changes in wagon designs;
- Training in the use of modern electronic monitoring equipment and data processing to improve maintenance practices; and
- Training in train operating plans to ensure reliable and sustainable operations.

4.11 ALTERNATIVES

The consideration of alternatives is a legal requirement, as stipulated in the EIA Regulations, R385 of April 2006. Alternatives are defined as a 'different means of meeting the general purpose and requirements of the activity, which may include alternatives to: (a) the property on which or location where it is proposed to undertake the activity; (b) the type of activity to be undertaken; (c) the design or layout of the activity; (d) the technology to be used in the activity; and (e) the operational aspects of the activity ⁽¹⁾.'

(1)'activity' means an activity identified in (a) Government Notice No. R. 386 and R.387 of 2000 as a listed activity; or (b) in any other notice published by the Minister or MEC in terms of section 240 of the Act as a listed activity or specified activity;

The different types of alternatives that may be relevant to the Project are discussed in the following sections, including the no-go or do-nothing alternative, i.e. maintenance of the status quo.

4.11.1 *Location and site alternatives*

The location of the loop sites is driven primarily by technical factors and is restricted to the existing route of the railway line. Various train scheduling diagram's were prepared by the railway engineers so that scenarios could be considered for where new or extended loops were needed to allow for the increased capacity in tonnage on the line over time. The overall strategy with planning the loop upgrades was to achieve overall stability in the regional rail network.

The selection of the yards that form part of this Project and the substation site is also directly linked to the overall expansion of the rail network.

Tables 4.6 to 4.9 indicate the rationale for the location and relative direction of the proposed loops, the changes to the yards and the location of the substation.

New Loops

Table 4.6 *Rationale for selection of New Loops*

Loop name	Direction (with respect to the Port of Ngqura and Hotazel)	Rationale for direction/location of new loop
Eastern Cape		
Tootabi	Not applicable	Loop location dictated by optimized train running times.
Klipfontein	Towards Hotazel	Loop to be extended in the direction of Hotazel to avoid costly alterations to a road-over-rail bridge in the direction of the Port of Ngqura.
Glenheath	Towards the Port of Ngqura	Loop to be extended in the direction of the Port of Ngqura to minimise the crossing time (scheduling issue) and to take advantage of better train handling on the Port of Ngqura side.
Northern Cape		
Hanover Road	Towards the Port of Ngqura	Loop to be extended in the direction of the Port of Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.

Extended Loops

Loops shorter than 1 200 m were identified. Those that were too technically difficult (and thus too expensive to extend) or that posed environment risks were identified and excluded from further investigation.

The remaining loop site alternatives were then again subjected to the various traffic demand scenarios. Train turn around times, their sensitivity to various delays and train handling requirements were then analysed. Safety considerations are paramount as scheduling conflicts could result in train collisions. The minimum number of loops, that satisfied the relevant criteria, were then selected for the EIA.

According to the project railway engineers, R&H Railway Consultants, the following alternative sites were considered during the planning phase of the loops.

The direction of the extension, at existing crossing loops, was dictated by the conditions at each site. For at least two proposed sites – Witmos and Drenan - plans for an upgrade or expansion were scrapped due to the costs of constructing a grade separation bridge at a major road level crossing at the one site and the need for a road deviation at the other. Both would have required land to be expropriated. Further details about the Witmos and Drenan options are provided below:

- At Witmos, plans were abandoned in favour of a loop upgrade at Klipfontein. The location of Witmos was such that it would require major engineering intervention, including deviating the line, building bridges and diverting canals as well as expropriating land at the loop. These factors did not make this site feasible.
- At Drenan, the proposed loop extension was constrained by a bridge on the one side and a tunnel on the other. This option was scrapped due to engineering implications and cost.

Table 4.7 *Rationale for Selection of Existing Loops to be Lengthened*

Loop name	Direction (with respect to the Port of Ngqura and Hotazel)	Rationale for direction of lengthening
Eastern Cape		
Barkly Bridge	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to a bridge over the Sundays River in direction of the Port of Ngqura.
Addo	Towards Hotazel	Loop to be lengthened in the direction of the Port of Ngqura to avoid altering the branch line to Kirkwood in direction of Hotazel.
Coerney	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly earthworks required to widen a deep cutting in direction of the Port of Ngqura.

Loop name	Direction (with respect to the Port of Ngqura and Hotazel)	Rationale for direction of lengthening
Verby	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura due to steep gradient ¹ in the approach direction from Hotazel.
Eagle's Crag	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a bridge over the Boesmans River in the direction of the Port of Ngqura.
Blinkhoff	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a bridge over a small River in the direction of Hotazel.
Saltaire	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to the approach to a tunnel in the direction of the Port of Ngqura. The current main line will become the loop and a new main line will be built alongside to avoid extensive earthworks involved in having to cut deep into a hill adjacent to the line.
Kommadagga	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to the approach to a tunnel in the direction of the Port of Ngqura.
Golden Valley	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to a level crossing in the direction of the Port of Ngqura.
Mortimer	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to a bridge over a small River in direction of the Port of Ngqura. Furthermore, the section towards Hotazel is on the straight which will improve train handling and safety.
Halesowen	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura at request of train operations in Kimberley to ease train handling on the up grade section of the line under loaded conditions.
Marlow	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura at request of Marlow Agricultural High School (following the public participation process) to avoid two level crossings linking the school with its adjoining agricultural operations on the other side of the railway line. Cost was also a significant issue.
Kaptein	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a level crossing in the direction of Hotazel.
Knutsford	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid the earthworks cost of a deep cutting in the

(1) ¹ Gradient is a problem from a train handling perspective. If the gradient is too steep the train could break apart when pulling away or the wheels could lose traction and damage the rail.

Loop name	Direction (with respect to the Port of Ngqura and Hotazel)	Rationale for direction of lengthening
		direction of the Port of Ngqura. In addition, train handling, visibility and thus safety is improved by avoiding the steeper gradient and increased curvature on the Port of Ngqura side of the loop site.
Visrivier	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to a level crossing and a bridge over the Fish River in the direction of the Port of Ngqura.
Conway	Towards Hotazel	Loop to be lengthened in the direction of Hotazel to avoid costly alterations to a level crossing on the R401 and a bridge over the Fish River in the direction of the Port of Ngqura.
Tafelberg	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.
Rosmead	Towards Hotazel	Loop to be lengthened in the direction of Hotazel due to high cost of installing new signalling on the Port of Ngqura side of Rosmead.
Flonker	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly earthworks required to construct the loop in the direction of Hotazel.
Carlton	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.
Northern Cape		
Barredeel	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura due to increase efficiency with respect to crossing time and thus improved throughput (point-to-point running time).
Wildfontein	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura due to safety considerations with respect to the steep gradient on the Hotazel side of the station.
Linde	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura. There are no real limitations in lengthening the loop in the direction of Hotazel. However, current selection is better for throughput (point-to-point running time).
Burgervilleweg	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.
Bletterman	Towards the Port of Ngqura	Loop to be lengthened in the direction of the Port of Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.
Bletterman	Towards the Port of	Loop to be lengthened in the direction of the Port of

Loop name	Direction (with respect to the Port of Ngqura and Hotazel)	Rationale for direction of lengthening
	Ngqura	Ngqura to avoid costly alterations to a road-over-rail bridge in the direction of Hotazel.

Yard Changes

The current yard infrastructure along the railway line from Hotazel to the Port of Ngqura is sufficient to deal with the increased rail traffic. However, some yards require moderate upgrades to improve their functionality. Hence, no yard selection process was undertaken as was the case with the loops. *Table 4.8* simply indicates the rationale for the changes to each yard.

Table 4.8 *Rationale for Proposed Changes at the Yards*

Yard Name	Brief description	Rationale for changes
Northern Cape		
Hotazel Yard	Yard to be remodelled.	Yard to be remodelled to handle 104/105 wagon trains. Current layout of the yard dictates the location of the changes planned.
Mamathwane Yard	Mamathwane yard to be extended in the direction of the Port of Ngqura and the signal station.	Yard to be extended in the direction of the Port of Ngqura to improve train operations (including train handling and throughput) and upgrade signalling to facilitate a link to a private siding serving a mining client.
Posmasburg Yard	Access to wagon repairs section to be electrified and a lean-to ⁽⁶⁾ to be added to the workshop.	Electrification will allow locomotives to operate independently and limit the need for shunting.
Beaconsfield Yard	An additional staging yard to be constructed at the Electric Running Shed (ERS) ⁽⁷⁾ .	The additional staging is a requirement for current operations.
	Cross-overs to be added in the yard and electrified	The additional cross-overs will reduce the time of getting locomotives to and from the ERS/workshop.
Ronaldsvlei	Two block joints to be installed on the DC lines.	The block joints will improve the signalling and train safety.
	A crossing loop to be added	The crossing loop will facilitate more capacity for change over from DC to AC for locomotive exchanges.

(6) Shed with a sloping roof and three walls that abut the wall of another structure (<http://en.wikipedia.org/wiki/Lean-to>).

(7) Workshop to repair electric locomotives.

New Substation

An explanation for the siting of the proposed substation at Emil is provided in Table 4.9.

Table 4.9 *Rationale for the Selection of the Substation Site*

Substation Name	Rationale	Alternatives
Northern Cape		
Emil Substation	Due to the increase in the volume of manganese transported, the frequency of trains will increase. Simulation results indicate that the voltage at the locomotives with two trains in the section between Sishen and Wincanton substations will fall below the acceptable levels to run the service.	1. Do not build a new substation. If the new substation is not built, this will result in trains not being able to run on schedule due power limitations. 2. Build a new substation at another location. The position of the site for the new substation was determined through a computer simulation. No other feasible options were generated. 3. Run diesel locomotives. This has implications for cost, train efficiency and the environment.

4.11.2 *Design alternatives*

Alternative designs were investigated with respect to the loops considered. The proposed loop extensions were designed such that no new bridges were required and only limited earthworks and relocation of existing roads and level crossings would be required.

The following design alternatives were considered:

- The port of Saldanha and the Port of Ngqura (near Port Elizabeth) were investigated as alternative ports of export to the existing port at Port Elizabeth. At the time of writing of this report the port of Ngqura was considered the best option based on economic considerations. However, this selection is subject to change in response to changes in the global economy.
- The alternative to relocate the entire railway line from Sishen to De Aar, bypassing Kimberley, was also investigated and found to be unfeasible due to cost and environmental implications and risks.
- A new second railway line was considered for the entire length of the line. However, this option was rejected due to cost, environmental risks as well as significant geographic constraints such as deep or narrow valleys and numerous river crossings.

4.11.3 *Demand alternatives*

Demand is driven by the international and local markets. As such the latest forecasted demand data was evaluated. This was done for an increase in demand for manganese ore from the current two trains per day to six trains per day and the containers originating at Ngqura from zero to three trains per

day per direction (6 slots) (plus the 3 container trains currently originating in Port Elizabeth) and various combinations thereof. Following this evaluation, various scenarios for capacity increases over time were developed. These are subject to change as markets change.

The current demand requires nine new/upgraded loops (as outlined in *Section 4.9.1*). The combination of loops was chosen such that minimal additional loops would be required as capacity demands increase.

4.11.4 *Activity alternatives*

Activity alternatives relate to providing alternative ways of achieving the same objectives. In this Project, the objective is to increase the volume of containers and commodities transported. An activity alternative would, therefore, relate to transportation of these goods by road, rather than rail. Assessing the potential for road transport would need to involve other role players and government and would require considerable input and investigation, owing to the large geographic scale of the study area and the volumes of goods that need to be transported. There are a number of advantages and disadvantages to road transport which include the following:

- Advantages - include opportunities for small entrepreneurs / road transport contractors to benefit from the associated employment and economic opportunities
- Disadvantages - include the impact on the public in terms of road infrastructure maintenance, vehicle congestion, vehicle emissions and road safety; accessibility and extent of major road networks; and the cost of transport by road.

4.11.5 *Process alternatives*

Process alternatives are dictated by various aspects including but not limited to the operating conditions, throughput needs and design requirements and/or restrictions. The most optimal solution is found by limiting the extent of infrastructure and rolling stock investments required. This is achieved by optimizing the processes i.e. streamlining activities and using an optimal train length of 104 wagons.

Shorter trains would result in increased train frequency and fleet size, with the latter carrying a significant capital cost. An increase in train frequency would require additional train slots in the overall schedule. The schedule would then slowly get more and more congested which would require additional loops to be extended or built to alleviate the problem. This construction would carry a cost burden and potential environmental and social risks.

4.11.6 *Material alternatives*

Due to the specialised nature of the material required for a project of this nature there are limited opportunities for considering material alternatives.

Material requirements are dictated by axle loads and design requirements so as to safely operate a railway service of this nature.

4.11.7 *Phasing alternatives*

Various phasing alternatives were investigated namely 6, 8, 10 and 12 mtpa of manganese ore and three additional container trains (along this rail corridor). The output from the analysis carried out by the railway engineers showed that different loop combinations are required between Port Elizabeth and De Aar depending on the throughput tonnage required. The major driver in infrastructure requirements is the throughput tonnage required which is dependent on international and local demand for manganese ore. Increasing the number of phases results in increased costs as more loops are constructed in total to achieve the same throughput. Thus the decision was taken to opt for the scenario that is based on the latest information available to Transnet and the Manganese Industry – this would be the most cost effective solution.

4.11.8 *The no-go alternative*

Should the proposed loops, yards, traction substation and associated infrastructure not be constructed or upgraded then an increase in container and commodity capacity on the railway line between the Port of Ngqura and Hotazel will not be possible. This would have serious implications for South Africa's mining and container handling sectors and would affect our export capabilities. This suggests direct negative consequences for the provincial and national economy. Local effects would be related to a lack of stimulation in terms of employment and opportunities for small and medium enterprises, which would benefit from the proposed development. The implementation of this component of the project may commence prior to the required authorisation from DEAT with respect to the rest of the project outlined above.

5.1 INTRODUCTION

This section provides a description of the baseline biophysical and socio-economic characteristics of the Project area which traverses the Northern and Eastern Cape provinces. The study area largely follows the existing railway line from Hotazel to the Port of Ngqura and Port Elizabeth, 1 100 km to the south east.

5.2 BIOPHYSICAL ENVIRONMENT

5.2.1 Climate

The climate varies over the entire length of the existing railway line from the dry and arid Northern Cape to the wetter coastal regions of the Eastern Cape.

The climate of the eastern part of the Northern Cape Province, which includes the towns of Hotazel, Postmasburg, Kimberley and De Aar, is typically characterised by summer rainfall of approximately 400 mm per annum, high summer temperatures, with extreme temperatures exceeding 40 °C, and cold and clear winters with temperatures below 0 °C at night (Mucina, & Rutherford, 2006).

The climate of the central and western part of the Eastern Cape Province, through which the exiting railway line runs, varies according to the distance from the Indian Ocean. Coastal regions are typically characterised by mild, temperate conditions with average temperatures of between 14 °C and 23 °C, while inland areas experience slightly more extreme conditions with average temperatures of between 5 °C and 35 °C. Rainfall is scarce throughout the western part of the province with rainfall typically occurring at the coast in winter and inland during summer (Mucina, & Rutherford, 2006).

Local climatic conditions at the development sites could determine the scale and affect of project activities on the environment, for example, the amounts of dust generated (especially in dry, water scarce areas) by additional train traffic and the extent of erosion and surface run-off (for e.g. in wetter coastal areas) due to construction activities.

5.2.2 Topography

The topography of the project area is largely dominated by the semi arid Karoo basin in the Northern Cape and much of the Eastern Cape, as well as the sub-escarpment and coastal areas of the Eastern Cape. The terrain through which the existing railway line runs is, therefore, predominantly quite flat, with exception of those sections of the line that traverse the Cape Fold mountains and the escarpment north of Patterson and south of Cradock.

The topography of the landscape could play a role in determining how many people/communities are able to see or hear the proposed activities.

5.2.3

Geology

Given the length of the line, the geology has been roughly divided into regions with similar morphology. These are listed below and based on the Geology Map of South Africa and the Kingdoms of Lesotho and Swaziland (Keyser, 1997):

- The section of line between Hotazel and Sishen is located entirely on geology of the Kalahari Group which is comprised of Aeolian sands and limestone;
- From the Sishen to Harts River the railway line is primarily underlain by geology of the Transvaal Supergroup, although there is a small section of Quaternary geology of the Kalahari Group immediately east of Posmasburg. The Transvaal Supergroup rocks are comprised of dolomite, limestones, cherts, jaspilite and andesites, whilst the Kalahari Group geology is comprised of Aeolian sands and limestone;
- The portion of the line from Harts River to Barkly West is underlain by geology of the Ventersdorp Supergroup, which is comprised of basalts and andesites;
- From Barkly West to De Aar the geology is made up of the Ecca Group shales;
- From De Aar to Kommadagga the line is primarily underlain by geology of the Beaufort Group with doleritic intrusions. This geology is comprised of mudstones and sandstones;
- Between Kommadagga and Paterson, where the line crosses the Suurberg mountain range, the project area is underlain by sedimentary rocks (quartzite and shales) from the Cape Supergroup; and
- Between Paterson and Port Elizabeth, the geology is comprised mainly of mudstones and limestones of the Algoa and Uitenhage groups.

Based on the fact that a structurally sound existing railway line is already in place, the upgrade of the current line is not expected to cause instability to, or impact negatively on local geology. The abovementioned strata should provide sufficient foundation for the proposed activity if construction is undertaken in accordance with a detailed geotechnical investigation.

5.2.4

Surface and Groundwater

The existing railway line, along which the proposed upgrades, refurbishments and developments will occur, runs in a southerly direction from Hotazel

towards Postmasburg, crossing a number of tributaries of the Ga-mogara River before heading in an easterly direction, crossing the Klein Riet, Steenbok, Harts and Vaal Rivers, before arriving in Kimberley. From Kimberley, the railway line runs south south west, crossing the Riet River, the Orange River and the Hondeblafspruit, en-route to De Aar, before crossing the provincial border between the Northern and Eastern Cape near Carlton. From there, the line runs in a south easterly direction towards Cradock before following the Noupoortspruit, the Groot and Klein Brak, Great Fish, Boesmans and Sundays Rivers in a generally southerly direction to the Port of Nqgura and Port Elizabeth.

River systems encountered along the route (where the railway either crosses or is located within 500 m of a river system) are largely classified by the National Spatial Biodiversity Assessment (NSBA), compiled by the South African National Biodiversity Institute (SANBI), as endangered and critically endangered⁽⁸⁾ with the exception of the Ga-mogara, Hondeblafspruit, Groot Brak and Noupoortspruit, all of which are classified as not threatened (see *Figure 5.2* and *Figure 5.3*). According to the NSBA, "*critically endangered ecosystems have lost so much of their original natural habitat that ecosystem functioning has broken down and species associated with the ecosystem have been lost or are likely to be lost.*" Therefore, any remaining natural habitat must be protected and conserved to ensure that species associated with these systems are not threatened further.

Figure 5.1 shows the Critically Endangered Boesmans River at the proposed Tootabi loop.

(8) Critically endangered river heterogeneity signatures have an intact length below their conservation target (in this case 10% of their total length).

Figure 5.1 *Railway line running adjacent to the critically endangered Boesmans River system near Tootabi, Eastern Cape.*



In terms of groundwater, the Aquifer Classification Map of South Africa (1998) classifies the groundwater vulnerability⁽⁹⁾ along the current railway line between Hotazel, the Port of Ngqura and Port Elizabeth as low to moderate between Hotazel and Barredeel and then generally low thereafter as the railway line enters the Eastern Cape en-route to Port Elizabeth.

A similar pattern is evident with regard to groundwater sensitivity⁽¹⁰⁾ (see *Figure 5.4* and *Figure 5.5*), which is generally low between Hotazel and Kimberley, increasing to high between Bletterman and Barredeel. Thereafter, it is predominantly low with the exception of Barkly Bridge which is classified as moderate to high in terms of groundwater sensitivity.

The groundwater beneath the railway line is of variable quality, although for most of the Karoo and Kalahari, the towns are dependant on groundwater for domestic use. The groundwater in these areas is, therefore, sensitive to potential contamination.

(9) Vulnerability is a measure of the potential for a release from the site actually impacting the receptor, i.e. is there a pathway from the site to the receptor.

(10) Sensitivity is the measure of the degree of impact a release from the facility may have on a receptor. The sensitivity is related to the quality and use or potential use.

Figure 5.2 River ecological status: Hotazel to De Aar

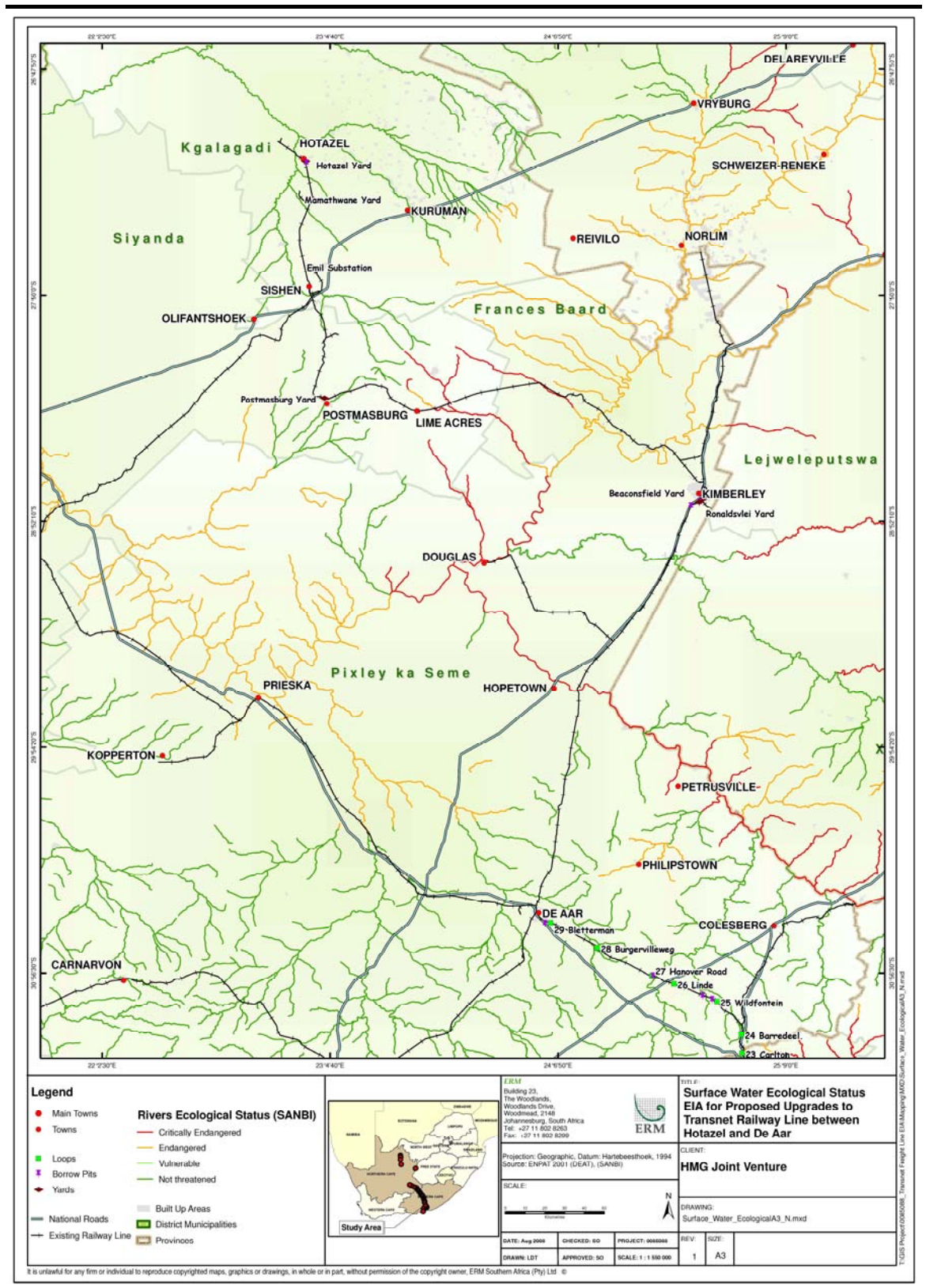


Figure 5.3 River ecological status: De Aar to Port Elizabeth

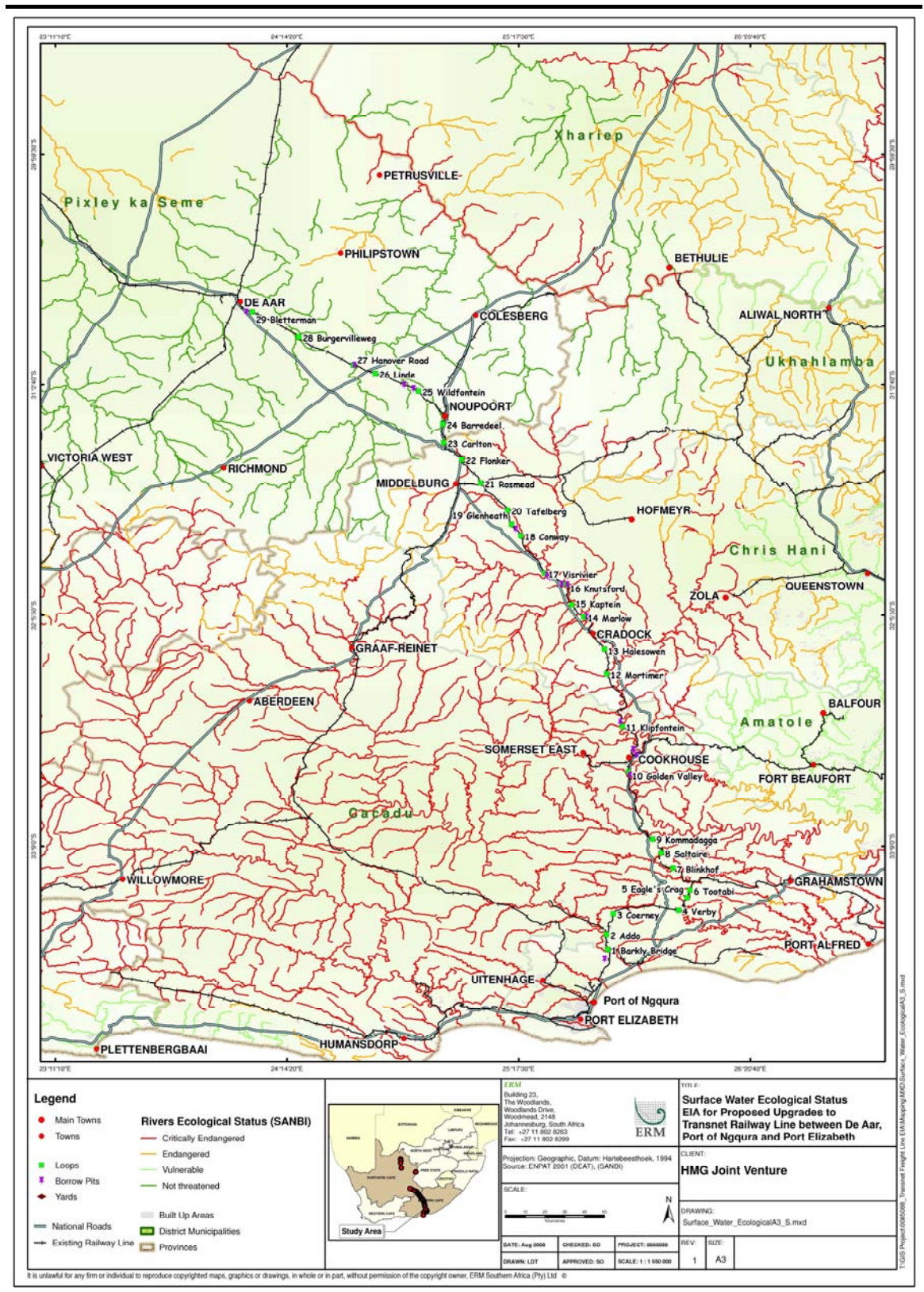


Figure 5.4 Groundwater sensitivity: Hotazel to De Aar

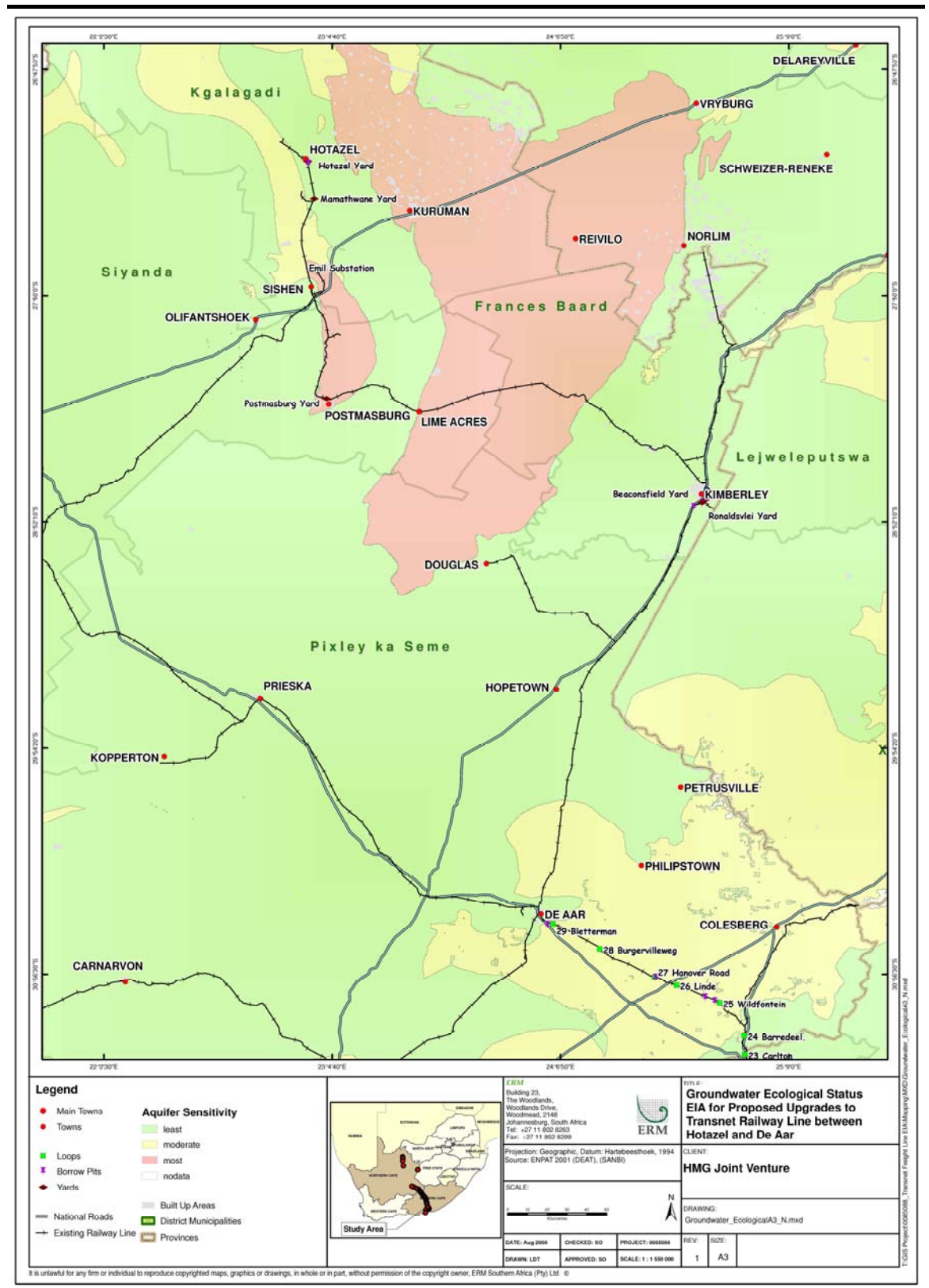
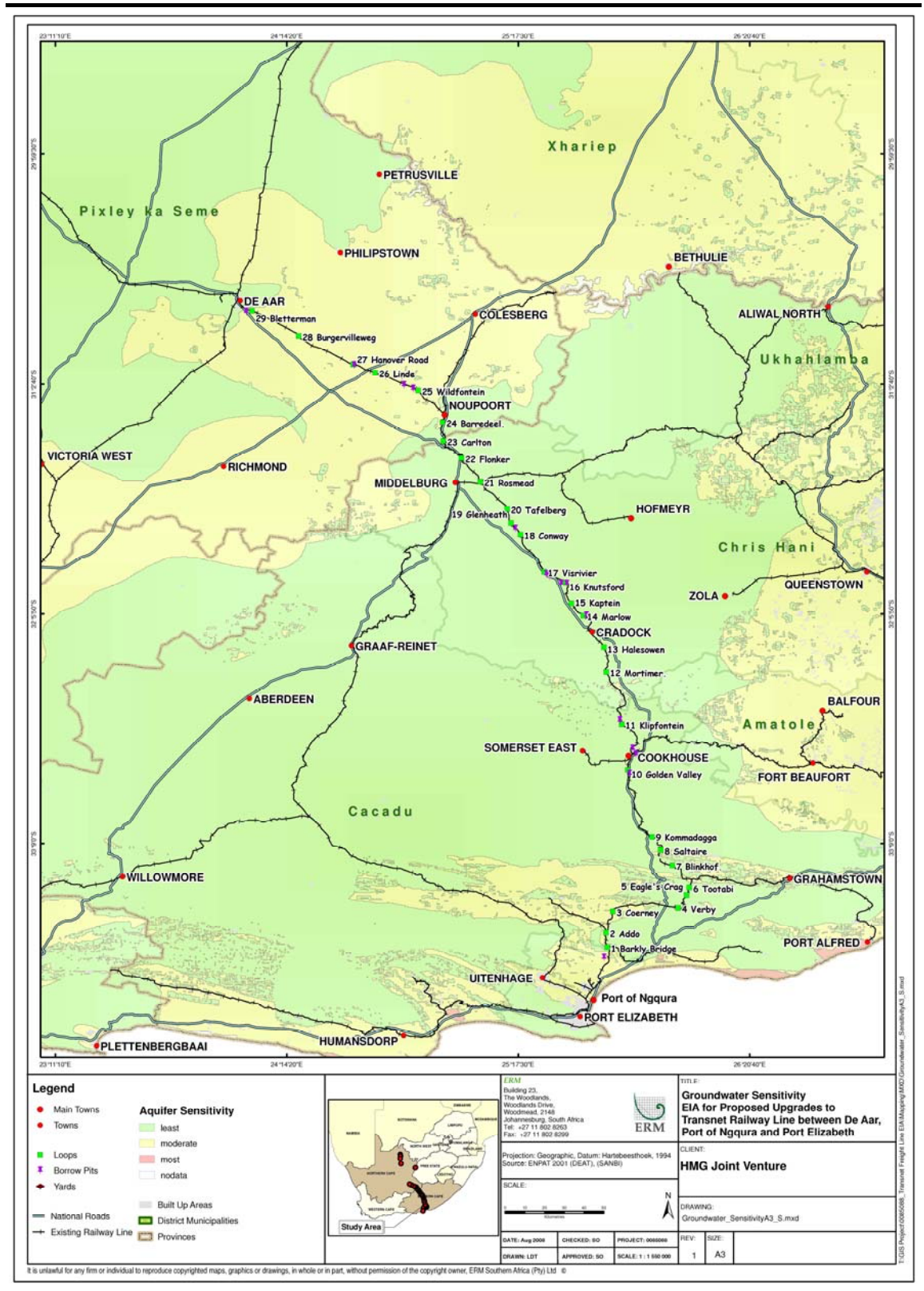


Figure 5.5 Groundwater sensitivity: De Aar to Port Elizabeth



Flora

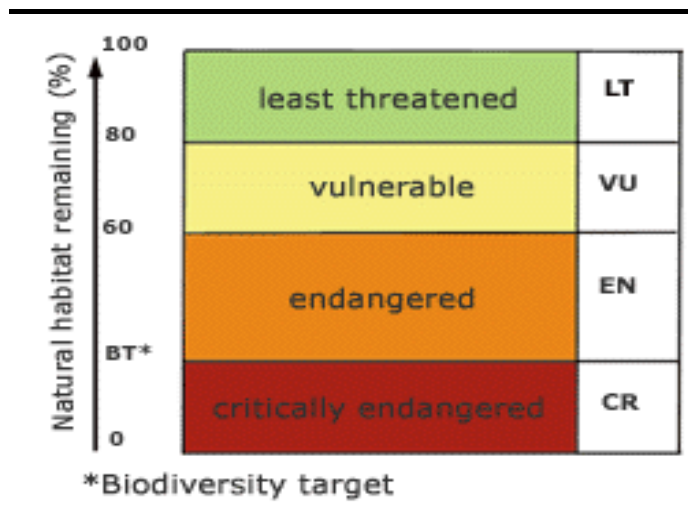
The topography along the current railway line is characterised by the escarpment and Karoo basin in the north and Cape Fold Mountains in the south. As such, the vegetation in the north is characterised by species that constitute the Savannah, Nama Karoo and Grassland Biome species. As the railway line approaches the edge escarpment, moving into the sub escarpment region, the vegetation is dominated by Albany thicket Biome species and those associated with the Fynbos and Azonal Biome (Mucina and Rutherford, 2006).

The project area falls within 13 different vegetation types, based on Mucina and Rutherford (2006). From north to south of the project area, this includes, Kathu Bushveld, Kuruman Thornveld, Kimberley Thornveld, Northern Upper Karoo, Tarkastad Montane Shrubland, Eastern Upper Karoo, Southern Karoo River, Great Fish Thicket, Albany Alluvial Vegetation, Albany Broken Veld, Kowie Thicket, Sundays Thicket and Coega Bonteveld.

Of the 13 vegetation types identified within the study area, 12 are classified as least threatened and one is classified as endangered by the NSBA. The ecological status {Least Threatened (LT), Vulnerable (VU), Endangered (EN) and Critically Endangered (CR)} is based on how much of a given vegetation type's original area remains intact, relative to the four basic thresholds calculated on the basis of the best available science (see *Figure 5.6*) (Driver *et al*, 2005).

Note that the threshold beyond which an ecosystem becomes critically endangered varies from 16% to 36%, depending on the ecosystem. Basically, the more species-rich the ecosystem is, the higher the threshold value will be. This threshold is also known as the biodiversity target. It represents the proportion of each ecosystem one would ideally like to see included in a formal protected area.

Figure 5.6 National Spatial Biodiversity Assessment (NSBA) thresholds and criteria (Driver, A. et al, 2005)



The Albany Alluvial vegetation (Figure 5.7) is the only vegetation type on a national level that is considered threatened and has an ecological status of Endangered. The Addo loop site falls within this vegetation type.

Figure 5.7 Albany alluvial vegetation



The target for conservation is 31%. Currently only about 8% is conserved ⁽¹¹⁾, 6% statutorily conserved in the Greater Addo Elephant National Park, the

(11) Mucina and Rutherford (2004)

Baviaanskloof Wilderness Area, the Loerie Dam, the Swartkops Valley, the Yellowwoods Nature Reserves and the Double Drift Reserve Complex; and about 2% is protected in eight private conservation areas.

The ecological status at a national level for each of the vegetation types relevant to the study area are listed in *Table 5.1* below.

Table 5.1 *Vegetation types and their NSBA ecological status within the project area*

Vegetation Type	Ecological Status	Sites where Vegetation is found within the Study Area
Kathu Bushveld	Least threatened	Hotazel yard Mamathwane yard Emil substation
Kuruman Thornveld	Least threatened	Posmasburg yard
Kimberley Thornveld	Least threatened	Ronaldsvlei yard (Kimberley) Beaconsfield yard (Kimberley)
Northern Upper Karoo	Least threatened	Burgervilleweg Bletterman: Borrow pit near Bletterman
Tarkastad Montane Shrubland	Least threatened	Marlow Borrow pit near Knutsford
Eastern Upper Karoo	Least threatened	Halesowen Kaptein Knutsford; Borrow pits near Knutsford. Visrivier; Borrow pit near Visrivier Conway; Borrow pit near Conway Glenheath Tafelberg Rosmead Carlton Barredeel. Wildfontein Borrow pit near Wildfontein Linde Hanover Road; Borrow pit near Hanover Road
Southern Karoo River	Least threatened	Klipfontein; Borrow pit near Klipfontein Mortimer; Borrow pit near Marlow
Great Fish Thicket	Least threatened	Borrow pit near Cookhouse
Albany Alluvial Vegetation	Endangered	Addo
Albany Broken Veld	Least threatened	Blinkhof Saltaire Kommadagga Golden Valley; Borrow pit near Golden Valley
Kowie Thicket	Least threatened	Verby

Vegetation Type	Ecological Status	Sites where Vegetation is found within the Study Area
		Eagles Crag Tooabi
Sundays Thicket	Least threatened	Barkley Bridge Coerney
Coega Bonteveld	Least threatened	Borrow pit near Barkley Bridge

At a provincial or municipal level, the Subtropical Thicket Ecosystem Planning (STEP) programme, based only in the Eastern Cape, has identified a number of vulnerable habitats. These vegetation types listed in *Table 5.2* cover much of their original extent but further disturbance or destruction could harm their health or functioning. Consequently, these ecosystems can withstand only limited loss of natural area through disturbance or development.

Table 5.2 *Vegetation types and their STEP ecological status within the project area*

Vegetation Type	Ecological Status	Sites where vegetation is found within the Study Area
Fish Spekboom Thicket	Vulnerable	Borrow pit near Cookhouse
Sundays Doring Veld	Vulnerable	Addo
Sundays Spekboom Thicket	Vulnerable	Barkly Bridge Coerney

In addition to the national and provincial picture with respect to the ecological status of vegetation within the study area, the specialist baseline ecological study identified a number of protected, endemic, IUCN rated 'near threatened' ⁽¹²⁾ and conservation worthy species at a number sites

The ecological sensitivity of any piece of land is based on its inherent ecosystem service and overall preservation of biodiversity. Although national standards and priorities are taken into account, site specific ratings (based on fieldwork and observation) may differ from national ratings. For example:

- A vegetation type with a national listing of "Least Concerned" can still include habitats that support protected species or ecosystems with high connectivity (these species or ecosystems cannot simply be ignored because of the listing of the vegetation type they occur in). When considering biodiversity at the species level, protected species and species of conservation concern need to be taken into consideration; and
- Likewise, a vegetation type that is listed as "Threatened" can also have disturbed areas. Taking into consideration the limited impact of the

(12) Near-Threatened - is a conservation status assigned to species or lower taxa that may be considered threatened with extinction in the near future, although it does not currently qualify for the threatened status.

proposed project upgrades in an area that is already disturbed, the ecological sensitivity of the vegetation can only be rated as medium, rather than high.

Table 5.3 highlights the sites of medium and high ecological importance with respect to vegetation and plant species identified in the specialist ecology study (Volume 2 of the Final EIR). According to the study, high, medium and low ecological importance is defined as follows:

- **High ecological importance** – Sensitive ecosystems with either low inherent resistance or low resilience towards disturbance factors or highly dynamic systems considered being important for the maintenance of ecosystem integrity. Most of these systems represent ecosystems with high connectivity with other important ecological systems OR with high species diversity and usually provide suitable habitat for a number of threatened or rare species. These areas should be protected.
- **Medium ecological importance** – These are slightly modified systems which occur along gradients of disturbances of low-medium intensity with some degree of connectivity with other ecological systems OR ecosystems with intermediate levels of species diversity but may include potential ephemeral habitat for threatened species.
- **Low ecological importance** – Degraded and highly disturbed/transformed systems with little ecological function and are generally very poor in species diversity (most species are usually exotic or weeds).

Table 5.3 Sites of medium and high ecological importance (vegetation)

Site Name	Ecological importance (as determined by the specialist ecologist)	Plant species identified on site (by specialist ecologist)	Rationale for ecological importance rating
Barkley Bridge borrow pit	High (with conservation worthy plant species; Red Data species)	<i>Sideroxylon inerme</i> – DWAF protected ² <i>Ficinia truncata</i> - BIT <i>Rhombophyllum rhomboideum</i> – En, NT , PP <i>Euphorbia meloformis</i> subsp. <i>valida</i> – Rare, NT , PP Mesembryanthemaceae (<i>Carpobrotus edulis</i> , <i>Delosperma rogersii</i> , <i>Mesembryanthemum aitonis</i> , <i>Ruschia hamata</i> , <i>Ruschia sp.</i> <i>Trichodiadema bulbosum</i> , <i>Drosanthemum sp.</i>) – PP <i>Haworthia attenuata</i> – PP <i>Aloe humilis</i> – PP <i>Pachypodium bispinosum</i> – PP <i>Carpobrotus edulis</i> – Med	1. Due to numerous protected species under various legislations, the presence of a Near Threatened species, a valued medicinal plant species and high diversity. 2. The nature of the activity, i.e. the destruction of vegetation resulting from the use of the borrow pit.

Site Name	Ecological importance (as determined by the specialist ecologist)	Plant species identified on site (by specialist ecologist)	Rationale for ecological importance rating
Marlow borrow pit	High	Amaryllidaceae (<i>Haemanthus humilis</i> , <i>Cyrtanthus contractus</i>) – PP <i>Haworthia bolusii</i> var. <i>blackbeardiana</i> – PP <i>Trichodiadema pomeridianum</i> & <i>Ruschia spinosa</i> – PP	1. Due to numerous protected species and high diversity. 2. The nature of the activity, i.e. the destruction of vegetation resulting from the use of the borrow pit.
Conway borrow pit	High (with conservation worthy plant species; high densities of protected plant species)	<i>Ruschia spinosa</i> – PP <i>Aloe broomii</i> – PP <i>Stomatium</i> (?) sp. – PP	1. Due to numerous protected species and high diversity. 2. The nature of the activity, i.e. the destruction of vegetation resulting from the use of the borrow pit.
Addo	Medium	<i>Malephora</i> sp. – PP	Due to the presence of a protected species and that the site falls within a protected habitat. However, only a Medium rating was giving because of the existing disturbance on site and the limited disturbance expected from construction activities (i.e. working within the railway reserve primarily, apart from the laydown area, and therefore only the vegetation within the reserve is expected to be disturbed/destroyed).
Eagles Crag	Medium (with conservation worthy plant species; high densities of protected plant species)	<i>Aloe speciosa</i> , <i>A. tenuior</i> – PP Mesembryanthemaceae (<i>Delosperma echinatum</i> , <i>Ruschia putterillii</i> , <i>R. uncinata</i> , <i>Lampranthus productus</i>) – PP Amaryllidaceae (<i>Brunsvigia</i> nr. <i>striata</i> , <i>Nerine</i> cf. <i>flexuosa</i>) – PP <i>Pachypodium succulentum</i> – PP <i>Hypoxis</i> cf. <i>iridifolia</i> – Med	Due to the presence of numerous protected species and a valued medicinal species. Only a Medium rating was giving because of the natural of the activity (i.e. construction activities can be limited to existing disturbed areas and the railway reserve).
Blinkhof	Medium		This site does not have any taxa of conservation interest. However, there is a high erosion potential, which is a concern. A Medium rating was given because of the potential for erosion to impact on the connectivity of adjacent ecosystems.

Site Name	Ecological importance (as determined by the specialist ecologist)	Plant species identified on site (by specialist ecologist)	Rationale for ecological importance rating
Golden Valley borrow pit	Medium	Possible occurrence of <i>Cyrtanthus smithiae</i> – PP, NT	1. Possible occurrence of a protected species / Near Threatened species. 2. The nature of the activity, i.e. the destruction of vegetation resulting from the use of the borrow pit. However, the diversity in the area was low, therefore, if it wasn't for the possible PP/NT species it would have been rated Low.
Cookhouse borrow pit	Medium (with conservation worthy plant species; Red Data species)	<i>Cyrtanthus smithiae</i> – PP, NT <i>Aloe tenuior</i> – PP <i>Stapelia grandiflora var. grandiflora</i> - PP	Only a few Protected species and low diversity (i.e. without the PP species the rating would have been Low).
Mortimer	Medium	Presence of a wetland-associated plant composition	The presence of the wetland-associated plant composition may indicate a wetland. Due to wetlands being protected a Medium rating was given.
Knutsford borrow pit	Medium (with conservation worthy plant species; high densities of protected plant species)	Mesembryanthemaceae (<i>Ruschia spinosa</i> , <i>Delosperma multiflora</i> , <i>Drosanthemum hispidum</i> , <i>Malephora sp.</i> , <i>Ruschia cradockensis subsp. cradockensis</i> , <i>Trichodiadema sp.</i>)- PP <i>Pachypodium succulentum</i> – PP	Only a few Protected species and low diversity (i.e. without the PP species the rating would have been Low).
Flonker	Medium	Medium due to close proximity to “climax” Tarkastad Montane Shrubland	‘A climax community is a biological community of plants and animals which, through the process of ecological succession, has reached a steady state.’ Due to the close proximity there could possible be an impact on this vegetation type (i.e. impact on the connectivity of ecosystems).

Site Name	Ecological importance (as determined by the specialist ecologist)	Plant species identified on site (by specialist ecologist)	Rationale for ecological importance rating
Carlton	Medium	Site in close proximity to "climax" Besemkaree Koppies Shrubland	'A climax community is a biological community of plants and animals which, through the process of ecological succession, has reached a steady state.' Due to the close proximity there could possibly be an impact on this vegetation type (i.e. impact on the connectivity of ecosystems).
Hanover Road borrow pit	Medium (with conservation worthy plant species; high densities of protected plant species)	<i>Ruschia spinosa</i> , <i>Titanopsis</i> sp. - PP	Only a few Protected species and low diversity (i.e. without the PP species the rating would have been Low).

Key to column 3 (plant species identified on site):

(d) - dominant taxa

BIT - Biogeographically important taxon reaching the eastern limit of its distribution

En - Endemic to Coega Bontveld

NT - Near-threatened (according to IUCN listing criteria)

PP - Protected plant as promulgated by Schedule 4 of the Cape Nature and Environmental Conservation Ordinance, No. 19 of 1974

Med - Valued medicinal plant

Invaders and weed species are plants that invade natural or semi-natural habitats; especially areas disturbed by humans and are commonly known as environmental weeds. Weeds that invade severely disturbed areas are known as ruderal ⁽¹³⁾ and agrestal ⁽¹⁴⁾ weeds. Most of these weeds are annuals colonising waste sites and cultivated fields. These weeds only persist on recently disturbed areas and seldom invade established areas (Henderson, 2001). Declared weeds and invaders have the tendency to dominate or replace the canopy or herbaceous layer of natural ecosystems, thereby transforming the structure, composition and function of natural ecosystems.

The amended Regulations (Regulation 15) of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) identify three categories of problem plants, namely:

- Category 1 plants may not occur on any land other than a biological control reserve and must be controlled or eradicated. Therefore, no person shall establish, plant, maintain, propagate or sell/import any category 1 plant species.

(13) Ruderal species is a plant species that is first to colonise disturbed lands.

(14) Growing wild in cultivated areas.

- Category 2 plants are plants with commercial application and may only be cultivated in demarcated areas (such as biological control reserves) otherwise they must be controlled.
- Category 3 plants are ornamentally used plants and may no longer be planted, except those species already in existence at the time of the commencement of the regulations (30 March 2001), unless they occur within 30 m of a 1:50 year floodline and must be prevented from spreading.

Localised, albeit patchy invasions commonly occur along the railway servitude. *Table 5.4* list the weed and invader species that were recorded in the project area during the ecology specialist study.

Table 5.4 *List of weed and invader taxa recorded within the project area*

Species	Common Name	Type	Control Measure
<i>Agave americana</i>	American agave	Invader	Eradicate
<i>Argemone ochroleuca</i>	Mexican poppy	Weed	Difficult to eradicate
<i>Atriplex lindleyi</i>	Australian saltbush	Invader	Control
<i>Cirsium vulgare</i>	Scotch thistle	Weed	Difficult to eradicate
<i>Eucalyptus camaldulensis</i>	Red river gum	Invader	Control
<i>Nicotiana glauca</i>	Wild tobacco	Weed	Eradicate
<i>Opuntia ficus-indica</i>	Sweet Prickly-pear	Weed	Eradicate
<i>Opuntia humifusa</i>	Creeping prickly pear	Weed	Eradicate
<i>Opuntia imbricata</i>	Imbricate prickly pear	Weed	Eradicate
<i>Pennisetum setaceum</i>	Fountain grass	Weed	Eradicate
<i>Pinus spp.</i>	Pines	Invader	Control
<i>Prosopis glandulosa</i>	Mesquite	Invader	Eradicate

A more detailed description of vegetation in the study area can be found in the terrestrial ecology specialist report in *Volume 2* of the Final EIR.

Fauna

Based on a Quarter Degree Square (QDS)⁽¹⁵⁾ survey of the project area, a number of avifauna and mammal species were identified. Amongst those identified, 34 Red Data listed bird species were recorded of which 19 are listed as Not Threatened (NT) and 15 as Vulnerable (VU).

Thirty nine Red Data listed mammal species were also recorded within the Study area. Of the 39 species recorded, 13 are listed as Data Deficient (DD), 7 are Not Threatened (NT), 11 are Protected Species (PS), 4 are Vulnerable (VU), 3 are Endangered (EN) and 1 is listed as Critical (CR). Some of these mammals only occur within protected areas (i.e. Nature Reserves, Private Game Reserves, etc.), for example, Black Rhinoceros (*Diceros bicornis*), listed as CR, and the Oribi (*Ourebia ourebi*), listed as EN.

(15) Quarter Degree Squares (QDS) correspond to the area shown on a 1:50 000 map and are approximately 27 km long (north-south) and 23 km wide (east-west)

A number of heptofaunal species were also identified in the QDS analysis, many of which are endemic, restricted or rare in occurrence such as the Plain Mountain Adder, Albany Adder, Cape Mountain Lizard, Common Mountain Lizard, Namaqua Plated Lizard, FitzSimons' Longtailed Seps, Short-legged Seps, Common Longtailed Seps, Cape Grass Lizard Elandsberg Dwarf Chameleon, Peringuey's Coastal Leaf-toed Gecko, Essex's Dwarf Leaf-toed Gecko and the Giant Bullfrog.

A number of protected macro invertebrates may also occur within the project area. These include Creeping Scorpions *Opistacanthus asper / validus*, Burrowing Scorpions *Opisthophthalmus glabrifrons*, Horned Baboon Spiders *Ceratogyrus spp.*, Common Baboon Spiders *Harpactira spp.*, Golden Baboon Spiders *Previously Pterinochilus spp.*, Coega Copper Butterfly *Aloeides clark* and the Wineland Blue Butterfly *Lepidochrysops bacchus*.

A full list of species is located in the ecology specialist report in Volume 2 of the Final EIR.

5.2.6 Biodiversity Conservation Areas

A number of protected areas are situated in relatively close proximity to the existing railway line between Hotazel, the Port of Ngqura and Port Elizabeth. Two protected or conservation worthy areas, namely, the Addo Elephant National Park and the Shamwari Game Reserve, have a boundary which is approximately less than 1 km from a loop development site, i.e. Coerney and Eagles Crag plus Tootabi respectively. The Frontiers Safari Game Farm is located approximately 1 km from the proposed loop development at Blinkhoff.

Table 5.5 summarises the protected areas in the vicinity of the proposed project sites.

Table 5.5 Protected areas in the vicinity of the proposed project sites

Station/yard name	Approximate distance to protected area (km)	Name of protected area	Direction (from loop/yard)
Barkly Bridge	2.8, 7	Addo Elephant NP, Tregathlyn Game Reserve	E
Coerney	0.02, 2.3	Addo Elephant NP	E, N
Eagle's Crag	0.4, 0.7	Shamwari Game Reserve	SE, E
	11	Addo Elephant NP	NW
Tootabi	0.4, 0.7	Shamwari Game Reserve	SE, E
	11	Addo Elephant NP	NW
Blinkhoff	1-1.5	Frontiers Safari Game Farm	E
Saltaire	10	Frontiers Safari Game Farm	SE
Kommadagga	12-13	E. Cape Game Farm	NE
Golden Valley	16,19,26,28	Glen Avon Falls Kloof, Bosberg Nature Reserve, Oudekraal Game Farm, East Cape Game Farm	NW, NW, NW, SE
Klipfontein	12	Oudekraal Game Farm	W

Station/yard name	Approximate distance to protected area (km)	Name of protected area	Direction (from loop/yard)
Mortimer	20, 23	Mountain Zebra NP, Oudekraal Game Farm	NW, SW
Halsowen	16	Mountain Zebra NP	W
Cradock	6.9	Mountain Zebra NP	W
Marlow	8.4	Mountain Zebra NP	W
Knutsford	16.8	Mountain Zebra NP	SW
Visrivier	21	Mountain Zebra NP	S
Conway	-	-	-
Glenheath	-	-	-
Tafelberg	-	-	-
Rosmead	-	-	-
Flonker	-	-	-
Carlton	-	-	-
Barredeel	-	-	-
Noupoort	-	-	-
Wildfontein	-	-	-
Linde	-	-	-
Hanover Road	-	-	-
Burgervilleweg	-	-	-
Bletterman	-	-	-
De Aar (yard)	-	-	-
Kimberley (yard)	30-35km	Vaalbos NP	NW
Postmasburg (yard)	-	-	-
Mamathwane	-	-	-
Hotazel (yard)	-	-	-

5.3

SOCIO-ECONOMIC ENVIRONMENT

The type of socio-economic information reported on includes economic data, employment statistics, income and poverty levels as well as data on social infrastructure and services. This *Section* is structured such that it first reports on socio-economic data at the provincial level and then at the district level. A section on land use, ownership and land claims is also included.

The Transnet railway line which is to be upgraded traverses an extensive and diverse geographic area that varies considerably in terms of social and economic conditions. Much of the project area is rural, interspersed with urban pockets. It also contains one metropolitan municipality. The line traverses a total of six district municipalities, thirteen local municipalities and twenty towns. These are listed in *Table 5.6*.

The municipalities traversed by the railway line vary substantially in terms of their size, financial resources, administrative capabilities, access to social services and economic activities, as well as demographic composition.

Table 5.6 *Provinces, Municipalities and Towns affected by the Transnet Freight Line*

Province	Metropolitan and District Municipalities	Local Municipalities	Towns
Northern Cape	Kgalagadi District Municipality	Gamagara	Kathu (Sishen)
			Mamathwane
		Ga-segonyana	Hotazel
	Siyanda District Municipality	Kgatelopele	Limeacres
		Tsantsabane	Postmasburg
			Beeshoek
		Lohathla	
	Frances Baard District Municipality	Sol Plaatje	Kimberley
		Dikgatlong	Ulco
	Pixley Ka-Seme District Municipality	Umsobomvu	Noupoort
Emthanjeni		Hanover	
		De Aar	
	Siyancuma	Belmont	
Eastern Cape	Chris Hani District Municipality	Inxuba Yethemba	Craddock
			Rosmead
			Middelburg
	Cacadu District Municipality	Sundays River Valley	Addo
		Makana	Alicedale
		Blue Crane Route	Cookhouse
	Nelson Mandela Metropolitan Municipality	N/A	Port Elizabeth (and Coega)

The following *Section* sketches the socio-economic profile of the project area at a provincial and district municipality level. The section covers, *inter alia*, population levels, distribution and densities as well as ethnicity and language. It also reports on employment, poverty level as well as social infrastructure and services. The information is presented as per the geographic areas through which the railway line passes, namely:

- The Northern Cape and its district municipalities (see *Table 5.6*); and
- The Eastern Cape and its district municipalities (see *Table 5.6*).

Please note that racial categories used in this section, namely Black, White, Indian and Coloured, follow those used by Government.

5.3.1 *Provincial Level*

Northern Cape

The vast and arid Northern Cape is South Africa’s largest province, with a total area of 372,889 km², nearly a third of the country’s land area. The province is home to just four percent of the country’s population resulting in an extremely low population density of three people/km² (Department of Economic Development, 2007).

Despite the rural nature of the area, 70 percent of households are in urban areas which include small towns and secondary cities (Pauw, 2005b). Kimberley is the largest urban area and Upington is the second largest. The Northern Cape has a young population with 58 percent of the population

younger than 30 years. The gender split in the Northern Cape is fairly even with 51 percent females and 49 percent males (Department of Human and Social Development, 2008). Over the past five years, there has been a trend of migration out of the province, whereby people in the 20 – 24 year age group are leaving the province in order to move to the Western Cape, North West, Gauteng and the Free State (Department of Economic Development, 2007).

In the Northern Cape, about 68 percent of the population speak Afrikaans, with other languages being Setswana, isiXhosa and English. The province has a rich San cultural heritage, with the San people living in the Kalahari area.

The Northern Cape lies to the south of the Orange River, which feeds the agriculture and alluvial diamond industries. The Northern Cape Province is the smallest contributor to the national economy, contributing only two percent to the Gross National Product. This contribution should, however, be seen in the context of it comprising a total of four percent of the country's population. In terms of income per capita, the province ranks third after Gauteng and the Western Cape (Pauw, 2005b). The 2007 estimate of the national growth rate is five percent (CIA, 2008). The Northern Cape has the lowest economic growth rate among South Africa's provinces at 3.1 percent (SAIRR, 2008).

The province is constrained by climatic extremes, limited water resources and the vast land mass that must be covered to effect efficient service delivery. These challenges influence the development of the socio-economic environment (Department of Economic Development, 2007).

The province is under-developed with an economy that relies heavily on primary production in the mining and agriculture sectors (Department of Economic Development, 2007). The provincial economy's dependence on the primary sector makes it vulnerable to factors like the strength of the rand and climatic conditions such as drought. Mining is the largest contributor to the regional gross domestic product; however, agriculture is the largest sector in terms of employment (Department of Economic Development, 2007).

The province is affected by high poverty rates (45 percent in 2001), inequalities in the distribution between race groups and high unemployment (Pauw, 2005b). The unemployment rate of 26 percent is higher than the national rate of 23 percent (Stats SA, 2007b). The dependency on social grants for the Northern Cape (14.8 percent) is marginally higher than the national average of 14 percent. Dependence on social grants has increased from 9.7 percent in 2002 to 14.8 percent in 2007 (Stats SA, 2007a). The labour dependence for the Northern Cape is 1.6 which is below the national of 1.9 (Health Systems Trust, www.hst.org.za). The labour dependence is defined as the number of people supported by every member of the labour force (age 15 – 55) excluding him or herself.

With respect to health, the biggest challenges are malnutrition, foetal alcohol syndrome, tuberculosis, chronic diseases such as hypertension, and HIV/

Aids. The HIV prevalence rate is 18.5 percent in the province (Department of Economic Development, 2007). The mortality profile of the Northern Cape shows that 51 percent of deaths are attributed to non-communicable diseases, particularly cardio vascular disease. Twenty-three percent of deaths are attributed to communicable diseases and malnutrition, 14 percent to HIV/Aids and 11 percent to injuries. The prevalence of HIV is higher in women than men, with the number of female deaths at 16 percent compared to 14 percent in males. The percentage of deaths as a result of injuries is more than double in the case of males as compared to females (Bradshaw *et. al.*, 2004).

More than 90 percent of the population have access to piped water albeit within a proximity of 200 m of their homes. Approximately 30 percent of the population depend on ground water resources of variable quality (Portfolio Committee on Water Affairs and Forestry, 2005). According to the census 2001 data, the sanitation backlogs in the Northern Cape are most significant in the Kgalagadi and Frances Baard District Municipalities. Nearly 41 percent of the province's population do not have access to flushing toilets (Department of Economic Development, 2007).

Eastern Cape

The Eastern Cape Province has a total land area of 168,966 km², which represents approximately 14 percent of South Africa's land area, making it South Africa's second-largest province after the Northern Cape. There are approximately 6.9 million people living in the province, constituting nearly 15 percent of the country's total population. Outside of the major cities, the Eastern Cape is largely rural and agricultural in nature with an approximate population density of 41 people/ km².

The Eastern Cape has a female dominated population where 54 percent are female and 46 percent are male. An average of 39 percent of the population is younger than 15 years which is an indication of young dependency.

The province is dominated by the Black population group (87.5 percent) followed by Coloured (7 percent) (Department of Social Development, 2008). The majority of the people in the Eastern Cape Province speak isiXhosa (81 percent), followed by Afrikaans and English.

Even though the Eastern Cape is the hub of South Africa's motor industry and has extensive areas of fertile land, it remains one of the country's poorer provinces. The Eastern Cape comprises 14 percent of the national population, and contributes approximately eight percent to South Africa's national economy. In the most recent period, its economy has grown at a rate of 5 percent (South African Institute of Race Relations, 2008). The new port development at Coega (the Port of Ngqura) is expected to contribute significantly to the local and provincial economy (<http://www.southafrica.info/about/geography/eastern-cape.htm>).

The sector contribution to the Gross Geographic Product (GGP) is as follows:

- Agriculture (7 percent);
- Mining (0.05 percent);
- Manufacturing (21 percent);
- Electricity (2 percent);
- Construction (3 percent);
- Finance (14 percent)
- Trade (14 percent);
- Community services (31 percent); and
- Transport (9 percent).

(http://www.socdev.ecprov.gov.za/statistics/key_performance_indicators/_pdf/labour_market_indicators/gross_geographic_product.pdf).

The Eastern Cape is one of the poorest provinces in South Africa. The biggest employer is the public/ government ⁽¹⁶⁾ sector which employs 26 percent of the workforce. The unemployment rate is 55 percent and the percentage of the population living below the poverty line is 67 percent (Department of Social Development, 2008). The Eastern Cape Department of Social Development reports that only 18 percent of the workforce is employed in the formal sector. According to the General Household Survey, the Eastern Cape is the province with the highest dependence on social grants (19 percent). The rate of growth in social grant dependency is also the highest of all provinces, increasing from 5.5 percent in 2002 to 19.1 percent in 2007 (Stats SA, 2007a). The Eastern Cape also has the second highest labour dependency ⁽¹⁷⁾ (3.7 people) after the Limpopo Province (4.8 people) compared to the national average of 1.9 people (*Health System Trust*, <http://www.hst.org.za/healthstats/22/data>).

As in the case of the Northern Cape, cardio vascular disease is the primary non-communicable disease. The prevalence of HIV in the Eastern Cape is 29 percent, which is the same as the national average (Department of Health, 2007). HIV/ Aids is the main cause of death in the province. The mortality profile of the Eastern Cape shows that 43 percent of deaths are attributed to non-communicable deaths. Twenty percent of deaths are HIV/ Aids related, with more women (23 percent) dying of HIV/ Aids than men (17 percent) ⁽¹⁸⁾. Deaths caused by communicable diseases are also higher than the Northern Cape at 27 percent (Bradshaw *et. al.*, 2004).

Only 62 percent of households have access to piped water in the Eastern Cape and 31 percent of households do not have access to toilets (Department of Social Development, 2008).

(16) The public/ government sector forms part of the community service sector above.

(17) Labour dependency is defined as the number of people supported by every member of the labour force excluding him/ herself.

(18) The percentage of female and male deaths provided is a percentage of deaths of all female and male deaths.

Kgalagadi District Municipality

The Kgalagadi District Municipality is located in the Northern Cape Province and borders Botswana. Before March 2006 the area was a cross-border municipal area which straddled the Northern Cape and North West provinces. Following the re-demarcation of the provincial borders, the entire Kgalagadi municipal area is now located in the Northern Cape Province.

The District Municipality consists of three local municipalities, namely the Ga-Segonyana, Gamagara, and Moshaweng Municipalities. The Transnet Railway Line will traverse the Gamagara and Ga-Segonyana local municipalities.

There are a total of 176,909 people living in the District Municipality, which is approximately 23,612km² in size, equating to a population density of approximately seven people/ km². The population is young with 66 percent being below the age of 30 years and only five percent being over the age of 65 years. Females represent 53 percent of the population.

In the Kgalagadi District Municipality, the majority of the population are Black (88 percent), with the next largest race group being Coloured (7 percent). Setswana is the first language of 84 percent of the population.

The affected area is sparsely populated and consists mainly of commercial farms and mining activities (Atkins & Marais, 2007). The District Municipality contributes 24 percent to the provincial gross domestic product (MEC for Finance and Economic Affairs, 2006). Key economic sectors in order of prominence are mining, social services, agriculture, trade/ tourism, manufacturing and construction. Despite mining being the most important economic sector it only employs two percent of the local population (Atkins & Marais, 2007).

The majority of people living in the Kgalagadi District Municipality (76 percent) have no income at all, with 16 percent earning between R400 and R800 per month (Stats SA, 2001). There is a high dependence on income earners in the District Municipality, as over 75 percent of the population are either unemployed or not economically active (Atkins & Marais, 2007).

Water and sanitation services in the Kgalagadi District Municipality are inadequate. Regarding access to water, 78 percent of households have a supply of water within 200m of their homes. A total of 14 percent of the households have water in their home or yard, while 36 percent of the

(19) A district municipality is a category c municipality envisaged in section 155(1) (c) of the Constitution of South Africa. In the constitution it is defined as a local authority that has municipal executive and legislative authority in an area that has more than one municipality (RSA Constitution, 1996).

households access water at a local school (Portfolio Committee on Water Affairs and Forestry, 2005).

Only 20 percent of households have flush toilets, 37 percent of the households make use of pit latrines without ventilation, while 22 percent of households do not have access to sanitation facilities (Portfolio Committee on Water Affairs and Forestry, 2005).

Refuse removal services of the Kgalagadi District Municipality are not available to the majority of households (67 percent), who make use of informal refuse dumps.

In the Kgalagadi District Municipality, HIV/ Aids is one of the major problems as is the high level of alcohol abuse.

Siyanda District Municipality

The Siyanda District Municipality covers an area of more than 100,000km² (almost 30 percent of the entire province) of which 65,000km² comprises the vast Kalahari Desert, Kgalagadi Trans-frontier Park and the former Bushman Land. The area is populated by roughly 200,000 people, giving it a population density of about 1.7 people/km² (Pauw, 2005a). There are more females (52 percent) in the District Municipality than males. As with the other District Municipalities, the population is young, with nearly 60 percent being below the age of 30 years and five percent over the age of 65 years (Stats SA, 2001).

The District Municipality comprises six local municipalities, namely Mier, Kai Garieb, Khara Hais, Tsantsabane, Kheis and Kgatelopele. Of these, the Transnet Railway Line traverses Kgatelopele and Tsantsabane. Upington is the district municipal capital and the seat of the municipal government.

The racial breakdown of the Siyanda District Municipality reflects that of the province. A total of 64 percent of the population are classified as Coloured, 24 percent are Black and the remaining 12 percent are White and Indian/ Asian. Afrikaans is the first language of 82 percent of the population followed by Setswana (14 percent).

The area is characterised by extensive livestock farming in the arid areas, as well as intensive irrigation farming along the Orange River. The area aims to become a major exporter of grapes and raisins. Diamonds, iron, lime and salt are mined in the eastern parts of the District Municipality and are major contributors to the District Municipality's economy. Tourism is also a growing sector due to the various national parks located within the District Municipality (Atkins & Marais, 2007).

The Siyanda District Municipality contributes approximately 13 percent to the provincial gross domestic product. Agriculture is the highest contributor to the primary sector (MEC for Finance and Economic Affairs, 2006).

In the Siyanda District Municipality, there is a high dependence on the economically active population, given that 55 percent of the population are either unemployed or not economically active. The majority of the population do not earn any income and 27 percent earn a monthly personal income of between R0 –R800 (Stats SA, 2001).

In the District Municipality the greatest social problems are illiteracy and poverty. The number of households living in poverty is 40.5 percent; this is below the provincial average of 42 percent (Atkins & Marais, 2007).

The largest employment sector in Siyanda District Municipality is agriculture (42 percent) ⁽²⁰⁾ followed by the community and social services sector (13 percent). The construction and mining sector include relatively small work forces of 3.6 percent and 3.3 percent workers respectively (Atkins & Marais, 2007). There is a trend of inward migration of seasonal workers from the North West province, who work on irrigation farms along the Orange River. As a result the Black population has increased from 44,600 in 1996 to 51,300 in 2001 (Atkins & Marais, 2007).

Electricity is the most common energy source used by 61 percent of households, followed by wood which is used by 28 percent of households. A total of 90 percent of households in the towns and settlements of the Siyanda District Municipality have access to a supply of water (Atkins & Marais, 2007). Only 40 percent of the population have access to piped water in their homes or on their plots, while 31 percent of households access water at the local school. A total of 2,539 households that are located on farms, however, are without access to water.

A total of four percent of households in towns and settlements within the Siyanda District Municipality are without sanitation facilities and by 2010 it is expected that another 4,328 households will be established that require services. Another three percent of households on farms are without basic sanitation, with a further 1,302 households being expected to be established by 2010 that would require services which will exacerbate the sanitation provision backlog (Atkins & Marais, 2007).

Frances Baard District Municipality

The Frances Baard District Municipality has a total area of approximately 12,384 km² and accounts for three percent of the total geographic area of the Northern Cape Province, making it the smallest District Municipality in the province.

The District Municipality consists of four local municipalities, namely Sol Plaatje, Magareng, Dikgatlong, Phokwane and a District Management Area

(20) The percentages relating to employment relates to the portion of the population that is employed and not the population of the district

(DMA). The Transnet Railway Line will traverse Sol Plaatje and Dikgatlong local municipalities.

The District Municipality has a population of about 324,800 people (Stats SA, 2001) which is about 40 percent of the provincial population, giving it the highest population density in the province of 26 people/km² (Frances Baard District Municipality 2005/06 IDP). About 62 percent of the population of the Frances Baard District Municipality live in the Sol Plaatje local municipality, which is highly urbanised. More than half of the District Municipality's population are female (52 percent). Approximately 56 percent of the population are below the age of 30 years, making it a young population. Only five percent are over the age of 65 years.

Unlike other District Municipalities in the province, the population of the Frances Baard District Municipality is dominated by Black people (61 percent), 27 percent are Coloured and 12 percent are White. Setswana is the dominant home language closely followed by Afrikaans. IsiXhosa followed by English are the next two most common home languages ⁽²¹⁾ (Municipal Demarcation Board, 2006).

The Frances Baard District Municipality is isolated from the national spatial economy due to poor transport linkages. The key economic activities in the District Municipality are agriculture and mining. Mining is the highest contributor to the primary sector in Frances Baard District Municipality (MEC for Finance and Economic Affairs, 2006). The District Municipality contributes approximately 41 percent to the provincial gross domestic product. Sol Plaatje municipality is the economic engine of Frances Baard District Municipality as it contributes about 75 percent of the economic activities of the District Municipality.

The Frances Baard District Municipality suffers from high levels of unemployment (41 percent) and low wages for those who are employed. It is estimated that about 81 percent of those who are employed earn less than R3,200 per month (Stats SA, 2001).

About 78 percent of the Frances Baard District Municipality population use electricity as their main source of domestic energy, while 17 percent use candles and four percent use paraffin for lighting purposes.

Water and sanitation provision in the Frances Baard District Municipality is good with the majority of households having access to these facilities. According to the 2005 census 85 percent had access to water and 90 percent access to adequate sanitation (Portfolio Committee on Water Affairs and Forestry, 2005).

(21) The Municipal Demarcation Board reports figures based on 2001 Census data and reports figures in actual number as opposed to percentages. The figures are Setswana (142,248), Afrikaans (138,513), isiXhosa (17,007) and English (16,102).

The population of the Frances Baard District Municipality suffers from low levels of education. It is estimated that about 42 percent of those aged 20 years and above have had no schooling or have only completed primary school, while only 25 percent have attained grade ten or above. This existing poor education standard has given rise to high levels of unskilled labour in the labour market.

Pixley Ka-Seme District Municipality

The Pixley Ka-Seme District Municipality is predominantly rural in character with a total population of 164,603 people, equating to 16 percent of the provincial population. The District Municipality is sparsely populated, with a population density of 1.6 people/km². There are approximately 41,135 households with an average of four people per house. The total population decreased from 176,283 in 1996 to 164,620 in 2001 largely as a result of migration out of the District Municipality in search of employment opportunities (Atkins & Marais, 2005). There are more women (53 percent) than men in the District Municipality. The population is young with approximately 58 percent of the population being below the age of 30 years and 6 percent over the age of 65 years.

The District Municipality consists of nine local municipalities of which the Transnet railway line will traverse, namely the Umsobomvu, Emthanjeni and Siyancuma Local Municipalities.

As with the majority of District Municipalities in the Northern Cape, the majority of the population in the Pixley Ka-Seme District Municipality are classified as Coloured (62 percent), 27 percent are Black and 10 percent are White. The majority (78 percent) of the population speak Afrikaans as a first language (Stats SA, 2001).

The Pixley Ka-Seme District Municipality contributes only 10 percent to the total gross geographic product of the Northern Cape Province and is currently the poorest of the five municipal districts in the province. The key economic sectors in order of prominence are agriculture, community services, trade/tourism, construction and private households. The towns primarily function as agricultural service centres. The District Municipality is the largest wool producing area in the country and has a long history of sheep farming. There is a growing trend towards game farming, resulting in further job losses in the agricultural sector (Atkins & Marais, 2007).

Unemployment in the Pixley Ka-Seme District Municipality is 37 percent, the highest in the Northern Cape Province. In 2001, 42 percent of households in the Pixley Ka-Seme District Municipality were living below the poverty line (Atkins & Marais, 2007). Poverty levels are said to have worsened after the scaling down of railway transportation and freight utilisation by government and the private sector (Mme Dipuo Peters, 2006). De Aar is an example of a town that has suffered as a result of the decline in rail transport with widespread unemployment. According to the Pixley Ka Seme District Growth

and Development Strategy the revitalisation of De Aar as a railway hub is being considered as a new economic initiative (Atkins & Marais, 2007).

More than 75 percent of households in the Pixley Ka-Seme District Municipality have access to electricity. This high average is not experienced evenly throughout the District Municipality. There has been an increase in the use of electricity as an energy source and a decrease in the use of paraffin, gas and candles.

The level of water service provision throughout the Pixley Ka-Seme District Municipality is high, with 97 percent of all households in the District Municipality having access to water services. Sanitation service provision is poor, with only 57 percent of the District Municipality's households having adequate sanitation services. The shortfall in sanitation services in this District Municipality alone accounts for nearly 31 percent of the provincial backlog.

In terms of housing, 83 percent of the Pixley Ka-Seme District Municipality live in formal housing, 11 percent in informal housing and only 2 percent in traditional housing (Pixley Ka-Seme reviewed IDP, 2005). More than 70 percent of households in the Pixley Ka-Seme District Municipality receive refuse removal services.

5.3.3 *District Municipality Level - Eastern Cape*

Chris Hani District Municipality

The Chris Hani District Municipality is in the heart of the Eastern Cape, a linking node to all the regions in the Province. It is largely rural and has pockets of urban zones. It comprises eight local municipalities and also includes the Mountain Zebra National Park. The Transnet Railway Line will traverse the Inxuba Local Municipality.

There are approximately 798,597 people living in the Chris Hani District Municipality in 203,041 households (Stats SA, 2008). The land area is 36,963 km², making for a population density of 22 people/km². Approximately 71 percent of the population reside in rural areas. The population is relatively young with 54 percent of the population under the age of 20 years. More than half of the population is female (54 percent). The population of the Chris Hani District Municipality is predominantly Black (94 percent) and 93 percent isiXhosa-speaking.

The Chris Hani District Municipality contributes 0.4 percent towards the national gross domestic product. Key economic sectors in the District Municipality are agriculture, community services, construction and trade. The transport sector achieved a growth rate of 4.3 percent between 1996 and 2005.

The population of economically active age (15-65 years) comprise approximately 54 percent of the population. Unemployment in the District

Municipality is 60 percent, which is higher than the provincial level. The Chris Hani District Municipality's average per capita income (R10,220 per annum/R852 per month) falls below the average for the province. The District Municipality has the second highest dependence on social welfare grants. The level and depth of poverty in the District Municipality is considerable, with 77 percent of the population being adjudged to be living in poverty (European Consultants Organisation, date unknown).

It is estimated that currently 73 percent of the total population of the Chris Hani District Municipality has access to water services, whilst only 55 percent receive sanitation services.

The number of clinics in the Chris Hani District Municipality provides for a ratio which is higher than the national norm of one clinic per 10,000 people ⁽²²⁾. Access to health professionals is below the provincial average.

Education levels are low throughout the Chris Hani District Municipality with 30 percent of the population having had no schooling, despite the number of education professionals being higher than the provincial average (Atkins & Marais, 2007). The majority of Chris Hani residents are functionally illiterate. This results in a high number of uneducated people entering the workforce thereby increasing the size of the unskilled labour market.

Cacadu District Municipality

The Cacadu District Municipality is the largest of the six district municipalities in the Eastern Cape Province with a land area of 58,243 km². A relatively large part of the District Municipality consists of national parks, namely the Addo National Elephant Park and the Tsitsikamma National Park. The Cacadu District Municipality is predominantly rural in nature and is characterised by small, scattered towns and settlements. Despite its rural nature, it is the most urbanised District Municipality in the province with 67 percent of people living in urban areas. The District Municipality consists of nine local municipalities, of which the Transnet Railway Line traverses the Makana, Sundays River Valley and Blue Crane Route municipalities.

The Cacadu District Municipality includes less than five percent of the population of the Eastern Cape Province (Stats SA, 2001). The total population is 388,206 and the population density equates to nearly seven people/ km². The average number of people per household is four.

In the Cacadu District Municipality, the Black population is the dominant race group (52 percent) followed by the Coloured population (35 percent). The language spoken as a first language in the District Municipality follows the pattern for race groups in the District Municipality with isiXhosa being the first language of the majority of the population, followed by Afrikaans and a

(22) The quality of these clinics is not presented in the secondary data sources.

minority of the population speaking English as a first language ⁽²³⁾ (Municipal Demarcation Board, 2006).

Agriculture is one of the key drivers of the economy in the Cacadu District Municipality as it contributes nearly 40 percent of the Eastern Cape's agricultural output (Atkins & Marais, 2007). It has an export based economy largely tied to agriculture. Farm output is transported to Port Elizabeth for processing and/or export. There has been some diversification of farming into tourism activities through, for example, game farming and hunting. The rate of economic growth between 1996 and 2002 was 2.4 percent, second only in the province to the Nelson Mandela Metropolitan Municipality (3.7 percent) (Atkins & Marais, 2007).

The largest proportion of the population in the Cacadu District Municipality is employed in the agriculture sector. The District Municipality has the lowest rate of unemployment (35 percent), poverty (46 percent) and of dependency in the province (European Consultants Organisation, date unknown). Less than one quarter (22 percent) of households in the Cacadu District Municipality live on less than R1,000 per month. Notwithstanding this, the average per capita income (R18,810 per annum/R1,568 per month) is the highest in the province, second only to the Metro.

A large proportion of the population (25 percent) has only some primary education. Another 15 percent of the population has no schooling. This translates into 60,570 people who do not have basic literacy. Functional literacy (60 percent) within the Cacadu District Municipality is below the Eastern Cape provincial average. Despite this, the percentage of the population that have completed matric (22 percent) is higher than that of the Eastern Cape (20 percent) (Atkins & Marais, 2007).

The Cacadu District Municipality depends predominantly on ground water for both human consumption and agricultural activity. The Cacadu District Municipality falls within what is known as the 'drought corridor ⁽²⁴⁾' (Usman and Reason, 2004). This region is infamous for its sporadic droughts and water is generally scarce. The low level of local rainfall results in sporadic droughts consequently drying up supply boreholes to towns and villages. The number of households with water on site (85 percent) is almost double the Eastern Cape provincial average. A high number of households are connected to a water-borne sewerage system (68 percent), although a significant number (15 percent) are still dependent on the bucket system.

Electricity is the most common form of energy used in the Cacadu District Municipality, although wood and paraffin are still used relatively widely.

(23) The Municipal Demarcation Board reports figures based on 2001 Census data. It reports the figure as actual numbers as opposed to percentages. The figures are isiXhosa (189,994), Afrikaans (174,905) and English (20,806).

(24) The drought corridor extends across the Southern Africa region. This region extends from 20 degrees to 25 degrees south and is typically a summer rainfall region, but the region often experiences half or more of the summer season as a dry spell.

In the Cacadu District Municipality, 68 percent of the population have their waste collected once a week.

Access to health professionals and health services in the Cacadu DM is below the Eastern Cape provincial average.

Nelson Mandela Metropolitan Municipality

The Nelson Mandela Metropolitan Municipality (NMMM) is the only metropolitan municipality in the Eastern Cape Province and is home to Port Elizabeth. The NMMM was established in 2000 and covers an area of 1,845 km². The total population of the municipality is approximately 1.5 million people with a population density of 813 people/ km². The average household size is just less than four people, although approximately 16 percent of all households are occupied by single persons.

The majority of the population of the NMMM are classified as Black (59 percent), while 24 percent are classified as Coloured. The remaining population are White and Indian/ Asian. Fifty eight percent of the population speak isiXhosa as their first language followed by Afrikaans (30 percent) and English (12 percent).

NMMM is the economic powerhouse of the Eastern Cape Province, contributing 44 percent to the provincial gross geographic product. The economy of the municipality is based on strong manufacturing (notably automotive), agricultural and tourism sectors. As the hub of automotive manufacturing in South Africa it accounts for 50 percent of the local manufacturing sector.

The unemployment rate in the NMMM is high with approximately 45 percent of the population being unemployed. It is understood that the prospect of finding work in the metropolitan area attracts in-migration of unskilled workers into the surrounding area, driving up unemployment rates in the NMMM (Pauw, 2005a).

The level of service and infrastructure provision in the NMMM is high as the majority of households have access to basic services, such as the provision of water and sanitation, electricity and refuse removal. Statistics illustrating this are outlined below (NMMM IDP, 2008/09):

- 93 percent of households have access to a basic level of water, the remaining households have access to potable water through standpipes;
- 91 percent of households have access to a basic level of sanitation, with the bucket system having been eliminated in all formal areas;
- 99,8 percent of households have access to a basic level of solid waste removal; and

- 98 percent of households in formally demarcated municipal residential areas have access to a basic level of electricity.

5.4 *LAND ISSUES RELATED TO THE PROJECT*

5.4.1 *Land use*

The predominant land use activities in the Northern Cape are mining, livestock and game farming and agriculture (Department of Environmental Affairs and Tourism, 2004a). The Eastern Cape land use activities are predominantly forestry, agriculture as well as sheep and cattle farming (Department of Environmental Affairs and Tourism, 2004b).

The Eastern Cape has been selected as the site for the national pilot project for the implementation of bio-fuels through mass planting of canola.

5.4.2 *Land ownership*

Land ownership is an indicator of land tenure reform. Almost all the land in the Northern Cape is privately owned. In the past, state agricultural land has been made available to emerging commercial farmers, in the form of leasing, outright sale and access to grazing land. More recently the Northern Cape launched the Land Redistribution for Agricultural Development (LRAD) programme which is designed to reduce rural poverty by helping previously disadvantaged people to manage their own farms effectively (Department of Environmental Affairs and Tourism, 2004a). The Eastern Cape has 66.5 percent of the land under private ownership and 29.5 percent under communal ⁽²⁵⁾ ownership. The state owns four percent of the land (Department of Environmental Affairs, 2004b).

5.4.3 *Land Claims*

This section provides an overview of land claims in the two provinces which the line traverses. It starts off with a national overview of progress made with settling land claims and some of the difficulties relating to settling outstanding claims. This is followed by progress made which is specific to the Northern Cape and Eastern Cape provinces respectively, highlighting some of the claims that have been finalised in the 2007/2008 financial year.

According to the Commission on Land Rights, 95 percent (74,747 claims) of all land claims lodged with the Commission have been settled. A total of 432,226 hectares of land were delivered to restitution beneficiaries during the 2007/2008 financial year, which has brought the total land restored to 2,078,385 hectares since 1995. There are still 4,900 claims outstanding nationally, and these claims are complex with numerous challenges including:

(25) Under communal ownership, individuals have no right to sell or own the land, so the land is ultimately owned by the state (Department of Environmental Affairs, 2004b).

- Claims that are still with the land claims court;
- Disputes involving communities as well as traditional leaders on jurisdiction issues; and
- High cost of land.

It is costing more to settle fewer claims and in some instances the Commission has resorted to land expropriation to fast track claims (Mphela, 2008). To date 53 notices of possible expropriation have been served, where there have been disputes on the issue of price.

The national target is to settle between 97 percent and 98 percent of claims by March 2009. It is envisaged that the remaining two percent will be not be settled due to the challenges mentioned above. A total of R15 billion is required to settle the remaining 4,949 claims (Mphela, 2008).

In excess of 90 percent of land claims have been settled in the Northern Cape, with only 218 claims outstanding. In the 2007/2008 financial year eleven claims were settled amounting to 107,552ha, benefitting 1,599 households.

There are 555 claims outstanding in the Eastern Cape. This could potentially have an impact on the project as the loop sites are located in this province. Given the number of claims that still have to be settled, the probability of the additional land needed being subject to a claim is higher than in the Northern Cape. The 2007/2008 financial year saw the settlement of 45 claims in rural areas, benefitting 8391 households.

5.4.4 *Land acquisition process*

The issue of land acquisition may impact the project if additional land is required for the construction and extension of the loops. It is currently unclear if additional land outside of the rail reserve will be required for the Project. This will become clearer once the boundary of the rail reserve at the loop sites has been surveyed.

With respect to the land acquisition process, Transnet has committed to the following Servitude and Land Acquisition Principles when undertaking an acquisition bid:

- Servitude acquisition will, as far as possible, be based on negotiations with landowners and an amicable agreement being reached. Expropriation shall not be used unless all other reasonable avenues have been exhausted.
- The calculation of compensation shall follow recognised international practice. A professional valuer shall be appointed to compile an evaluation of the land lost, based on the prevailing market conditions (i.e. recent sales).

- The evaluation is based on the following principles:
 - 100% compensation for the servitude area based on the strip valuation on registration of the servitude.
 - Interest per annum on the consideration from the date of occupation (construction) to the date of registration.
 - 100% compensation for crop and other infrastructure damage.

- The Expropriation Act 63 of 1975 provides for a solatium on both the value of the property and actual financial loss. The solatium to a maximum value of R55 000 shall be added to the compensation as follows:
 - 10% of total consideration amount, if the consideration amount does not exceed R100 000; plus
 - 5% of the consideration amount by which it exceeds R100 000, if the consideration amount does not exceed R500 000; plus
 - 3% of the consideration amount by which it exceeds R500 000, if the consideration amount does not exceed R1 million; plus
 - 1% (but not amounting to more than R10 000) of the consideration amount which it exceeds R1 000 000).

- Disagreements about valuations shall be settled, where possible, with the landowner through discussions between the owner and the independent valuer.

5.4.5 *Historical, Cultural and Archaeological Aspects*

A review of topographic, aerial and GIS maps as well as field observations revealed that the majority of sites for proposed upgrade, refurbishment or development are not associated with any significant historical, cultural and archaeological phenomena.

Most sites are heavily impacted and disturbed by current railway activities as well as agricultural and residential activities at certain sites. As such, cultural artefacts are rare. However, middle and late Stone Age artefacts (*Figure 5.8*) have been noted at a number of sites (Kommadagga, KDC011 near Klipfontein and KDC 003 near Witputs on the Kimberly-De Aar Section) and there is a possibility that similar artefacts may be found during the construction process. For more detailed discussion see the specialist report in *Volume 2* of the Final EIR.

Figure 5.8 Middle to late stone age artefact found near the Kommadagga loop site



A number of important battlefields and associated gravesites occur adjacent to the line, particularly between Kimberly and De Aar in the Northern Cape. These areas occur outside of the railway reserve and none have been identified close to the proposed upgrade, refurbishment or development sites. However, the communal cemetery near the Klipfontein loop site is situated within the reserve (Figure 5.9).

Figure 5.9 Cemetery near Klipfontein loop site



It is understood that some of the Transnet station buildings (*Figure 5.11*) may be older than 60 years old and would, therefore, have some potential historical significance. None of these historic buildings, if present, will be damaged or altered in any way during the project. However, should any of these building be affected, the relevant heritage authorities will be consulted.

Figure 5.10 Abandoned station building at Golden Valley, Eastern Cape



6 THE STAKEHOLDER ENGAGEMENT PROCESS

6.1 INTRODUCTION

The undertaking of a public participation or stakeholder engagement process, as part of an EIA, is a legal requirement in terms of R385 of the EIA Regulations of 21 April 2006.

The purpose of the stakeholder engagement process for this EIA was to:

- Share information about the Project and the EIA process with potentially interested or affected stakeholders;
- Obtain stakeholder feedback on issues, concerns and opportunities;
- Respond to stakeholder queries about the potential impacts and benefits of the Project;
- Provide stakeholders with updates on the progress of the EIA; and
- Inform stakeholders of their rights in terms of the EIA process.

Stakeholders include neighbouring landowners (e.g. landowners adjacent to the entire railway line between Hotazel and the Port of Ngqura and other Project sites along the railway line; authorities (local, provincial and national); Non-Governmental and Community Based Organisations; and other interested groups or individuals.

6.2 STAKEHOLDER ENGAGEMENT DURING SCOPING

The following activities were undertaken during the Scoping phase:

- A stakeholder database was compiled from information in existing databases, from information provided by municipalities, from internet searches, from property title deeds, from responses to various Project notifications and from stakeholder attendance at public meetings. The database was updated throughout the EIA process. There is currently close to 600 stakeholders on the database.
- A Background Information Document (BID) was distributed to stakeholders in English, Afrikaans, isiXhosa and Setswana throughout the EIA process. The BID was also placed on the Project website (www.erm.com/Transneteia). The purpose of the BID was to convey accessible information on this Project to potential stakeholders and allow them the opportunity to comment on the proposed Project and the EIA

process. The BID also invited potential stakeholders to register their interest in the Project.

- The Project was advertised in seven local newspapers and two regional newspapers between the end of July and September 2008. Advertisements were placed in English, Afrikaans and isiXhosa. These adverts informed the public of the Project and requested them to register as Interested and Affected Parties (I&APs) if they would like to participate in the EIA process. Respondents to the advert were included on the project database. The adverts also invited stakeholders to attend various public meetings.
- Site notices were placed at strategic locations (such as municipal offices, libraries and post offices) in 16 towns within or in proximity to the project area. The notices provided information about the Project, the contact details of the consultant and details of the public meetings.
- Eight public meetings were held at various locations within the project area. Each public meeting started with an open house exhibit for the attendees to view various posters and to interact with the project team on a one-on-one basis, followed by a formal public meeting including a more detailed presentation on the Project and then a question and answer session (see *Figure 6.1* and *Figure 6.2*). The meetings provided stakeholders with an opportunity to raise any issues or concerns regarding the Project proposal.

The location of the public meetings and number of attendees is summarised in *Table 6.1*.

Figure 6.1 Public meeting in Greenpoint, Kimberley



Figure 6.2 Public meeting in Cookhouse



Table 6.1

Summary of public meetings held

Town	Date	Address	No. of attendees
Eastern Cape			
Paterson	25 August 2008	Eastern Cape Agricultural Co-op Hall, Buchnar Street	15 registered
Cookhouse	26 August 2008	Town Hall, 6 Main Street	120 registered. Estimate 200+ present
Cradock	27 August 2008	Cradock High School, Elize Coetzee Hall, Naested Street	4 registered
Middleburg	28 August 2008	Town Hall, Market Street	75 registered
Northern Cape			
De Aar	29 August 2008	Multipurpose Centre, Malai Camp	7 registered
Greenpoint, Kimberley	10 September 2008	Greenpoint High School, Redwood Street	84 registered
Beaconsfield, Kimberley	11 September 2008	Dutoitspan Primary School, Corner Central & Hercules Street	4 registered
Hotazel	22 September 2008	Hotazel Recreation Complex, Kupferburger Circle, Hotazel	4 registered

- Throughout the EIA process to date, issues, concerns and opportunities raised by public and authority stakeholders, that were communicated to ERM, have been recorded and compiled into an Issues and Response Report.
- A Draft Scoping Report (DSR) was released for a 30-day public review period from 6 October to 7 November 2008. A notification letter, together with a copy of the DSR non-technical summary was sent to stakeholders on the database, to inform them of the availability of the DSR for comment and where the report could be viewed. The report was placed on the Project website and hardcopies were lodged at the following public libraries:

• Port Elizabeth Main Library	• Hanover Public Library
• Paterson Public Library	• De Aar Public Library
• Kirkwood Public Library	• Beaconsfield Public Library
• Cookhouse Public Library	• Kimberley Public Library
• Cradock Public Library	• Hotazel Public Library
• Middelburg Public Library	
- Six written comments were received within the commenting period on the DSR. These comments were compiled into a comments and responses table, which was included in the Final Scoping Report and also distributed

to those stakeholders who had provided comment. The Final Scoping Report was also placed on the Project website.

- A Draft Environmental Impact Report (EIR) was released for a 30-day public review period from 26 May to 25 June 2009. A notification letter, was sent to stakeholders on the database, to inform them of the availability of the EIR for comment and where the report could be viewed. The report was placed on the Project website and hardcopies were lodged at the following public libraries:

• Port Elizabeth Main Library	• Hanover Public Library
• Paterson Public Library	• De Aar Public Library
• Kirkwood Public Library	• Beaconsfield Public Library
• Cookhouse Public Library	• Kimberley Public Library
• Cradock Public Library	• Hotazel Public Library
• Middelburg Public Library	• Addo Library

- Two written comments were received within the commenting period on the Draft EIR. These comments were compiled into a comments and responses table, which has included in the Final EIR and also distributed to those stakeholders who had provided comment.
- All registered stakeholders were notified of the submission of the Final EIR, which was placed on the Project website. The Executive Summary was made available both in English and Afrikaans.

Table 6.2 below contains a high level summary of the issues raised by stakeholders to date.

Table 6.2 *Summary of issues raised by I&APs*

Broad categories	Issues raised
Socio-economic considerations	<p>How and when the recruitment process will be rolled out.</p> <p>Fairness of the tender process and the real opportunities for local labourers and smaller, local operators.</p> <p>Whether Transnet's primary contractor will use local subcontractors.</p> <p>Nature of employment, skill levels and numbers to be employed.</p> <p>Position of former Transnet employees with respect to getting guaranteed employment on the project.</p> <p>Training and capacity building with respect to unskilled labour.</p> <p>Concern over health and safety of workers who may be exposed to manganese dust.</p> <p>Sanitation and management of waste at labour camps.</p> <p>Social ills associated with labour camps including the spread of HIV.</p> <p>Effect of the project on the already strained electricity supply network.</p> <p>Safety at railway crossings and an increase in rail accidents.</p> <p>Long term community benefits of the project.</p> <p>Benefits to local businesses.</p> <p>Impact of manganese dust on people living adjacent to the line.</p> <p>Impact of potential increases in vibration on houses adjacent to the railway line.</p>

Broad categories	Issues raised
	Increased rail capacity for the transport of products from Eastern Cape, Metro and Industrial Development Zone to Gauteng and growths of these areas.
Biophysical considerations	Assistance with beneficiation of country's mineral wealth at Coega. Loss of biodiversity and impact on endangered animals and birds as a result of increased rail traffic and construction activities. Impact on scarce water resources as a result of construction activities.
EIA process	Local specialists and experts should be used in the process.
General	Possible benefits to the grain industry from increased trains along the line in terms of transporting their goods to market. Heritage sites should be protected and local knowledge be used to identify important sites. A need to look at the big picture with respect to other projects, future demands and plans along the line, such as a likely future rail terminus at Coega, the future need for an intermodal facility, rail support and maintenance facilities. Impact of the project on the demand for road transportation alternatives The process for land acquisition. The linkage between the railway line and passenger transportation during the 2010 Soccer World Cup. Possibilities for Public Private Partnerships.

Authority consultation and involvement

Authority consultation and involvement during the EIA process to date is summarised in *Table 6.3* in chronological order.

Table 6.3 *Summary of authority involvement*

Description	Timeframe
Pre-application meeting with DEAT to confirm ERM's approach to the EIA	1 July 2008
Submission of EIA applications to DEAT	21 July 2008
Informal meetings and discussions with various local authorities (municipalities) to discuss the public participation process	14-19 July 2008
The distribution of the BID to various local, provincial and national authorities for comment	July - September 2008
Submission of copies of the EIA applications and reports to the provincial commenting authorities responsible for environmental management, namely, the Eastern Cape Department of Economic Affairs, Environment and Tourism (DEAET) and the Northern Cape Department of Tourism, Environment and Conservation (DTEC)	September 2008
Distribution of the DSR non-technical summary and copies of the DSR to various authorities for comment. This included the heads/managers of all the District and Local Municipalities within the Project area, the provincial environmental and heritage authorities, as well as the South African National Roads Agency (SANRAL)	Comment period from 6 October to 7 November 2008

A follow up meeting with DEAT to discuss the DSR, to highlight the key issues raised during the Scoping phase, to discuss the proposed approach to the EIA phase of study and to confirm the timing of the remaining EIA tasks	14 October 2008
The receipt of written comments on the DSR from SAHRA, Sol Plaatjie Municipality and the Nelson Mandela Bay Municipality	October 2008
Submission of the Final Scoping Report (including Plan of Study for EIA) to DEAT	17 November 2008
DEAT approval of the Final Scoping Report (including Plan of Study for EIA) (<i>Annex A2</i>)	3 February 2009
Distribution of the EIR non-technical summary and copies of the full EIR to various authorities for comment. This included the heads/managers of all the District and Local Municipalities within the Project area, the provincial environmental and heritage authorities, as well as the South African National Roads Agency (SANRAL)	26 May 2009
Submission of Final EIR to DEAT and copies also sent to SAHRA, the Sol Plaatjie Municipality and the Nelson Mandela Bay Municipality	20 July 2009

6.3

WAY FORWARD

After due consideration of the final report, DEAT will issue an Environmental Authorisation setting out their decision and the key factors that led to the decision. The authorisation may be positive (the Project has been approved) or negative (the Project has been rejected). ERM will distribute notice of the Environmental Authorisation to all registered I&APs on the project database.

The notification will include an explanation of the statutory appeal period as well as how and when stakeholders may lodge an appeal.

7.1 INTRODUCTION

This *Chapter* should be read in conjunction with *Section 3.3* of on the EIA methodology being applied to this environmental assessment.

The sections that follow aim to firstly summarise all the biophysical and socio-economic impacts assessed for the construction and operational phases of the Project and secondly, to elaborate on the assessment of impacts judged to be of moderate or major significance (as defined in *Table 3.5* of *Section 3.3*).

Although impact summary tables generally follow the detailed assessment, the scale and nature of this Project i.e. the many different components and number of sites to be assessed, warranted that the information was first condensed into a tabular format to identify which impacts were of greatest concern, before a detailed discussion was had as to why the Project Team judged these impacts as the ones of key concern (i.e. requiring the most mitigation).

It should be borne in mind that the rating of impact significance can often be somewhat subjective and to a large extent depends on the Project Teams experience of similar projects and/ or impacts and the input or opinion of specialists. As far as possible, a clear justifications for the impact ratings are, therefore, provided, both in the tables and in the descriptive sections that follows (*Sections 7.3 to 7.10*).

Mitigation measures are also provided in the descriptive section, to show how negative impacts could be reduced and positive impacts enhanced. No detailed impact description is provided for minor and negligible impacts – please refer to the Impact Summary tables for this information. As minor and negligible pre-mitigation impacts are already within acceptable levels and do, therefore, not require special mitigation measures, a number of general or best practice construction measures can be applied to further reduce/enhance these impacts. These measures are included in HMG’s Specific Environmental Specifications document provided in *Annex A1*.

7.2 IMPACT SUMMARY TABLES

The impact summary tables at the back of the report (*Tables 7.1 to 7.8*) have been grouped firstly according to Project phase (i.e. construction or operation) and then by Project component (i.e. loops, yards, substation, etc.). As the socio-economic impacts associated with the Project are broader, in that they apply to all the Project components, they have been summarised in separate tables.

The tables provide the following information:

- The potential impact and a description thereof;
- The loops or other development sites to which the impact applies;
- The nature of the impact;
- Ratings for the magnitude (extent, duration and intensity) and likelihood of the impact, including justifications for the rating;
- A rating for the significance of the impact before mitigation measures are applied (pre-mitigation); and
- The expected significance rating following the effective implementation of mitigation measures (post-mitigation or residual impacts).

Mitigation measures have been excluded from the impact summary tables in order to improve the readability of the tables and to keep them as concise as possible. The measures are, however, outlined in *Sections 7.3 to 7.10* and will be linked to the EMP for the Project.

7.2.1 *How to use the impact summary tables*

It is suggested that the reader fold out the A3 tables at the back of the report in order to allow reading of the text in the report alongside the tables with cross reference to the table. Proceed by reading the general description of the nature of the impact and then the relevant assessment information related to that impact in the relevant row in the table. A summary is provided in the text and this is followed by the detailed description of the mitigatory measures.

Table 7.1 Loops (construction phase impacts)

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Spread/colonisation of invasive alien species and weed taxa (Section 7.3.1)	Vegetation clearing and construction activities at the laydown areas and along drainage lines, could lead to soil disturbance, which may provide opportunities for alien plant and weed species to propagate.	All Loop sites	Negative - Indirect	O: Alien vegetation is likely to establish itself on-site.	P: Invasive alien vegetation is highly likely to remain beyond the life of the project once established.	H: Alien vegetation will affect/alter the species diversity, ecological function and landscape character permanently.	M: It is highly likely that alien invasive vegetation will establish itself as a result of suitable conditions generated by construction activities.	Major (High magnitude, medium likelihood)	Moderate
Loss of vegetation communities (Section 7.3.2)	Vegetation clearing along the rail corridor and access roads, and relocation of fences will lead to the loss of vegetation communities.	Sites of medium ecological importance include Addo, Eagles Crag, Blinkhof, Flonker and Carlton .	Negative -Direct	O: Impact will be on-site within the rail reserve	P: Even with effective rehabilitation the vegetation community will not return to its original state, the duration is permanent.	M: The affected environment will be altered but, natural functions and processes are likely to continue. However, since the vegetation communities are sensitive to disturbance, the intensity is expected to be medium.	H: Some vegetation communities will definitely be lost.	Moderate (Medium magnitude, high likelihood)	Minor
Loss of faunal diversity and richness (Section 7.3.3)	Clearing of vegetation, establishment of access roads and removal of fences, etc will directly	Blinkhoff, Saltaire and Eagles Crag	Negative - Direct & Indirect	O: Impact will be on-site within the rail reserve	L-t: With respect to the loops where habitat can re-	M: Disruption to or loss of faunal habitat may result in temporary relocation	H: Some faunal loss/ disturbance will definitely occur.	Moderate (Medium magnitude, high	Minor

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
	affect faunal habitat. Indirect loss of diversity and species richness is associated with habitat loss.				establish itself.	of fauna and/or change in behavioural patterns.		likelihood)	
Loss of protected invertebrate species (Section 7.3.4)	General construction activity could lead to a loss of endangered burrowing scorpions and baboon spiders.	Eagles Crag, Blinkhoff, Saltaire and Kommadagga	Negative - Direct & Indirect	O: Impact will be on-site within the rail reserve	P: Any loss of endangered invertebrate species will be permanent.	M: Although invertebrate species can escape/ move away from construction sites, some endangered species may be killed during construction.	H: Some protected invertebrates will definitely be impacted upon.	Moderate (Medium magnitude, high likelihood)	Minor
Disturbance to riparian zone (Section 7.3.5)	Disturbance to the riparian zone associated with a critically endangered river system (Boesmans River) owing to encroaching development which could lead to water pollution and siltation	Tootabi	Negative - Direct	L: Impact on riparian zone could have knock-on effects on the river system	L-t: Impact likely to occur only during construction (short-term). However, the effects of possible pollution and siltation could have longer lasting effects.	H: As the riparian zone is associated with a Critically Endangered river system, any further disturbance to this area should be avoided, hence the intensity of the impact would be high.	L: Pollution/ siltation as a result of construction activities is possible but not likely as the loop site is located on the side of the rail reserve furthest from the river.	Moderate (High magnitude, low likelihood)	Minor
Noise disturbance (Section 7.3.6)	Noise disturbance could result from the use of heavy machinery, blasting, drilling and general construction activities.	Tootabi, Eagles Crag, Barkly Bridge, Coerney, Golden Valley, Mortimer, Marlow, Visrivier, Conway, Rosmead and Bletterman.	Negative - Direct	O: Impact will be on-site within the rail reserve	S-t: - Impact expected during the construction phase only.	M: Noise impacts will be more severe where social receptors are in close proximity to the loop site (within 50m) such as at Coerney, Golden Valley and	H: Owing to the remoteness of project area and topography, noise impacts will definitely be experienced, even though this will be over a short duration (3-5mth period) and affect few receptors.	Moderate (Medium magnitude, high likelihood)	Minor

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
						Visrivier.			
Removal of declared invader and weed species	During vegetation clearing within the rail reserve and along access roads and at construction camps and laydown areas, alien invasive and weed species will be removed.	All loop sites	Positive - Direct	L: Clearing is likely to happen where construction camps and laydown areas are established but this would be of limited extent.	T: Clearing of weed/alien invasives will only last for a short period. Alien vegetation is likely to re-establish. Surface disturbance may even accelerate propagation and spread.	L: Relatively small areas will be cleared during establishment of the camps/laydown areas (approx 3000 sqm sites).	M: It is highly likely that some alien vegetation will be cleared.	Minor (Positive) (Low magnitude, medium likelihood)	Minor
Loss of or disturbance to sites of archaeological, paleontological or cultural significance (Section 7.3.3)	Construction activities may result in the disturbance, damage or destruction of sites of medium to high cultural significance (as defined in the NHRA) or sites of paleontological importance.	Klipfontein (cemetery)	Negative Indirect (e.g. vandalism)	O: Impact will be on-site within the rail reserve	S-t: Vandalism likely to have a short-term impact on the cemetery site	M: The cemetery at Klipfontein may be indirectly impacted by negligence and vandalism. This site is of medium archaeological importance.	L: It is possible that the cemetery may be impacted during construction.	Minor (Medium magnitude, medium likelihood)	Negligible
Soil erosion	Soil erosion may occur as a result of vegetation clearing within the rail reserve, at access roads and along riverbanks.	Soil erosion: All loop sites; Possible riverbank erosion at Tootabi	Negative - Direct	O: Impact on-site at all loop sites L: At Tootabi soil erosion could affect the	S-t: Erosion may occur during the construction phase only. L-t: The effects	M: Variable intensity due to variable site conditions (nature of soil, topography, vegetation cover etc.).	L: Soil erosion at loop sites is possible. Erosion of riverbanks at Tootabi possible but not likely as construction will not take place on the river	Minor (Medium magnitude, low likelihood)	Negligible

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
				surrounding natural environment (i.e. Boesmans River).	of possible siltation could have longer lasting impacts at Tootabi.		bank.		
Contamination of soil and groundwater resources	Contamination of soil and groundwater due to potential fuel, chemicals or effluent spillage.	Loop sites with medium or high groundwater sensitivity include: Barkly Bridge, Saltaire, Barredeel, Wildfontein, Linde, Hanover Road, Burgervilleweg, Bletterman	Negative - Direct	L: Although soil contamination would be on-site, contaminants leaching through the soil could reach the groundwater and have a local effect, as groundwater is likely to extend off-site.	S-t to L-t: Soil can be remediated in the short-term, however, groundwater may take longer to naturally remediate or may require treatment.	M: Variable intensity due to variable site conditions (nature of soil, topography, groundwater characteristics, etc.). Sites with high groundwater sensitivity are related to the quality and use or potential use of the groundwater.	L: Contamination impacts are possible, especially at fuel/chemical handling and storage areas.	Minor (Medium magnitude, low likelihood)	Negligible
Potential contamination of surface water features	Contamination of surface water features (perennial rivers, streams and dams) in proximity to the development sites as a result of potential fuel, chemicals or effluent spillage.	Perennial rivers within 500m exist at: Barkly Bridge, Eagles Crag, Tootabi, Mortimer, Marlow, Knutsford and Conway	Negative - Direct	L: Contamination of surface water features may have a local effect as the contaminated water may extend off-site.	S-t to L-t: Effects on surface water features polluted during construction may persist beyond the construction period.	M: Variable intensity due to variable site conditions (topography, pathways to the receptor, distance to surface water features, quality of the surface water body, etc.).	L: Contamination impacts are possible, especially at fuel/chemical handling and storage areas.	Minor (Medium magnitude, low likelihood)	Negligible
Dust nuisance	The generation of dust through site clearance, earthworks and general	Tootabi, Eagles Crag, Barkly Bridge, Coerney,	Negative - Direct	O: Impact will be on-site within the rail reserve	S-t: - Impact expected during the construction	L: Social receptors are not likely to be affected by the	M: Dust impacts are very likely to occur at all development sites,	Minor (Low magnitude, medium)	Negligible

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
	construction activities could pose a nuisance to social receptors in proximity to the loop sites.	Golden Valley, Mortimer, Marlow, Visrivier, Conway, Rosmead, and Bletterman			phase only.	amount of dust generated.	although in very small measures.	likelihood)	
Vibration nuisance	Vibration effects generated from construction related activities such as drilling and blasting could impact on social and biophysical receptors.	Tootabi, Eagles Crag, Barkly Bridge, Coerney, Golden Valley, Mortimer, Marlow, Visrivier, Conway, Rosmead and Bletterman	Negative - Direct	O: Impact will be on-site within the rail reserve	S-t: - Impact expected during the construction phase only.	L: Ground borne vibration could possibly affect environmental function and processes (especially for receptors within 8m from the source) but presents more of a nuisance issue. Expected vibration levels are too low to cause structural damage to houses (whether formal or informal). See Vibration Study Report in Annex A7.	L: There are no sensitive social receptors within 8m from the loop sites. Vibration levels of typical construction machinery are within acceptable levels.	Negligible (Low magnitude, low likelihood)	Negligible
Disruption to run-off/surface water flow affecting river systems	Disruption to run-off/surface water flow due to earthworks, excavated material storage and general construction activity could affect river system dynamics.	Tootabi	Negative - Direct	L: The Boesmans River borders the rail reserve at Tootabi.	S-t: Earthworks and stockpiling will only occur during the construction phase.	M: The Boesmans River is a critically endangered river system, therefore, run-off may affect river dynamics.	N: As the loop site is separated from the river by the existing railway line, it is unlikely that run-off /deviated surface water flow from cleared areas/stockpiles would enter the river.	Negligible (Medium magnitude, negligible likelihood)	Negligible
Traffic	Traffic disruptions could	Tootabi, Eagles	Negative	R: Although the	S-t: - Impact	L: Few construction	L: Impact possible where	Negligible	Negligible

Impact	Description	Applicable Loops	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
disruption and hazards	result owing to general construction activities including increased volume of heavy vehicles and blasting. These activities could also lead to potential traffic incidents.	Crag, Barkly Bridge, Coerney, Golden Valley, Mortimer, Marlow, Visrivier, Conway, Rosmead and Bletterman	- Direct	impact may be felt more locally on secondary and minor roads in proximity to the construction sites, some materials may be transported by road from PE, hence the extent of the impact could be regional.	expected during the construction phase only.	vehicles (less than 10) are expected during the construction of each loop. Social receptors are likely to be able to adapt to this increase in traffic with ease. This increase in traffic volume presents only a low risk of incidents.	site is close to communities or high use public roads. For example Coerney, Golden Valley, Visrivier and Conway are located alongside national roads.	(Low magnitude, low likelihood)	

Table 7.2 Yards (construction phase impacts)

Impact	Description	Applicable Yards	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				<u>Extent</u> <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Contamination of soil and groundwater resources	Contamination of soil and groundwater due to potential fuel, chemicals or effluent spillage at the yards.	All yards	Negative - Direct	L: Although soil contamination would be on-site, contaminants leaching through the soil could reach the groundwater and have a local effect, as groundwater is likely to extend off-site.	S-t to L-t: Soil can be remediated in the short term, however, groundwater may take longer to naturally remediate or may require treatment.	L: Low because groundwater sensitivity is low at all the yard sites (see aquifer classification map in <i>Chapter 5</i>).	L: As some contaminants are handled/stored at the yard sites, contamination of soil and/or groundwater is possible.	Negligible (Low magnitude, low likelihood)	Negligible
Dust nuisance	The generation of dust through site clearance, earthworks and general construction activities at the yards could pose a nuisance to social receptors in the vicinity.	All yards - more significant at Beaconsfield owing to proximity to residential area (within 1km)	Negative - Direct	O: Dust generation is expected to be limited to the yard sites.	S-t: Impact expected during the construction phase only.	L: As all the yards are existing, it is expected that social receptors will be able to adapt to the yard upgrades with ease. Beaconsfield is closest to a residential area but is far enough away not to be severely impacted by the intermittent and small quantities of dust generated during construction.	L: Although dust impacts will not be severe, it is possible that they may be experienced by social receptors exposed to the construction activities (e.g. people driving past the yards).	Negligible (Low magnitude, low likelihood)	Negligible
Noise	Noise disturbance to social	All yards - more	Negative	L: Noise from	S-t: Impact	L: Seeing as none of	L: Noise impacts may be	Negligible	Negligible

Impact	Description	Applicable Yards	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
disturbance	receptors due to general construction activities at the yards.	significant at Beaconsfield owing to proximity to residential area (within 1km)	- Direct	construction activities is mainly limited to the yard sites, however, some vehicular noise may be experienced beyond the site boundaries.	expected during the construction phase only.	the sites are Greenfield sites and the project involves upgrades to these sites, noise generated is not expected to be severe, even at Beaconsfield.	temporarily experienced by people passing by the yard sites.	(Low magnitude, low likelihood)	
Traffic disruption and hazards	Traffic disruption in the vicinity of the yards due to general construction vehicle activity. These activities could also lead to potential traffic incidents.	All yards - more significant at Beaconsfield owing to proximity to residential area (within 1km)	Negative - Direct	L: Owing to the possible transport of materials to the yard site, traffic impacts are expected to extend off-site. Traffic routes and sources of materials for the yard upgrades are not confirmed at this stage.	S-t: Impact expected during the construction phase only.	L: Minimal volumes of construction traffic are expected, therefore, this should not result in any disruptions to existing traffic flow/patterns and the risk of traffic incidents is, therefore, very low.	L: Although the likelihood of traffic impacts occurring is very low, it cannot be discounted completely owing to possible human error.	Negligible (Low magnitude, low likelihood)	Negligible

Table 7.3 Substation near Emil (construction phase impacts)

Impact	Description	Applicable Substation	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre-Mitigation)	Significance (Post - Mitigation)
				<u>Extent</u> <i>O-s - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Loss of vegetation communities	Vegetation clearing for a new substation and access road will lead to loss of vegetation communities.	Emil	Negative -Direct	L: Impact predominantly at the substation site but includes access road that will need to be cleared.	P: Vegetation communities will be permanently lost to the substation development and access road.	L: The area to be cleared for the substation is fairly small (600 sq m) and the ecological importance of the vegetation at the site is low (see Ecology Specialist Report in Annex A5), therefore, the intensity is considered to be low.	H: Some vegetation communities will definitely be lost through clearing.	Minor (Low magnitude, high likelihood)	Minor
Loss of and disturbance to fauna	Earthworks and vegetation clearing at the substation site and access road will directly affect faunal habitat and disturb current faunal activity.	Emil	Negative -Direct	L: Impact is predominantly at the substation site but extends to include the new access road that is required.	P: Loss of habitat (incl. that of a protected scorpion species) will be permanent	L: Even though the development of the substation site and access road may affect a protected scorpion species that could occur in the area, this species is mobile and occurs in the wider area, therefore the intensity is low.	H: Some disturbance to fauna and loss of habitat will definitely occur.	Minor (Low magnitude, high likelihood)	Minor
Dust nuisance	Generation of dust through site clearance, earthworks and general construction activities may impact on ecological and social receptors.	Emil	Negative - Direct	L: Largely an on-site impact but rated as local due to the requirement for an access road.	S-t: Impact expected during the construction phase only.	L: Even though the area is dry, the amount of dust expected to be generated is limited owing to the size of	H: Although limited to a short time and a small area, some dust will definitely be generated.	Minor (Low magnitude, High likelihood)	Minor

Impact	Description	Applicable Substation	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre-Mitigation)	Significance (Post - Mitigation)
				Extent <i>O-s - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
						the substation footprint, Dust impacts are not considered to be severe enough to alter ecological functions or processes and there are no sensitive receptors in the vicinity (the closest settlement is a mining compound ~3.5km east of the site, near Kathu, which is a further 3.5km east of the compound).			
Noise disturbance	Noise disturbance to social receptors due to general construction activities.	Emil	Negative - Direct	L: Noise impacts are not expected to extend far beyond the site boundaries. Some vehicular noise will be generated.	S-t: Impact expected during the construction phase only.	L: Although noise carries far in areas such as this i.e. flat and undeveloped, there are no social receptors in the vicinity (the closest settlement is a mining compound ~3.5km east of the site, near Kathu, which is a further 3.5km east of the compound).	H: Some noise will definitely be generated by construction activities and vehicles.	Minor (Low magnitude, High likelihood)	Minor
Establishment of invasive	Vegetation clearing and disturbances could lead to	Emil	Negative -Indirect	L: Impact predominantly	S-t: Impact expected during	L: The access road will occupy a small	L: Some alien vegetation infestation is possible.	Negligible (Low	Negligible

Impact	Description	Applicable Substation	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre-Mitigation)	Significance (Post - Mitigation)
				Extent <i>O-s - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
alien species and weed taxa	soil disturbance which will provide opportunities for alien plant and weed species to propagate.			around the substation infrastructure and the access road.	the construction phase only.	cleared area and will be maintained therefore alien infestation is not expected to be severe.		magnitude, low likelihood)	
Soil erosion	Soil erosion could result from cleared areas (e.g. for the access road).	Emil	Negative -Direct	L: Impact predominantly around the substation infrastructure and along the access road.	S-t: Impact expected during the construction phase only.	N: Conditions in the area are not conducive to severe soil erosion (i.e. the area is flat, annual rainfall is low and wind speed is generally low).	L: Although conditions at the site are unlikely to lead to soil erosion, this cannot be discounted completely.	Negligible (Negligible magnitude, low likelihood)	Negligible
Contamination of soil and groundwater resources	Contamination of soil and groundwater could occur due to potential fuel, chemicals or effluent spillage.	Emil	Negative - Direct	L: Mainly on-site due to presence of an oil-filled transformer and possible herbicide use in the substation yard to clear vegetation. However, vehicles accessing the site could leak fuel or oil.	S-t: Impact expected during the construction phase only.	L: The groundwater sensitivity is low in this area; therefore, any potential contamination should not be severe.	L: Owing to the nature of construction activities, soil and groundwater contamination is possible.	Negligible (Low magnitude, low likelihood)	Negligible

Table 7.4 Kimberley-De Aar railway refurbishment (construction phase impacts)

Impact	Description	Applicable Section	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre-Mitigation)	Significance (Post-Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Loss of or disturbance to sites of archaeological, paleontological or cultural significance (Section 7.6.1)	General construction activities could cause disturbance, damage or destruction to sites of medium or high cultural significance (as defined in the NHRA); or affect sites of paleontological importance.	Site ID KDC 003 near Witputs	Negative - Indirect (e.g. through vandalism)	L: Site KDC 003 lies on private property approx. 50m southeast of the existing railway reserve boundary fence.	P: Damage to site will be irreversible.	H: This site is of high local significance in terms of the NHRA and would be permanently altered if impacted by construction activities.	L: It is possible that site KDC 003 could be impacted	Moderate (High magnitude, low likelihood)	Minor
Dust nuisance (Section 7.6.2)	Generation of dust from general refurbishment activities which includes the topping up of base material, replacement of the rail sleepers and adding of electrification equipment could impact on social receptors.	Settlements located at: Houtkraal - 60m, Potfontein - 100m, Oranjerivier - 75m, Klokkfontein - 450m and Modderrivier - 75m. although Houtkraal and Potfontein appear to be abandoned station buildings i.e. uninhabited	Negative - Direct	O: All work to be done within the railway reserve.	S-t: Impact expected during the construction phase only.	M: Although dust generated will be minimal, as there are no major earthworks or blasting planned - this could impact on social receptors within 100m of the line at Oranjerivier and Modderrivier.	H: Although of limited quantities, some dust will definitely be generated during refurbishment of the line.	Moderate (Medium magnitude, High likelihood)	Minor
Noise disturbance (Section 7.6.3)	Noise disturbance from general construction activities may impact on social receptors. No blasting is expected.	Settlements located at: Houtkraal - 60m, Potfontein - 100m, Oranjerivier - 75m, Klokkfontein - 450m and Modderrivier - 75m. although	Negative - Direct	O: All work to be done within the railway reserve.	S-t: Impact expected during the construction phase only.	M: Although no major earthworks or blasting is expected to take place, there are social receptors within 100m of the line at Oranjerivier and Modderrivier that	H: Although of limited intensity, noise will definitely be generated during construction.	Moderate (Medium magnitude, High likelihood)	Minor

Impact	Description	Applicable Section	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre-Mitigation)	Significance (Post-Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
		Houtkraal and Potfontein appear to be abandoned station buildings i.e. uninhabited				could be affected.			

Table 7.5 Social impacts for all project components during the construction phase

Impact	Description	Applicable Sites	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Increased pressure on infrastructure and services (Section 7.7.1)	General construction activities and associated labour could lead to increased pressure on infrastructure such as water, sanitation and roads as well as general services such as clinics.	All loops, yards and the substation but more relevant to sites where isolated, local communities are located in proximity to the site	Negative - Direct	L: Impacts are likely to be on people living in close proximity to the sites (within 20km).	S-t: Impact expected during the construction phase only.	M: The intensity is difficult to rate as the impact is likely to be experienced differently by different groups of people in the community – the intensity is, therefore, conservatively rated as medium.	M: It is highly likely that there will be an increase in pressure on existing infrastructure	Moderate (Medium magnitude, medium likelihood)	Minor
Spread of HIV/AIDS and STIs	The project may attract migrant workers into the project area during construction. An increase in migrant workers is often linked to an increase in the	All loops, yards and the substation but most relevant to the loops	Negative - Indirect	L: The impact is not expected to be transmitted beyond the local level.	P: The impact could be permanent in some cases as it could potentially lead	M: Those affected would require support in dealing with this impact on them.	M: The influx of migrant workers is likely to lead to an increase in the prevalence of these diseases.	Moderate (Medium magnitude, medium likelihood)	Moderate

Impact	Description	Applicable Sites	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
	transmission and prevalence of STIs given the rise in the number of single men within a targeted area. Prostitution may also result. This in turn exacerbates the transmission and, therefore, the prevalence of HIV/AIDS and STIs.				to the death of individuals.				
Increase in Social Ills (section 7.7.2)	The introduction of project labourers/employees/contractors into local communities could lead to potential impacts including, <i>inter alia</i> , increase in prostitution, increase in the consumption and sale of alcohol and drugs, potential increase in domestic violence and an increase in violence in general.	All loops, yards and the substation	Negative - Indirect	L: Likely to have local effect due to influx of the labour force into local communities.	S-t: Impact expected during the construction phase only.	M: Social ills such as drug and alcohol abuse are already a problem in many of the towns in the project area and these would be exacerbated.	M: The introduction of a construction workforce will likely lead to an increase in social ills.	Moderate (Medium magnitude, Medium likelihood)	Moderate
Potential employment and procurement opportunities (Section 7.7.3)	Construction activities are associated with the generation of employment opportunities, across varying skill levels; and also requires the procurement of goods and services	All loops, yards and the substation. However, the loops are associated with the majority of requirements for goods and services	Positive - Direct, Indirect & Induced	L: Through project-related employment from local communities R: Through procurement and labour	S-t: Impact expected during the construction phase only.	L: The intensity is low due to the limited number of jobs that will be created and the temporary nature thereof. It is expected that approx 100	H: Procurement of goods, services and employment (direct and indirect) will definitely be created for the duration of the construction phase.	Minor (low magnitude, high likelihood)	Negligible

Impact	Description	Applicable Sites	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post - Mitigation)
				Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
		and will be the biggest contributor to employment generated during the project		employment from within the affected provinces N: Through procurement and skilled labour employment from other provinces. There will also be some international procurement of specialised equipment.		unskilled and 75 skilled jobs will be created during the construction of each loop and construction will only last about 3-5 months at each loop.			

Table 7.6 Railway line between Hotazel and the Port of Ngqura, including the loops (operational phase impacts)

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre-Mitigation)	Significance (Post-Mitigation)
			Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Impact from increased noise generation (Section 7.8.1)	Impact on sensitive receptors such as human settlements, schools and wildlife areas owing to an increase in the frequency of trains.	Negative - Direct	L: Impact will extend beyond the rail reserve	L-t: Increased noise generation is associated with additional volumes of trains on the line, which will increase over time.	H: For those social receptors close to the railway line, where no buffer (e.g. steep or undulating topography) is present, noise impacts are expected to occur. On this basis, the noise study indicates that for trains travelling at an average speed of 45km/hr passed rural residential settlements approximately 30m from the line, the acceptable noise limit of 45dBA (according to SANS10103) will be exceeded by 14dBA . When the increase in train volumes is at its highest (estimated to be in 2020), the acceptable noise limits will be exceeded by 18dBA at 45km/hr. The intensity of the impact will be even greater at higher train speeds.	M: Noise disturbance, above acceptable levels, will very likely be experienced at locations with settlements in close proximity to the line (30m - 100m).	Major (High magnitude, medium likelihood)	Major
Impact of manganese dust	Impact on sensitive receptors such as human settlements and wildlife areas due to long-term exposure.	Negative - Direct	L: Impact will extend beyond the rail reserve	L-t: It is expected that manganese ore will be	L: Modelled quantities in the air quality study (see the Air Quality Specialist Report in <i>Annex A1</i>) show the amount of	L: Although the manganese is transported as chunks of ore, some dust may possibly be dispersed off the open	Negligible (Low magnitude, low	Negligible

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring N - Negligible L - Low M - Medium H - High	Significance (Pre-Mitigation)	Significance (Post-Mitigation)
			Extent O - On-site L - Local R - Regional N - National	Duration T - Temporary S-t - Short-term L-t - Long term P - Permanent	Intensity N - Negligible L - Low M - Medium H - High			
				transported on the line for the duration of its lifespan	additional manganese dust generated by increased train volumes to be negligible and within acceptable limits. Manganese dust generation is associated more with handling areas such as at the mines and at the export terminals. There is, therefore, not expected to be any alteration of ecological function and processes or any effect on people that may be living in proximity to the line.	wagons, even though the quantities will be negligible.	likelihood)	
Impacts from increased vibration effects	Impact of ground borne vibration on sensitive receptors such as settlements (people, houses & structures), from an increase in the frequency of trains.	Negative - Direct	L: Impact will extend beyond the rail reserve	L-t: Increased vibration effects are associated with additional volumes of trains on the line, which will increase over time.	L: The vibration study (see the specialist report in <i>Annex A7</i>) found no adverse effects on built structures, the closest of which is located about 40m from the rail reserve. However, some informal dwellings to occur closer than this, but are not considered to be at risk. The increased vibration is expected to present a nuisance to people as there are more trains passing over a given period but the severity of the vibration of any one train is within acceptable limits, assuming the train speed and locomotive type is similar to what is currently in use. Increased train speeds can exacerbate vibration effects.	L: The effect of the vibration caused by one train is expected to be similar to the current situation, even though the frequency of the vibration disturbance will increase.	Negligible (Low magnitude, low likelihood)	Negligible

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre-Mitigation)	Significance (Post-Mitigation)
			<u>Extent</u> <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Impact on public safety	Impact on public safety from higher train frequencies at level crossings.	Negative - Direct	O: Impact expected to occur within the railway reserve	L-t: Risk will exist for the duration of the lines operation.	L: No new level crossings will be constructed. Existing crossings may be upgraded or moved a short distance hence users are familiar with the sites of the crossings and potential for traffic incidents if safety procedures are not followed. The traffic study (see the specialist report in <i>Annex A6</i>) modelled the probability of an increase in incidents owing to an increase in the volume of trains (max volume estimated to be in 2016) and found the probability for an increase in incidents occurring to be negligible.	L: Although modelled results show the likelihood of level crossing incidents to be negligible, it is possible that incidents may occur due to human error. The likelihood of pedestrian incidents was not covered in the study.	Negligible (Low magnitude, low likelihood)	Negligible

Table 7.7 Yards and substation (operational phase impacts)

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre - Mitigation)	Significance (Post-Mitigation)
			<u>Extent</u> <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Impact from increased noise generation	Impact on sensitive receptors such as settlements in close proximity to the railway yards and the substation site.	Negative - Direct	O: All the yards and the substation sites are remote, therefore the impact will be on-site. The Beaconsfield yard in Kimberley is located 1km away from an informal settlement, but this is sufficiently far away for operational noise at the yard not to reach them.	L-t: Noise impacts will be generated for the life of the project.	N: The yard upgrades will not increase operational activity to a large degree, therefore, noise levels will be similar to existing conditions. Any noise associated with the presence of the substation will not be severe, in light of surrounding mining land uses which are the main noise generators.	N: No noise impacts are expected to occur at sensitive receptors.	Negligible (Negligible magnitude and negligible likelihood)	Negligible
Contamination of soil and groundwater resources	Contamination of soil and groundwater due to potential fuel, transformer oil or chemical spillage at Emil substation.	Negative - Direct	L: Although soil contamination would be on-site, contaminants leaching through the soil could reach the groundwater and	L-t: Contamination impacts could occur at any time over the life of the project.	L: It is not expected that large quantities of contaminants may be spilled and as the groundwater sensitivity in this area is low, remediation should be possible.	L: Although unlikely to occur under standard operating conditions, it is possible that spillages may occur due to mismanagement or poorly maintained equipment.	Negligible (Low magnitude and low likelihood)	Negligible

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre - Mitigation)	Significance (Post-Mitigation)
			<u>Extent</u> <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
			have a local effect, as groundwater is likely to extend off-site.					

Table 7.8 Social impacts (operational phase impacts)

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>	Significance (Pre - Mitigation)	Significance (Post-Mitigation)
			<u>Extent</u> <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	<u>Duration</u> <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	<u>Intensity</u> <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
Change in Sense of Place (Section 7.10.1)	Issues such as noise and vibration are likely increase due to the increased number of train movements per day thereby impacting the sense of place. The increase in rail traffic may impact on movement patterns across the line as well.	Negative - Direct & indirect	L: The impact will be experienced at a local level throughout the project area.	L-t: The impact may be experienced at various stages during the project lifetime	M: The intensity is likely to vary throughout the project area and will also vary for different sectors of the population. Vulnerable people such as the sick and elderly are most likely to experience this change negatively.	M: It is very likely that the sense of place will be impacted on for some people/communities.	Moderate (Medium magnitude, medium likelihood)	Negligible
	The project may generate positive economic benefit and revitalisation of areas along the line.	Positive - Direct	L: The impact will be experienced at a local level	L-t: The impact may be experienced at	L: The intensity is likely to vary throughout the project area and will also	M: It is very likely that there will be some positive view of the changes brought	Minor (Low magnitude, medium)	Minor

Impact	Description	Nature	Magnitude of Impact			Likelihood of impact occurring	Significance (Pre - Mitigation)	Significance (Post-Mitigation)
			Extent <i>O - On-site</i> <i>L - Local</i> <i>R - Regional</i> <i>N - National</i>	Duration <i>T - Temporary</i> <i>S-t - Short-term</i> <i>L-t - Long term</i> <i>P - Permanent</i>	Intensity <i>N - Negligible</i> <i>L - Low</i> <i>M - Medium</i> <i>H - High</i>			
			throughout the project area.	various stages during the project lifetime	vary for different sectors of the population. The youth may feel encouraged by the opportunities that they perceive may occur as a result of the project.	about by the project	likelihood)	
Potential employment and procurement opportunities	The operations phase will impact direct employment and have indirect impacts through procurement.	Positive - Direct	L: Through operations-related employment in local communities in the project area. R: Through procurement and labour employment within the affected provinces. N: Through procurement and skilled labour employment from other provinces.	L-t: Jobs will be created over the lifetime of the project as the volumes of product being handled increases.	N: Relatively few permanent job opportunities will be created by the project during operations and these will be spread over a long period of many years.	L: The likelihood of permanent job creation and procurement is possible, although the expected levels will be significantly lower during operations as opposed to the construction phase.	Negligible (Negligible magnitude and low likelihood)	Negligible

In determining the positive and negative construction phase impacts associated with the loops, the following numbers of impacts per significance category were identified:

- One (1) major impacts;
- Five (5) moderate impacts;
- Six (6) minor impacts; and
- Three (3) negligible impacts.

The major and moderate pre-mitigation impacts are described in *Sections 7.3.1 to 7.3.8*.

7.5.1

Spread or colonisation of invasive alien species and weed taxa (Major significance)

The establishment of laydown areas and temporary access roads at the loop sites and the associated clearing of vegetation are likely to result in areas with little or no vegetation cover. These patches of disturbed soil are likely to be vulnerable to colonisation by ruderal ⁽²⁶⁾ weeds (mostly annual weeds), or declared alien invasive species, that will prohibit the natural succession of the local indigenous vegetation during rehabilitation. Such soil disturbances, as well as the inappropriate handling of topsoil, could enhance the spread of invader taxa to other systems or vegetation units. Disturbances along drainage lines could also contribute towards the spread of alien invader species locally and regionally. In addition, it is also possible that bush encroacher species (e.g. *Acacia natalitia* & *A. karroo*) may become dominant in the immediate surrounding areas.

Although primarily linked to construction phase activities, if measures are not taken to control and eradicate alien invasives and weed taxa, then the impact on local vegetation communities could persist well beyond the construction phase.

(26) A ruderal species is a plant species that is first to colonise disturbed lands.

Box 7.2 summarises the potential impacts associated with the spread or colonisation of invasive alien species and weed taxa at the loops during the construction phase of the project.

Box 7.1 *Impact summary: spread or colonisation of invasive alien species and weed taxa at the loops*

PRE-MITIGATION IMPACT: MAJOR

- Vegetation clearing during construction will leave bare patches of soil, **enhancing establishment of weeds or declared alien species.**
- Resultant secondary impact – **likely to prohibit natural succession during rehabilitation.**
- Soil disturbance and inappropriate handling of topsoil could enhance **spread of invader taxa to other systems or vegetation units of high sensitivity.**
- Increased **disturbance along drainage lines** could also contribute **towards spread** of alien invaders.
- **Bush encroacher species** may become **dominant** in immediate surrounding areas, which will impact on natural systems which in turn will **also affect faunal habitats and diversity.**

Degree of Confidence: The degree of confidence in the assessment is **high** as it is based on site investigations and assessment conducted as part of specialist study by terrestrial ecologist.

POST MITIGATION IMPACT: MODERATE

Mitigation for spread/ colonisation of invasive alien species and weed taxa

The objective of mitigation is to minimise the impacts on vegetation communities, faunal habitats and species diversity. Specific measures include:

- An alien invasive and weedy species removal programme will be implemented throughout the construction phase and the railway servitude will be regularly (biannually) inspected for the re-establishment of invader species and the follow-up removal thereof;
- All declared invader and weed species occurring at project sites and within the rail reserve will be eradicated (see *Table 7.1*);
- All plant material that is cleared should be removed from the site, to a designated storage area (in the case of replanting) or waste site so that seeds can not disperse; and
- Cleared areas will be succeeded by proper soil stabilisation procedures and rehabilitation to prevent soil erosion.

7.5.2 *Loss of vegetation communities (Moderate significance)*

The construction phase activities will include vegetation clearing which will result in the loss of vegetation communities. Clearing is required to accommodate laydown areas and access roads. The laydown areas (approximately 3 000 m²) will be cleared to allow the establishment of

temporary offices, stores, shelters, mess toilets and ablution facilities. The new and temporary access roads required to reach the development sites varies in length.

Although vegetation would be able to re-establish themselves at the laydown areas and along the temporary access roads once construction is complete, it is unlikely to represent the same diversity of the communities they replace.

Box 7.1 summarises the potential loss of vegetation communities associated with the loops during the construction phase.

Box 7.2

Impact summary: loss of vegetation communities at loops

PRE-MITIGATION IMPACT: MAJOR

- Majority of the areas proposed for construction **already disturbed**.
- The footprint of construction activities is of **limited extent** in context of 1400km rail line, however five loop sites have been classified as **areas of medium ecological significance**.
- Impacts relate specifically to **vegetation clearing** during construction at the loop sites and associated activities (access roads and laydown areas).
- Impacts will result in the **direct loss of certain vegetation communities**.
- Although some vegetation communities will re-establish – **unlikely to achieve same diversity even with effective mitigation** and rehabilitation impact remains moderate.

Degree of Confidence: The degree of confidence in the assessment is **high** as it is based on input from a specialist terrestrial ecologist.

POST MITIGATION IMPACT: MODERATE

Mitigation for loss of vegetation communities

The objective of mitigation is to minimise the construction impacts on the vegetation communities at each site. Specific measures include:

- Establish the footprint of laydown areas as far as possible on existing disturbed areas as opposed to “greenfield” areas;
- The extent of the laydown/construction area will be fenced-off and all materials and equipment will be restricted to this work area;
- The extent of the construction site will be demarcated on the site layout plans, and no construction personnel or vehicles will be allowed to encroach beyond the demarcated area without prior authorisation to do so. Those areas surrounding the construction site that are not part of the demarcated development area will be marked as “no-go” areas for employees, personnel or machinery. These no-go areas will be demarcated with construction/ danger tape to control unauthorised access to them;
- A qualified local botanist will be appointed to supervise the identification, marking and transferring of plant taxa, where required. This is only expected to occur at sites flagged as having vegetation of moderate to high

ecological importance, or where sensitive/protected vegetation species and communities are known to occur (see *Section 5.2.5 in Chapter 5*);

- Where any Red Listed, protected or important medicinal plant species are identified by the local botanist, they will be marked, and if threatened by destruction, they will be removed (with the relevant permits) and temporarily placed within an on-site nursery for re-establishment after the construction phase;
- Regular checks will be carried out by the Environmental Control Officer (ECO) or Site Engineer to identify areas where erosion is occurring as a result of the vegetation removal. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the paths/sources causing the erosion, will be undertaken;
- Vehicles transporting materials to and from a designated offloading area will be covered with tarpaulins to reduce dust generation and will be restricted to designated roads;
- Stockpiles of sand and earthworks material that is susceptible to wind erosion will be covered during windy periods;
- Harvesting of firewood or any plant material will be prohibited. The immediate surrounding area will be regularly monitored by the ECO for evidence of wood collection. Fines could be implemented to alleviate firewood collection; and
- Contractors, labourers and visitors will be familiarised with the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during awareness building and capacity building/ training exercises/ induction programmes or their first visit to the site (in the form of a pamphlet or training session).
- Topsoil removed (during levelling of areas where loops are to be constructed in levelling of laydown areas and yards or topsoil removal at access roads) should be kept separate and used for vegetation rehabilitation purposes.
- Where necessary, special erosion prevention/ protection measures will be implemented

7.5.3

Loss of faunal diversity and richness (Moderate significance)

The clearing of vegetation for construction activities such as the establishment of laydown areas and the creation and use of access roads could have both a direct (through direct mortality) and indirect (through the loss of habitat) impact on fauna at the loop sites. Furthermore the moving and erecting of new fences may also disrupt existing habitats and breeding areas. The loss of faunal habitat could result in an indirect loss in faunal diversity and species richness. In addition, the loss of faunal habitat is likely to be significantly

greater at sites with high faunal activity which includes Blinkhoff, Saltaire and Eagles Crag.

The specialist study on terrestrial ecology concluded that the loss of habitat due to construction activities is unlikely to cause significant disturbance to these species or any other Red Data mammal species possibly occurring in the vicinity of the various sites.

Box 7.5 summarises the potential loss of faunal diversity and richness at the loops during the construction phase.

Box 7.3

Impact summary: loss of faunal diversity and richness

PRE-MITIGATION IMPACT: MODERATE

- **High faunal activity** at Blinkhof, Saltaire and Eagles Crag.
- **Impact on fauna** (through direct **mortality and** indirect through **loss of habitat**) through vegetation clearing, moving and erecting of new fences.
- Loss of habitat due to construction activities **unlikely to cause significant disturbance** to fauna (including possible red data species) possibly occurring in vicinity of the sites.

Degree of Confidence: The degree of confidence in the assessment is **high** as it is based on site investigations and assessment conducted as part of a terrestrial ecology specialist study.

POST MITIGATION: MINOR

Mitigation for loss of faunal diversity and richness

The objective of mitigation is to minimise the impacts on faunal diversity and species richness within and adjacent to the study sites.

Specific measures include:

- Establish the footprint of laydown areas on existing disturbed areas as opposed to “greenfield” areas;
- The extent of the laydown/construction area will be fenced-off and all materials and equipment will be restricted to this work area;
- The extent of the construction site will be demarcated on the site layout plans, and no construction personnel or vehicles will leave the demarcated area without authorisation to do so. Those areas surrounding the construction site that are not part of the demarcated development area will be marked as “no-go” areas for employees, personnel or machinery. These no-go areas will be demarcated on the ground with tapes or pegs to prevent unauthorised access to them;
- Construction vehicles should be restricted to driving during daylight hours only. This will reduce the likelihood of ‘road kills’;

- As a minimum, the legal speed limit on public roads will be enforced on all drivers. However, the speed on temporary or private dirt roads will be restricted to 40 km/hr;
- Hunting, the unnecessary destruction of burrow systems or nesting sites and interactions with wildlife will be prohibited;
- Littering at work sites and in adjacent areas will be prohibited. Suitable facilities will be provided for waste management; and
- Contractors, labourers and visitors will be educated on the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during induction or their first visit to the site (in the form of a pamphlet or training session).

7.5.4 *Loss of protected invertebrate species (Moderate significance)*

The clearing of vegetation for construction activities such as the establishment of laydown areas, the creation and use of access roads, earthworks (such as cut and fill operations) and blasting, could have both a direct (through direct mortality) and indirect (through the loss of habitat) impact on protected invertebrate species such as Burrowing Scorpions (*Opisthophthalmus spp.*) and Baboon Spiders (likely from the Family Theraphosidae). Evidence of their presence or suitable habitat has been identified at a number of the loop sites, including Blinkhoff, Saltaire, Eagles Crag and Kommadagga.

Box 7.6 summarises the potential loss of protected invertebrate species at the loop sites during the construction phase.

Box 7.4 *Impact summary: loss of protected invertebrate species at the loops*

<p><u>PRE-MITIGATION IMPACT: MODERATE</u></p> <ul style="list-style-type: none"> • Evidence of protected species such as Burrowing scorpions and Baboon Spiders at Blinkhof, Saltaire and Eagles Crag and Kommadagga. • Impact on invertebrate species (through direct mortality and indirect through loss of habitat) through vegetation clearing, moving and erecting of new fences. <p>Degree of Confidence: The degree of confidence in the assessment is high as it is based on site investigations and assessment conducted as part of a terrestrial ecology specialist study. Further specialist survey of certain sites may be required to remove specimens and to inform mitigation.</p> <p><u>POST MITIGATION: MINOR</u></p>
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Mitigation for loss of protected invertebrate species

The objective of mitigation is to minimise the impacts on protected invertebrate species.

It is recommended that the identified sites with evidence of protected species be surveyed prior to the commencement of the construction phase by an entomologist and specimens be donated to a local museum to further scientific research on these species.

Specific measures include:

- Establish the footprint of laydown areas on existing disturbed areas as opposed to “greenfield” areas;
- The extent of the laydown/ construction area will be fenced-off and all materials and equipment will be restricted to this work area;
- The extent of the construction site will be demarcated on the site layout plans, and no construction personnel or vehicles will leave the demarcated area without authorisation to do so. Those areas surrounding the construction site that are not part of the demarcated development area will be marked as “no-go” areas for employees, personnel or machinery. These no-go areas will be demarcated on the ground with tapes or pegs to prevent unauthorised access to them; and
- Posters will be displayed at project sites known to include the habitat of protected species such as the Burrowing Scorpion and Baboon Spiders, so that workers can know to avoid them, not cause them harm, move them to a safe location or donate them to a local museum as specimens for scientific research purposes.

7.5.5 *Disturbance to riparian zone (Moderate significance)*

The proposed construction of a new passing loop at Tootabi lies adjacent to the riparian vegetation of the Critically Endangered Boesmans River. Not only does the riparian habitat support a variety of flora and faunal species, but the functioning of this river is of major concern, considering its current ecological status. Development encroaching on the riparian vegetation and effects of construction activities in the area (such as excavation and stockpiling of material, use of heavy construction equipment and vehicles) could have a direct negative impact on the riparian zone, for example, through pollution from contaminated run-off and suffocation of vegetation from airborne materials (dust) and sediment. This could have knock-on effects on river function and water quality, from siltation and contaminants entering the river system, respectively.

It is expected that the construction of the loop at Tootabi will occur on the opposite side of the existing railway line, approximately 10m -100m from the riparian zone.

Box 7.7 below summarises and outlines the potential loss and disturbance to riparian zone vegetation within the project area during the construction phase.

Box 7.5 *Impact summary: disturbance to riparian zone at Tootabi*

PRE-MITIGATION IMPACT: MODERATE

- Construction activities at the **Tootabi loop site** could **impact on the riparian zone** adjacent to the railway line and this could have **knock-on effects on the Boesmans River,**
- Although **construction activities will occur on the opposite side of the railway line,** it is possible that some disturbance to the riparian zone may still occur
- The **effects of siltation/pollution could extend beyond the construction phase**
- as the riparian zone is associated with a **Critically Endangered river system,** any further disturbance to this area should be avoided

Degree of Confidence: The degree of confidence in the assessment is **high** as it is based on site investigations and assessment conducted as part of a terrestrial ecology specialist study.

POST MITIGATION: MINOR

Mitigation for loss and disturbance to riparian zone vegetation

The objective of mitigation is to minimise the impacts on the riparian vegetation and prevent pollution/degradation of the Boesmans River. Specific measures include:

- All construction activities at the Tootabi loop site will be restricted to the railway reserve, more specifically to the western side of the reserve and to vacant areas further west;
- The eastern side of the railway reserve, adjacent to the riparian vegetation, will be fenced and marked on layout plans as a no-go area;
- The extent of the construction work area will be fenced-off and no unauthorised access will be allowed outside of the rail reserve and designated work areas;
- Ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles will be located as far away as possible from the riparian zone and any water courses;
- Vehicles transporting materials to and from a designated offloading area will be covered with tarpaulins to reduce dust generation and will be restricted to designated roads;
- Stockpiles susceptible to wind erosion will be covered during windy periods;
- Harvesting of firewood or any plant material will be prohibited. The immediate surrounding area will be regularly monitored by the ECO for evidence of wood collection. Fines could be implemented to alleviate firewood collection;

- Contractors, labourers and visitors will be educated on the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during induction or their first visit to the site (in the form of a pamphlet or training session); and
- Should the development plans for this loop change, such that there may be an impact on the riparian vegetation or the Boesmans River, then an application for a Water Use License according to Section 21 of the National Water Act (Act No. 36 of 1998) will be applied for.

7.5.6 *Noise disturbance (Moderate significance)*

Noise disturbance during the construction phase could result from the use of heavy machinery (e.g. generators) and vehicles, blasting, drilling and general noise from labourers. While the noise emitted from construction activities is likely to be highly variable, noise disturbance could be experienced by some social receptors, such as human settlements and schools, located in proximity to the railway line. There are human settlements at Tootabi, Eagles Crag, Barkly Bridge, Coerney, Golden Valley, Mortimer, Marlow, Visrivier, Conway, Rosmead and Bletterman. The settlements near the Coerney, Golden Valley and Visrivier loops occur within 50 m of the railway line. There is also a school located at Coerney, within 50 m of the line.

Noise disturbance from construction activities could also be more acutely experienced in wilderness areas, such as those near the Addo loop site (for e.g. the boundaries of the Addo Elephant National Park and Shamwari Game Reserve are within 1km from the loop). However, in the case of both Addo Elephant National Park and Shamwari Game Reserve, the affected section of boundary and thus reserve is less than 500m and in addition, landscape at Shamwari Game Reserve adjacent to the loop site is significantly undulated and should attenuate any noise impacts into the reserve.

According to the South African National Standard, SANS 10103, the acceptable noise levels for different land use types occurring within the project area, is given as follows (also see noise specialist report in *Volume 2* of the Final EIR):

- Rural residential areas (which characterizes the majority of the project area) - 45dBA (35dBA at night); and
- Suburban areas with little road traffic - 50dBA (40dBA at night).

Although it is difficult to predict the noise impact on sensitive receptors without detailed modeling, which would take into account topography of the land, existing natural and man-made buffers, prevailing wind direction and speed, etc., it is expected that some receptors will experience a noise disturbance during the construction phase.

Box 7.8 summarises the noise disturbance at the loop sites during the construction phase.

Box 7.6

Impact summary: noise disturbance at loops

PRE-MITIGATION IMPACT: MODERATE

- **Direct negative impact for human settlements** surrounding construction sites.
- **Sensitive receptors within 50m** will experience the noise disturbance more intensely, but this only affects three loop sites for a limited period (3-5 months at each loop).

Degree of Confidence: The degree of confidence is **medium** as the potential for noise disturbance has not been modelled for sites where a sensitive receptor occurs. The specialist noise study undertaken has taken a conservative approach to predicting possible noise impacts

POST MITIGATION: MINOR

Mitigation for noise disturbance

The objective of mitigation is to minimise the impacts of noise disturbance on social and ecological (faunal and avifaunal) receptors during construction. Specific measures include:

- Operate equipment within its specification and capacity so as not to overload them and cause them to operate ineffectively;
- Regularly maintain equipment (particularly with regards to lubrication) and vehicles (exhausts) so that they operate efficiently;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Drive at the legal speed limit on public roads and at 40 km/hr on dirt or private roads to limit the noise generated;
- Restrict construction activities to daylight hours that are reasonable and practicable to the specific site conditions; and
- Sensitive social receptors such as schools (e.g. at Coerney) will be given adequate notice of when noisy activities, such as blasting, will occur (if applicable).

7.6

CONSTRUCTION PHASE IMPACTS ASSOCIATED WITH THE YARDS

In determining the construction phase impacts associated with the yards, the following numbers of impacts per significance category were identified:

- No major impacts;
- No moderate impacts;

- No minor impacts; and
- Four (4) negligible impacts.

For details on the negligible impacts please refer to the impact summary tables (*Tables 7.1 to 7.8*) along with *Chapter 8* and the Standard Environmental Specification (*AnnexA1*) for general best practice mitigation measures.

7.7 CONSTRUCTION PHASE IMPACTS ASSOCIATED WITH THE SUBSTATION AT EMIL

In determining the construction phase impacts associated with the substation at Emil, the following numbers of impacts per significance category were identified:

- No major impacts;
- No moderate impacts;
- Four (4) minor impacts; and
- Three (3) negligible impacts.

For details on the minor and negligible impacts please refer to the impact summary tables (*Tables 7.1 to 7.8*) along with *Chapter 8* and the Standard Environmental Specification (*AnnexA1*) for general best practice mitigation measures.

7.8 CONSTRUCTION PHASE IMPACTS ASSOCIATED WITH THE REFURBISHMENT BETWEEN KIMBERLEY AND DE AAR

In determining the construction phase impacts associated with the refurbishment of the railway line between Kimberley and De Aar, the following numbers of impacts per significance category were identified:

- No major impact;
- Three (3) moderate impacts;
- No minor impacts; and
- No negligible impacts.

The moderate pre-mitigation impacts are described in *Sections 7.6.1 to 7.6.3*.

7.8.1 *Loss of or disturbance to sites of archaeological, paleontological or cultural significance (Moderate significance)*

The KDC003 site near Witputs (approximately 21 km north-east of Hopetown) lies about 50 m from the railway line and outside the railway reserve (which is fenced) and is considered to be a site of “high cultural significance” as stipulated in Section 3(3) of the National Heritage Resources Act (Act No. 25 of 1999).

The site consists of a single, large boulder and small rock nearby with engravings on numerous sides. The engravings on the boulder show a single Eland, five possible human footprints (one outlined, four fully engraved) and an indistinct engraving below the Eland. An unidentified figure is engraved on the small rock.

This site may be indirectly affected during the construction phase through negligence and vandalism.

Box 7.9 summarises the potential loss of or disturbance to sites of archaeological, paleontological or cultural significance during the refurbishment activities between Kimberley and De Aar.

Box 7.7 *Impact summary: loss of or disturbance to sites of archaeological, paleontological or cultural significance (Kimberley-De Aar)*

PRE-MITIGATION IMPACT: MODERATE

- A site (KDC003) near Witputs, located about 50 m from the railway line and outside the railway reserve is considered a **site of "high cultural significance"**
- The site may be indirectly affected during the construction phase through **negligence and vandalism.**

Degree of Confidence: The degree of confidence in the assessment is **high** as it is based on the findings of a specialist archaeological, cultural heritage and paleontological study.

POST MITIGATION: MINOR

Mitigation for the loss of or disturbance to sites of archaeological, paleontological or cultural significance

- A chance-find procedure will be implemented so that in the event of graves or stone age artefacts/fossils being uncovered, the ECO/Site Engineer will take the appropriate action, which includes:
 - Stopping work in the immediate vicinity and if possible, fencing off the area with tape to prevent further access;
 - Reporting the discovery to the provincial department of the South African Heritage Resources Agency;
 - Appointing a local archaeological/paleontological expert to inspect the discovery;
 - Implementing further mitigation measures proposed by the expert; and
 - Allowing work to resume only once clearance is given in writing by the expert.

- In the case of a chance-find of a grave, the National Monuments Council will be contacted and arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

7.8.2 *Dust nuisance (Moderate significance)*

Although no major earthworks or blasting are expected during the refurbishment of the line between Kimberley and De Aar, it is expected that small amounts of dust will be generated by general construction activities. For the majority of this section of the railway line, this should pose little to no problem. However, for social receptors located within 100 m of the line (this includes the towns of Oranjerivier and Modderrivier), dust generated may pose a nuisance impact. The magnitude of the impact will be influenced by factors such as prevailing wind speed and direction, how dry the soil is, etc

Box 7.10 summarises the impact of dust nuisance during the refurbishment of the Kimberley to De Aar section of the railway line.

Box 7.8 Impact summary: dust nuisance (Kimberley-De Aar)

<p><u>PRE-MITIGATION IMPACT: MODERATE</u></p> <ul style="list-style-type: none"> • Dust generated will be minimal, as there are no major earthworks or blasting planned over this 230km section of the railway line. • Could impact on social receptors within 100m of the line at Oranjerivier and Modderrivier for the limited duration of the refurbishment. <p>Degree of Confidence: the degree of confidence in the assessment is medium as the amount of dust to be generated is not quantifiable and will vary depending on climatic conditions and other factors.</p> <p><u>POST MITIGATION: MINOR</u></p>
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Mitigation for dust nuisance

The objective of mitigation is to minimise the impacts of dust nuisance on social and ecological receptors. Specific measures include:

- The removal of vegetation will be limited to the construction areas only;
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, run-off, and air-borne dust;
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2 m in height to prevent wind-blown dust;
- Apply dust suppression that is appropriate, reasonable and practicable to the scale of the stock piles (it is anticipated that these will be small) that are

based on accepted principles such as wetting. This would restrict the consumption of water and allow the contractor to implement other appropriate measures that could be equally effective e.g. dust suppressors, shade cloth etc.;

- Access roads should be wetted down where reasonable and practicable to limit dust generation;
- Construction material being transported by trucks will be suitably moistened or covered to prevent dust generation;
- Speed restrictions of 40km/h will be implemented on construction sites and access roads to limit dust entrainment by vehicles;
- Verges, cuttings, lay-down areas and construction areas will be re-vegetated according to specific site conditions as soon as the construction activity is completed at each of the respective sites and in accordance with the operational or post-construction utilisation of that particular site;
- Material in transit will be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle will be covered with a tarpaulin to prevent dust;
- Minimise haulage distances, if possible; and
- Environmental friendly soil stabilisers may be used as additional measures to control dust on gravel road and at construction work areas.

7.8.3 *Noise disturbance (Moderate significance)*

Although no major earthworks or blasting are expected during the refurbishment of the line between Kimberley and De Aar, it is expected that some noise will be generated by general construction activities. For the vast majority of this section of the railway line, this should pose little to no problem. However, for social receptors located within 100 m of the line (at Oranjerivier and Modderrivier) noise generated could result in a negative impact. The magnitude of the impact will be influenced by factors such as topography, buffers (man-made and natural) and prevailing wind speed and direction.

Box 7.11 summarises the impact of noise disturbance during the refurbishment of the Kimberley to De Aar section of the railway line.

PRE-MITIGATION IMPACT: MODERATE

- **All construction and refurbishment work is expected to take place within the rail reserve**
- **Although of limited intensity, some noise disturbance likely to occur – construction vehicles accessing the site. No blasting**
- **Could impact on social receptors within 100m of the line at Oranjerivier and Modderivier for the limited duration of the refurbishment.**

Degree of Confidence: the degree of confidence in the assessment is **medium** as the amount of noise to be generated is not quantifiable and will vary depending on topographic conditions and other factors.

POST MITIGATION: MINOR*Mitigation for noise disturbance*

The objective of mitigation is to minimise the impacts of noise disturbance on social and ecological receptors during construction. Specific measures include:

- Operate equipment within its specification and capacity so as not to overload them and cause them to operate ineffectively;
- Regularly maintain equipment (particularly with regards to lubrication) and vehicles (exhausts) so that they operate efficiently;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Drive at the legal speed limit on public roads and at 40 km/hr on dirt or private roads to limit the noise generated;
- Restrict construction activities to daylight hours that are reasonable and practicable to the specific site conditions; and
- Sensitive social receptors such as schools (e.g. at Coerney) will be given adequate notice of when noisy activities, such as blasting, will occur (if applicable).

7.9

CONSTRUCTION PHASE SOCIO-ECONOMIC IMPACTS

In determining the positive and negative socio-economic impacts related to the construction phase of all the project components, the following numbers of impacts per significance category were identified:

- No major impacts;
- Three (3) moderate impacts;
- One (1) minor impact; and

- No negligible impacts.

The moderate pre-mitigation impacts are described in *Sections 7.7.1 to 7.7.3*. For details on the minor impact please refer to the impact summary tables (*Tables 7.1 to 7.8*) along with *Chapter 8* and the Standard Environmental Specification (*AnnexA1*) for general best practice mitigation measures.

In addition to the mitigations suggested in *Sections 7.7.1 to 7.7.3*, a Social Management Plan (SMP) will be compiled by the HMGJV for the construction phase. The SMP will be based on the high level social assessment of the affected area and communities will suggest specific areas where the corporate social responsibility/investment can be addressed or implemented.

7.9.1 *Increased pressure on infrastructure and services (Moderate significance)*

The construction phase may place increased pressure on limited existing infrastructure and services throughout the project area. In particular, issues of water scarcity, sanitation, access and roads and availability of social services such as clinics, schools and housing delivery may be issues arising both directly and indirectly from the construction phase. Municipalities are currently struggling to provide adequate infrastructure and services to people in communities already within their jurisdiction.

Much of the study area, particularly in the Northern Cape, is classified as semi desert and water scarce. In the Eastern Cape, the project area falls within what is known as the 'drought corridor ⁽²⁷⁾' (Usman and Reason, 2004). This region is known for its sporadic droughts and water is generally scarce. Transnet are considering sinking new boreholes or reaching agreements with adjacent landowners for use of borehole water. Alternatively, water will need to be trucked in. However, employees taking up residence in surrounding towns will make use of municipal services.

Many of the districts through which the railway line passes are rural and sanitation is less than adequate. Basic sanitation is supplied to 74 percent of all households in the Northern Cape and in parts of the Eastern Cape only 55 percent have access to adequate sanitation.

The increase in heavy vehicle traffic on the predominantly gravel road network in the study area will affect the quality of the roads. The tarred roads in towns may also be impacted due to use by heavy construction vehicles.

The potential influx of job seekers into towns in the project area could further increase the pressure on already limited social services. It is expected that this impact could be experienced beyond the construction phase, should migrant workers choose to settle in the area.

(27) The drought corridor extends across the Southern Africa region. This region extends from 20 degrees to 25 degrees south and is typically a summer rainfall region, but the region often experiences half or more of the summer season under a dry spell.

Box 7.12 outlines the potential impact of increased pressure on infrastructure and services within the project area during the construction phase.

Box 7.10 *Impact summary: increased pressure on infrastructure and services*

<p><u>PRE-MITIGATION IMPACT: MODERATE</u></p> <ul style="list-style-type: none">• Construction activities, although of limited duration, could result in increased pressure on limited existing infrastructure and services throughout the project area.• The dispersed and limited increase in heavy vehicle traffic on the predominantly gravel road network in the study area will affect the quality of the roads.• Potential influx of job seekers into towns in the project area could further increase the pressure on already limited social services. Resulting impact could extent beyond construction phase, should migrant workers choose to settle in the area. <p>Degree of Confidence: The degree of confidence is medium given the lack of information on the state of existing infrastructure at the local level.</p> <p><u>POST MITIGATION: MINOR</u></p>

Mitigation for increased pressure on infrastructure and services

The objectives of the mitigation measures are to:

- Ensure that the project activities do not place any direct pressure on the already strained local infrastructure and services;
- Implement corporate social investment projects that off-set impacts on infrastructure and services from in-migration; and
- Encourage and support government in improving the levels of infrastructure and services provided in the project area, e.g., public lighting and electricity.

Specific mitigation measures that could be taken include:

- Transnet will meet all practical infrastructure and service needs of its construction phase activities so that no additional pressure is placed on existing capacity. Such interventions include:
 - Transnet will drill boreholes or truck water in, should there be insufficient water to meet the needs of the project during construction;
 - Transnet will make sanitation facilities available on-site for all employees and contractors;
 - Transnet will use diesel powered mobile generators for construction activities; and

- Transnet will upgrade and maintain transport routes in the area that are used by project vehicles; vehicles will be required to use specified routes so as to limit impacts to local roads.
- In order to manage the expectations of potential job-seekers and thus attempt to reduce their numbers, Transnet will advertise the approach to, and requirements for, employment and procurement throughout the Northern and Eastern Cape Provinces;
- Transnet will develop and implement a Corporate Social Investment (CSI) Programme that clearly outlines their anticipated initiatives. These initiatives will be identified in consultation with the affected local communities. The plan will outline where projects will be implemented and what the nature of the assistance will be. This strategy will be communicated through a stakeholder engagement plan to ensure that expectations remain realistic and are pro-actively managed;
- Transnet will initiate the formation of partnerships, particularly with relevant government departments, to address selected infrastructural and service areas that are negatively impacted by the influx of job-seekers;
- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all towns. Transnet will appoint a permanent community liaison officer to interact with the communities;
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet;
- Employment will be recruited from towns only and no farm labourers will be employed by the contractors; and
- Where reasonable and practicable, construction camps and lay-down areas (labourer camps and accommodation) will be established within existing towns and where possible vacant or underutilised facilities will be used for the abovementioned.

It is important to emphasise that Transnet, while meeting its own infrastructure and service requirements, will not take on the government's responsibility as service provider.

7.9.2 *Spread of HIV/AIDS and STIs (Moderate significance)*

The mortality profile of the Northern Cape shows that 51 percent of deaths are attributed to non-communicable diseases, particularly cardio vascular disease.

Twenty-three percent of deaths are attributed to communicable diseases and malnutrition, including 14 percent to HIV/Aids and 11 percent to injuries. The prevalence of HIV is higher in women than men, with 16 percent of all female deaths compared to 14 percent of all male deaths. The percentage of deaths as a result of injuries among males is more than double that for females (MRC, 2000).

The mortality profile of the Eastern Cape shows that 43 percent of deaths are attributed to non-communicable deaths. As in the Northern Cape, cardiovascular disease is the primary non-communicable disease. However, the prevalence of HIV in the Eastern Cape is much higher as it is the main cause of death in the province. Twenty percent of deaths are HIV/Aids related, with more women (23 percent) dying of HIV/Aids than men (17 percent) ⁽²⁸⁾. Deaths caused by communicable diseases are also higher in the Eastern Cape at 27 percent (MRC, 2000).

Due to the lack of information on health statistics at the local level and given the prevalence of HIV/Aids it is believed that HIV/AIDS and STIs are most relevant to the project activities. This is because it has an immediate and direct effect on the workforce and the local communities at the project sites.

An increase in migrant workers is often linked to an increase in the transmission and prevalence of STIs given the rise in the number of single men within a targeted area. Prostitution also tends to become more common. This in turn exacerbates the transmission and, therefore, the prevalence of HIV/AIDS and STIs. It is expected that this impact could be experienced beyond the construction phase, should migrants choose to settle in the area.

The increased prevalence of these diseases could negatively and directly affect contractors, employees, local residents and the families and sexual partners of anyone becoming infected in the project area. Given that workers will not be housed in labour camps but amongst the community, it will be extremely difficult to limit the extent of the interaction of the workforce with the local communities.

Box 7.13 summarises the potential impact from the spread of HIV/AIDS and STIs within the project area during the construction phase.

(28) The percentage of deaths attributed to HIV/Aids is a percentage of all female and male deaths.

PRE-MITIGATION IMPACT: MODERATE

- Project may attract migrant workers - often linked to an **increase in transmission and prevalence of STIs**. Prostitution may also result which in turn exacerbates the problem.
- Increased prevalence of these diseases could negatively and directly **affect contractors, employees, local residents and the families and sexual partners**.
- Given that workers will not be housed in labour camps but amongst the community, it will be extremely **difficult to limit the extent of the interaction** of the workforce with the local communities.
- **Construction period short** and limited job opportunities, suggesting influx likely to be small but high levels of unemployment could attract job seekers from elsewhere.
- Impact could be experienced **beyond the construction phase**, should migrants choose to settle in the area.

Degree of Confidence: The degree of confidence is **medium** given the uncertainties related to the numbers of employees/contractors and extent of in-migration.

POST MITIGATION: MINOR*Mitigation for spread of HIV/AIDS and STIs*

The objectives of mitigation are to minimise the transmission of diseases, through effective control measures and to reduce the impact of the disease on the health of employees/contractors to the lowest possible level.

Transnet cannot accept sole responsibility for the management of all health related matters. They will, however, be able to enforce some controls, specifically with respect to the project activities and workforce. Transnet can partner with relevant authorities to deliver appropriate interventions on a wider scale.

Specific mitigation measures include:

- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all affected towns. Transnet will appoint a permanent community liaison officer to interact with the affected communities.
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet.
- Transnet will implement an education programme for all of its own and contract employees to educate them about the measures for mitigating the transmission of HIV/AIDS and STIs. Condoms will be made available to the workers.

- Transnet will implement an HIV/AIDS programme in the project area addressing factual health issues as well as behaviour change issues around the transmission of, and infection by, HIV/AIDS and other STIs. This will be done in association with local health providers. The programme will include making condoms available within affected communities.
- Transnet will seek to foster a relationship with local health providers such that they can monitor changes in levels of community health and wellbeing.

7.9.3 *Increase in social ills (Moderate significance)*

Social change is typically linked to an influx of people into an area in the form of employees directly related to the project, as well as job-seekers, migrating into the area in anticipation of work. As a worst-case scenario, these changes have been known to cause increased vulnerability and the susceptibility of host communities to a range of social pathologies, including increased levels of crime, substance abuse, increased incidence of sex workers, and domestic violence. However, since the construction period per loop is likely to be short and the employment opportunities limited, the consequent influx of migrants is likely to be relatively small.

The major part of the area which the railway line traverses is rural with agriculture being the primary sector of employment. The agricultural sector in general is renowned for the high levels of substance abuse by farm workers. Through the stakeholder engagement process it was established that some of the communities in the project area have an existing substance abuse problem.

Transnet intends for project employees and contractors to find accommodation within the local towns. This will make it difficult for the company to mitigate any increase in social ills that may arise from this influx of workers. Conversely, the workforce will also be susceptible to the impacts of social ills existing within host communities and may also find themselves victims to incidents such as violent attacks by disgruntled locals.

Following the construction phase, it is unlikely that any further job-seekers will move into the area. It is anticipated that few of the job-seekers who arrive for the construction phase will remain in the area and are likely to adjust to the social conditions of the area. Some social ills may, however, continue to be experienced.

Box 7.14 summarises the potential impact of an increase in social ills within the project area during the construction phase.

PRE-MITIGATION IMPACT: MODERATE

- Influx of people into an area in the form of employees directly related to the project, as well as job-seekers, migrating into the area in anticipation of work may give rise to **potential increased levels of crime, substance abuse, increased incidence of sex workers, and domestic violence.**
- Given that workers will not be housed in labour camps but amongst the community, it will be extremely **difficult to mitigate any increase in social ills.** Also means that workers will be susceptible to impacts of social ills of host communities.
- **Construction period short** and limited job opportunities, suggesting influx likely to be small but high levels of unemployment could attract job seekers from elsewhere.
- Impact could be experienced **beyond the construction phase**, should migrants choose to settle in the area.

Degree of Confidence: The degree of confidence is **medium** given the uncertainties related to the numbers of employees/contractors and extent of in-migration. Also given that the assessment is based on secondary data and due to the limited feedback on this matter from the consultation process.

POST MITIGATION: MINOR*Mitigation for increase in social ills*

The objectives of mitigation are to:

- Limit, where possible, social pathologies brought about by in-migration into the project area; and
- Ensure that Transnet and contractors manage their employees in such a way that the impacts on local communities are limited.

Specific mitigation measures proposed are:

- Transnet will develop and implement an induction programme, including a Code of Conduct, for all employees and contractors, which will include the following:
 - Respect for local residents and customs;
 - Zero tolerance of illegal activities by construction personnel including using the services of prostitutes, illegal sale or purchase of alcohol, sale, purchase or consumption of drugs or illegal gambling or fighting;
 - No use of project vehicles for non-business purposes;
 - Description of disciplinary measures for infringement of stipulated protocols; and
 - Speed limits that as a minimum meet the legal requirements but are more stringent, where possible.
- Transnet will develop and implement a Corporate Social Investment (CSI) Programme that clearly outlines its anticipated initiatives. These initiatives will be identified in consultation with the affected local communities. The plan will outline where projects will be implemented and what the nature of the proposed interventions will be. The strategy

will be communicated through the stakeholder engagement plan to ensure that expectations remain realistic and are pro-actively managed. Transnet will initiate the formation of partnerships with relevant government departments, such as law enforcement agencies to initiate a community policing forum, to address identified areas of need.

- In order to manage the expectations of potential job-seekers and thus attempt to reduce their numbers, Transnet will advertise the approach to and requirements for employment and procurement throughout the Northern and Eastern Cape Provinces.
- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all towns. Transnet will appoint a permanent community liaison officer to interact with affected communities.
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet.

7.10

OPERATION PHASE IMPACTS ASSOCIATED WITH THE RAILWAY LINE

In determining the operation phase impacts associated with the railway line (including the loops), the following numbers of impacts per significance category were identified:

- One (1) major impact;
- No moderate impacts;
- No minor impacts; and
- Three (3) negligible impacts.

The major pre-mitigation impact is described in *Sections 7.8.1*. For details on the negligible impacts please refer to the impact summary tables (*Tables 7.1 to 7.8*) along with *Chapter 8* and the Standard Environmental Specification (*AnnexA1*) for general best practice mitigation measures.

7.10.1

Impact from increased noise generation (Major significance)

The expected increase in railway traffic between Hotazel and the Port of Ngqura is likely to have a direct and negative impact on communities living close to the line.

Although much of the railway line runs through a deeply rural setting, the communities at Mamathwane, Sishen, Beeshoek, Posmasburg, Lime Acres, Koopmansfontein, Ulco, Longlands, Diamantoor, Barkley West, Spytfontein,

Modderrivier, Klofontein, Heuningskloof, Graspan, Belmont, Witpit, Oranjerivier, Kraankuil, Potfontein, Houtkraal, Bletterman, Rosmead, Conway, Visrivier, Golden Valley, Coerney, Marlow, Mortimer, Klipfontein, Eagles Crag, Tootabi and Barkly Bridge could be impacted by noise disturbance as a result of increased train frequency and train length.

In addition, where the line passes wilderness areas within 500 m of their boundary, noise may have a negative direct impact on these areas and associated wildlife. While the intensities of such impact for the future rail traffic scenarios (at an average speed of 45km/hr) are high at Addo Elephant National Park, between Coerney and Patterson, and Shamwari private reserve, at Eagles Crag, the true intensity can only be determined through detailed modeling, which would take into account the topography and other factors.

For those human settlements close to the railway, where no buffer (e.g. steep or undulating topography or man made structure) is present, a noise disturbance is likely to be experienced. Based on this premise, the noise study indicates that for trains travelling at an average speed of 45km/hr passed rural residential settlements approximately 30m from the line, the acceptable noise limit of 45dBA (SANS 10103) will be exceeded by 14dBA. When the increase in train volumes is at its highest (estimated to be in 2020), the acceptable noise limits will be exceeded by 18dBA at speeds of 45km/hour. The intensity of the impact will be even greater at higher train speeds.

The specialist study on noise also concluded that:

- The likely future impact of noise from freight traffic would range between High and Very High on the closest residences and settlements located some 30 m from the railway line.
- At a school site approximately 90 m from the railway line near Coerney station the existing and future impact of noise from freight traffic would range between Low and High for train speeds of 45km/h and 80 km/h, respectively.
- There was insufficient information available to enable the noise impact from existing or projected future freight traffic to be quantified with any degree of accuracy and confidence. This also applied to the effectiveness of any noise barriers that may be considered to reduce the noise impact.
- A more detailed noise study of the school site, the residences in close proximity to the railway line and the protected areas highlighted in the specialist report is recommended.

Box 7.15 outlines the potential impacts from increased noise generation within the project area during the operation phase.

Box 7.13 *Impact summary: impacts from increased noise generation*

PRE-MITIGATION IMPACT: MAJOR

- The impact of noise from freight traffic expected to be **High to Very High** on the few residences and settlements located some 30 m from the railway line.
- At a **school site near Coerney station** approximately 90 m from the railway line the impact of noise from freight traffic would range between **Low and High** depending on train speeds.
- Where the line passes **wilderness areas** within 500m of their boundary such as at **Addo Elephant National Park**, and the **Shamwari private reserve**, noise may have a negative direct impact on these areas and associated wildlife. The intensity of such impact for exist rail traffic at an average speed of 45km/hr is already high because it exceeds acptble noise limits for wilderness areas. The noise level will not necessarily increase with increased frequency of trains.

Degree of Confidence: The degree of confidence in the assessment is **medium** as the amount of noise to be generated from the increased train frequency and number of wagons will vary depending on topographic conditions and other factors. The specialist assessment is based on a conservative approach assuming a flat, featureless landscape. No detailed modelling has been undertaken at the loop sites so the information presented in the noise specialist study is taken to be conservative.

POST MITIGATION: MAJOR

Mitigation for impacts from noise disturbance

The objective of mitigation is to minimise the impacts of noise disturbance on social and ecological receptors during operations. Amongst others, some specific measures include:

- The need for noise barriers (in the form of walls or earth berms) at sites where the acceptable noise limits (45dBA according to SANS 10103) are exceeded at sensitive social receptors (such as human settlements or schools in close proximity to the railway line), will be investigated during the detailed design of the relevant loops, with the aim of reducing the noise impact caused by the additional trains. Barriers are usually erected as close to the railway line as possible and are a minimum of 3 m in height (generally 5-7 m); they need to extend at least 100 m beyond the receptor;
- A noise monitoring program will be established at sensitive social receptors during the construction phase. The purpose of this program will be to establish a base level of the noise caused by the existing rail traffic; and
- Should significant incremental increases in the noise levels be observed after operation has started, appropriate measures will be implemented to mitigate these using, amongst others, the noise attenuation strategies described above.

Noise emanating from rail traffic is directly related to speed. It is thus recommended that rail speeds be reduced in the vicinity of residences and other noise sensitive land located in close proximity to the railway line.

7.11 OPERATION PHASE IMPACTS ASSOCIATED WITH THE YARDS AND SUBSTATION

In determining the positive and negative operation phase impacts associated with the yards and the substation, the following numbers of impacts per significance category were identified:

- No major impacts;
- No moderate impacts;
- No minor impacts; and
- Two (2) negligible impacts.

For details on the negligible impacts please refer to the impact summary tables (Tables 7.1 to 7.8) along with Chapter 8 and the Standard Environmental Specification (Annex A1) for general best practice mitigation measures.

7.12 OPERATION PHASE SOCIO-ECONOMIC IMPACTS

In determining the socio-economic impacts associated with the operational phase of the Project, the following numbers of impacts per significance category were identified:

- No major impacts;
- One (1) moderate impact;
- One (1) minor impact; and
- No negligible impacts.

The moderate pre-mitigation impact is described in Sections 7.10.1. For details on the minor impact please refer to the impact summary tables (Tables 7.1 to 7.8) along with Chapter 8 and the Standard Environmental Specification (Annex A1) for general best practice mitigation measures.

7.12.1 Change in sense of place (Moderate significance)

The operational phase impacts relating to the change in the sense of place are largely restricted to the anticipated increase in the frequency of trains and the general increase in activity around level crossings which may impact on movement patterns across the line. The potential increase in noise and vibration could also impact on the sense of place.

It is also possible that a change in the sense of place could be positive. Many of the towns along the railway line have lost their vibrancy due to a reduction in the frequency of the rail service over time. It is possible that the Project will

inject new opportunities into the towns along the line and revive the railway hubs. This vision is reflected in the Pixely Ka Seme District Municipality Growth and Development Strategy (2007/2008) for example, which identifies the revitalisation of the De Aar railway hub as part of its proposed economic initiatives. The potential for positive change brought about by the project was also expressed at several stakeholder engagement meetings.

The change in the sense of place will have positive impacts for those who are easily able to adapt to change and benefit from the project activities (for e.g. the youth). For those that are unable to adapt (for e.g. the sick and elderly), the changes may have an emotional impact, leading to a sense of alienation from a familiar environment.

Box 7.16 summarises the potential impact of a change in sense of place within the project area during the operation phase.

Box 7.14 *Impact summary: change in sense of place*

PRE-MITIGATION IMPACT: MODERATE

- Impact on sense of place expected as a result of anticipated **increase in the frequency of trains** and the **general increase in activity around level crossings** and potential **increase in noise and vibration**;
- For **those groups of people that are unable to adapt** (for e.g. the sick and elderly), the changes may have an emotional impact, leading to a **sense of alienation from a familiar environment**.

Degree of Confidence: The degree of confidence is **medium** as there was no fieldwork undertaken for this assessment. Field observations and photographic logs were provided by other team members. Previous studies show that a change to the sense of place is probable. However the consultation process did not identify this as an issue of particular concern.

POST MITIGATION: MINOR

Mitigation for change in sense of place

The objectives of mitigation are to:

- Limit, where possible, any negative changes in the sense of place, whilst enhancing the positive impacts of such a change;
- Minimise the impact of nuisance factors, e.g., vibration, noise, dust, or traffic, during the construction and operation phases; and
- Manage the influx of job-seekers.

Specific mitigation measures should include:

- Transnet will develop and implement an induction programme, including a Code of Conduct, for all employees and contractors, this will include the following:
 - Respect for local residents and customs;
 - Zero tolerance of illegal activities by construction personnel including using the services of prostitutes; illegal sale or purchase of alcohol; sale, purchase or consumption of drugs; illegal gambling or fighting;
 - No use of project vehicles for non-work business;
 - Description of disciplinary measures for infringement of stipulated protocols;
 - At a minimum, the legal speed limit should be adhered to; and
 - Refer to mitigation measures for traffic, noise and dust as outlined in Sections 7.3.4, 7.3.2 and 7.6.1 respectively.
- Transnet will develop and implement a Corporate Social Investment (CSI) Programme that clearly outlines their anticipated initiatives. These initiatives will be identified in consultation with the affected local communities. The plan will outline where projects will be implemented and what the nature of the assistance will be. This strategy will be communicated via the stakeholder engagement plan to ensure that expectations remain realistic and are pro-actively managed. Transnet will initiate the formation of partnerships with relevant government departments (e.g. law enforcement to initiate a community policing forum) to address identified areas of need.
- In order to manage the expectations of potential job-seekers and thus attempt to reduce their numbers, Transnet will advertise the approach to and requirements for employment and procurement throughout the Northern and Eastern Cape Provinces.
- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all towns. Transnet will appoint a permanent community liaison officer to interact with the communities.
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet.

Other Socio-economic Impacts

Other positive socio-economic impacts considered within the impact assessment are included below. Although the full assessment of these impacts fall outside of the scope of the EIA, these are important to note.

- Positive impacts of the proposed line related to the beneficiation of valuable raw products, transportation of these products in-land and general assistance with the growth of the Eastern Cape, Metro, Industrial Development Zone and the South African economy.
- The greater capacity on the rail line may also improve the feasibility of the future relocation of the manganese export terminal and tank farm.
- Increased rail capacity and transport efficiency is likely to result in reduction in long distance bulk commodity and container movements by road, which has a high negative impact on roads.

7.13

DECOMMISSIONING IMPACTS

Potential decommissioning impacts associated with the Project have not been assessed according to the assessment methodology owing to the long term nature of the Project, uncertainties in where decommissioning activities would take place; and when. The implication of the time lapse is that the baseline environmental and social conditions could be vastly different to that described in this report.

It is also expected that loops would not be decommissioned in isolation but that various sections of the line would be decommissioned, hence impacts are associated with the existing railway line (and access roads) as well. Borrow pits are not considered part of the scope of decommissioning by Transnet as these are third party owned and operated sites.

Table 7.9 outlines a number of potential positive and negative decommissioning impacts that are likely to be experienced in the event of the decommissioning of the railway line, yards and the substation. These impacts are very similar to those expected during the construction phase. Mitigation measures are, therefore, the same for the construction phase impacts and are not repeated here.

Table 7.9 *Potential decommissioning phase impacts*

Impact Description	Railway Line (incl. loops, access roads but excl. borrow pits)	Yards and Substation (incl. access roads)
Loss of faunal diversity and richness.	Negative - Direct	Negative - Direct
Loss of protected invertebrate species.	Negative - Direct	Negative - Direct
Disturbance to the riparian zone.	Negative - Direct	N/A
Removal of alien invasive and weed species.	Positive - Indirect	Positive - Indirect
Disruption to river systems (water flow, contamination).	Negative - Indirect	N/A
Soil erosion.	Negative - Direct	Negative - Direct
Contamination of soil and groundwater resources.	Negative - Direct	Negative - Direct
Dust, noise and vibration nuisances.	Negative - Direct	Negative - Direct

Impact Description	Railway Line (incl. loops, access roads but excl. borrow pits)	Yards and Substation (incl. access roads)
Traffic disruption and hazards.	Negative - Direct	Negative - Direct
Loss of or disturbance to sites of archaeological, paleontological and cultural heritage significance.	Negative - Direct and Indirect	N/A
Creation of temporary local employment and procurement opportunities.	Positive - Direct	Positive - Direct
Increase in social ills and spread of disease associated with housing of labour in local towns.	Negative - Indirect	Negative - Indirect

7.14

BORROW PIT IMPACTS

While there is no requirement under the environmental Regulations to assess the borrow pits as part of the scope of this project, the nature of the potential impacts associated with the excavation at these sites will be discussed briefly below.

Authorisation for the use of borrow pit follows a separate process via the Department of Minerals and Energy. Broadly speaking, the process to gain authorisation involves application for a mining permit/mining right to open new and/or existing borrow pits. However, as Transnet is a parastatal, it is deemed an "organ of state" as stipulated in Section 106 and is, therefore, exempted from certain provisions of the Act. Transnet will have to follow an abbreviated authorisation process for new/dormant borrow pits. Borrow material from within the rail reserve does not require authorisation.

Although not part of the assessment of this project, the borrow pit sites designated as possible sources of earthworks material for the construction phase of the project are likely to have a number of impacts associated with them, namely:

- Loss of vegetation communities - The vegetation communities at three borrow pit sites (Barkley Bridge, Marlow and Conway) have been identified by the specialist ecologists as areas of high ecological importance. In addition, a further four borrow pits (Golden Valley, Cookhouse, Mortimer and Knutsford) have been identified as areas of medium ecological importance (see *Section 5.2.5 in Chapter 5* for more detail). Clearing will be required at all the borrow pit sites in order to access the underlying fill material. It is expected that the vegetation communities at the borrow pits are unlikely to re-establish themselves since their soil habitat would be completely removed along with any seeds/bulbs therein.
- Loss of faunal diversity and richness - The clearing of vegetation for the excavation of fill materials from borrow pits could have both a direct

(through direct mortality) and indirect (through the loss of habitat) impact on fauna in the local area. The loss of faunal habitat could result in an indirect loss in faunal diversity and species richness. In addition, the loss of faunal habitat is likely to be significantly greater at borrow pit sites with high faunal activity (including Barkley Bridge, Marlow, Knutsford, Conway, Wildfontein and Hanover Road.

- Loss of protected invertebrate species - The clearing of vegetation for the excavation of fill materials from borrow pits could have both a direct (through direct mortality) and indirect (through the loss of habitat) impact on protected invertebrate species such as Burrowing Scorpions (*Opisthophthalmus spp.*) and Baboon Spiders (likely from the Family Theraphosidae). Evidence of their presence or suitable habitat have been identified at a number of borrow pit sites including Cookhouse, Conway and Marlow.
- Spread or colonisation of invasive alien species and weed taxa - The clearing of vegetation associated with excavation at the borrow pit sites are likely to result in areas with little or no vegetation cover. These patches of disturbed soil are likely to be vulnerable to colonisation by ruderal ⁽²⁹⁾ weeds (mostly annual weeds), or declared alien invasive species, that will prohibit the natural succession of the local indigenous vegetation during rehabilitation. Such soil disturbances, as well as the inappropriate handling of topsoil (at borrow pits), could enhance the spread of invader taxa to other systems or vegetation units. Disturbances along drainage lines could also contribute towards the spread of alien invader species locally and regionally. In addition, it is also possible that bush encroacher species (e.g. *Acacia natalitia* & *A. karroo*) may become dominant in the immediate surrounding areas.
- The loss of or disturbance to sites of archaeological, paleontological or cultural significance - The borrow pit sites at Kommadagga and KDC 011 (near Klipfontein) are considered to be sites of “high cultural significance” as stipulated in Section 3(3) of the National Heritage Resources Act (Act No. 25 of 1999). According to the Act, sites are considered important because of their:
 - (b) *Possession of uncommon, rare or endangered aspects of South Africa’s natural or cultural heritage;*
 - (c) *Potential to yield information that will contribute to an understanding of South Africa’s natural or cultural heritage;*
 - (d) *importance in demonstrating the principal characteristics of a particular class of South Africa’s natural or cultural places or objects;*
 - (f) *Importance in demonstrating a high degree of creative or technical achievement at a particular period.*

(29) A ruderal species is a plant species that is first to colonise disturbed lands.

Both sites are associated with Middle and Late Stone Age artefact assemblages including hand axes cores, blades, points, flakes, chunks, possible hammer stones/grindstones and manuports (river pebbles).

Where borrow pits will be excavated, direct negative impacts may occur through the permanent loss of cultural, archaeological and paleontological assemblages.

- Dust and Noise – Where borrow pits are worked in relative close proximity to social receptors (communities, homesteads, households, schools, hospitals) dust and noise as a result of earthworks could impact these social receptors.

For more detailed description of potential impacts associated with the borrow pit sites, please refer to the specialist study documents in *Volume 2* of the Final EIR.

7.15 CUMULATIVE IMPACTS

Cumulative impacts can be regarded as the combined effects (whether positive or negative) of more than one development (past, present or in the foreseeable future) within the same geographical area or on the same receptor/resource.

Other developments which may, therefore, be influenced by this Project, include possible new mines or mining related developments in the Northern Cape and the construction of a new manganese export terminal. The potential impacts associated with these activities are outside the scope of this EIA process but would need to be considered through separate EIAs and/ or mine permitting processes, were they to realise.

The planned mining developments may wish to use the railway line for the transport of their products. As such, this could potentially result in an increase in the frequency of trains along the line, thereby exacerbating the operational impacts, such as noise disturbance.

The possible linkages and cumulative effects associated with a new manganese terminal are uncertain and unclear as the location of the new terminal (if proven to be feasible) has not been determined. However, it is expected that a new terminal (possibly at the Port of Ngqura or Port of Saldanha) may require some alteration or upgrade of the existing rail infrastructure, such as additional loops.

7.16 ASSESSMENT OF THE NO-GO ALTERNATIVE

The no-go or do nothing alternative (i.e. the maintenance of the status quo) involves not extending/constructing the proposed loops or the traction

substation and not upgrading the yards or refurbishing the Kimberley-De Aar section of the railway line.

The impact of not implementing the Project can be viewed as both positive and negative. The positive consequences include not causing impacts to the biophysical and social environment, particularly to sensitive ecological or social receptors, whereas the negative implications are associated with the direct loss of opportunities for local employment and procurement of goods and services at a provincial and national scale. The key negative consequence would, however, be lost opportunities and revenue associated with reduced manganese export and container handling. If the railway line and associated structures is not upgraded to handle the additional capacity, this would result in a negative, direct impact on generation of foreign income, which would affect the provincial and national economy. Negative, indirect impacts would also be experienced on the supply chain that services this sector of the economy.

8 ENVIRONMENTAL MANAGEMENT PLAN (PROJECT ENVIRONMENTAL SPECIFICATION)

8.1 TRANSNET EMP DOCUMENTATION

Transnet, with agreement from the Department of Environmental Affairs and Tourism, has created an Environmental Management Plan (EMP) that consists of three documents and is applied to all Transnet projects. The three EMP documents are:

- The Construction EMP (CEMP);
- The Standard Environmental Specification (SES); and
- The Project Environmental Specification (PES).

In brief, the CEMP outline the roles and responsibilities during the construction phase. The SES provides generic guidance and mitigation for potential impacts while the PES outlines potential impacts and their mitigation that are specific to the project. All three documents are used by the contractor to draw up detailed method statements outlining their approach to construction taking all the potential generic and specific impacts into account.

The potential operational phase impacts are addressed in the generic Transnet Environmental Management System (EMS) and as such no operational impacts will be addressed in this chapter.

8.2 SITE ESTABLISHMENT

Refer to Section 4.1 of the SES (Annex A1)

8.2.1 *Scope*

Refer to Section 4.1.1 of the SES (Annex A1)

8.2.2 *Site plan*

Refer to Section 4.1.1.1 of the SES (Annex A1)

8.2.3 *Sewage and Sanitation*

Refer to Section 4.1.1.2 of the SES (Annex A1)

8.2.4 *Effluent Management*

Refer to Section 4.1.1.3 of the SES (Annex A1)

- 8.3** **WASTE MANAGEMENT OBJECTIVE**
- Refer to Section 4.2 of the SES (Annex A1)
- 8.3.1** **Scope**
- Refer to Section 4.2.1 of the SES (Annex A1)
- 8.3.2** **Approach**
- Refer to Section 4.2.2 of the SES (Annex A1)
- 8.3.3** **Waste Management**
- Refer to Section 4.2.3 of the SES (Annex A1)
- 8.4** **VEHICLE AND EQUIPMENT REFUELING OBJECTIVE**
- Refer to Section 4.3 of the SES (Annex A1)
- 8.4.1** **Scope**
- Refer to Section 4.3.1 of the SES (Annex A1)
- 8.4.2** **Refuelling**
- Refer to Section 4.3.2 of the SES (Annex A1)
- Control*
- Refer to Section 4.3.2.1 of the SES (Annex A1)
- Spill response*
- Refer to Section 4.3.2.2 of the SES (Annex A1)
- 8.5** **SPRAY PAINTING AND SANDBLASTING**
- Refer to Section 4.4 of the SES (Annex A1)
- 8.5.1** **Objective**
- Refer to Section 4.4.1 of the SES (Annex A1)
- 8.5.2** **Scope**
- Refer to Section 4.4.2 of the SES (Annex A1)

8.5.3 *Spray painting and sandblasting*

Refer to Section 4.4.3 of the SES (Annex A1)

8.6 *DUST MANAGEMENT*

Refer to Section 4.5 of the SES (Annex A1)

8.6.1 *Objective*

Refer to Section 4.5.1 of the SES (Annex A1)

8.6.2 *Scope*

Refer to Section 4.5.2 of the SES (Annex A1)

8.6.3 *Dust management*

Refer to Section 4.5.3 of the SES (*Annex A1*)

- The removal of vegetation will be limited to the construction areas only;
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, run-off, and air-borne dust;
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2 m in height to prevent wind-blown dust;
- Apply dust suppression that is appropriate, reasonable and practicable to the scale of the stock piles (it is anticipated that these will be small) that are based on accepted principles such as wetting. This would restrict the consumption of water and allow the contractor to implement other appropriate measures that could be equally effective e.g. dust suppressors, shade cloth etc.;
- Access roads should be wetted down where reasonable and practicable to limit dust generation;
- Construction material being transported by trucks will be suitably moistened or covered to prevent dust generation;
- Speed restrictions of 40km/h will be implemented on construction sites and access roads to limit dust entrainment by vehicles;
- Verges, cuttings, lay-down areas and construction areas will be re-vegetated according to specific site conditions as soon as the construction

activity is completed at each of the respective sites and in accordance with the operational or post-construction utilisation of that particular site;

- Material in transit will be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle will be covered with a tarpaulin to prevent dust;
- Minimise haulage distances, if possible; and
- Environmental friendly soil stabilisers may be used as additional measures to control dust on gravel road and at construction work areas.

8.7 *STORM WATER AND DEWATERING*

Refer to Section 4.6 of the SES (Annex A1)

8.7.1 *Objective*

Refer to Section 4.6.1 of the SES (Annex A1)

8.7.2 *Scope*

Refer to Section 4.2 of the SES (Annex A1)

8.7.3 *Storm water and dewatering*

Refer to Section 4.6.3 of the SES (Annex A1)

Surface run-off

Refer to Section 4.6.3.1 of the SES (Annex A1)

Dewatering

Refer to Section 4.6.3.2 of the SES (Annex A1)

Wastewater

Refer to Section 4.6.3.3 of the SES (Annex A1)

Management requirements

Refer to Section 4.6.3.4 of the SES (Annex A1)

8.8 *REHABILITATION*

Refer to Section 4.7 of the SES (Annex A1)

8.8.1 *Objective*

Refer to Section 4.7.1 of the SES (Annex A1)

8.8.2 *Scope*

Refer to Section 4.7.2 of the SES (Annex A1)

8.8.3 *Rehabilitation*

Refer to Section 4.7.3 of the SES (Annex A1)

8.9 *NOISE MANAGEMENT*

Refer to Section 4.8 of the SES (Annex A1)

8.9.1 *Objective*

Refer to Section 4.8.1 of the SES (Annex A1)

8.9.2 *Scope*

Refer to Section 4.8.2 of the SES (Annex A1)

8.9.3 *Noise Management*

Refer to Section 4.8.3 of the SES (Annex A1)

- Operate equipment within its specification and capacity so as not to overload them and cause them to operate ineffectively;
- Regularly maintain equipment (particularly with regards to lubrication) and vehicles (exhausts) so that they operate efficiently;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Drive at the legal speed limit on public roads and at 40 km/hr on dirt or private roads to limit the noise generated;
- Restrict construction activities to daylight hours that are reasonable and practicable to the specific site conditions; and
- Sensitive social receptors such as schools (e.g. at Coerney) will be given adequate notice of when noisy activities, such as blasting, will occur (if applicable).

8.10 *PROTECTION OF HERITAGE RESOURCES*

Refer to Section 4.9 of the SES (Annex A1)

8.10.1 *Objective*

Refer to Section 4.9.1 of the SES (Annex A1)

8.10.2 *Scope*

Refer to Section 4.9.2 of the SES (Annex A1)

8.10.3 *Archaeological sites*

Refer to Section 4.9.3 of the SES (Annex A1)

8.10.4 *Graves and Middens*

Refer to Section 4.9.4 of the SES (Annex A1)

8.10.5 *Site specific measurers*

The objective of mitigation is to minimise the impacts on archaeological, paleontological or cultural resources within the project area. Mitigation measures include:

General measures:

- A chance-find procedure will be implemented so that in the event of graves or stone age artefacts/fossils being uncovered, the ECO/Site Engineer will take the appropriate action, which includes:
 - Stopping work in the immediate vicinity and if possible, fencing off the area with tape to prevent further access;
 - Reporting the discovery to the provincial department of the South African Heritage Resources Agency;
 - Appointing a local archaeological/paleontological expert to inspect the discovery;
 - Implementing further mitigation measures proposed by the expert; and
 - Allowing work to resume only once clearance is given in writing by the expert.

- In the case of a chance-find of a grave, the National Monuments Council will be contacted and arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

At Klipfontein (cemetery):

- The cemetery will be fenced off from the railway reserve to restrict any unauthorised access by workers. This will be done following consultation with the local community who use the cemetery.

8.11 FIRE PREVENTION

Refer to Section 4.10 of the SES (Annex A1)

8.11.1 Objective

Refer to Section 4.10.1 of the SES (Annex A1)

8.11.2 Scope

Refer to Section 4.10.2 of the SES (Annex A1)

8.11.3 Fire control

Refer to Section 4.10.3 of the SES (Annex A1)

8.12 SUPPLY OF WATER FOR HUMAN USE

Refer to Section 4.11 of the SES (Annex A1)

8.12.1 Objective

Refer to Section 4.11.1 of the SES (Annex A1)

8.12.2 Scope

Refer to Section 4.11.2 of the SES (Annex A1)

8.12.3 Collection of water from natural resources

Refer to Section 4.11.3 of the SES (Annex A1)

8.12.4 Provision of drinking water

Refer to Section 4.11.4 of the SES (Annex A1)

8.13 PROTECTION OF LIVESTOCK OR GAME AND THE COLLECTION OF FIREWOOD

Refer to Section 4.12 of the SES (Annex A1)

8.13.1 *Objective*

Refer to Section 4.12.1 of the SES (Annex A1)

8.13.2 *Scope*

Refer to Section 4.12.2 of the SES (Annex A1)

8.13.3 *Poaching of livestock or game*

Refer to Section 4.12.3 of the SES (Annex A1)

8.13.4 *Killing of animals*

Refer to Section 4.12.4 of the SES (Annex A1)

8.13.5 *Collection of firewood*

Refer to Section 4.12.5 of the SES (Annex A1)

8.14 *ENVIRONMENTAL AWARENESS TRAINING*

Refer to Section 4.13 of the SES (Annex A1)

8.15 *PREVENTION OF VEGETATION LOSS OR DISTURBANCE*

8.15.1 *Scope*

Prevent the loss of or disturbance to vegetation communities, conservation worthy plant species and riparian vegetation due to construction related activities including site clearance and the establishment of construction camps.

8.15.2 *Management*

Minimise the loss of or disturbance to vegetation communities and riparian vegetation due to construction related activities including site clearance and the establishment of construction camps. Specific measures include:

8.15.3 *Vegetation communities*

- Establish the footprint of laydown areas as far as possible on existing disturbed areas as opposed to “greenfield” areas;
- The extent of the laydown/construction area will be fenced-off and all materials and equipment will be restricted to this work area;
- The extent of the construction site will be demarcated on the site layout plans, and no construction personnel or vehicles will be allowed to

encroach beyond the demarcated area without prior authorisation to do so. Those areas surrounding the construction site that are not part of the demarcated development area will be marked as “no-go” areas for employees, personnel or machinery. These no-go areas will be demarcated with construction/ danger tape to control unauthorised access to them;

- A qualified local botanist will be appointed to supervise the identification, marking and transferring of plant taxa, where required. This is only expected to occur at sites flagged as having vegetation of moderate to high ecological importance, or where sensitive/protected vegetation species and communities are known to occur (see *Section 5.2.5 in Chapter 5*);
- Where any Red Listed, protected or important medicinal plant species are identified by the local botanist, they will be marked, and if threatened by destruction, they will be removed (with the relevant permits) and temporarily placed within an on-site nursery for re-establishment after the construction phase;
- Regular checks will be carried out by the Environmental Control Officer (ECO) or Site Engineer to identify areas where erosion is occurring as a result of the vegetation removal. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the paths/sources causing the erosion, will be undertaken;
- Vehicles transporting materials to and from a designated offloading area will be covered with tarpaulins to reduce dust generation and will be restricted to designated roads;
- Stockpiles of sand and earthworks material that is susceptible to wind erosion will be covered during windy periods;
- Harvesting of firewood or any plant material will be prohibited. The immediate surrounding area will be regularly monitored by the ECO for evidence of wood collection. Fines could be implemented to alleviate firewood collection; and
- Contractors, labourers and visitors will be familiarised with the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during awareness building and capacity building/ training exercises/ induction programmes or their first visit to the site (in the form of a pamphlet or training session).
- Topsoil removed (during levelling of areas where loops are to be constructed in levelling of laydown areas and yards or topsoil removal at access roads) should be kept separate and used for vegetation rehabilitation purposes.

- Where necessary, special erosion prevention/ protection measures will be implemented

8.15.4 *Riparian zone (Tootabi)*

The objective of mitigation is to minimise the impacts on the riparian vegetation and prevent pollution/ degradation of the Boesmans River. Specific measures include:

- All construction activities at the Tootabi loop site will be restricted to the railway reserve, more specifically to the western side of the reserve and to vacant areas further west;
- The eastern side of the railway reserve, adjacent to the riparian vegetation, will be fenced and marked on layout plans as a no-go area;
- The extent of the construction work area will be fenced-off and no unauthorised access will be allowed outside of the rail reserve and designated work areas;
- Ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles will be located as far away as possible from the riparian zone and any water courses;
- Vehicles transporting materials to and from a designated offloading area will be covered with tarpaulins to reduce dust generation and will be restricted to designated roads;
- Stockpiles susceptible to wind erosion will be covered during windy periods;
- Harvesting of firewood or any plant material will be prohibited. The immediate surrounding area will be regularly monitored by the ECO for evidence of wood collection. Fines could be implemented to alleviate firewood collection;
- Contractors, labourers and visitors will be educated on the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during induction or their first visit to the site (in the form of a pamphlet or training session); and
- Should the development plans for this loop change, such that there may be an impact on the riparian vegetation or the Boesmans River, then an application for a Water Use License according to Section 21 of the National Water Act (Act No. 36 of 1998) will be applied for.

8.16 *MANAGEMENT AND PREVENTION OF SPREAD/ COLONISATION OF INVASIVE ALIEN SPECIES AND WEED TAXA*

8.16.1 *Scope*

Manage and prevent the spread/colonisation of invasive alien plant species and weed taxa that may result from construction activities that will leave terrestrial vegetation areas significantly disturbed and altered.

8.16.2 *Management*

Minimise the impacts on vegetation communities, faunal habitats and species diversity. Specific measures include:

- An alien invasive and weedy species removal programme will be implemented throughout the construction phase and the railway servitude will be regularly (biannually) inspected for the re-establishment of invader species and the follow-up removal thereof;
- All declared invader and weed species occurring at project sites and within the rail reserve will be eradicated (see *Table 7.1*);
- All plant material that is cleared should be removed from the site, to a designated storage area (in the case of replanting) or waste site so that seeds can not disperse; and
- Cleared areas will be succeeded by proper soil stabilisation procedures and rehabilitation to prevent soil erosion.

8.17 *PREVENTION OF LOSS IN FAUNA/INVERTEBRATE DIVERSITY AND RICHNESS*

8.17.1 *Scope*

Prevent the loss of or disturbance to faunal and invertebrate species diversity and richness due to construction related activities including site clearance and the establishment of construction camps.

8.17.2 *Management*

Minimise the impacts on faunal diversity and species richness within and adjacent to the project area. Specific measures include:

- Establish the footprint of laydown areas on existing disturbed areas as opposed to “greenfield” areas;
- The extent of the laydown/construction area will be fenced-off and all materials and equipment will be restricted to this work area;

- The extent of the construction site will be demarcated on the site layout plans, and no construction personnel or vehicles will leave the demarcated area without authorisation to do so. Those areas surrounding the construction site that are not part of the demarcated development area will be marked as “no-go” areas for employees, personnel or machinery. These no-go areas will be demarcated on the ground with tapes or pegs to prevent unauthorised access to them;
- Construction vehicles should be restricted to driving during daylight hours only. This will reduce the likelihood of ‘road kills’;
- As a minimum, the legal speed limit on public roads will be enforced on all drivers. However, the speed on temporary or private dirt roads will be restricted to 40 km/hr;
- Hunting, the unnecessary destruction of burrow systems or nesting sites and interactions with wildlife will be prohibited;
- Littering at work sites and in adjacent areas will be prohibited. Suitable facilities will be provided for waste management; and
- Contractors, labourers and visitors will be educated on the regulations and good practice regarding general housekeeping and the ecological process, biodiversity value and function of the area, during induction or their first visit to the site (in the form of a pamphlet or training session).

8.18 SOCIAL ISSUES

8.18.1 Scope

The scope with respect to social issues are as follows:

- Ensure that the project activities do not place any direct pressure on the already strained local infrastructure and services;
- Implement corporate social investment projects that off-set impacts on infrastructure and services from in-migration; and
- Encourage and support government in improving the levels of infrastructure and services provided in the project area, e.g., public lighting and electricity.
- Minimise the transmission of diseases, through effective control measures and to reduce the impact of the disease on the health of employees/contractors to the lowest possible level;
- Limit, where possible, social pathologies brought about by in-migration into the project area; and

- Ensure that Transnet and contractors manage their employees in such a way that the impacts on local communities are limited.

8.18.2 *Management*

8.18.3 *Increased pressure on infrastructure and services*

The objectives of the mitigation measures are to:

- Ensure that the project activities do not place any direct pressure on the already strained local infrastructure and services;
- Implement corporate social investment projects that off-set impacts on infrastructure and services from in-migration; and
- Encourage and support government in improving the levels of infrastructure and services provided in the project area, e.g., public lighting and electricity.

Specific mitigation measures that could be taken include:

- Transnet will meet all practical infrastructure and service needs of its construction phase activities so that no additional pressure is placed on existing capacity. Such interventions include:
 - Transnet will drill boreholes or truck water in, should there be insufficient water to meet the needs of the project during construction;
 - Transnet will make sanitation facilities available on-site for all employees and contractors;
 - Transnet will use diesel powered mobile generators for construction activities; and
 - Transnet will upgrade and maintain transport routes in the area that are used by project vehicles; vehicles will be required to use specified routes so as to limit impacts to local roads.
- In order to manage the expectations of potential job-seekers and thus attempt to reduce their numbers, Transnet will advertise the approach to, and requirements for, employment and procurement throughout the Northern and Eastern Cape Provinces;
- Transnet will develop and implement a Corporate Social Investment (CSI) Programme that clearly outlines their anticipated initiatives. These initiatives will be identified in consultation with the affected local communities. The plan will outline where projects will be implemented and what the nature of the assistance will be. This strategy will be communicated through a stakeholder engagement plan to ensure that expectations remain realistic and are pro-actively managed;

- Transnet will initiate the formation of partnerships, particularly with relevant government departments, to address selected infrastructural and service areas that are negatively impacted by the influx of job-seekers;
- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all towns. Transnet will designate a community liaison officer to interact with the communities;
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet;
- Employment will be recruited from towns only and no farm labourers will be employed by the contractors; and
- Where reasonable and practicable, construction camps and lay-down areas (labourer camps and accommodation) will be established within existing towns and where possible vacant or underutilised facilities will be used for the abovementioned.

It is important to emphasise that Transnet, while meeting its own infrastructure and service requirements, will not take on the government's responsibility as service provider.

8.18.4 *Spread of HIV/AIDS and STIs*

Specific measures that could be taken include:

- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all affected towns. Transnet will designate a community liaison officer to interact with the affected communities.
- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet.
- Transnet will implement an education programme for all of its own and contract employees to educate them about the measures for mitigating the transmission of HIV/AIDS and STIs. Condoms will be made available to the workers.

- Transnet will implement an HIV/AIDS programme in the project area addressing factual health issues as well as behaviour change issues around the transmission of, and infection by, HIV/AIDS and other STIs. This will be done in association with local health providers. The programme will include making condoms available within affected communities.
- Transnet will seek to foster a relationship with local health providers such that they can monitor changes in levels of community health and wellbeing.

8.18.5 *Increase in social ills*

Specific measures that could be taken include:

- Transnet will develop and implement an induction programme, including a Code of Conduct, for all employees and contractors, which will include the following:
 - Respect for local residents and customs;
 - Zero tolerance of illegal activities by construction personnel including using the services of prostitutes, illegal sale or purchase of alcohol, sale, purchase or consumption of drugs or illegal gambling or fighting;
 - No use of project vehicles for non-business purposes;
 - Description of disciplinary measures for infringement of stipulated protocols; and
 - Speed limits that as a minimum meet the legal requirements but are more stringent, where possible.
- Transnet will develop and implement a Corporate Social Investment (CSI) Programme that clearly outlines its anticipated initiatives. These initiatives will be identified in consultation with the affected local communities. The plan will outline where projects will be implemented and what the nature of the proposed interventions will be. The strategy will be communicated through the stakeholder engagement plan to ensure that expectations remain realistic and are pro-actively managed. Transnet will initiate the formation of partnerships with relevant government departments, such as law enforcement agencies to initiate a community policing forum, to address identified areas of need.
- In order to manage the expectations of potential job-seekers and thus attempt to reduce their numbers, Transnet will advertise the approach to and requirements for employment and procurement throughout the Northern and Eastern Cape Provinces.
- Transnet will establish a stakeholder engagement plan to ensure on-going identification and management of stakeholder issues and concerns. This engagement plan will target residents from all towns. Transnet will designate a community liaison officer to interact with affected communities.

- Transnet will implement a grievance procedure that is easily accessible to local residents, and which allows complaints related to contractor or employee behaviour to be lodged and responded to. Transnet will respond in a serious manner to any such complaints. A grievance register will be maintained by Transnet.

8.19 *VIBRATION*

8.19.1 *Scope*

Minimise the impacts of vibration nuisance on social and ecological (faunal and avifaunal) receptors as a result of construction activities.

8.19.2 *Management*

Minimise the impacts of vibration on social and ecological receptors. Specific measures include:

- Ensure proper maintenance of wheel and rail surfaces to optimise the life of the train and rails, and at the same time to reduce operational vibrations;
- At special trackwork such as turnouts and crossovers where significant increases in the vibration levels can occur, special devices that incorporate mechanisms to close the gaps between rails should be implemented to significantly reduce vibration levels;
- Trenches could be used to control ground-borne vibration in areas close to social receptors. A 5 m deep trench should be effective if the peak of the frequency content of the vibration is at around 30 Hz;
- Adjust night time schedules to minimise movements during the most sensitive hours, based on specific complaints received.

8.20 *TRAFFIC HAZARDS AND DISRUPTION*

8.20.1 *Scope*

Minimise the potential traffic hazards and disruption as a result of increased construction related traffic within the project area and surrounding arterials and access roads, including national and provincial roads.

8.20.2 *Management*

Minimise the potential traffic hazards and disruption. Specific measures include:

- The impacts of delivery trucks during construction can be reduced by transporting more construction materials via rail;
- The impacts on the existing traffic can be reduced by scheduling the arrivals and departures of construction vehicles;
- Educate both the construction crew and the local community on traffic safety and possible hazards arising from the construction activities;
- All warning, regulatory and prohibition signs recommended by the National Department of Transportation, *South African Roads Traffic Signs Manual (SARTSM)* should be implemented;
- All regulatory and warning signs recommended by the National Department of Transportation, *South African Roads Traffic Signs Manual (SARTSM)* should be adhered to; and
- All plans and specifications should provide details on how the traffic control operations are to be carried out.

8.21 ASSOCIATED FORMS

Refer to Section 5 of the SES (Annex A1)

8.22 RECORDS

Refer to Section 6 of the SES (Annex A1)

The EIA has identified and assessed a number of potential impacts and alternatives relating to the Project. This section provides an overview of the EIA findings and makes recommendations regarding key mitigation measures and management actions.

9.1 CONCLUSION

This section highlights the most significant potential impacts identified during the construction and operational phases of the Project.

9.1.1 *Potential Construction Phase Impacts*

Only one potentially negative impact of major significance could be identified for this phase of the proposed project. This impact relates to the required vegetation clearing at the proposed loop sites for the upgrade of the railway line between Ngqura and Hotazel and the resulting spread or colonisation of alien invasive species and weeds.

It is important to note that this impact can be effectively managed through the implementation of the mitigation measures described in Chapters 7 and 8. If these mitigatory measures are effectively enforced the significance of these impacts can be reduced from major to an acceptable level of moderate significance.

No impacts of major significance is expected during the refurbishment of the railway line between Kimberley and De Aar

No negative socio-economic impact of major significance is anticipated during the construction phase. A positive impact associated with the construction phase of the loop sites is associated with the generation of employment and procurement opportunities; however, these will be very limited, mainly owing to the spread of construction activities over time. For example, only three loops will be constructed during the first phase of the Project. This impact is, therefore, only of minor significance.

9.1.2 *Potential Operation Phase Impacts*

The negative operational phase impact of major significance is associated with noise generation from an increase in train frequencies over time, along the railway line between Ngqura and Hotazel.

Although this impact (from current and future rail traffic) is only expected to be experienced where sensitive receptors such as human settlements, schools and wildlife areas are in close proximity to the railway line (within 50 m), there is very little that can be done to reduce the noise generated from the

passing trains in these locations. This said, the increase in train frequencies will be marginal and spread over a long period of time, as demand drives the need to increase rail transport capacity. The post-mitigation significance of this impact has, therefore, remained as major.

A positive impact associated with the operational phase of the railway line is associated with employment creation and procurement of goods and services. However, opportunities generated will be negligible and certainly less than the construction phase. A further positive impact is the change in the sense of place. However, this would only be relevant to certain parts of the population (for eg. the youth) who view signs of infrastructure development as having the potential to generate future opportunities for the local area. The impact on sense of place can also be negative for certain groups of people, owing to different perspectives and experiences.

9.1.3 *Other impacts*

An obvious key positive impact of the Project, although not assessed in terms of the impact methodology adopted and because of its sphere of influence, pertains to the regional and national economic benefits from the export of manganese. This has positive implications in terms of local procurement of goods and services along the supply chain as well as the generation of foreign revenue from export. The benefits of this are felt at both national and provincial levels. Therefore, if one considers the “no-go” or “do nothing” alternative to the Project, this would have negative implications for the economy at various scales through direct loss of foreign exchange generation and indirectly through impacts on the supply chain.

A number of cumulative impacts associated with the Project may need to be considered by Transnet, in collaboration with other roleplayers (such as Government, mining houses) and affected stakeholders. These pertain mainly to the knock-on effects on other industries who may want to use the railway line to transport their products and the possible future linkages with a new manganese export terminal, should this prove to be feasible. These impacts, as well as impacts and benefits related to an increase in rail transport rather than by road, have not been assessed in detail as they fall outside the scope of the Project EIA. However, where appropriate, these aspects should be taken into account in future planning and decision making.

9.2 *RECOMMENDATIONS*

A number of recommendations have been made in Chapters 7 and 8 around mitigation and management measures to either reduce the negative impacts or to enhance the Project benefits. These recommendations/ mitigation measures should be written into the record of decision on this application.

Further to these measures, it is worthwhile pointing out the following:

- The significance of the impacts can only be reduced/enhanced if Transnet effectively implements the mitigation measures that have been outlined;
- Although use of existing borrows pits falls outside the scope of the EIA, it is Transnet's responsibility to ensure that it only makes use of licensed borrow pits. We recommend that this be made a condition of the environmental authorisation. This condition further suggests that should Transnet require new borrow pits or fill material from the rail reserve, that these be licensed in accordance with the borrow pit permitting procedure outlined by the DME;
- Although the EMP in Chapter 8 and the typical mitigation measures outlined in Transnet's generic documents in *Annex A1* only apply to the construction phase, it is expected that measures to manage operational impacts, as outlined in this report, will be drawn into the Environmental Management System for the Project, which will be implemented following construction;
- The Project Environmental Specification provided in Chapter 8 needs to be continually revised to adapt to changes in the Project and to include any further conditions of the environmental authorisation;
- Should decommissioning of any infrastructure associated with the Project occur at a future stage, the general mitigation measures outlined in Transnet's generic EMP documents should be adhered to. Where necessary, specialist botanical or archaeological input may be sourced to advise on protection of sensitive sites and rehabilitation measures; and
- It is Transnet's responsibility to ensure that other permitting/licensing requirements such as those pertaining to borrow pits, water use/abstraction, removal of protected plants, etc are complied with, prior to the commencement of construction.

Finally, it is a requirement of the EIA Regulations under NEMA that the independent environmental consultant provides a recommendation on whether the Project should be authorised or not. In our opinion, following the assessment of potential impacts and in developing the mitigation measures to be implemented by Transnet, we feel that the project may be authorised, keeping in mind the conditions described above.

Furthermore, owing to the scale of development, the current economic climate and uncertainties around the full implementation of all the project activities, we would advise that the positive environmental authorisation, if granted by DEAT, be valid for five years.

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- Census data on communities in the Eastern Cape and Northern Cape, DWAF.

Annex A 1

Generic Transnet EMP Documents

Construction environmental management plan



Joint Venture

Note: If hardcopy, check electronic system for latest revision
Transnet Capital Projects Environmental Management
Construction Environmental Management Plan
02 September 2008



Transnet Capital Projects Environmental Management Construction Environmental Management Plan

HMG-EM-STD-002

Prepared by: *M M Lelane* 9/9/08
Programme Environmental Manager Date

Reviewed by: *[Signature]* 19/9/2008
Snr Project Managers - Ore Line/Marine/Special Projects Date

Approved by: *[Signature]* 3/10/08
Programme Manager Date

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Annexure 1

Main Actions Required by the Contractor for Compliance with the CEMP

- 1.1 Prior to Commencement
 - 1.1.1 The Declaration of Understanding
 - 1.1.2 Environmental Method Statements
 - 1.1.3 Appointment of Contractor's Environmental Officer
 - 1.1.4 Environmental Induction
- 1.2 During the Construction Period
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 - 1.2.3 Environmental Method statement awareness

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- 1.2.5 Other issues to ensure compliance
- 1.3 Site clean up for closure

Annexure 2

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- 2.2 *Declarations*
 - 2.2.1 EMPLOYER'S ENVIRONMENTAL OFFICER
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 - 2.2.3 APPROVING AUTHORITY (i.e. the Employer's Construction Manager)

Annexure 3

Environmental Inspections and Audits

- 3.1 Environmental Inspections and Audits
- 3.2 Work Places Inspection
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- 3.4 Construction Site and documentation Compliance Audit

Annexure 4

Environmentally Friendly Products

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 - 4.1.2 PINELANDS ENVIRONMENTAL TECHNOLOGIES
 - 4.1.3 ZORBIT TECHNOLOGIES CAPE cc
 - 4.1.4 DYNACHEM (PTY) LTD
 - 4.1.5 BIO-SYSTEMS SA.
 - 4.1.6 IBA ENVIRONMENT SA
 - 4.1.7 VULA ENVIRONMENTAL SERVICES
- 4.2 SAFETY PRODUCTS
 - 4.2.1 PIENAAR BROS. (Pty) Limited
- 4.3 SANITARY PRODUCTS
 - 4.3.1 SANNI TREE WATERLESS.CO.1996
 - 4.3.2 CUT DOWN ON WASTE

Abbreviations/Definitions

CEMP	Construction Environmental Management Plan. Construction CEMP including Standard Environmental Specifications and Project Environmental Specifications
PES	Project Environmental Specification describes project specific standards to be met during construction, usually set in the RoD for the project
SES	Standard Environmental Specifications describes a set of minimum environmental standards for all construction sites
The Employer	Transnet Capital Projects using the managing Agent, HMG Joint Venture
<i>Contractor</i>	means the main contractor as engaged by Transnet Capital Projects for infrastructure construction operations, including all <i>Sub-Contractors</i> appointed by the main <i>Contractor</i> of his own volition for the execution of parts of the construction operations; and any other <i>Contractor</i> from time to time engaged by Transnet Capital Projects directly in connection with any part of the construction operations which is not a nominated <i>Sub-Contractor</i> to the main <i>Contractor</i>
Contractor's Environmental Officer	<i>Contractor's</i> Environment Officer responsible for ensuring compliance with the CEMP on a daily basis
Employer's Project Manager	The overall Project Manager for the construction project. The Site Engineer will report to the Employer's Project Manager
Employer's Construction Manager	Works together with the Employer's Project Manager to ensure that construction proceeds in accordance with the relevant specifications and deadlines
Employer's Environmental Manager	works together with the Employer's Project Manager and Construction Manager to ensure that the requirements of the RoD are met
Employer's Environmental Officer	Responsible for ensuring that the CEMP is implemented by the Employer's construction team and the <i>Contractors</i> and their <i>Sub-Contractors</i>
DEAT	Department of Environmental Affairs and Tourism
ECO	Environmental Control Officer. Independent environmental specialist who monitors compliance with the ROD and CEMP.

1. Introduction

This Standard summarises the main factors that the *Contractor* must comply with during the construction phase to ensure that the environment is considered, negative impacts avoided or minimised, and positive impacts optimised. It also gives details on issues that will be helpful in ensuring easier compliance with the CEMP. This document is important to both the *Contractor* and the *Contractor's* Environmental Officer as well as any *Sub-Contractors* reporting to the *Contractor*. The *Contractor* and the *Contractor's* Environmental Officer shall confirm that they have reviewed and understood the contents of this document by signing the Declaration of Understanding (HMG-EM-FM-023). The *Contractor* shall submit the signed copy of the Declaration of Understanding to the Employer's Project Manager as part of his tender documentation or else the tender will be found to be incomplete.

The purpose of this Standard is to:

- Describe how the environment will be managed during the construction phase
- Detail the role of the *Contractor* with respect to the implementation of the CEMP for this project
- Aid the *Contractor* to understand the CEMP
- Provide a set of standards for environmental management during the construction phase

2. Overview of the Construction Environmental Management Plan (CEMP)

It is the stated goal of the Employer to implement sustainable environmental management practices within the organisation. This will apply to the planning, design, construction, operation, restoration, reuse and decommissioning activities related to the bulk infrastructure development. The CEMP is the tool used to ensure this goal is achieved during the construction and commissioning phases. Some decommissioning may occur during site clearing in brownfield sites and this CEMP will also apply to these activities.

2.1 Composition of the CEMP

The specifications shall form an integral part of all Contracts, and *Contractors* are required to make them an integral part of their Contracts with *Sub-Contractors*. The CEMP and associated specifications shall be included in the Tender Documents issued to the prospective *Contractors*. The *Contractors* shall incorporate all requirements set out in the specifications in their submissions to the Employer.

There are two types of environmental specifications:

- **Standard Environmental Specification (SES)** that describe the minimal acceptable standard for environmental management for a range of environmental aspects commonly encountered on construction projects. This Specification sets environmental objectives and targets with which the *Contractor* shall comply

- **Project Environmental Specifications (PES)** that describe standards specific to a particular project. Variations and additions to the Standard Specification are set out in this Project Specification. These would generally be drawn from the Record of Decision(s) for that project or from specific port requirements set by the Transnet National Ports Authority. The PES could also require a higher minimal standard to that described in the SES, if that is required by the RoD or the particular environmental situation at a construction site

2.2 Purpose of the Specifications

The purpose of the specifications is to incorporate the relevant recommendations of Environmental Impact Assessments and other environmental studies for the facilities and the conditions of the relevant Record of Decisions (RoDs) and the relevant Transnet Operating Division Environmental Management System (where applicable) into a environmental performance specification for implementation during the construction phase of the project.

The specifications are configured as performance specifications to ensure that the Employer and any entities that enter into formal agreements with themselves viz. Consultants, *Contractors* and *Sub-Contractors*, achieve an acceptable level of environmental performance. No advice, approval of method statements or any other form of communication from the Employer shall be construed as an acceptance by the Employer of any obligation that absolves the *Contractor* from achieving any required level of performance. Further, there is no acceptance of liability by the Employer which may result from the *Contractor* failing to comply with the specification, i.e. the *Contractor* remains responsible for achieving the required performance levels.

3. References

The contractor is advised of the following legislation, specifications, authorisation conditions and International SO (the list should not be regarded as exhaustive)

- Standard Environmental Specifications (HMG-EM-STD-001)
- Project Environmental Specifications
- National Environmental Management Act 107 of 1998 (NEMA)
- Project Record of Decision (RoD) applicable to the Project
- Sea-shore Act No. 21 of 1995
- Environmental Conservation Act 73 of 1989
- National Water Act 36 of 1998

Environmental Management procedures prepared by TNPA for ports have been used in compiling this document and the associated specifications.

4. Roles Responsibilities and Organisational Structure Relating to the Implementation of the CEMP

4.1 Environmental Management: Roles and Responsibilities

4.1.1 *Project Environmental Manager*

The Employer's Project Environmental Manager (PEM) will be responsible for ensuring that the CEMP and the associated documents are complied with by the *Contractor*. The PEM will report to the Employer's Project Manager and functionally to the Employer's Programme Environmental Manager. The specific tasks during the construction stage will involve:

- Liaison with the authorities
- Preparation of the project specific Project Environmental Specification
- Review reports from the Employer's Environmental Officer
- Chair any environmental incident and environmental non-conformance enquiries
- Ensure induction material includes project appropriate environmental issues
- Approve environmental training programmes and other awareness initiatives
- Conduct Quarterly audits on the construction site and the Employer's Environmental Officer to determine how effectively the CEMP is being implemented
- The Employer's Environmental Manager will be responsible for the following deliverables:
 - ◆ Quarterly audits of construction site compliance with the CEMP
 - ◆ Arranging for an external independent environmental auditor to conduct quarterly audits of construction site compliance with CEMP and RoD requirements as required by DEAT
 - ◆ Prepare environmental monitoring protocols (if monitoring to be done by the Employer's Environmental Officer and not an outside consultant)

4.1.2 *Construction Manager*

The Employer's Construction Manager has overall responsibility for environmental management on site which includes the implementation of the CEMP, SES and PES. The Employer's Construction Manager reports to the Employer's Project Manager. The Employer's Construction Manager is supported by the Employer's Project Environmental Manager. The specific tasks during the construction phase will include:

- Reviewing the monthly reports compiled by the Employer's Environmental Officer
- Identifying the need for remedial measures with regard to proposed works
- Communicating directly with the *Contractors*
- Issuing non-conformance notification to *Contractors* that do not comply with the requirements as set out in the CEMP

4.1.3 *Environmental Officer*

The Employer's Environmental Officer reports to the Employer's Construction Manager and the Employer's Project Environmental Manager and is responsible for conducting the day-to-day tasks required to ensure that the CEMP is correctly implemented on the construction site. The Employer's Environmental Officer will typically conduct the following tasks:

- Prepare site environmental induction programmes to all staff of the Employer and the Contractors
- Prepare and conduct awareness training (e.g. posters, tool box talks, signage) for staff of the employer
- Monitor the Contractor's compliance with the CEMP on site
- Conduct monthly observation and environmental audit of all Contractors and work areas
- Ensure that all environmental monitoring programmes (sampling, measuring, recording etc when specified) are carried out according to protocols and schedules
- Measurement of completed work (e.g. areas topsoiled, revegetated, stabilised etc)
- Maintain site documentation related to environmental management (permits, CEMP, method statements, RoD, reports, audits, monitoring results, receipts for waste removal etc). Documentation to be maintained on the relevant site Document Control System
- Attendance at scheduled SHE meetings and project coordination meetings
- Inspect and report on environmental incidents and check corrective action
- Keep a regular photographic record of all environmental incidents
- Implementation of environmental-related actions arising out of the minutes from scheduled meetings
- Review and sign off Environmental Method Statements prepared by *Contractors*
- Collate information received, including monitoring results into a monthly report to the Project Manager, showing progress against targets

The key deliverables will include the compilation of:

- A project start up checklist (HMG-EM-FM-016)
- Monthly inspection/environmental audit report (HMG-EM-FM_006)
- Incident reports (HMG-EM-FM-009)
- An Environmental Incidents register (HMG-EM-FM-014)
- Environmental Non-Conformance Reports (HMG-EM-FM-XXX)
- An Environmental Non-Conformance Register (HMG-EM-FM-024)
- A complaints register (HMG-EM-FM-002) (if a register is required or appropriate)
- An Environmental Method Statements Register (HMG-EM-FM-012)
- A Hazardous Substances Register (HMG-EM-FM-013)

- A Site close-out inspection (HMG-EM-FM-022)

4.1.4 Contractor's Environmental Officer

The *Contractor* shall appoint an Environmental Officer to ensure compliance with the requirements in the CEMP. The *Contractor*, as part of his Tender Document, shall submit the name and CV of the *Contractor's* Environmental Officer as well as an Environmental Plan detailing his, roles and responsibilities. This will be for the Employer's Project Manager's approval and no work can commence on site if this has not been done.

The *Contractor's* Environmental Officer will report to the Employer's Environmental Officer on site. It will be the responsibility of the Contractor's Environmental Officer to ensure that all work is conducted according to approved Environmental Method Statements and that the requirements of the CEMP are implemented in a timeous and proper manner in his/her work area. The *Contractor's* Environmental Officer tasks will include:

- Daily, weekly and monthly inspections of the work area(s) as per schedule. The *Contractor* is referred to Annexure 3 for an example of the aspects that will need to be inspected and which aspects will be audited by the Employer's Environmental Officer.
- Preparing activity based Environmental Method Statements
- Monitoring compliance with the CEMP and approved Environmental Method Statements
- Reporting and recording of any environmental incidents
- Attendance at all SHE meetings, toolbox talks and induction programmes
- Waste Management
- Ensuring that environmental signage and barriers are correctly placed
- Taking required corrective action within specified time frame

The *Contractor's* Environmental Officer will be expected to submit daily, weekly and monthly checklists to the Employer's Environmental Officer. Should the *Contractor's* Environmental Officer change from that person identified during either the tender stage, or the construction period, the *Contractor* shall submit a CV of a replacement Environmental Officer for approval by the Employer's Environmental Officer and Project Manager. No work can proceed until the replacement Environmental Officer has been approved.

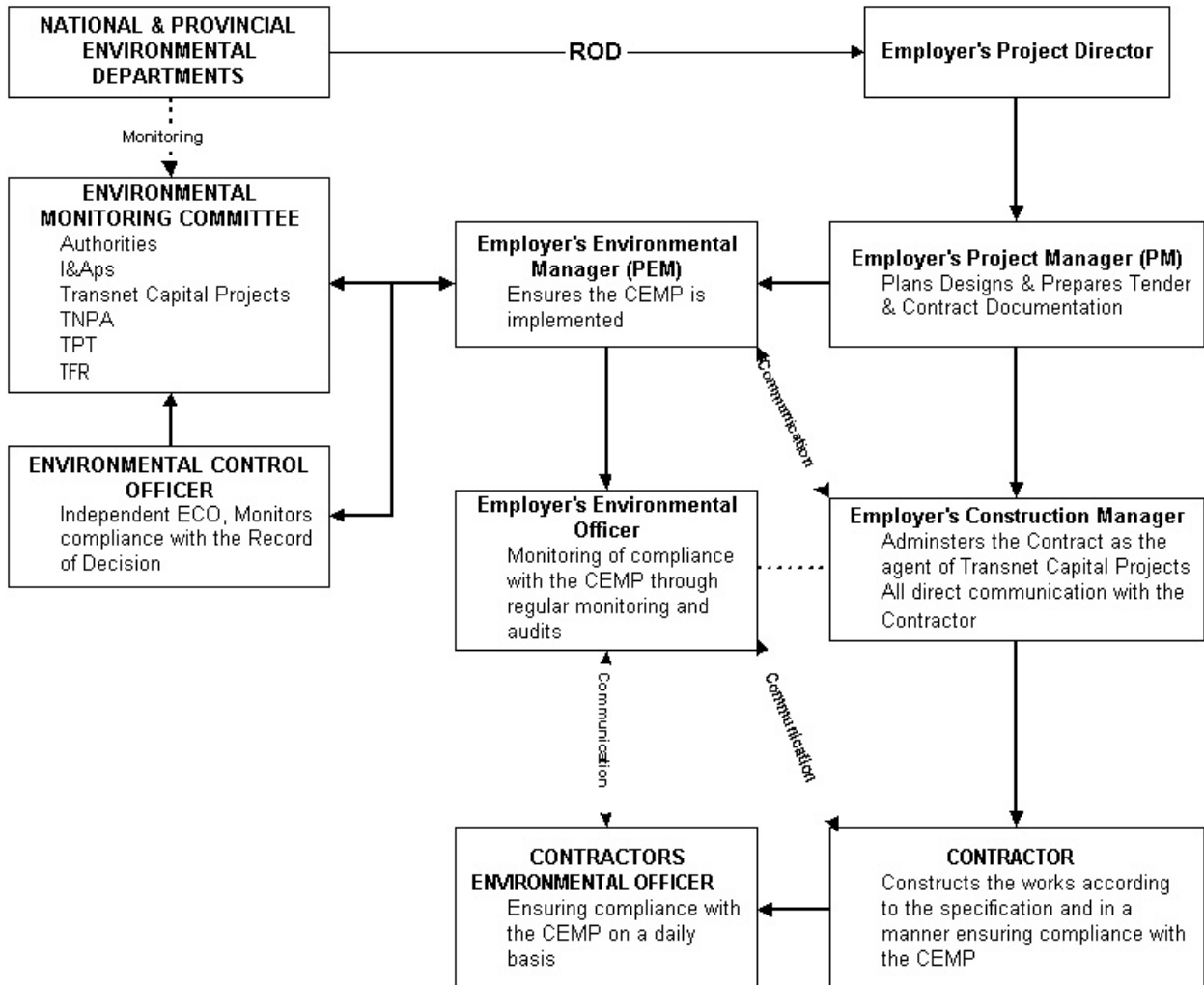
4.2 Organisational Structure

The organisational structure identifies and defines the responsibilities and authority of the various organisations involved in the project. All instructions and official communications regarding environmental matters shall follow the organisational structure shown in Figure 1.

From Figure 1 it can be seen that all instructions that relate to the CEMP will still be given to the *Contractor* via the Employer's Construction Manager. In an emergency situation, however, the Employer's Environmental Officer may give an instruction directly to the *Contractor*. Site Environmental Management will be an item on the agenda of the monthly site meetings, and the Employer's Environmental Officer will attend these meetings. If at any time the Employer's Construction Manager is uncertain in any way with respect to an

environmentally related issue or any specification in the CEMP, he shall consult with the Employer's Environmental Manager.

Figure 1: Typical Organogram for Construction



4.3 The Contractor

The *Contractor* shall comply with the specifications of the CEMP and abide by the Employer's Construction Manager's instructions regarding the implementation of the CEMP.

The Declaration of Understanding, as detailed in Section 5.7, must be signed, and the original signed copy must be submitted to the Employer's Construction Manager prior to the start of construction.

Annexure 1 details some of the main actions required for the CEMP by the *Contractor* at various stages during the contract. The Employer's Environmental Officer will monitor that all of these actions are undertaken and in accordance with the CEMP. Annexure 1 aims to ensure that the main actions are not overlooked, and unnecessary delays do not result, by ensuring that the Employer's Project Manager and *Contractor* are aware of these requirements ahead of time.

It must be noted, however, that Annexure 1 does not list all the requirements of the CEMP, but rather serves as a guide as to where definite actions are required before certain activities can commence. Annexure 1 only summarises main points in the SES and should therefore be read in conjunction with the SES, and the PES.

Annexure 3 contains additional issues deemed to form part of the CEMP. It also lists the aspects that will be subject to regular inspections and audits by the various parties.

4.4 Environmental Control Officer

The RoD may require that an independent Environmental Control Officer (ECO) is appointed to review compliance with the conditions of the RoD and the CEMP. The ECO shall be an external consultant to the Employer and Contractor's organisation.

4.5 Environmental Monitoring Committee

The RoD may require that an Environmental Monitoring Committee (EMC) is established prior to the commencement of the activity as described in the RoD. The RoD will describe the functions of the EMC but will generally be required to monitor and review the Employer's and Contractor's performance and implementation of the approved CEMP.

5. Matters Pertaining to the Implementation of the CEMP

5.1 Availability of the CEMP

Copies of the relevant CEMP documentation (SES, & PES, and any *Contractor's* Guideline Documents) shall be available at the site offices of the *Contractor* and at the Employer's Site Office. All *Contractor's* personnel including sub-contractors will be required to go through an environmental induction programme before commencing work on site and this shall be reinforced through regular toolbox talks. The *Contractor* shall ensure that all personnel that work on Site (including *Sub-Contractors* and their staff, and suppliers) are familiar with and understand the requirements of the CEMP.

5.2 Project Management Plan

The contractor is required to submit with this Tender documents an Environmental Management Plan. The EMP should describe relevant roles and responsibilities, and how potential

environmental impacts will be identified and managed including the monitoring and recording thereof. These will be used to assess a Contractor's competency and experience of preventing and managing environmental impacts.

5.3 Environmental Method Statements

Throughout the construction and commissioning phase activity based Environmental Method Statements (see Annexure 2) need to be compiled by the *Contractor* for approval by the Employer's Construction Manager and Employer's Environmental Officer. The *Contractor* shall submit written Environmental Method Statements to the Employer's Construction Manager, as requested in the CEMP or as directed by the Employer's Construction Manager. The Environmental Method Statement is a written submission by the *Contractor* to the Employer's Construction Manager describing:

- The proposed activity, setting out the plant, materials, labour and method the *Contractor* proposes using to carry out an activity;
- The potential negative impacts and risks associated with the activity;
- How the impact will be prevented or managed;
- The relevant environmental standards to be met;
- Environmental monitoring to be undertaken and records to be maintained.

The method statement shall also cover applicable details with regard to:

- Construction procedures;
- Materials and equipment to be used;
- Transportation of the equipment to and from site;
- How the equipment/ material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Description of how potential environmental impact will be presented or managed;
- Compliance/ non-compliance with the Specifications; and
- Any other information deemed necessary by the Employer's Construction Manager.

The *Contractor* shall abide by these approved Environmental Method Statements, and any activity covered by an environmental method statement shall not commence until it has been approved by the Employer's Environmental Officer and Construction Manager. To enable timely approvals, the environmental method statement shall be submitted to the Employer's Construction Manager and Environmental Officer for review two to three weeks prior to the intended date of commencement of the activity, or as directed by the Specifications or the Employer's

Construction Manager. Certain environmental method statements are required with the tender, as outlined in Annexure 2.

Annexure 2 gives an explanation of environmental method statements and provides a typical pro forma sheet that must be provided by the *Contractor* for each activity requiring an environmental method statement.

5.4 Environmental Incidents and Non-conformances

An environmental incident can be divided into three levels, eg Major, medium and minor. They are set out as follows:

5.4.1 Major environmental incident

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in widespread, long-term, irreversible significant negative impact on the environment and/or has a high risk of legal liability.

Where the environmental impact of a medium environmental incident is still present 120 days after occurrence, the incident will be classified as a major incident.

NOTE: A major environmental incident usually should be reported to the authorities, usually result in a significant pollution and may entail risk of public danger. Major environmental incidents usually remain an irreversible impact even with the involvement of long-term external intervention i.e. expertise, best available technology, remedial actions, excessive financial cost etc.

5.4.2 Medium environmental incident

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in widespread or localised, short term, reversible significant negative impact on the environment and/or has a risk of legal liability.

Where the environmental impact of a minor environmental incident is still present 3 days after occurrence, the incident will be classified as a medium incident.

NOTE: A medium environmental incident may be reported to the authorities, can result in significant pollution or may entail risk of public danger. The impact of medium environmental incidents should be reversible within a short-term with or without intervention.

5.4.3 Minor environmental incident

An incident or sequel of incidents, whether immediate or delayed, that does not result in any negative impact on the environment after once-off internal intervention on the day of occurrence.

An incident where there is unnecessary wastage of a natural resource is also classified as a minor environmental incident. Examples are leaking water pipes, escaping steam and wastage of electricity where it is obviously not the intension of the natural resource to be wasted.

NOTE: A minor environmental incident is not reportable to authorities, should not result in pollution and may not have a risk of public danger. The impact of minor environmental incidents should be negligible immediately after occurrence and/or once-off intervention on the day of occurrence.

5.5 Removal from Site, and Suspension of the Works

Non-compliance with the conditions of the CEMP constitutes a breach of Contract. The Employer's Project Manager, at his own discretion, has the power to remove from Site any person who is in contravention of the CEMP, and if necessary, the Employer's Construction Manager can suspend part or all of the works, as required.

5.6 Environmentally Friendly Products

Annexure 4 contains a list of suppliers who advertise environmentally friendly products and which have been used successfully in practice. It should be noted that this list is by no means exclusive, and that other bio-remediation measures and environmentally friendly products should also be investigated.

5.7 Declaration of Understanding

The Contractor has to sign the Declaration of Understanding (HMG-EM-FM-023) before any construction activities are to commence. The Declaration of Understanding must be issued to the Contractor by the Employer's Environmental Officer.

Annexure 1

Main Actions Required by the Contractor for Compliance with the CEMP

1.1 Prior to Commencement

The Employer's Project Manager must ensure that the requirements below are requested of the *Contractor* in the Project Construction Contract Document, the Letter of Appointment and any other relevant correspondence with the *Contractor* prior to the start of works, as relevant.

1.1.1 *The Declaration of Understanding*

The Declaration of Understanding in the *Contractors* Guideline Document shall be signed and provided by the *Contractor* as part of his Tender Document.

1.1.2 *Environmental Method Statements*

Where relevant, an Environmental Plan and environmental method statements, as detailed in the CEMP, SES, Protection Action Plan (PAP) and PES (activity based environmental method statements), shall be provided by the *Contractor* as part of their Tender. Pro-formas are included for the Contractor's use. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous solid waste management
- Storm water management
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills
- Diesel tanks and refuelling procedures
- Dust control
- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site division (Demarcation of the site)
- Emergency procedures for environmental incidents
- Closure of construction laydown area

Note that sanitation / toilet facilities are managed by the Health and Safety department and is not covered in this CEMP.

1.1.3 Appointment of Contractor's Environmental Officer

The *Contractor* must appoint an Environmental Officer and submit this appointment, along with a CV and job description of the SHE Officer to the Employer's Construction Manager and Environmental Officer for their approval. Should the Contractor's Environmental Officer change from that person identified during either the tender stage, or the construction period, the Contractor shall submit a CV of a replacement Environmental Officer for the Employer's Project Manager's approval. No work can proceed until the replacement Environmental Officer has been approved.

1.1.4 Environmental Induction

The *Contractor* shall ensure that all management, foremen and the general workforce, as well as all suppliers and visitors to site have attended the Induction Programme prior to commencing any work on site. If new personnel commence work on the site during construction, the *Contractor* shall ensure that these personnel undergo the Induction Programme and are made aware of the environmental issues on site. The Contractor must ensure that all of their personnel understand the requirements of the CEMP as relevant to their scope of work.

1.2 During the Construction Period

1.2.1 Copy of the CEMP and familiarisation thereof

A copy of the CEMP, SES, and the relevant PES clauses shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Sub-Contractors and their staff) as well as suppliers, are familiar with and understand the specifications contained in the SES and PES.

1.2.2 Environmental Method Statements (Activity Based)

Other Activity Based Method Statements which are required during construction must be submitted to the Employer's Environmental Officer and Construction Manager for approval two to three weeks prior to the commencement of the activity. Emergency construction activity Environmental Method Statements may also be required. The activities requiring Environmental Method Statements cannot commence if they have not been approved by the Employer's Construction Manager and Environmental Officer. The contractor is provided with an Environmental Method Statement pro-forma which provides details of the minimum requirements to be included in the Contractor's Environmental Method Statement. Contractor's Method Statements that do not comply with those minimum requirements will not be approved. Activity Based Environmental Method Statements are defined in the Project Environmental Specification (PES).

1.2.3 Environmental Method statement awareness

Where applicable, the *Contractor's* EO shall provide job-specific training on an *ad hoc* basis when workers are engaged in activities which require Environmental Method Statements. The Contractor's EO shall maintain a record of training topics and attendees.

1.2.4 Re-vegetation and rehabilitation

The *Contractor* shall be responsible for rehabilitating and revegetating all areas to the satisfaction of the Employer's Construction Manager as detailed in the project specifications.

1.2.5 *Other issues to ensure compliance*

The list below is a list of some of the other issues that the *Contractor* must ensure he has planned for to meet the requirements of the environmental specifications. It is not a comprehensive list but serves as a guide:

- Cement and concrete batching
- Workshop and maintenance of plant
- Protection of natural fauna and flora
- Protection of historical and archaeological artefacts

1.3 Site clean up for closure

The *Contractor* shall clear and clean the work and laydown area and ensure that everything not forming part of the Permanent Works is removed from site and that all rehabilitation has taken place in accordance with the Project Environmental Specification. Retention moneys will not be paid until a Site Closure Inspection (conducted by the Employer's EO) has taken place and signed off by the Employer's Construction Manager together with the Contract Completion Certificate.

Annexure 2

Information on Environmental Method Statements (Activity Based)

Activity Based Environmental Method Statements are to be completed by the Contractor undertaking the work. The Environmental Method Statement will enable the potential negative environmental impacts associated with the proposed activity to be assessed.

The activity can only commence once the Environmental Method Statement is approved by the Employer's Environmental Officer and Construction Manager. In some instances local authorities may also need to approve the method statements. This will be highlighted in the Project Environmental Specification, when appropriate.

The *Contractor* (and, where relevant, any *Sub-Contractors*) must also sign the Environmental Method Statement, thereby indicating that the works will be carried out according to the methodology contained in the approved Environmental Method Statement.

The Employer's Environmental Officer and Construction Manager, and where relevant ECO, will use the Environmental Method Statement to audit compliance by the *Contractor* with the requirements of the approved Environmental Method Statement.

Changes to the way the works are to be carried out must be reflected by amendments to the original approved Environmental Method Statement; amendments require the signature of the Employer's Environmental Officer and Construction Manager, denoting that the changed methodology or works are necessary for the successful completion of the works, and are environmentally acceptable. The *Contractor* will also be required to sign the amended Environmental Method Statement thereby committing him/herself to the amended Environmental Method Statement.

This Environmental Method Statement MUST contain sufficient information and detail to enable the Employer's Construction Manager and Environmental Manager to apply their minds to the potential impacts of the works on the environment. The *Contractor* will also need to thoroughly understand what is required in order to undertake the works.

The initial Environmental Method Statements that will be required are listed in the environmental specifications. Others may be requested by the Construction Manager during the Contract.

THE TIME TAKEN TO PROVIDE A THOROUGH, DETAILED ENVIRONMENTAL METHOD STATEMENT IS TIME WELL SPENT. INSUFFICIENT DETAIL WILL RESULT IN DELAYS TO THE WORKS WHILE THE ENVIRONMENTAL METHOD STATEMENT IS REWRITTEN TO THE EMPLOYER'S CONSTRUCTION MANAGER'S AND ENVIRONMENTAL OFFICER'S SATISFACTION.

The page overleaf provides a *pro forma* Environmental Method Statement sheet which needs to be completed for each activity requiring a method statement in terms of the CEMP.

2.1 Activity Based Environmental Method Statement (HMG-EM-FM-002)

PROJECT NAME:		DOCUMENT NO:	
PROJECT NO:		DATE:	
CONTRACTOR:		CONTRACT NO:	

PROPOSED ACTIVITY (give title of the Environmental Method Statement and reference number from the CEMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:		End Date:	
-------------	--	-----------	--

DESCRIPTION OF HOW POTENTIAL ENVIRONMENTAL IMPACTS WILL BE PREVENTED OR MANAGED (provide as much detail as possible, including annotated sketches and plans where possible):

ENVIRONMENTAL STANDARDS (List the applicable Environmental standards to be met)

MONITORING AND RECORD KEEPING (Describe how the activity will be monitored to ensure the the environmental standards are met, as well as the records to be kept)

2.2 Declarations

2.2.1 EMPLOYER'S ENVIRONMENTAL OFFICER

The work described in this Environmental Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm:

Print Name	Signature	Date
------------	-----------	------

2.2.2 PERSON UNDERTAKING THE WORKS

I understand the contents of this Environmental Method Statement and the scope of the works required of me. I further understand that this Environmental Method Statement may be amended on application to other signatories and that Transnet Capital Projects Environmental Manager and Construction Manager will audit my compliance with the contents of this Environmental Method Statement

Print Name	Signature	Date
------------	-----------	------

2.2.3 APPROVING AUTHORITY (i.e. the Employer's Construction Manager)

The works described in this Method Statement are approved.

Print Name	Signature	Date
------------	-----------	------

Annexure 3

Environmental Inspections and Audits

3.1 Environmental Inspections and Audits

Environmental inspections and audits are conducted using five basic techniques:

- Interviews with Contractors staff (including sub-contractors and suppliers)
- Document checks
- Observations
- Monitoring
- Measurement and verification

This annexure defines the areas and aspects of the construction site that will be inspected or audited, the frequency of such audits, the auditor and auditee.

It should be noted that these lists are not exhaustive and that each site will have specific issues that will need to be audited at an appropriate frequency.

For each construction project, the auditor and auditee are as follows:

Place	Inspector/Auditor	Auditee	Inspection/audit frequency
Work places	<i>Contractor's EO</i>	<i>Contractor's team (incl. sub-contractors)</i>	Daily Inspection
Construction site	The <i>Employer's Environmental Officer</i>	<i>Contractor's EO</i>	Monthly Audit
Construction site (entire area)	The Employer's Project Environmental Manager	The Employer's Environmental Officer	Quarterly Audit
<i>Operational phase*</i>	<i>Accredited EMS auditor</i>	<i>Operator of the port</i>	<i>Every 2 years</i>

* Not covered in this documentation

3.2 Work Places Inspection

The *Employer's* Environmental Officer will be required to conduct weekly inspections of all work places for which the *Contractor* is responsible, including but not limited to the following:

- *Contractor's* camp, recreational and canteen facilities
- Material lay down areas
- Liquid and solid waste storage facilities (general, hazardous, recycling and scrap)
- Workshops
- Oil traps (bunded area)
- Wash bays
- Construction work area
- Spray booths
- Haul roads
- No-go areas
- Storm water drains
- And any other construction areas for which the *Contractor's* EO is responsible

At each of these sites, the *Contractor's* EO will be required on a daily basis to check for the following, where relevant:

By observation:

- Litter
- Separation of solid waste as per system (general, hazardous, recycling, scrap)
- Hydrocarbon spills
- Effectiveness of dust control measures
- Illegal washing out of containers in Stormwater/sewer drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Water use and wastage
- Pollution of water resources
- Provision, use and security of toilet facilities
- Any other illegal activities that contravene the CEMP.

By document check:

- Removal of oil for recycling as per schedule
- Removal of packaging as per agreements with suppliers
- Removal of hazardous waste by specialist *Contractors* as per schedule
- Correct placement of environmental signage and posters
- Document board listing emergency numbers, hazmat info sheets, etc

3.3 Construction Site Audit

The *Employer's* Environmental Officer will be required to conduct monthly inspections of the entire construction site, which may involve more than one *Contractor* and may include, but not be limited to the following:

- Entire construction site
- Construction site fencing
- Environmentally sensitive areas
- *Contractor's* camp, recreational and canteen facilities
- Material lay down areas
- Liquid and solid waste storage facilities (general, hazardous, recycling, scrap)
- Workshops
- Oil traps (bunded areas)
- Wash bays
- Quarries and borrow pits used for fill and construction material
- Spoil dumping areas
- Bioremediation site
- Fuel depot and hydrocarbon storage areas
- Construction work area
- Concrete batching plant
- Spray booths
- Haul roads
- No-go areas
- Storm water drains
- And any other construction areas not listed

At each of these sites the Employer's Environmental Officer will be required to check for the following, where relevant:

By observation:

- Litter
- Separation of solid waste as per system (general, hazardous, recycling, scrap)
- Hydrocarbon spills
- Use of bunding, hard standing and other protection measures
- Illegal dumping
- Effectiveness of dust control measures
- Illegal washing out of containers in storm water/sewer drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Illegal use of tracks and off-road driving in no-go areas
- Correct procedures are followed for topsoil removal and stockpiling
- Effectiveness of erosion protection measures
- Excess noise and vibration
- Water use and wastage
- Pollution of water resources
- Any other illegal activities that contravene the CEMP

By document check:

- All receipts for the collection of old oil, general recycled waste and hazardous waste
- Correct placement of environmental signage and posters
- Document board listing emergency numbers, hazmat info sheets, etc
- Complete and accurate records of the Contractor's Environmental Management File

By measurement:

- Amount of water used by each *Contractor* (where practical)
- Amount of topsoil removed and stockpiled
- Amount of land stabilisation completed

- Area revegetated
- Amount of waste recycled, sent to scrap yard or disposed of to municipal waste handling
- Amount of material treated in the bioremediation site (where relevant)

By monitoring:

- Effectiveness of dust control systems
- Effectiveness of pollution control systems
- Effectiveness of rehabilitation and revegetation programmes
- Effectiveness of erosion control methods
- Effectiveness of noise control barriers

A site-specific inspection checklist will be provided to the Employer's Environmental Officer prior to site establishment.

3.4 Construction Site and documentation Compliance Audit

The *Employer's* Project Environmental Manager and/or an independent environmental auditor and/or the Environmental Controls Officer will conduct quarterly audits of the entire construction site and documentation system (Contractor and Employer), which may include, but not be limited to the following:

- Site entrance
- Entire construction works area
- No-go areas
- Environmentally sensitive areas
- Liquid and Solid waste storage facilities (general, hazardous, recycling, scrap)
- All workshops
- Refuelling depots
- *Contractor's* camp area and lay down place
- Any other place which needs to be audited within the construction site

By observation:

- Litter
- Liquid and Solid waste storage facilities (general, hazardous, recycling, scrap)
- Hydrocarbon spills
- Use of bunding, hard standing and other protection measures

- Illegal dumping
- Effectiveness of dust control measures
- Illegal washing out of containers in storm water/sewer drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Illegal use of tracks and off-road driving in no-go areas
- Correct procedures are followed for topsoil removal and stockpiling
- Effectiveness of erosion protection measures
- Excess noise and vibration
- Water use and wastage
- Pollution of water resources
- Provision and use of toilet facilities
- Any other illegal activities that contravenes the CEMP

By document check:

- Complaints register is available and up to date
- Environmental Method Statements are signed off and filed correctly and up to date
- All environmental permits are available
- Copy of the RoD is available on site
- Copies of the CEMP, SES and PES are available on site
- Copies of all daily, weekly inspections and audits, minutes, incident reports and corrective action reports are filed correctly (Contractor's and Employers Environmental Officer Audits)
- Copies of close-out reports are available
- The monitoring programme (where relevant) is being adhered to and the monitoring results are no more than one month late
- Chains of custody for samples can be provided on request
- Sampling protocols are followed
- Emergency numbers and procedures are clearly displayed
- Photographic record
- Records of Environmental Awareness Training of Contractors and Staff

- Any other documentation necessary to ensure effective environmental management of the site

By verification (if necessary):

- Spot samples to check water quality (e.g. storm water runoff)
- Map/plan measurements to check areas disturbed/revegetated
- Check dust collection buckets are working
- Check oil separators
- Any other aspect which gives cause for concern

By interview:

- The *Employer's* Environmental Officer
- The *Contractor's* Environmental Officer
- Contractor's staff at random

A specific site audit protocol will be formulated prior to the first audit and sent to the Employer's Programme Environmental Manager two weeks in advance of the quarterly audit.

Annexure 4

Environmentally Friendly Products

It should be noted that this list is by no means exclusive, and that other bio-remediation measures and environmentally friendly products should also be investigated.

4.1 BIO-PRODUCTS

4.1.1 ENRETECH

Environmental Remediation Technology

Tel: (021) 683-1858 fax: (021) 683-1858

Cell: 082 677 4505 info@enretech.co.za

www.enretech.co.za

Products:

- Enretech 1, microbial bioremediation product for spills on soil and shale
- Premium floor sweep, premium oil absorbent for spills on hard surfaces
- Cellusorb (E-2 Fibre), premium absorbent for spills on water
- Enretech acid absorbent, Natural solutions for acid spill
- Booms and pillows, (cellusorb-filled Cotton-cloth Casings), absorbent spill containment
- Gator H.D Spray & WIPE, general purpose clear liquid for effective cleaning of almost any hard surface
- GATOR H.D. DEGREASOL, heavy duty all-purpose industrial cleaner/degreaser for effective cleaning of petroleum & vegetable oils, waxed and common grime form hard surface
- GATOR ANTISEPTIC HANDCLEANER, degreaser

4.1.2 PINELANDS ENVIRONMENTAL TECHNOLOGIES

Tel: (021) 531 3749/50 Fax: (021) 531 3903/ 531 3003

cell: 082 464 1074

Products:

- CHEMCAP, oil dispersant & degreaser - www.chemcap.com
- TSW, asbestos encapsulation
- Dustex, soil binder to reduce dust and can even be used as a temporary surface on dust roads to reduce dust.

4.1.3 ZORBIT TECHNOLOGIES CAPE cc

Tel: (021) 535 5165 or 54 6363/4/5/6 Fax: (021) 54 6367

Products:

- PEAT SORB, microbial bioremediation product for spills on soil and shale

4.1.4 DYNACHEM (PTY) LTD

Chemical Speciality and Detergent Manufacturers

Tel: (021) 54 6363/4/5/6 Fax: (021) 54 6367

cell: 083 629 7934

Tel: (021) 948 6180 Fax: (021) 948 6190

cell: 082 469 0366 www.spillsorb.com

Products:

- SPILL SORB

4.1.5 BIO-SYSTEMS SA.

Bio-Augmentation for: Municipal Industrial and Commercial use

Bob Hadley

Tel: (021) 7622339 Fax: (021) 762 2339

cell:082 901 9011 biosystem@is.NETcom.com

www.BIOBUGS.com

4.1.6 IBA ENVIRONMENT SA

Institiut de Biotechnologie Appliquee

Tel: (021) 858 1510 Fax: (021) 858 1004

Cell:082 682 7866 e-mail: ambico@iafrica.com

4.1.7 VULA ENVIRONMENTAL SERVICES

Tel: (022) 766 1106 Fax: (022) 766 1106

Cell: 0825645748

Products

- Hydropam for dust suppression and hydroseeding.

4.2 SAFETY PRODUCTS

4.2.1 PIENAAR BROS. (Pty) Limited

Industrial Safety & Supplies

Tel: (021) 2511 8131 Fax: (021) 511 2464

pb@iafrica.com

4.3 SANITARY PRODUCTS

4.3.1 SANNI TREE WATERLESS.CO.1996

Tel. (021) 788 1573

4.3.2 CUT DOWN ON WASTE

Contact the following numbers for information on collection points in your area:

- (Plastic containers) Plastics Federation (011) 314 4021
- (Cans and tins) Collect-a-Can (011) 466 2939
- (Glass) Consol Glass (011) 874 2010
- (Motor and cooking oils) Oilkol (011) 762 5506
- (Paper) Nampak 0800 018 818

MC:dww
Attachment(s)/Enclosure

Standard environmental specification



Transnet Capital Projects Environmental Management

Standard Environmental Specification

HMG-EM-STD-001

Prepared by: 10/9/08
 Programme Environmental Manager Date

Reviewed by: 19/9/2008
 Snr Project Managers - Ore Line/Marine/Special Projects Date

Approved by: 3/10/08
 Programme Manager Date

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1. Purpose

This procedure describes the minimum standards for environmental management to which Contractor's and sub-Contractor's on a construction site must comply. It is a generic standard for use across all construction works conducted under the management of Transnet Capital Projects.



There may be project specific environmental standards in addition to the standards in this document, or that exceed the standards prescribed here. These project specific environmental standards will be described in the Project Environmental Specifications that will be issued separately for each project.

This document must be read in conjunction with the Construction Environmental Management Plan (HMG-EM-M-002).

2. Scope

This procedure applies to Contractor's that work on site under the authority of Transnet Capital Projects Construction Manager.



3. References

- National Environmental Management Act 107 of 1998 (NEMA)
- Project Record of Decision (RoD) applicable to the Project
- Sea-shore Act No. 21 of 1995
- Dumping at Sea Control Act 73 of 1980
- Environmental Conservation Act 73 of 1989
- ISO-9001
- ISO-14001
- Construction Environmental Management Plan HMG-EM-M-002

4. Standards for environmental management

The Contractor shall identify the kinds of environmental impacts that will occur as a result of their activities and then prepare separate Method Statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the Construction Environmental Management Plan HMG-EM-M-002.

4.1 Site establishment

To ensure that environmental issues are taken into account in the establishment of the site offices and all other facilities on site.

4.1.1 **Scope**

The standard applies to all activities relating to the planning of the site, site establishment, operation of the site and closure of the site.

4.1.1.1 *Site plan*

The contractor shall establish his construction camps, offices, workshops, staff accommodation and any other facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall submit to the Construction Manager for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan.

4.1.1.2 *Sewage and Sanitation*

Addressed through the Safety Management Plan and managed by the Safety Department in terms of the OSH Act.

4.1.1.3 *Effluent Management*

All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

4.2 **Waste Management Objective**

To ensure that all waste generated during construction and commissioning of the facilities is properly disposed of.

Examples of typical construction waste which, could be expected on the site are indicated in the following table:

TABLE 2: EXAMPLE OF CONSTRUCTION WASTE CLASSIFICATION

WASTE	CLASSIFICATION	
	HAZARDOUS	GENERAL
Clean soil		X
Construction debris contaminated by oil or organic compounds	X	
Empty drums (depends on prior use)	X	X
Empty paint and coating containers		X
Waste paint and/or solvent	X	
Waste oil	X	
Phenolic waste	X	
Waste concrete		X
Rubble (not contaminated by oil or organic compounds)		X
Waste containing appreciable properties of fibrous	X	

WASTE	CLASSIFICATION	
	HAZARDOUS	GENERAL
asbestos		
Sewerage sludge	X	
Scrap metal		X
Explosive waste	X	
Waste timber		X
Waste Cable		X
PCB waste	X	
Waste plastic		X
Aerosol containers	X	
Batteries, light bulbs, circuit boards, etc.	X	X
Domestic waste		X

4.2.1 *Scope*

The standard applies to all construction, commissioning and site activities that may lead to the generation of waste.

4.2.2 *Approach*

Waste is grouped into general or hazardous, depending on its characteristics. The classification determines handling methods and the ultimate disposal of the material.

General waste to be expected during construction includes the following:

- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel
- Uncontaminated construction debris such as used wood and scrap metal
- Uncontaminated soil and non-hazardous rubble from excavation or demolition

Hazardous waste is waste, which has the potential, even in low concentrations, to have a significant adverse effect on public health and/or the environment. This would be on account of its inherent chemical and physical characteristics, such as toxic, ignitable, corrosive, carcinogenic or other property.

Waste avoidance and minimisation

A ladder approach to waste management is encouraged. Waste should preferably be managed in the following order:

- **Prevent:** by waste avoidance and minimisation during production
- **Recycle:** waste recycling, recovery and utilisation
- **Treat:** waste treatment in order to reduce toxicity and to minimise the quantities of waste
- **Disposal:** waste disposal, probably by incineration, destruction or landfill

4.2.3 *Waste Management*

The Contractor is responsible for the removal from site of all waste generated through the Contractors activities. The Contractor shall ensure that all waste is removed to appropriate licensed waste management facilities.

The classification of waste determines handling methods and the ultimate disposal of the material. The Contractor shall manage hazardous wastes that are anticipated to be generated by his operations as follows:

- Characterise the waste to decide if it is general or hazardous
- Obtain and provide an acceptable container with label
- Place hazardous waste material in container
- Inspect the container on a regular basis as prescribed by the Contractors waste environment management plan
- Track the accumulation time for the waste
- Haul the full container to the disposal site
- Provide documentary evidence of proper disposal of the waste

Transnet Capital Projects Environmental Officer will work in conjunction with the Contractor's construction safety and industrial hygiene personnel to create a Contractor's Hazardous Materials Management Program. This program will establish the necessary protocol for proper handling and removal of hazardous materials on the site.

Information on each hazardous substance will be available to all persons on site with the SEO. Training and education about the proper use, handling, and disposal of the material will be available to all workers who will be handling the material.

Transnet Capital Projects Environmental Officer must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.



The Contractor shall manage GENERAL WASTE that are anticipated to be generated by operations as follows:

- Determine if waste is non-hazardous and obtain containers for waste storage
- Notify waste hauler when container is full so that it can be removed and replaced with an empty

On the Project, however, waste generating entities are directed to control the generation of non-hazardous waste by:

- Eliminating waste generation or reducing the total volume
- Reducing the degree of contamination of waste generated
- Reclaiming materials otherwise considered waste

The Contractor shall therefore recycle GENERAL WASTE that are anticipated to be generated by its operations as follows:

- Obtain and label recycling containers for:
 - ◆ Office Waste
 - ◆ Aluminium and steel cans
 - ◆ Glass Bottles
 - ◆ Scrap Metals
 - ◆ Waste Timber
 - ◆ And locate them within temporary office building and trailers
- Establish recycled material collection schedule
- Arrange for full bins to be hauled away

Spent batteries, circuit boards, and bulbs, while non-hazardous, require special collection and handling.

4.3 Vehicle and Equipment Refueling Objective

To eliminate / control fuel and oil spillage at refuelling facilities.

4.3.1 *Scope*

The standard applies to all refuelling, lubrication and oil changing requirements on all vehicles and machinery.

4.3.2 *Refueling*

Engine driven compressors, pumps, air conditioners, and arc welders can have small leaks (usually oil) that can accumulate to become spills, which require clean up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of hydraulic fluid spilled to the ground and under lock and key arrangements.

4.3.2.1 *Control*

No vehicles or machines shall be serviced or refuelled on site except at designated servicing or refuelling locations, no oil or lubricant changes shall be made except at designate locations, or in case of breakdown or emergency repair.

The Contractor shall store fuel and oil at a secure area, which shall be bunded and designed with a liner or paved surface to prevent spillage from entering the ground.

The Contractor shall provide details of its proposed fuel storage and fuelling facility to Transnet Capital Projects Environmental Officer for approval, the design shall comply with the regulations of the *Water Act* (Act 36 of 1998), the *Hazardous Substances Act* (Act 15 of 1973), and the *Environment Conservation Act* (Act 73 of 1989).

4.3.2.2 *Spill Response*

The Contractor shall comply with the regulations of the *Water Act* (Act 36 of 1998), the *Hazardous Substances Act* (Act 115 of 1973), and the *Environment Conservation Act* (Act 73 of 1989).

The Contractor shall provide details for approval of its spill response plan in the event of any spills of fuel, oils, solvents, paints or other hazardous materials. The plan will show measures to be taken to remove contaminated soils from site and demonstrate complete removal of contamination.

The Contractor shall instruct construction personnel on the following spill prevention and containment responsibilities:

- Repair all leaks of hydrocarbons or chemicals as soon as possible
- Take all reasonable means to prevent spills or leaks
- Do not allow sumps receiving oil or oily water to overflow
- Prevent storm water run-off from contamination by leaking or spilled drums of oil or chemicals
- Do not discharge oil or contaminants into storm sewer system

If a spill to land occurs, the Contractor is responsible for:

- Immediate action to stop or reduce the spill and contain it
- Actions necessary to prevent the spill from contaminating groundwater or off-site surface water
- Disposal of contaminated material to location designated thereto

Any spill to water has the potential to disperse quickly, therefore, the spill must be contained immediately using appropriate containment equipment.

If a spill to water occurs, the Contractor is responsible for:

- Immediate action to stop or reduce the spill and contain it
- Notifying the appropriate on-site authorities
- Actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent material
- Proper disposal of spilled material

4.4 **Spray Painting and Sandblasting**

4.4.1 *Objective*

To ensure that all spray painting and sandblasting on site is done in a controlled manner where appropriate measures are taken to prevent paint contamination of the soil and to ensure that sandblasting grit/media is properly contained and disposed of.

4.4.2 Scope

All spray painting and sandblasting on site.

4.4.3 Spray Painting and Sandblasting

Spray painting and sandblasting should be kept to a minimum. All painting should as far as practicable be done before equipment and material is brought on site. Touch up painting is to be done by hand painting or by an approved procedure. A Method Statement shall be submitted to the SHE Coordinator for approval.

The relevant Contractor will inform Transnet Capital Projects Environmental Officer of when and where spray painting or sandblasting is to be carried out prior to commencement of work. Transnet Capital Projects Environmental Officer will monitor these activities to ensure that adequate measures are taken to prevent contamination of the soil.



NB: If the area is in confined or high areas then a protection plan is to be issued for approval.

4.5 Dust Management**4.5.1 Objective**

Contractors (associated with activities such as earthworks, geotechnical surveys, piling, storm water drainage, construction of roads and railways, foundations, brick building, operating workshops, fencing, erecting construction camps, and batch plant activities, etc.) shall submit a dust control plan for approval by Transnet Capital Projects Environmental Officer.

**4.5.2 Scope**

Control of dust on the construction site and access roads.

4.5.3 Dust Management

Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust.

Dust to be controlled on unsurfaced access roads and site roads using sprayed water. Contractors are responsible for managing dust generated as a result of their activities. The Construction Manager will be responsible for the dust control of the construction areas.

Some dust control measures which are normally applied during construction are presented in this section for inclusion by the Contractor in the Contractor's dust control Method Statement.

These dust-mitigating procedures include the following:

- Limit vehicle speeds on unpaved roads to 20 km/h
- Wash the paved surfaces within the construction area twice a week
- Minimise haulage distances
- Apply water to gravel roads with a spraying truck when required
- Environmental friendly soil stabilisers may be used as additional measures to control dust on gravel road ad construction area

- Dust suppression measures will also apply to inactive construction areas. (An inactive construction site is one on which construction will not occur for a month or more.)
- Construction material being transported by trucks must be suitable moistened or covered to prevent dust generation
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2 m in height to, among other things, to prevent wind-blown dust
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, run-off, and air-borne dust
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training)

Water for dust control shall be taken only from approved sources.

4.6 Storm water and Dewatering Management

4.6.1 *Objective*

To ensure that storm water and dewatering drainage across the site occurs in a manner that will negate contamination by oils, fuels, litter and other waste and that will prevent erosion of the construction terrace.

4.6.2 *Scope*

All runoff and dewatering activities.

4.6.3 *Storm water and Dewatering Management*

Water is a valuable resource in the area. Both the quality and quantity of water used by the Contractor should be considered in making resource conservation plans.

Potential construction phase impacts on surface water and groundwater are associated with construction are run-off and percolation, dewatering activities, and miscellaneous liquid wastes associated with construction activities.

In general, construction activities may affect water quality and/or quantity of ground water and/or surface water of the area.

The Contractor shall be aware that, apart from run-off from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads, etc., and that contaminants during construction can include hydrocarbons from fuels and lubricants, sewerage from employee ablutions, even excess fertiliser from rehabilitation areas, etc.

The Contractor shall take note that discharges to controlled waters such as the sea, rivers, or groundwater or to sewerage systems are controlled under the South African Water Legislation

4.6.3.1 *Surface run-off*

Construction activities such as surface grading and excavation will disturb surface areas on-site. This will increase the potential for soil erosion and subsequent sediment transport during periods of precipitation run-off or when excavation dewatering is required. Construction activities also

have the potential to change local surface drainage and sediment transport patterns, site floodplain delineation, and percolation rates into the soil.

4.6.3.2 *Dewatering*

Dewatering during the groundwork produces a surface water discharge that will require collection and sedimentation. Dewatering has also the potential to affect groundwater quality and quantity.

4.6.3.3 *Wastewater*

Liquid wastes including used solvents, used lubricating oils, chemical flushing agents, spill cleanup wastes, painting wastes, and concrete mixing drum washings, etc., have the potential to affect surface water and groundwater quality.

4.6.3.4 *Management Requirements*

- Temporary drainage must be established on site during the construction period and until permanent drainage is in place. Contractors are responsible for maintaining the temporary drainage in their areas. Contractors must provide secondary drainage that prevents erosion
- Contractors must effect good housekeeping in their areas to prevent contamination of drainage water
- The Contractor shall clear stagnant water

Specific water Management measures (surface and groundwater) for incorporation by Civil/Earthworks Contractor in its C-EMP include the following:

- The Contractor shall ensure that no contaminated surface water shall flow off-site as a result of Contractor operations. Silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no run-off from the SITE except at points where silt traps are provided
- If applicable, the Contractor shall be responsible for collection, management, and containment within the site boundaries of all dewatering from all general site preparation activities. The dewatering water shall be contained within the site boundaries by sequentially pumping or routing water to and from sub-areas within the site as the construction activities proceed. No discharge of dewatering water to off-site land or surface water bodies will be allowed
- On-site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0,2% or as otherwise indicated
- Ditches shall be designed to carry a 25-years storm event with velocities in accordance to minimise erosion. Erosion protection shall consist of suitable stabilising surfaces in all ditches
- Culverts shall be designed to ensure passage of the 25-year storm peak run-off flow
- Both structural and non-structural (vegetative) erosion control measures will be designed, implemented, and properly maintained in accordance with best management practices which will include the following:
 - Scheduling of activities to minimise the amount of disturbed area at any one time

- Implementation of re-vegetation as early as feasible
- Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches
- Compacting loose soil as soon as possible after excavation, grading, or filling
- Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary berms or swales, small sedimentation basins, and gravelled roads to minimise transport of sediment
- Implementing the erosion and sedimentation control plan and ensuring that construction personnel are familiar with and adhere to the plan
- Managing run-off during construction
- The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls

4.7 Rehabilitation

4.7.1 Objective

To ensure that all areas affected by the project are appropriately rehabilitated and revegetated in a manner congruent with the surrounding biophysical environment. The prevention of the spread of alien invasive species.

4.7.2 Scope

All areas affected by the project including laydown areas.

4.7.3 Rehabilitation

Contractors shall rehabilitate their laydown area upon completion of work on site. A rehabilitation plan will be submitted to Transnet Capital Projects Construction Manager for approval at least six weeks before completion. The following are critical issues to be included in that rehabilitation plan:

- Details of soil preparation procedures including proposed fertilisers or other chemicals being considered for use
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified botanist should be sought in developing this list
- Procedures for watering the planted areas (frequency of watering, methodology proposed)
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring the rehabilitation successful)
- Procedures for the prevention of the establishment and spread of alien invasive species

4.8 Noise Management

4.8.1 Objective

To maintain construction noise at the site within legal limits.

4.8.2 Scope

Construction noise at the construction site.

4.8.3 Noise Management

- Keep all equipment in good working order
- Operate equipment within its specification and capacity and don't overload machines
- Apply regular maintenance, particularly with regards to lubrication
- Operate equipment with appropriate noise abatement accessories, such as sound hoods

Noise control measures for incorporation by the Contractor in its noise control plan shall include the following:

- Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, SABS Code 0103:1983, so that it will not produce excessive or undesirable noise when it is released
- All the Contractors' equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, *SABS Code 0103:1983*, for construction plant noise generation
- All the Contractors' vehicles shall be fitted with effective exhaust silencers and shall comply with *Road Traffic Act (Act 29 of 1989)* when any such vehicle is operated on a public road
- If on-site noise control is not effective, protect the victims of noise (e.g. ear-plugs) by ensuring that all noise-related occupational health provisions are met. (*Occupational Health and Safety Act (Act 85 of 1993)*)

4.9 Protection of heritage resources

4.9.1 Objective

To ensure the protection of archaeological, historical artefacts, or heritage resources discovered during construction activities.

4.9.2 Scope

Archaeological, historical artefacts, or heritage resources discovered on or near the site.

4.9.3 Archeological Sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such discovery. The South African Heritage Resources Agency is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist.

4.9.4 Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the engineer informed of the discovery. The National Monuments Council should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

4.10 Fire prevention

4.10.1 Objective

To minimise the risk of uncontrolled fires.

4.10.2 Scope

All activities on or near the site that could initiate an uncontrolled fire.

4.10.3 Fire control

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites. All conditions incorporated in the requirements of the Occupational Health and Safety Act shall also be implemented.

4.11 Supply of water for human use

4.11.1 Objective

To ensure that there is an adequate, safe water supply for all personnel on site.

4.11.2 Scope

Managing the water supply on site and controlling the abstraction of water from natural resources in the area.

4.11.3 Collection of water from natural resources

No water for domestic use (drinking water or for bathing or washing) shall be abstracted from any water resource (stream, river, or dam) without the express permission of Transnet Capital Projects Construction Manager. Such permission shall only be granted once it can be shown that the water is safe for use, that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water Affairs in accordance with the requirements of the Water Act.



4.11.4 Provision of drinking water

Water for human consumption shall be available at the site offices and at other convenient locations on site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction site.

4.12 Protection of livestock or game and the collection of firewood

4.12.1 Objective

To prevent illegal activities potentially perpetrated by site staff and to prevent the killing of any animals trapped in construction works or discovered on the construction site or surroundings.

4.12.2 Scope

Managing the activities of site staff during and after hours.

4.12.3 Poaching of livestock or game

On no account shall any hunting or fishing activity of any kind be allowed. This include the setting of traps, or the killing of any animal caught in construction works.

4.12.4 Killing of animals

On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous discovered on site. If such an animal is discovered on site an appropriately skilled person should be summoned to remove the creature from the site. Consideration should be given to selection and nomination of such a person prior to site establishment. If no-one is available, training should be provided to at least two site staff members.

4.12.5 Collection of firewood

The Contractor shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

4.13 Environmental Awareness Training

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed to be defined in the relevant Method Statement to be prepared by the contractor.

Objectives of environmental awareness training are:

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources
- Regulatory compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in regional and local regulations
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the proper person for solution
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability

All individuals on the Project construction site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The Contractor shall keep a record of all the environmental related training of the personnel.

5. Associated Forms

To be developed and advised

6. Records

All documents generated in terms of this procedure are to be retained as records in accordance with the requirements of the Archiving Project procedure, refer HMG-DM-P-013 – 'Archiving and Retention of Project Documentation'.



MC:dww
Attachment(s)/Enclosure

Annex A 2

Authority Correspondence

Communication & Correspondence with
DEAT

DEAT Approval –
Final Scoping Report &
Plan of Study



environment & tourism

Department:
Environmental Affairs and Tourism
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PER FACSIMILE / MAIL

Dear Ms Osman

APPLICATION FOR ENVIRONMENTAL AUTHORISATION R. 387 and R. 386: THE PROPOSED UPGRADING OF THE TRANSNET RAILWAY LINE BETWEEN HOTAZEL AND COEGA, (REFERENCE: 12/12/20/1240 & 1241).

The Scoping Report (SR) and Plan of Study for the Environmental Impact Assessment (POSEIA), dated 12 November 2008, for environmental authorisation of the abovementioned project refer.

The Department has evaluated the submitted documents and is satisfied that the documents comply with the legal requirements. The SR and POSEIA is hereby accepted by the Department in terms of regulation 31(1)(a) of the Environmental Impact Assessment Regulations, 2006. You may proceed with the EIA process required in terms of the Environmental Impact Assessment Regulations, 2006.

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Please ensure that written comments on the Environmental Impact Assessment Report (EIAR) is obtained from all the relevant provincial and local authorities as well as the national and provincial heritage resource management agencies and submitted to the Department with the final EIAR.

You are hereby reminded that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely



Ms Nosipho Jezile-Ngcaba

Director – General

Department of Environmental Affairs and Tourism

Letter signed by: D Mthembu

Designation: Director, Environmental Impact Evaluation

Date: 3/2/2009

CC: Mr Neville Eve

TRANSNET

Fax: (011) 239 5360

Annex A3

Comments and Responses on Final Environmental Impact Report (EIR)

Table A3.1 *Comments Received from the Distribution of the Draft Environmental Impact Report (EIR) for the Transnet Railway Upgrade*

Stakeholder Name	Method of Response	Comment/ Issues Raised	Response from Project Team
AUTHORITY			
No comments received			
NGO/ CBO			
No comments received			
OTHER STAKEHOLDERS			
Dr. Peter Inman Office of the CEO Coega Development Corporation (Pty) Ltd	Email, received on June 20, 2009	<p>With reference to the Draft EIR Executive Summary:</p> <p>1. E1.2</p> <ul style="list-style-type: none"> 1st para – First sentence would seem to imply the there is a developmental intent in the stated mandate and it is not just a question of making as large a profit as possible nor concentrating on the further development of certain favoured areas of the country at the expense of the poorer areas. 2nd para – Although other freight such as manganese and iron ore are mentioned, the priority is container traffic and container traffic takes the lion’s share of the available rail slots even with the upgrade. Presumably, with the economic downturn, the proposed upgrade work has been/ will be put on hold and hence any investors in the IDZ/Metro requiring additional rail capacity, such as Kalagadi Manganese for their Ferro-manganese smelter, will need to postpone their investments. 	<ul style="list-style-type: none"> Comment noted. It is ERM’s understanding (as indicated in the second sentence of this paragraph) that Transnet’s mandate in the context of this study does not imply a development intent in the broader context, but specifically focuses on major ports and rail commodity lines. However for the sake of clarity ERM has included the following underlined words/ phrases to make this more explicit: “Transnet ...by delivering <u>essential</u> freight transportation services <u>and in this way help</u> to reduce.....in South Africa. The third sentence has also been modified in the following way: <u>Transnet remains committed to following the necessary environmental authorisation processes in order to ensure that any bio-physical and socio-economic impacts and benefits resulting from this infrastructure expansion programme are adequately addressed.</u> Comment noted. No change suggested, as ERM does not consider it essential for the environmental authorisation process that all these matters now be clarified. As indicated in the recommendations ERM will be advising the decision authorities that given the scale of the development, the current economic climate and uncertainties, that should they grant a positive environmental authorisation, that it should be valid for five years.

		<ul style="list-style-type: none"> • 3rd para – Presumably, this proposed rail upgrade work has been included in the Cape Corridor master plan. How can a negative environmental authorisation be facilitated? It doesn't make sense. The upgrade work has to be done if the eastern Cape economy is to grow and, hence, the logic is "what mitigation measures will be required to obviate environmental impacts?". The environmental process is an enabler of economic development and not a block on it. <p>2. Table E2.1</p> <ul style="list-style-type: none"> • Under the broad category of "Socio-economic Considerations", the points made by the CDC have not been included. Since the overall heading says "Issues raised..." and most of the issues are negative, the CDC's positive issues should be included. These issues are growth of the EC, Metro and IDZ, beneficiation of the country's mineral wealth at Coega and rail capacity generally for products from the EC, Metro and IDZ to Gauteng for all of which the upgraded rail line is a key enabler. • Under the broad category of "EIA Process General", the need to look at the bigger picture is identified. This includes the likely future rail terminus at Coega rather than PE, the future need for an Intermodal Facility and the future need for rail maintenance and other support facilities. All of this impacts the CDC and Metro since the IDZ is the back-of-port and logistics location for the Port of Ngqura. The Port of Ngqura was planned at the outset on the clear understanding of how efficient modern logistics chains work, with the port area only being utilised for moving cargo in and out and not for storage purposes as in the older ports. <p>3. E1.3</p> <ul style="list-style-type: none"> • 4th para – the statement "Scope to increase volumes" must also be read with the need for greater operational efficiency both at the loading points and 	<ul style="list-style-type: none"> • Comment noted. No changes to the EIR as it cannot be assumed that any project regardless of its national or strategic importance will be guaranteed environmental authorisation by DEAT. EIAs are also not only concerned with obviating or mitigating negative impacts but also with enhancing potential benefits. • Comments noted. These issues have been included below Table E2.1 in the executive summary and reflected in the main body of the EIR. • Comment noted. These points illustrate the meaning of the need to look at the big picture. Although beyond the scope of this EIA, these issues raised are worth recording for the sake of completeness and have been included both in the executive summary and EIR. • Comment noted. Although the issue of efficiency is captured in the main report, where shorter trains are part of the strategy, as the executive
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		<p>at the discharge points. There is a further need for greater operational efficiency in the utilisation of the line and shorter more frequent trains are presumably under consideration.</p> <ul style="list-style-type: none"> • 5th para – an upgraded rail line was identified as a key element in the earlier proposals for a container terminal at Ngqura, as was the need for buffer storage of containers due to the difference between the numbers of containers offloaded from the larger vessels and the capacity of the rail line. • 6th para – in the long term, the present manganese loading facilities in PE port are not sustainable and therefore manganese exports will be through the Port of Ngqura. Again, there is no mention of the beneficiation imperatives for the country and the Ferrous-metals Cluster in the IDZ and hence additional rail capacity. The Port of Ngqura will not only service the IDZ (the IDZ is the back-of-port area) but also the Metro and the EC. • 7th para – technical difference between “refurbish” and “upgrade”? Don’t forget that the rail line will terminate at Coega in the future. 	<p>summary should serve as a stand alone document, the following sentence has been included: <u>‘In addition there is the need for greater operational efficiency both at the loading points and at the discharge points as well as in the utilization of the line itself.’</u></p> <ul style="list-style-type: none"> • Comment noted. The following underlined words/ phrases have been included for sake of completeness. <u>‘Effective operation of the ... This need was already identified early in the authorisation process for the Port of Ngqura. In addition, the need was identified for a buffer storage of containers due to the difference between the numbers of containers offloaded from the larger vessels and the capacity of the rail line.’</u> • It should be noted that the manganese terminal and Port of Ngqura itself falls outside the scope of this rail upgrade and refurbishment project and thus has not been addressed in any detail in this EIA. In terms of defining the rationale for this project, however, the points made by CDC are relevant and therefore have been included by making the following addition: <u>‘The CDC observed that in the long term, the present manganese loading facility in PE is not sustainable and that future manganese exports are likely to be through the Port of Ngqura. The CDC also emphasised the importance of having additional rail capacity so as to not compromise the Ferrous- metals cluster in the IDZ and its associated beneficiation imperatives.’</u> The following has also been inserted in the last sentence of this paragraph: <u>‘The port...IDZ as well as the Metro and broader Eastern Cape, and ...’.</u> • Comment noted. In the context of this project ‘refurbish’ means repair and re-commissioning of the existing, but disused, section of the railway line (e.g. between Kimberley and De Aar). ‘Upgrade’ refers to the lengthening of loops to accommodate longer trains with up to approximately 105 carriages. The last point regarding Coega is dealt with above.
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		<p>4. Table E2.2</p> <ul style="list-style-type: none"> #4 – if the study is “socio-economic” rather than just “socio” then the key issues will include opportunities to beneficiate valuable raw materials, transport products inland (e.g. refinery products) and generally assist in the growth of the IDZ, Metro, EC and the country. When greater capacity is available on the rail line, the future relocation of the manganese export terminal (and the tank farm) become feasible if not immediately viable. <p>5. E2.3</p> <ul style="list-style-type: none"> First bullet is written with a negative connotation. “Issues” are usually problems and “impacts” tend to also be considered in the negative whereas there are positive impacts. It is not what you say but how you say it. This constant reminder goes back to the early days of the Coega Project, which did include a new port and identified additional rail capacity as a key enabler, when everything was expressed as a negative. Third bullet point, again “impacts” but no mention of positive and negative. <p>6. E3.1</p> <ul style="list-style-type: none"> The last sentence refers to “the existing and disused line”. Is this the line that was decommissioned and removed some years ago? <p>7. Table E3.1</p> <ul style="list-style-type: none"> The “broad project components” category does not seem to include consideration of the future terminus at Coega and the required Intermodal Facility. This is a long term provision but decisions and actions now must not preclude such future opportunities. 	<ul style="list-style-type: none"> Comment noted. The particular study referred to focussed specifically on Social Impacts. These issues have, however, been included in <u>Section E4</u>. Although issues and impacts are generic terms used throughout EIAs, ERM agrees, and has rephrased the first bullet as follows: <u>‘Investigating issues and/or opportunities and potential impacts and/or benefits.’ This has also been made clearer throughout the Executive Summary and within the relevant chapters of the EIR..</u> As above. This bullet has been rephrased to include potential benefits. Comment noted. This sentence has been rephrased to read: <u>Finally the existing second rail line located between Kimberley and De Aar, in the Northern Cape, which has not been in use for some time and which has fallen into disrepair is to be refurbished and electrified.</u> Comment noted. This has been included below <i>Table E12</i> as follows: <u>‘The CDC pointed out that consideration should also be given to the proposed future terminus at Coega and the required Intermodal Facility. Although this is a long term provision, the CDC is concerned that any decisions and actions now must not preclude such future opportunities. Transnet however, are confident that the proposed upgrade and refurbishment dealt with in this EIA would not preclude or compromise such future development.’</u>
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		<p>8. E3.2.2</p> <ul style="list-style-type: none"> • Same comment as under E3.1 above. <p>9. E3.2.3</p> <ul style="list-style-type: none"> • Same comment as under Table E3.1 above. <p>10. E3.2.6</p> <ul style="list-style-type: none"> • The second paragraph seems to be innocuous but has the potential for huge HR problems when site works start. Buy-in from the local communities is essential and it is suggested that the CDC's HCS Business Unit is contacted as the IDZ's labour stability index is orders of magnitude better than the national index. Eskom would not be having the problems they are having with the new power stations if they had taken advice. <p>11. E3.3 and E3.3.1 and E3.3.2</p> <ul style="list-style-type: none"> • Training and skills development are huge problems nationally but, again, the DCD's HCS Business Unit can assist as government money has been accessed and a training centre to complement Olisphanttain (spelling is wrong but this is the national training centre) is being provided in the IDZ. This is primarily to support the Refinery and Power Station Projects but the concept and scale can undoubtedly assist at least for the southern part of the rail line. • Section on job creation is a bit weak and the last sentence is almost a throwaway. "The private sector and the IDZ, Metro, EC and the country will benefit." <p>12. Table E3.4</p> <ul style="list-style-type: none"> • The "Type of alternative" category refers to road as an alternative but which is unacceptable. Surely, there is a clear national government policy to reverse damaging trend of freight moving from rail to road. Further, in terms of environmental impact, rail is much less damaging for long distance bulk 	<ul style="list-style-type: none"> • See response to E3.1 • See suggested response to Table E3.1 • Comment noted. The following sentence has been included: <u>'Special provision will be made in the construction and operational phase EMP to ensure that special attention is given to engaging local communities at an early stage so as to obtain their inputs and buy-in to the planning and management of the proposed construction camps. Transnet may seek professional advise so as to maximise appropriate skills development and training and labour stability.'</u> • Comment noted. See response to E3.2.6. • Comment noted. See response to E3.2.6. The first sentence of the last paragraph has been replaced with: <u>'The private sector and the IDZ, the Metro and Eastern Cape as well as the country in general will benefit from the increased capacity of the rail line.'</u> • Comment noted. The EIA process requires us to present all possible alternatives to the project. This option was highlighted at a number of public meetings and must therefore be included for the sake of completeness. Could consider including under operational phase impacts a positive impact associated with the railway line. The following sentence
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		<p>commodity and container movements.</p> <ul style="list-style-type: none"> The “Type of alternative” category refers to process alternatives with shorter more frequent trains being the better operational solution. There may be a greater environmental impact purely from TFR’s operations but the greater overall efficiency from a total logistics chain point of view would probably more than offset that. <p>13. E4</p> <ul style="list-style-type: none"> First paragraph does not make it clear enough that, where there are potential benefits/positive impacts, there will be consideration of enhancing or optimising them. <p>14. Table E4.2</p> <ul style="list-style-type: none"> Why is “Major impact” described purely in the negative? The example given is also written in the negative whereas it could be worded as “to weigh such positive socio-economic factors as job creation against negative impacts on the environment”. <p>15. Table E4.3</p> <ul style="list-style-type: none"> The “Project component” category “Loops” should, for consistency, also include as a negligible impact the “Establishment of invasive alien species and weed taxa”. Having said that, surely there is a positive impact in that an alien eradication programme is also going to be required, or is the 	<p>has been included: <u>‘Increased rail capacity and transport efficiency is likely to result in a reduction in long distance bulk commodity and container movements by road which has a high negative impact on roads.’</u></p> <ul style="list-style-type: none"> Comment noted. Have amended the last sentence in the following way: <u>‘Shorterand the construction and operational being impacts. However, the greater overall efficiency from a total logistics chain point of view would probably offset these impacts to a large extent.’</u> Comment noted. Have included the following phrases: <u>‘The potential adverse effects; and seek opportunities to enhance potential benefits; and to.....enhancement.’</u> Comment noted. Agreed, this is an important shortcoming in the way EIAs is generally being perceived i.e. ‘What are wrong/ negative impacts; and how can these impacts be mitigated’. Equally important are what are the potential benefits / opportunities and how can these be maximised or enhance, and these have been amended to reflect this. Comment noted. The establishment of laydown areas and temporary access roads at the loop sites and the associated clearing of vegetation are likely to result in areas with little or no vegetation cover. These patches of disturbed soil are likely to be vulnerable to colonisation by ruderal⁽¹⁾ weeds (mostly annual weeds), or declared alien invasive species, that will prohibit the natural succession of the local indigenous vegetation during
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(1) A ruderal species is a plant species that is first to colonise disturbed lands.

		<p>Coega IDZ a special case.</p> <ul style="list-style-type: none"> The “Project component” category “Socio-economic” is couched in purely negative terms. What about pressure off Durban, growth of IDZ, Metro, EC and the country? <p>16. Table E4.4</p> <ul style="list-style-type: none"> The “Project component” category “Socio-economic” is couched in purely negative terms. What about pressure off Durban, growth of IDZ, Metro, EC and the country? <p>17. E4.4</p> <ul style="list-style-type: none"> The third paragraph refers to further mining developments and the purely negative impacts these will have. There are positive impacts if local companies, rather than foreign companies, develop such mines, and if there is beneficiation as well that should result in an overall positive impact. The fourth paragraph also implies purely negative impacts from the new manganese export terminal whereas the point above should be considered. Further, the removal of the existing manganese export terminal and tank farm have large positive effects on the environment (cumulative contamination from these operations is very significant) and also large positive socio-economic effects will redevelopment of the old port area. 	<p>rehabilitation. Such soil disturbances, as well as the inappropriate handling of topsoil, could enhance the spread of invader taxa to other systems or vegetation units. Disturbances along drainage lines could also contribute towards the spread of alien invader species locally and regionally. In addition, it is also possible that bush encroacher species (e.g. <i>Acacia natalitia</i> & <i>A. karroo</i>) may become dominant in the immediate surrounding areas.</p> <ul style="list-style-type: none"> Comment noted. The Socio economic impacts relate directly to the communities within the project area. National considerations are addressed in the main report but not in any detail since issues of relieving pressure in Durban can not be accurately defined. Comment noted. As for point above. Comment noted. Refer to comment on <i>Table E4.2</i> Comment noted. See above
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		<p>18. E4.5</p> <ul style="list-style-type: none"> • At least the case against the no-go alternative is put strongly. <p>19. E5</p> <ul style="list-style-type: none"> • The final paragraph is very opportune in the current economic climate. It is understood that the upgrading work is on hold but this has it's own consequences for those investors which require capacity on the rail line. 	<ul style="list-style-type: none"> • Comment noted. • Comment noted.
R. Hadley	Letter, 26 June 2009	<p>We have farmed at Conway for 6 years and 3 time (...) we have had floods here and the water comes up to our house as the railway acts as a dam wall</p> <p>With the proposed loop here at Conway our home will be flooded. To prevent this more culverts will have to be constructed along (...) under the line to release the flood waters.</p>	<ul style="list-style-type: none"> • Comment noted. Transnet have confirmed that previous flooding has occurred on the Conway farm. The proposed loop extension at Conway is currently still in the Project Definition and Planning stage (feasibility) and as such the hydrological study component will estimate the peak flood discharge. If Transnet decides to go ahead with construction of the loop extension (Project Implementation Phase), a hydrological study (further to the estimation of peak flood discharge) would be undertaken to verify the following: <ul style="list-style-type: none"> • Whether the existing culvert is adequate in terms of sizing and flow capacity. If the culvert is found to be inadequate, this will be resized. • Determination of the 50 and 100 year flood lines. Due to the proximity of the houses to the inlet of the culvert, it is likely that the house falls within the flood line, resulting in continuous flooding.

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Annex A 1

Background Information Document (BID)

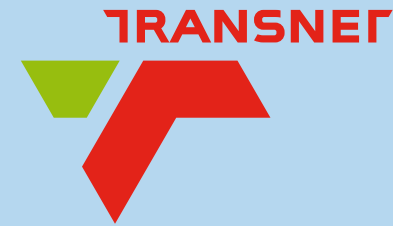
Environmental Impact Assessment

Transnet plans to increase the volume of containers and commodities such as manganese and iron ore that it transports on the existing 1 100km railway line between Port Elizabeth, the new Port of Ngqura and Hotazel.

To do this Transnet needs to upgrade or construct sections of the line and associated infrastructure. The main focus of the project is to add or extend certain loops and the refurbishing and electrification of certain sections of the existing double line between Kimberley and De Aar. Loops are sections of the line that allow trains to pass each other.

Before the proposed activities can commence, Transnet must obtain a positive authorisation in terms of the Environmental Impact Assessment (EIA) Regulations from the National Department of Environmental Affairs and Tourism (DEAT). Transnet has appointed Environmental Resources Management Southern Africa (ERM) to undertake the required EIA process.

This document provides more information on the proposed activities and the EIA process as well as how Interested and Affected Parties (I&APs) can become involved in the process.



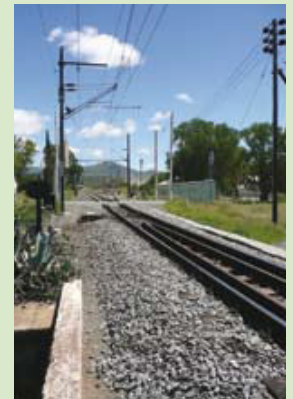
PROPOSED UPGRADE OF THE RAILWAY LINE between Hotazel and the Port of Ngqura

Background to Transnet's Plans

Transnet is currently building a new container terminal at the Port of Ngqura near Port Elizabeth. Operation of the container terminal requires the upgrading of the railway line to allow for an increased number of containers to be transported to and from the port. The proposed upgrading of the railway line is a priority due to the planned commissioning of the container terminal towards the end of 2009.

Transnet currently also transports manganese ore from mines at Hotazel along the railway line to the manganese terminal at Port Elizabeth, where it is exported. There is a growing demand for manganese internationally. This increase in world demand means that there is a need for larger volumes of manganese ore to be transported along the railway line to the port of Port Elizabeth and in future, to the Port of Ngqura. In future, this line may also carry other commodities.

The dual need to meet the demands from the mining and container sectors has led Transnet to decide to upgrade the railway line between the Port of Ngqura and Hotazel.



THE PROPOSED PROJECT ACTIVITIES

The proposed project will entail the following:

- Upgrading or restoring 25 of the existing loops. In most cases the upgrading will entail extending the loops;
- Other improvements associated with existing loops including buildings, access roads and new or altered level crossings;
- Building four new loops of at least 1200 m in length;
- Upgrading station yards at Hotazel, Mamathwane, Kimberley, De Aar and Postmasburg;
- Upgrading the Postmasburg wagon maintenance facilities;
- Providing additional locomotive staging facilities at Beaconsfield;
- Building a new electrical substation at Emil, with associated powerlines; and
- Additional signalling between Emil and Hotazel.

Construction camps and laydown areas for the storage of raw materials will be established during the construction phase of the proposed project. The construction process will also require the use of existing borrow pits and the creation of new borrow pits, within the rail reserve, to obtain suitable fill material.

The table gives a summary of the loops to be upgraded as well as certain of the associated construction activities near each loop.

The project will also include the recommissioning and electrification of the existing double section of the railway line (approximately 230 km) between De Aar and Kimberley. Although this activity does not require authorisation from DEAT, it is associated with a number of potential operational impacts that will be assessed during the EIA process



Project Locations

The maps show the locations of the proposed upgrades. A total of 20 upgrades and 3 new loops are proposed in the Eastern Cape, while 5 loop upgrades and 1 new loop is proposed in the Northern Cape.

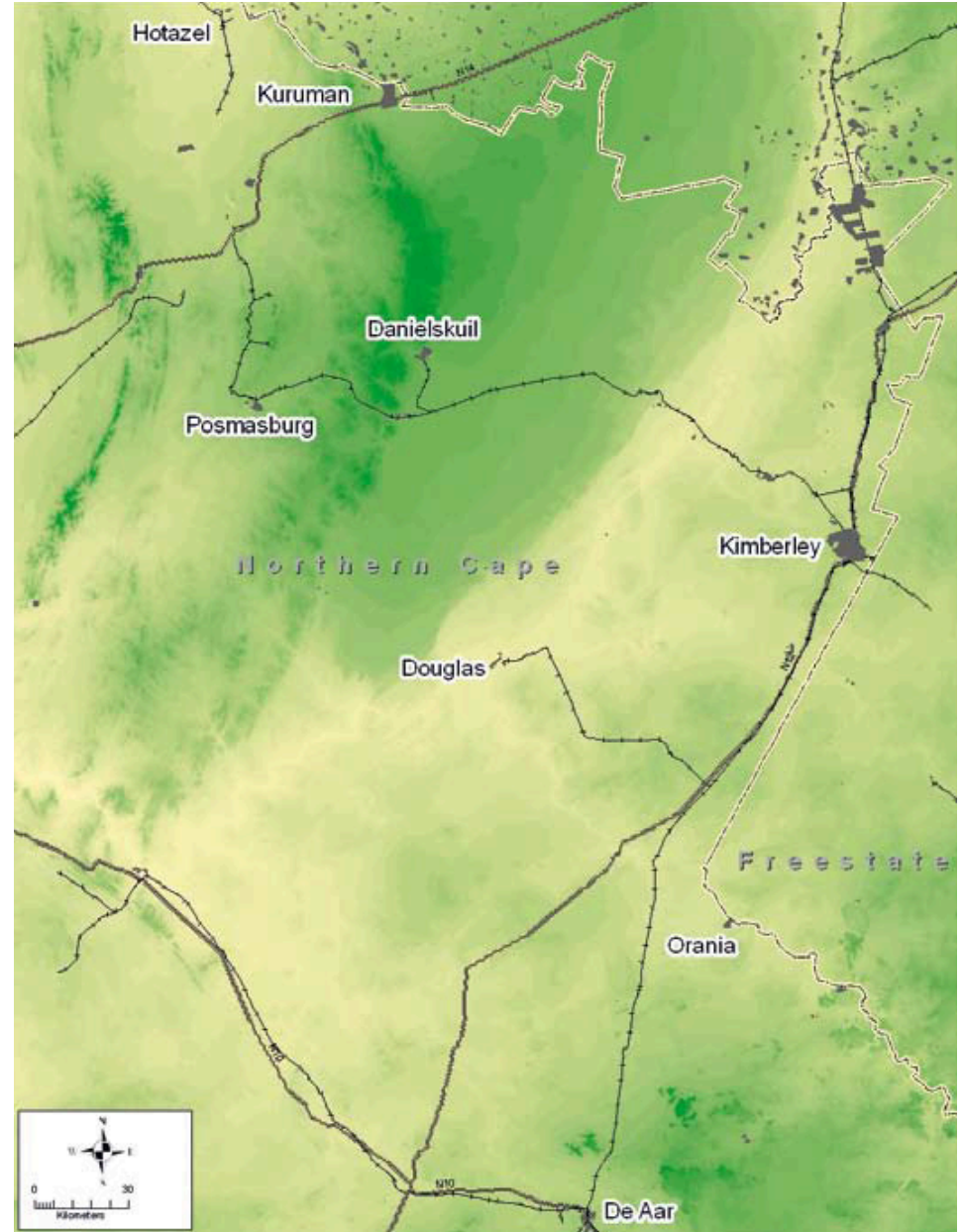




Table 1: Summary of the loops to be upgraded/ constructed as well as certain associated infrastructure

Loop Name	Loop to be Lengthened by (m)	Road Upgrade Required (Y/N)	Additional Land Required (Y/N)	Borrow Pit Required (Y/N), Location		
				Bulk Material	Sub base Material	
EASTERN CAPE						
Barkly Bridge	450	Y	Y	Y, On site	Y, Off site	
Addo	150	Y	N	N	N	
Coerney	1100	Y	N	Y, On site	Y, Off site	
Verby	777	Y	N	Y, On site	Y, Off site	
Eagle's Crag	716	Y	Y	Y, On site	Y, On site	
Tootabi	1332*	Y	Y	Y, On site	Y, Off site	
Blinkhoff	593	Y	N	Y, On site	Y, On site	
Saltire	439	Y	Y	Y, On site	Y, On site	
Kommadagga	678	Y	Y	Y, On site	Y, On site	
Golden Valley	372	Y	N	Y, On site	Y, Off site	
Klipfontein	1363*	Y	N	Y, On site	Y, On site	
Mortimer	548	Y	N	Y, On site	Y, On site	
Halesowen	840	Y	N	Y, On site	Y, Off site	
Marlow	698	Y	N	Y, On site	Y, Off site	
Kaptein	480	Y	Y	Y, On site	Y, Off site	
Knutsford	658	Y	Y	Y, On site	Y, Off site	
Visrivier	512	Y	N	Y, On site	Y, Off site	
Conway	827	Y	N	Y, Off site	Y, Off site	
Glenheath	1432*	Y	N	Y, On site	Y, Off site	
Tafelberg	712	Y	N	Y, On site	Y, Off site	
Rosmead	730	Y	Y	N	<i>In situ</i>	
Flonker	996	Y	N	Y, On site	Y On site	
Carlton	1460	Y	Y	Y, On site	Y On site	
NORTHERN CAPE						
Barredeel	582	Y	N	Y, On site	Y, Off site	
Wildfontein	324	Y	N	Y, On site	Y, Off site	
Linde	698	Y	Y	Y, On site	Y, Off site	
Hanover Road	1272*	Y	Y	Y, On site	Y, Off site	
Burgervilleweg	760	Y	N	Y, On site	Y On site	
Bletterman	710	Y	N	Y, On site	Y, Off site	

* indicates new loops to be constructed



Regulatory Matters and Approach to the EIA

ERM, as independent environmental practitioners, will conduct the EIA process in accordance with the EIA Regulations promulgated in terms of the National Environmental Management Act 1998 (Act No. 107 of 1998). As Transnet (the Applicant) is a parastatal, the national DEAT will be the competent regulatory authority officiating on the EIA process and not the provincial environmental departments of the Northern and Eastern Cape provinces.

Transnet will also obtain permits and authorisation from other relevant Government Departments for construction related activities such as establishment or use of borrow pits and the abstraction of water. The impacts associated with these activities will be investigated as part of this EIA process.

It is proposed that two EIA applications be submitted to DEAT. These applications will be structured as follows:

- Application 1 - the loops and infrastructure associated with the container requirements of the project. The 14 loops to be included in Application 1 include Burgervilleweg, Hanover Road, Linde, Wildfontein, Barredeel, Flonker, Rosmead, Tafelberg, Visrivier, Kaptein, Halesowen, Golden Valley, Saltaire and Addo.
- Application 2 - the remaining 15 loops and infrastructure as well as other proposed project activities which are associated with the manganese ore requirements of the project.

Although two EIA applications will be submitted, only one EIA process will be followed for the proposed developments along the entire route. If delays are experienced which relate to the commodities infrastructure (Application 2), then the EIA process may be split at the end of the Scoping Phase. (The Scoping phase is explained in the next section). Splitting the process in this way may facilitate decision-making on the application related to the container loops and infrastructure. DEAT agreed to this approach in a meeting on 1 July 2008.

The EIA Process

ERM will conduct the EIA process in three phases.

Phase 1: Project Initiation

This phase includes a kick-off meeting with the project team to confirm the project scope. It also includes a meeting with DEAT to confirm the approach to the EIA, followed by the formal submission of the applications to DEAT to initiate the EIA process.

Phase 2: Scoping

In this phase the project team will identify potential environmental and social issues related to the proposed project. This will include engaging stakeholders to understand their views and concerns. The project team will also commission a number of specialist studies to provide information about the study area and to identify potential impacts. These studies could include investigations on air quality, noise and vibration, traffic, archaeology and cultural heritage; and ecology.

Interaction with stakeholders and authorities during the scoping phase may identify additional studies to be conducted.

Based on this work, a Scoping Report and Plan of Study for the EIA will be drawn up and made available to stakeholders for comment. The updated Scoping Report, including stakeholder comments, will be submitted to DEAT for approval, before the start of the next phase of the EIA process.

Phase 3: Environmental Impact Assessment

The Impact Assessment phase will start once DEAT has accepted the Scoping Report and Plan of Study for the EIA. In this phase the project team will:

- Investigate the issues identified in the Scoping Phase;
- Commission additional specialist studies, where required and/or expand on the scope of studies undertaken during

the Scoping phase;

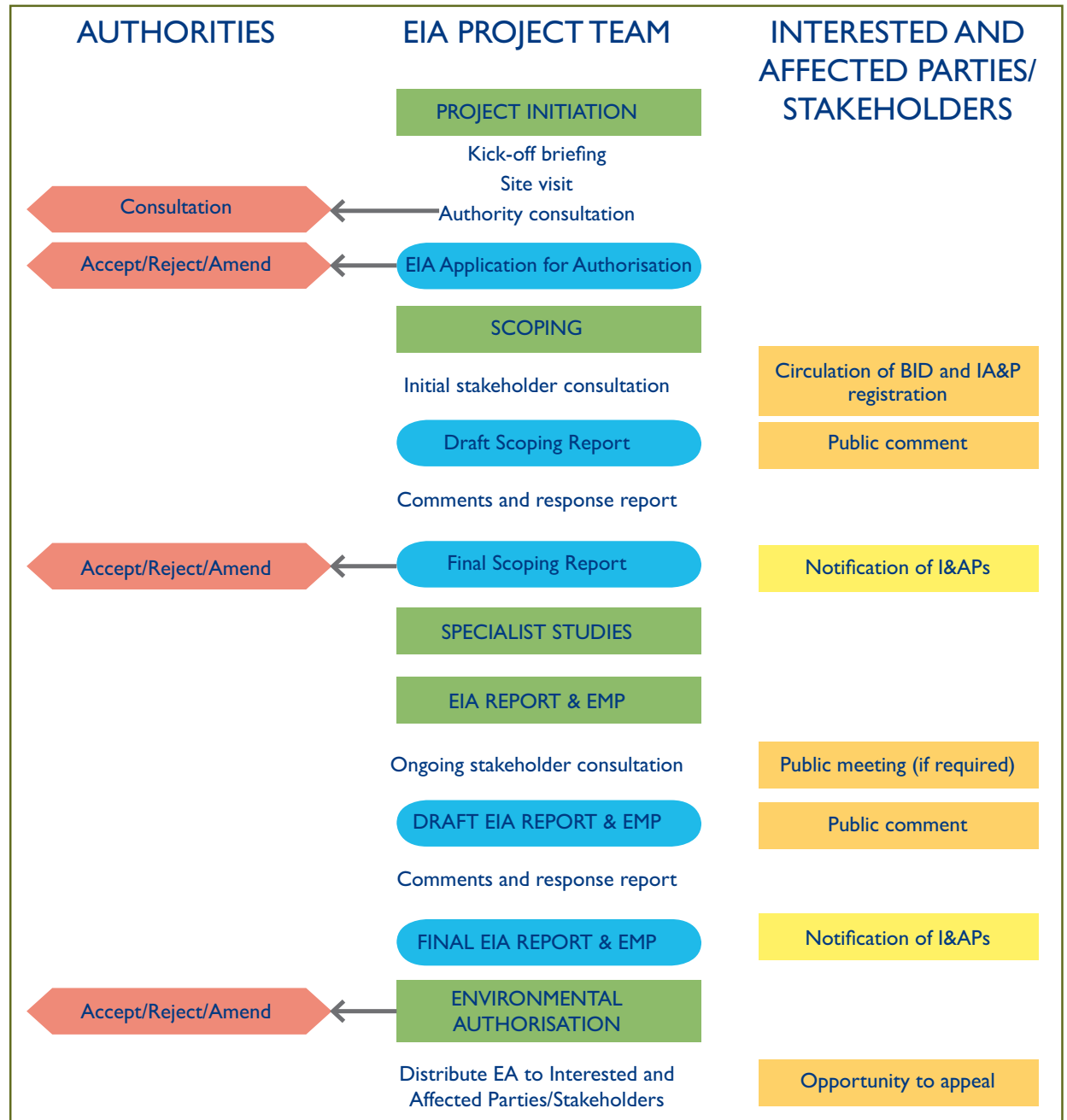
- Assess and determine the significance of the impacts that have been identified; and
- Propose ways in which the impacts can be mitigated and opportunities maximised.

During this phase we will continue ongoing communication and contact with stakeholders through various channels, including possible meetings where these are required. This will provide an opportunity for stakeholders to give input into the impact assessment and the proposed mitigation measures.

This phase will include the compilation of an EIA Report and a Draft Environmental Management Plan, which will be submitted to DEAT for approval. The public will be able to comment on the draft documents prior to submission to DEAT. The final report will be placed on the project website.

DEAT's decision regarding the environmental authorisation (whether positive or negative) will be communicated to all stakeholders who have been involved in the EIA process. Should anyone have any objections to the decision, there will be a formal opportunity to lodge an appeal.

The flow chart illustrates the EIA phases.



Possible Issues

The project team has identified some environmental issues that could arise during the EIA. These include:

- Soil and land disturbance from construction of the loops and borrow pits;
- Noise and vibration both from construction activities and from subsequent increased train activity;
- Traffic safety concerns both because of heavy construction vehicles and the establishment of new road crossings;
- Concerns about dust created during construction;
- The visual effect of construction on the landscape and the possible effect on the sense of place at each loop;
- Cultural, heritage or archaeological issues;
- Economic consequences and employment-related issues; and
- Ecological issues.

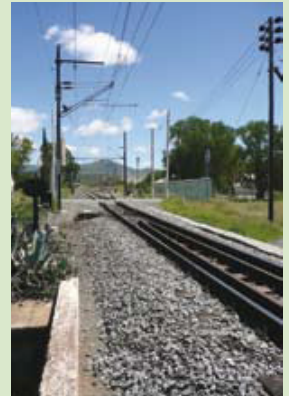
The project team will refine this list after the stakeholder consultation activities and baseline studies undertaken during the Scoping phase.

Public Participation

Public participation is an essential part of the EIA process. The flow diagram and the description of the process show the numerous opportunities for stakeholders to become involved.

Please register as an interested and affected party (I&AP) so that we can keep you informed of the process and of opportunities for your involvement. Please fill in the attached registration and comment sheet and return it to Sekena Masoet at ERM by 19 September 2008.

Please contact us if you would like further information.



Sekena Masoet • ERM Southern Africa (Pty) Ltd
Silverwood House, Block A, Steenberg Office Park, Steenberg, 7945
Tel: 021-7029100 • Fax: 021-7017900 • Email: Sekena.Masoet@erm.com

RESPONSE SHEET

Please include your comments on this form and return it to Sekena Masoet of ERM, Silverwood House, Block A, Steenberg Office Park, 7945 Cape Town , Tel: 021 702 9100, Fax: 021 701 7900 or e-mail: Sekena.Masoet@erm.com. If you would like to make additional comments please append these to the form.

Your response should reach ERM by 19 September 2008. Should you have any questions about the project please Sekena Masoet of ERM.

1. Are there any Interested and Affected Parties whom you believe should be consulted during the course of the EIA?

YES NO (Please check the appropriate box)

If yes, please indicate the name, organisation (if applicable), postal address, telephone and fax numbers of the person(s) concerned.

2. Are you satisfied that the proposed EIA process is open and thorough and provides an acceptable approach which will assist decision-making by the relevant Government authority?

YES NO (Please check the appropriate box)

If no, please indicate how you would like to see the process changed.

3. Are there any issues/impacts regarding the proposed project that you would like to draw to the attention of the EIA Team at this stage?

YES NO (Please check the appropriate box)

If yes, please describe the issues.

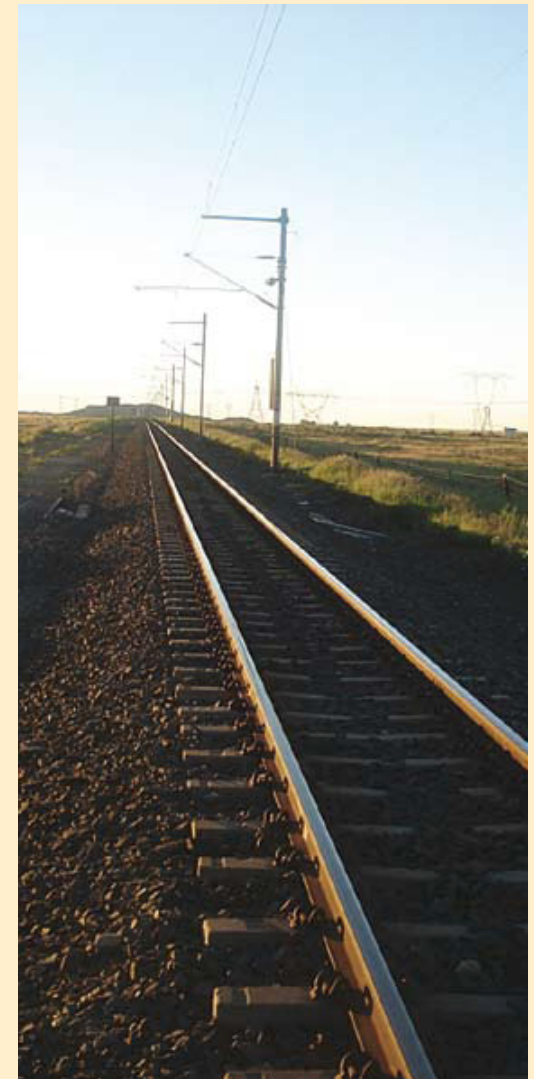
Name

Address Tel

..... Fax

E-mail Cell Phone

THANK YOU FOR YOUR PARTICIPATION.



*Delivering sustainable solutions
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ERM

Annex A 2

Written Responses Received



REGISTRATION NO. 1998/009584/06



Southern Region

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Date:	27 August 2008	Fax Number:	+27 (0) 41 398 3211
Enquiries:	Mr S van Aardt	Direct Line:	+27 (0) 41 398 3205
Email:	aardts@nra.co.za	Website:	www.nra.co.za

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ERM Southern Africa
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Silverwood Close
Steenberg
CAPE TOWN
7945

Dear Sir

PROPOSED UPGRADE OF THE RAILWAY LINE BETWEEN HOTAZEL AND THE PORT OF NGQURA : COMMENTS

Your EIA information in this regard refers.

The South African National Roads Agency Limited (SANRAL) is the road authority controlling declared National roads in South Africa. The proposed upgrade of the railway line follows sections of the N10 between Nanaga Interchange near Port Elizabeth to De Aar, the N9 between Middelburg and Noupport, the N12 south of Kimberley and crosses the N8 at Kimberley and the N14 east of Upington. In addition the railway line would require crossing the N2 close to the Port of Ngquara, where one bridge structure has been constructed west of the Coega River for access under the N2 to the Port.

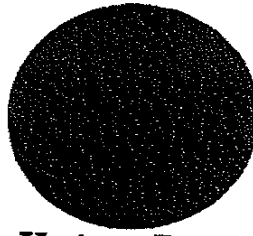
Transnet must note that any new structures of any kind within 60 metres from a national road reserve or 500 metres from the intersection of any road with a National road will require the consideration and approval of SANRAL. In addition the making of or changing the type of use of accesses to and from a National road, advertisements visible from a national road, subdivisions of land adjoining a National road and damaging a National road require SANRAL's approval or are prohibited as the case requires.

Transnet should accordingly timeously consult with SANRAL regarding their proposed upgrading, should it impact on the National roads.

Yours sincerely


Tom Kelly
Acting Regional Manager : Southern Region
Copy to: Western Region

0437221749



South African Heritage Resources Agency

40 KING STREET, SOUTHERN WOOD, EAST LONDON 5200

P O BOX 759, SOUTHERNWOOD, EAST LONDON 5200

TEL: 043 - 722 1740, FAX: 043 - 722 1749

WEBSITE: WWW.SAHRA.ORG.ZA

E-MAIL: TLUNGILE@EC.SAHRA.ORG.ZA

DATE: 11 SEPTEMBER 2008

ENQUIRIES: MR. T. LUNGILE, PROVINCIAL MANAGER

OUR REF: 9/2/073/0001

Mr. Sumaya Osman
Block A
Silverwood House
Steenberg Office Park
Silverwood Close
Steenberg
7945

Dear Sumaya,

**RE: BACKGROUND INFORMATION DOCUMENT- PROPOSED UPGRADE
OF THE RAILWAY LINE BETWEEN HOTAZEL AND THE PORT OF
NGQURA**

Thank you for your indication that development is to take place in this area.

In terms of the National Heritage Resources Act (NHRA), no.25 of 1999, heritage resources including archaeological and palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years and intangible aspect of heritage resources and other protected heritage resources may not be disturbed without a permit from a relevant heritage resources authority/ agency. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a Heritage Impact Assessment [HIA] is done.

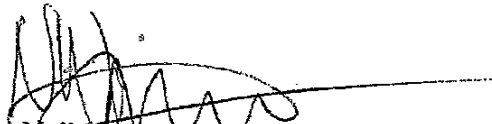
The South African Heritage Resources Agency [SAHRA] recommends that phase 1 of HIA must be conducted by a heritage specialist.

Your cooperation in this matter will be highly appreciated.

Thanking you in advance.

Yours faithfully

0437221749



Melinda Ngcai
For Manager



Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

Comment Sheet

August 2008

To register yourself as an Interested and Affected Party, please fill in your contact details and forward to ERM.

Name: MR T I MANENE	
Organisation: SUNDAYS RIVER VALLEY MUNICIPALITY WARD 4	
Telephone: 012-2351508	Fax: 012-2351168
Cellphone:	Email:
Postal Address: 1/2 PATERSON ADVICE OFFICE S ALEXANDRIA ROAD PATERSON 6130	

Return this comment sheet to us today, or send it to Sekena Masoet, ERM Southern Africa:

Fax Number: +27 (0) 21 7017900

Email: sekema.masoet@erm.com

Postal Address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please return your comments by 19 September 2008

Should you have any queries or comments regarding the proposed project, please note them below.

AS URGENT WE REQUEST THAT THE ERM SHOULD ALSO FACILITATE COMMUNITY AWARENESS WORKSHOPS INTO THOSE AFFECTED AREAS THIS MAY ASSIST COMMUNITY INVOLVEMENT AND PARTICIPATION IN WHICH MAY ALSO SUSTAIN AND MAKE IT EASIER TO THE WORK OF ERM TO REACH ITS AIMS AND OBJECTIVES ON THE EIA PROGRAMME AND ALSO TO ATTRACT SOME IAPs THAT HAVE MISSING THE OPPORTUNITY TO BE PART OF THIS IMPORTANT PROCESS IN OUR TRACK RECORD OF EXPERIENCE IN THE PAST WE DID ASSIST SANDY WREN AND MAZIZI CONSULTANTS FOR PUBLIC PARTICIPATION INTO THE AREA WHERE BY THEY CONDUCTED EIA FOR THE UPGRADE OF GREATER ABAO ELEPHANT NATIONAL PARKS AND THE GOEGA SAZ. WITH SUCCESS



Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

Comment Sheet

August 2008

To register yourself as an Interested and Affected Party, please fill in your contact details and forward to ERM.

Name: MR T J WANENE	
Organisation: PATERSON PARA-LEGAL RESOURCE PROJECT	
Telephone: 042 2351508	Fax: 042 2351168
Cellphone:	Email:
Postal Address: 5 ALEXANDRIA ROAD PATERSON 6130	

Return this comment sheet to us today, or send it to Sekena Masoet, ERM Southern Africa:

Fax Number: +27 (0) 21 7017900

Email: sekema.masoet@erm.com

Postal Address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please return your comments by 19 September 2008

Should you have any queries or comments regarding the proposed project, please note them below.

PRECISELY TO DEFINE CLEARLY THE ROLE OF DEAT AND STIPULATION OF THE (NATIONAL ENVIRONMENTAL MANAGEMENT ACT 1998) (ACT NO 107 OF 1998) AND THE REASON WHY DEAT HAS BEEN CLASSIFIED AS AN COMPETENT REGULATORY AUTHORITY. AND ALSO EXPLAIN WHY THERE IS EXCLUSION OF THE 2 PROVINCIAL DEPARTMENTS I.E. EASTERN CAPE AND THE NORTHERN CAPE. PLEASE SEND US MORE THAN 100 OF YOUR INFORMATIVE BOOKLETS ON THE PROPOSED UPGRADE OF THE TRANSNET RAILWAY LINE BETWEEN HOTAZEL AND THE PORT OF NGQURA

WE ARE OF ENCOURAGE THAT THIS INFORMATION SHOULD BE ENABLE TO ALSO REACH AND ACCESS OUR COMMUNITIES BY 3 LANGUAGES USED: AFRIKAANS, ENGLISH AND N... ..



Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

Comment Sheet

August 2008

To register yourself as an Interested and Affected Party, please fill in your contact details and forward to ERM.

Name: <u>TUSE JANAIRES MANENE</u>	
Organisation: <u>ANC BRANCH PATERSON</u>	
Telephone: <u>042-2351508</u>	Fax: <u>042-2351508-2351168</u>
Cellphone:	Email:
Postal Address: <u>10 RAILWAY FLATS KWAZENTLE PATERSON BIRD</u>	

Return this comment sheet to us today, or send it to Sekena Masoet, ERM Southern Africa:

Fax Number: +27 (0) 21 7017900

Email: sekema.masoet@erm.com

Postal Address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please return your comments by 19 September 2008

Should you have any queries or comments regarding the proposed project, please note them below.

I THANK YOU ABOUT YOUR GOOD PRESENTATION ON THE PUBLIC MEETING HELD ON THE 25/8/2008 IN PATERSON IT WAS MOST INTERESTED EXCITED AND MARVELLOUS FACILITATION WAS ALSO EXCELLENCE.

BUT WE DON'T AGREE WITH THE ISSUE OF EMPLOYMENT CREATION SHOULD BE RESPONSIBILITY OF EMPLOYMENT AGENCIES RATHER THAN TO BE CONTROLLED BY OUR COMMUNITIES WITH STRUCTURES CONCERNED AND MUNICIPALITIES THIS IS TO AVOID OF ANY ISSUES THAT MAY BE RAISE AND PREVENT ANY LABOUR EXPLOITATION AND OPPRESSION THAT MAY HAMPERS WORKERS.



Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

Comment Sheet

August 2008

To register yourself as an Interested and Affected Party, please fill in your contact details and forward to ERM.

Name: <i>REV. X C MABUNE</i>	
Organisation: <i>SANDF</i>	
Telephone: <i>0724459208/0836371161</i>	Fax: <i>0498423063/0498421796</i>
Cellphone: <i>0724459208/0836371161</i>	Email:
Postal Address: <i>15 STOCKENSTROOM STR MIDDELBURG E/CAPE 5900</i>	

Return this comment sheet to us today, or send it to Sekena Masoet, ERM Southern Africa:
Fax Number: +27 (0) 21 7017900
Email: sekema.masoet@erm.com
Postal Address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please return your comments by 19 September 2008

Should you have any queries or comments regarding the proposed project, please note them below.

<p><i>→ PRESENTATION WAS VERY CLEAR, UNDERSTANDABLE AND PEOPLE HAVE GOOD MANNERS!! KEEP-UP. "GOOD WORK!!"</i></p> <p><i>QUESTION: CONCERNS: HERITAGE BUILDING THAT MAY BE AFFECTED DURING CONSTRUCTION AND OPERATION PHASES WILL BE RE-BUILT ON ITS ORIGINAL STRUCTURE MATERIAL AND SHAPES.?</i></p> <p><i>→ PEOPLE THAT MIGHT BE AFFECTED/INFECTED BY THE DUST OF MANGANESE WILL BE SUPPORTED BY YOUR PROJECT: AS THE TRAIN IS NOW CURRENTLY CONVEYING THESE LOADS OF PRODUCTS.?</i></p>



Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

Comment Sheet

August 2008

To register yourself as an Interested and Affected Party, please fill in your contact details and forward to ERM

Name: <u>THEMBEKA PRIMROSE MAYANA</u>	
Organisation: <u>FILITONE TRADING C.C.</u>	
Telephone: <u>042-2307733</u>	Fax: <u>042-2351168</u>
Cellphone: <u>0845163953</u>	Email:
Postal Address: <u>PO Box 56 PATERSON 6130</u>	

Return this comment sheet to us today, or send it to Sekena Masoet, ERM Southern Africa:

Fax Number: +27 (0) 21 7017900

Email: sekena.masoet@erm.com

Postal Address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please return your comments by 19 September 2008

Should you have any queries or comments regarding the proposed project, please note them below.

THE PROPOSED PROJECT HAD BEEN DONE BUT NOT INVOLVED THE COMMUNITY LEADERS BECAUSE IT AFFECT OUR AREAS BUT NOT PARTICIPATING TO THE WHOLE THING. WHAT IS THE BENEFIT OF LOCAL SUB-CONTRACTORS AND BUSINESSES AT LARGE. I PROPOSED THAT OUR LOCAL PEOPLE TO BE TRAINED ESPECIALLY THE YOUTHS AND WOMEN TO BE PART OF THE PROJECT SO THAT THEY CAN BENEFIT AND FIGHT POVERTY.

Sekena Masoet

From: Phuti Ngoasheng [wessa.ep@gmail.com]
Sent: 07 August 2008 08:34 AM
To: Sekena Masoet
Subject: RE: PROPOSED UPGRADE OF THE TRANSNET RAILWAY LINE BETWEEN HOTAZEL AND THE PORT OF NGQURA

The Managing Director

ERM Southern Africa (Pty) Ltd

Tel: 021 702 9100

Fax: 021 701 7900

Email:

sekena.masoet@erm.com

07 August 2008

RE:

PROPOSED UPGRADE OF THE TRANSNET RAILWAY LINE BETWEEN HOTAZEL AND THE PORT OF NGQURA

Dear Sir or Madam:

I refer to the advertisement in the 1st August 2008 edition of The Herald on the subject matter. Please could you register WESSA (The Wildlife and Environment Society of South Africa-Eastern Province Region) as an interested and affected party with this application.

WESSA is interested in this project to ensure that all the necessary environmental factors are taken into consideration and the requisite legal procedures followed. We are particularly concerned about possible social and environmental impacts of this application.

We hope to contribute to the process and share information that would ensure that appropriate environmental decisions are taken into consideration.

Please send any background information documents, notices or Scoping reports to the address below. Email correspondence most welcome.


Sincerely,

Phuti Ngoasheng

Assistant Environmental Officer

--

2008/08/26



The Wildlife and Environment Society of South Africa-EP,
Conservation Unit
2b Lawrence Street
Central Hill
Port Elizabeth 6001
Tel: 041 585 9606/1157
Fax: 041 586 3228
Email: wessa.ep@gmail.com, morgan@wessa.co.za

This email message, and any attached files, are confidential and may contain privileged information. Any views expressed in this message are those of the sender, except where the sender specifically states them to be the view of WESSA. In the interests of effective and appropriate communication, anyone who is not an addressee of this email, may not copy, disclose, distribute or otherwise use it, or any part of it, in any form whatsoever. Furthermore, no-one may further distribute this email, or any part of it, without permission of the author. If you are not the intended recipient, please notify the sender immediately by return email, and then delete this email.

Sekena Masoet

From: Pieter Du Toit [HQP Strategy and Business Development.] [Pieter.DuToit@exxaro.com]
Sent: 03 September 2008 11:10 AM
To: Sekena Masoet
Cc: André Sims [HQP Business Development]
Subject: EIA Transnet Railway Line: Hotazel - Port of Ngqura

Sekena,

Following public notices regarding the mentioned Railway Line, we would like to be registered as an interested and affected party involved with this EIA.

Exxaro Resources Limited is planning an AlloyStream™ Manganese Project in the Coega Industrial Development Zone, a short distance east of Port Elizabeth. We intend to transport manganese fine ore and coal on this Railway Line.

It will therefore be appreciated if we are informed regarding the EIA aspects on this project. We also would like to know if reference will be made in this EIA to specific materials being transported. If so, we would request the transportation of our manganese fine ore and coal, to be included in such listings.

You are welcome to contact me, should there be any questions.

Regards

PIETER DU TOIT
Strategy & Business Development

Tel: + 27 12 307 7349
Fax: + 27 12 307 5303
Mobile: + 27 83 6091472
Email pieter.dutoit@exxaro.com
www.exxaro.com

✓ DONE

exxaro

ALLOYSTREAM | ALLOYS

This e-mail is confidential and is for the addressee only.
Please refer to <http://www.exxaro.com/content/main/disclaimer.asp> for important disclaimers.

2008/09/03

Sekena Masoet

From: Bradley Gibbons [bradleyg@ewt.org.za]
Sent: 04 August 2008 07:18 AM
To: Sekena Masoet
Subject: Interested and affected party: Transnet Railway Line

Dear Sekena

Please can you register me as an interested and affected party for the proposed upgrade of the Transnet Railway Line. All my contact details are below. My focus region is the De Aar area as well as the Middelburg area.

Thanks

Bradley

Bradley Gibbons
Project Coordinator: Karoo Crane Conservation Project South African Crane Working Group
Endangered Wildlife Trust [EWT] P O Box 40 Middelburg Eastern Cape 5900
Tel: +27 (0) 49 842 1116
Fax: +27 (0) 88 049 842 1116
Cell: +27 (0) 82 566 5803
Email: BradleyG@ewt.org.za
EWT Website: <http://www.ewt.org.za>

EWT VISION: "A healthy planet and an equitable world that values and sustains the diversity of all life".

This Project is supported by The Green Trust of WWF-SA, FH Chamberlain Trading (Pty) Ltd, Sandown Motor Holdings (Pty) Ltd and Bayer (Pty) Ltd.

This E-mail message and its attachments are subject to the disclaimers published at <http://www.ewt.org.za>

Janet Mkhabela

From: Sekena Masoet
Sent: 09 September 2008 09:09
To: Janet Mkhabela
Subject: FW: EIA - between Hotazel and Ngqurha

From: Nomonde Tyabashe [mailto:Ntyabashe@solplaatje.org.za]
Sent: 08 September 2008 04:26 PM
To: Sekena Masoet; Albert de Jong
Subject: EIA - between Hotazel and Ngqurha

Dear all,

This is in response to information on EIA for the proposed Upgrade of the Railway Line between Hotazel and Ngqurha.

I appreciate that you have included us as key stakeholders.

I have faxed through a response sheet.

In order to facilitate some issues from a Town Planning and Urban Development perspective in general, it would be great if additional information can be provided to us. Special reference is made to Upgrading of Kimberley Station – key questions include:

- timelines,
- are there concept plans in place that we can view,
- infrastructure requirements if any,
- overall impact of the development to the City,
- investment amount,
- jobs to be created, etc.

This information is crucial for our future planning.

Regards,

Nomonde Tyabashe-Kesiamang
Executive Director: Strategy, Economic Development and Planning
Sol Plaatje Municipality
Kimberley
8300
Tel: 053 8306 303
Fax: 086 536 4854
Email: ntyabashe@solplaatje.org.za

Janet Mkhabela

From: Sekena Masoet
Sent: 17 September 2008 16:12
To: Janet Mkhabela
Subject: FW: The advertisement of Environmental Impact Assessment - Transnet in the DFA of September 17,2008 bears reference.

Importance: High

-----Original Message-----

From: AStrachan [mailto:astrachan@ncpg.gov.za]
Sent: 17 September 2008 03:22 PM
To: Sekena Masoet
Subject: The advertisement of Environmental Impact Assessment - Transnet in the DFA of September 17,2008 bears reference.
Importance: High

** High Priority **
** Reply Requested by 9/17/2008 (Wednesday) **

The advertisement of Environmental Impact Assessment - Transnet in the DFA of September 17,2008 bears reference.

I am working in the Office of the Premier, Development Planning. The Unit prior objective is economic growth and poverty reduction through integration and alignment of all spheres of government. Rail vitalization in the Northern Cape is of utmost importance for economic growth in the Province.

I hereby wish to register:
Antoinette Strachan
Office of the Premier
Templar Building
Private Bag X5016
Kimberley, 8301

Fax: 053 - 831-2157
e-mail: astrachan@ncpg.gov.za
Tel: 053- 8025000
Cell_ 0734872664

Regards

Sekena Masoet

From: Nelson Mongale [10986901@nwu.ac.za]
Sent: 26 September 2008 11:42 AM
To: Sekena Masoet
Subject: hotazel and the Port of Ngqura

✓ Done

Hello Sekena

As our telephonical discussion, I would like to get involve in the project as this perfectly align with our Provincial Manufacturing Economic Development Strategy.

I will just give you a glance of the long term objectives for economic value of route regeneration strategic intent:

The long term objectives will be to establish and implement a sustainable initiative or initiatives that:

- Identify and develop new markets for products to be produced and manufactured in the region.
- Develop and set up regional manufacturing and production facilities.
- Reduce the import of products and services from other regions, therefore reducing the outflow of capital from the region.
- Increase the export of products and services to other regions, therefore increasing the inflow of capital to the region.
- Establish a continuous improvement innovation centre that focuses on increased value addition through products and services.
- These initiatives will lead to new job creation.
- Develop and set up capacity building, training and mentoring programme to capacitate, empower and supply the production and manufacturing facilities with skilled manpower.
- Develop and set up a corporate structure that incorporates the production and manufacturing facilities. The purpose of the corporate structure will be to perform centrally for the production and manufacturing facilities non-core functions such as marketing, financial administration, HR and others, thereby enabling these facilities to focus on its core functions.

Regards

Nelson Mongale

(B.Engineering Mechanical And Material Science, MBA)

Project Manager: Manufacturing Sector Development-Department of Economic Affairs Northern Cape Province

Perm Building , 2nd Floor, Room 208 A, Jones Street

Kimberley

8301

Tel: 053 8304844

Cell: 084 697 6017

Annex A 3

Newspaper Advertisement

List of Newspapers

Environmental Impact Assessment

TRANSNET



PROPOSED UPGRADE OF THE TRANSNET RAILWAY LINE between Hotazel and the Port of Ngqura Public Participation Process

The Project: Transnet plans to transport additional volumes of containers and bulk commodities such as manganese and iron ore on the 1 100km railway line between Port Elizabeth, the new Port of Ngqura and Hotazel, as well as Gauteng. To do this Transnet needs to upgrade or construct sections of the line as well as associated infrastructure, such as buildings, yards, access roads, level crossings and a new electrical substation.

The Location: Transnet wants to build four new loops and upgrade twenty four loops on the 500km section of line between the Port of Ngqura and De Aar. Twenty four of the loop sites are in the Eastern Cape and six in the Northern Cape. A number of station yards along the line will also be upgraded.

The Regulations: Transnet is initiating an Environmental Impact Assessment (EIA) process on the proposed upgrade in terms of the EIA Regulations of 21 April 2006, under the National Environmental Management Act (No. 107 of 1998), as amended.

The Consultants: ERM Southern Africa (Pty) Ltd

Get Involved: ←

- Register as an interested and affected party
- Send us your comments.
 - Let us send you more information.
- Allow us to stay in touch with you through the process.

Send your contact details and comments to Sekena Masoet at ERM at
sekena.masoet@erm.com,
(Phone) 021 702 9100 or (Fax) 021 701 7900.

Attend the Public Meeting: Attend our public meeting/s on the proposed upgrade.

Details are:

Paterson: 25 August 2008, 10:00am - 1:30pm, East Cape Agricultural Co-Op Hall, Buchnar Street.

Cookhouse: 26 August 2008, 10:00am - 1:30pm, Town Hall, 6 Main Street.

Cradock: 27 August 2008, 10:00am - 1:30pm, Cradock High School, Elize Coetzee Hall, Naested Str.

Middelburg: 28 August 2008, 10:00am - 1:30pm, Town Hall, Market Street.

De Aar: 29 August 2008, 10:00am - 1:30pm, Town Hall, 45 Voortrekker Street.



Omgewingsimpakontleding

TRANSNET



VOORGESTELDE OPGRADERING VAN DIE TRANSNET-SPOORLYN tussen Hotazel en Hawe van Ngqura Openbaredeelnames-proses

Die Projek: Transnet beplan om bykomende volumes houers en massakommoditeite soos mangaan- en ystererts op die 1 100 km spoorlyn tussen Port Elizabeth, die nuwe Hawe van Ngqura en Hotazel, asook Gauteng, te vervoer. Om dit te doen, moet Transnet gedeeltes van die lyn asook verwante infrastruktuur soos geboue, werwe, toegangspaaie, spooroorweë en 'n nuwe elektriese substasie opgradeer of oprig.

Die Ligging: Transnet wil vier nuwe uitwykspore bou en vier-en-twintig uitwykspore opgradeer op die 500 km lyngedeelte tussen die Hawe van Ngqura en De Aar. Vier-en-twintig van die uitwykspoorreine is in die Oos-Kaap en ses in die Noord-Kaap. Transnet beoog ook om die 230 km lyngedeelte tussen Kimberley en De Aar op te knap. 'n Aantal stasiewerwe langs die lyn sal ook opgegradeer word.

Die Regulasies: Transnet onderneem 'n Omgewingsimpakontleding (OIO)-proses oor die voorgestelde opgradering ingevolge die OIO-regulasies van 21 April 2006, onder die Nasionale Omgewingsbestuurswet (No. 107 van 1998), soos gewysig.

Die Konsultante: ERM Southern Africa (Edms.) Bpk

Raak Betrokke: ←

- Registreer as 'n belanghebbende en geaffekteerde party.
- Stuur vir ons u opmerkings.
 - Laat ons vir u verdere inligting stuur.
- Laat ons toe om met u kontak te behou met verloop van die proses.

Stuur u kontakbesonderhede en opmerkings aan Sekena Masoet, ERM by sekena.masoet@erm.com, (telefoon) 021 702 9100 or (faks) 021 701 7900.

Woon die Openbare Vergadering By: Woon ons openbare vergadering(s) oor die voorgestelde opgradering by.

Besonderhede is:

Paterson: 25 Augustus 2008, 10:00vm - 1:30nm,
Oos-Kaap Landbou Ko-operasie Saal, Buchnar Str.

Cookhouse: 26 Augustus 2008, 10:00vm - 1:30nm, Stadsaal, 6 Hoof Straat.

Cradock: 27 Augustus 2008, 10:00vm - 1:30nm, Hoërskool Cradock,
Elize Coetzee Saal, Naested Str.

Middelburg: 28 Augustus 2008, 10:00vm - 1:30nm, Stadsaal, Market Straat.

De Aar: 29 Augustus 2008, 10:00vm - 1:30nm, Stadsaal, 45 Voortrekker Straat.



Uvavanyo loKuchaphazeleka kweNdalo (Environmental Impact Assessment [EIA])

TRANSNET



UKUPHUCULWA NOKUHLAZIYWA OKUCETYWAYO KOMGAQO KALOLIWE KA-TRANSNET phakathi kwe-Hotazel ne-Port of Ngqura Inkqubo yoThatho-nxaxheba loLuntu

Iprojekthi: U-Transnet uceba ukuthutha iikhonteyina eziyimithamo engaphezulu nezinto-yinto zorhwebo eziyimithwalo emikhulu (volumes of containers and bulk commodities) ezifana nentsimbi ekrwada yemanganizi nesinyithi (manganese and iron ore) kumgaqo kaloliwe oyi-1100km phakathi kweBhayi (Port Elizabeth), ne-Port of Ngqura entsha ne-Hotazel kwakunye nase-Gauteng. Ukuze u-Transnet abe nakho ukwenza oku, kufuneka aphucule umgangatho okanye akhe iinxenye ezithile zomgaqo kwakunye namaseko (infrastructure) anxulumene kunye nayo, afana nezakhiwo, iiyadi, iindlela zokungena (access roads), imigaqo kaloliwe enqumla kweminye/kwindlela yezithuthi kumphakamo ofanayo (level crossings) nesitishi esitsha sombane.

Indawo: U-Transnet ufuna ukwakha imigaqo emine emitsha ephambuka iphinde ibuyele kwimigaqo engundoqo (loops) aze aphucule umgangatho wemigaqo ephambuka iphinde ibuyele kwimigaqo engundoqo eyi-24 kwindawo (site) engu-500km yomgaqo ophakathi kwe-Port of Ngqura ne-De Aar. Iindawo eziyi-24 zemigaqo ephambukayo zise-Mpuma Koloni ukuze eziyi-6 zibe seMntla Koloni. Uninzi lweeyadi zezitishi ezingakule migaqo nazo ziya kuhlaziywa.

Imigaqo: U-Transnet uqalisa inkqubo yoVavanyo lokuChaphazeleka kweNdalo (EIA) malunga nokuhlaziywa nokuphuculwa ngokweMigaqo ii-EIA Regulations yowe-21 Apreli 2006, phantsi koMthetho we-National Environmental Management Act (No. 107 of 1998), owenziwe izilungiso.

Abacehisi: ERM Southern Africa (Pty) Ltd

Zibandakanye: ← — — —

- Bhalisa njengeqela elinomdla okanye elichaphazelekayo. ● Thumela iikhomenti zakho.
- Sivumele ukuba sikuthumelele ingcaciso.
- Sivumele ukuba sisoloko siqhagamshelana nawe ngokumalunga nokuqhubeka kwale nkqubo.

Thumela iinkcukacha zakho zoqhagamshelwano neekhomenti ku-Sekena Masoet kwa-ERM apha:
sekena.masoet@erm.com, (ifowuni) 021 702 9100 okanye (ifeksi) 021 701 7900.

Yiya kwiIntlanganiso yoLuntu: Yiza kwintlanganiso yethu/kwiintlanganiso zethu zoluntu ezimalunga noku kuphuculwa kwalo mgangatho kucetywayo. **Iinkcukacha zezi:**

Paterson: 25 Agasti 2008, 10:00 kusasa - 1:30 emvakwemini, kwiHolo lase East Cape Agricultural Co-Op, kwiSitrato sase Buchnar.

Cookhouse: 26 Agasti 2008, 10:00 kusasa - 1:30 emvakwemini, kwiHolo Ledolophi, kwiSitrato Main 6.

Cradock: 27 Agasti 2008, 10:00 kusasa - 1:30 emvakwemini, kwiSikolo Samabanga Aphakamileyo sase Cradock, Kwiholo lase Elize Coetzee, kwiSitrato Naested.

Middelburg: 28 Agasti 2008, 10:00 kusasa - 1:30 emvakwemini, kwiHolo Ledolophi, kwiSitrato Market.

De Aar: 29 Agasti 2008, 10:00 kusasa - 1:30 emvakwemini, kwiHolo Ledolophi, kwiSitrato Voortrekker 45.



Table of Newspapers used to place advertisements

Town/Area	Name of Local Paper	Date in Ad in Newspaper
Meetings from 25 to 29 August 2008		
Addo/ Paterson	The Daily Sun	Daily (4 August)
Alicedale/Grahamstown	Grocotts Mail	Friday Edition (1 August)
Cookhouse	The Daily Sun	Daily (4 or 5 August)
Cradock	Cradock Courant	Friday Edition (1 August)
Rosmead/ Middelberg	Cradock Courant	Friday Edition (1 August)
Noupoort	The Advertiser & Karoonuus	Thursdays (31 July)
Hanover	The Echo	Friday Edition (1 August)
De Aar	The Echo	Friday Edition (1 August)
Regional E.Cape Paper	The Herald	Daily (Friday 1 August)
Regional N.Cape Paper	Diamond Fields Advertiser - DFA	Daily (Friday 1 August)
Meetings on 10 to 11 September 2008		
Beaconsfield	Diamond Fields Advertiser	Wednesday Edition (3 September)
Greenpoint	Volksbald	Wednesday Edition (3 September)
Meeting on 22 September 2008		
Hotazel	Diamond Fields Advertiser (DFA)	Wednesday Edition (17 September)
	Kuruman Bulletin	Thursday Edition (18 September)

Annex A 4

Site Notice

Notice of Environmental Impact Assessment

TRANSNET



PROPOSED UPGRADE OF THE TRANSNET RAILWAY LINE between Hotazel and the Port of Ngqura Public Participation Process

The Project: Transnet plans to transport additional volumes of containers and bulk commodities such as manganese and iron ore on the 1 100km railway line between Port Elizabeth, the new Port of Ngqura and Hotazel, as well as Gauteng. To do this Transnet needs to upgrade or construct sections of the railway line as well as associated infrastructure such as buildings, yards, access roads, level crossings and a new electrical substation.

The Location: Transnet wants to build four new loops and upgrade twenty-five loops on the 500km section of line between the Port of Ngqura and De Aar. Twenty three of the loop sites are in the Eastern Cape and six in the Northern Cape. The proposed yard upgrades and substation are located between Kimberley and Hotazel in the Northern Cape.

The Regulations: Transnet is initiating an Environmental Impact Assessment (EIA) process on the proposed upgrade in terms of the EIA Regulations of 21 April 2006, under the National Environmental Management Act (No. 107 of 1998), as amended.

The Consultants: ERM Southern Africa (Pty) Ltd

Get Involved: ←

Please register as an interested and affected party (I&AP) so that we can keep you informed of the process and of opportunities for your involvement.

Send your contact details and comments to Sekena Masoet
at ERM by 19 September 2008 at sekena.masoet@erm.com,
(Phone) 021 702 9100 or (Fax) 021 701 7900.

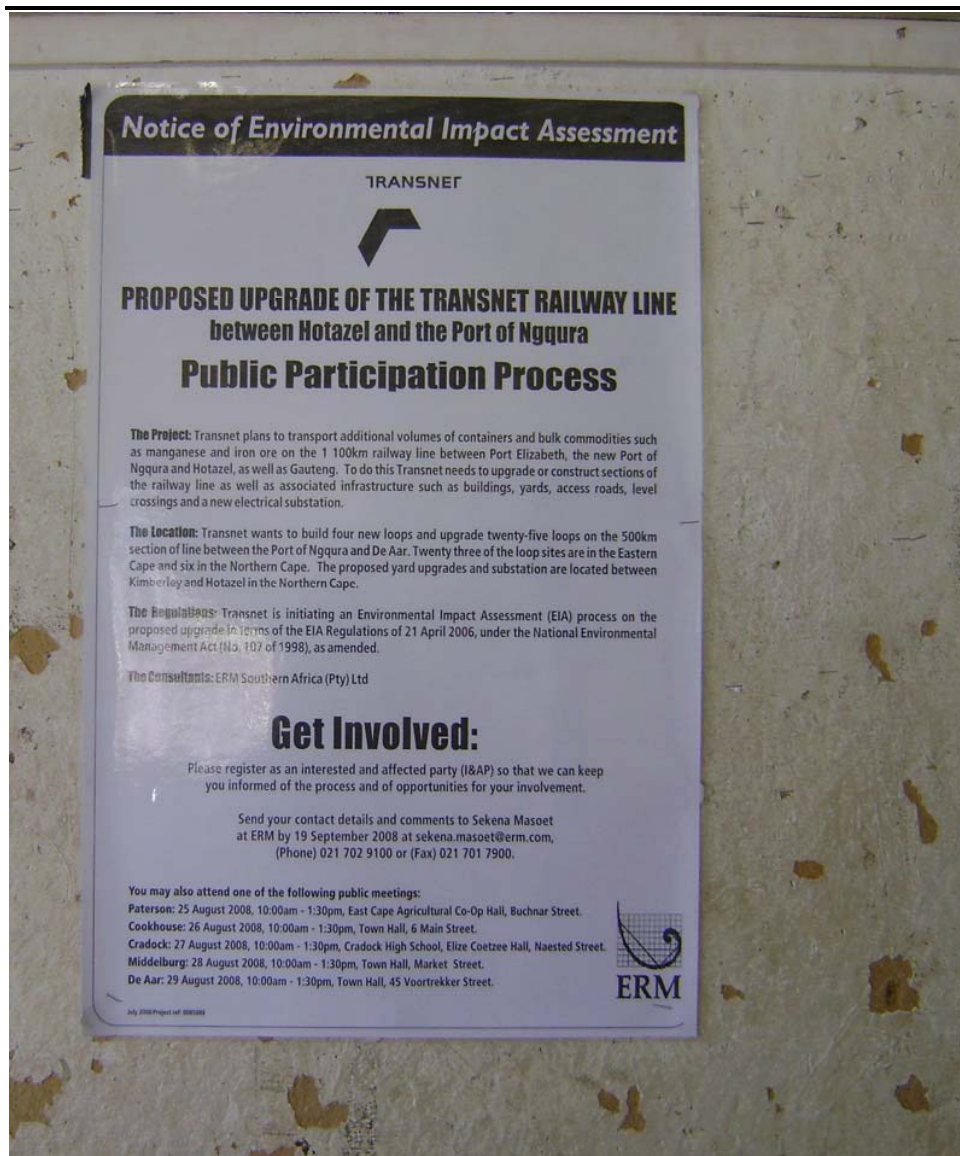


Table .1 *The Placement of Site Notices*

Site notices were placed in the following locations:

Town	Location
Port Elizabeth	Municipal Office, Post Office and Library
Addo	Municipal Office, Post Office, Main Town Library and Venue
Paterson	Municipal Office, Post Office, Main Town Library and Venue
Alicedale	Municipal Office, Post Office, Main Town Library and Venue
Grahamstown	Municipal Office, Post Office, Main Town Library and Venue
Cookhouse	Municipal Office, Post Office, Main Town Library and Venue
Somerset East	Municipal Office, Post Office, Main Town Library and Venue
Cradock	Municipal Office, Post Office, Main Town Library and Venue
Middelburg/Rosmead	Municipal Office, Post Office, Main Town Library and Venue
Noupoort	Municipal Office, Post Office, Main Town Library and Venue
Colesberg	Municipal Office, Post Office, Main Town Library and Venue
Hanover	Municipal Office, Post Office, Main Town Library and Venue
De Aar	Municipal Office, Post Office, Main Town Library and Venue
Kimberley	Municipal Office, Post Office, Main Town Library and Venue
Hotazel	Municipal Office, Post Office, Main Town Library and Venue

Figure 1 Picture of Site Notice



Annex A 5

Public Meeting Minutes and Attendance Registers

PUBLIC MEETING HELD IN PATERSON ON 25 AUGUST 2008

Meeting
minutes

Environmental
Resources
Management

Subject/Ref The proposed upgrade of Transnet Railway Line from
Hotazel to the Ports of Ngqura and Port Elizabeth

Venue Eastern Cape Agricultural Co-op Hall , Buchnar Street,
Paterson

Date of Meeting 25 August 2008

Present Community members and government officials

Distribution To all present in the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. He introduced himself as well as the other consultants accompanying him Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultants; Daniel Rogatschnig and Janet Mkhabela, Environmental Consultants from ERM.

Muller Coetzee encouraged the participants to be interactive and listen with an open mind. He also encouraged the audience to feel free to speak in their own languages (isiXhosa, English and Afrikaans), and to ask for clarity when they do not understand and to use the opportunity to comment or ask question.

2. PRESENTATION

Daniel Rogatschnig of ERM gave a presentation of the proposed upgrading and refurbishing of the rail project. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Rail Accidents

Thuse Manene expressed concern about the possible increase in rail accidents because of the expected increased rail traffic. He wanted to know how Transnet plans to prevent an increase in rail accidents. Werner Petrick from HMGJV asked Mr Manene if there has been an increase in the number of rail accidents over past years. Mr Manene responded that there has not been an increase; however, his concerns are based on the possibility that it might happen. Werner Petrick said that he could not answer on behalf of Transnet but that the concern is noted and will be forwarded to Transnet.

3.2 Capacity Building

Unskilled workers

Meeting minutes

The Mayor Siphokazi Matinese suggested that training should be provided for the unskilled labourers before the commencement of the project so that local people can benefit from the project. Werner Petrick explained that there is a recruitment strategy in place for the hiring of workers. Where necessary, training may be provided to the local people before construction commences. In addition, he reminded the stakeholders that the project is small and would not be able to offer many jobs.

Sub-contractors

Eden August wanted to know how the project is going to benefit or accommodate small local contractors. Werner Petrick explained that there would be an open tender process and everyone interested may tender.

Mr August argued that such tenders are always awarded to bigger construction companies and not locals. He wanted to know if there is a possibility, of smaller construction companies working with the bigger companies. Werner Petrick responded that a request would be made to Transnet to make special provisions for big contractors to use small local sub-contractors.

3.4 Water Resources

The Mayor Siphokazi Matinese wanted to know what would be the strategy for accessing water in areas where water is scarce. Werner Petrick responded that water would be sourced locally or trucked in or obtained from local farmers if necessary.

3.5 Future plans for the railway line

Andrea von Holdt from Coega Development Corporation, wanted to know about Transnet's future plans for the railway line and whether they are planning to use the line to transport other commodities or not. Werner Petrick explained that the present focus is to increase the transportation of manganese and containers and that he was not sure about Transnet's other plans but that the EIA process should provide clarity on this.

3.6 Electricity Supply

Andrea von Holdt also wanted to know how the cost and availability of electricity would affect the project. Saai Zaayman explained that the project would not have any effect on the electricity supply for the project areas. Only one substation was required for the electrification of the railway line in Emil.

3.7 Manganese Dust

A participant wanted to know how the effects of manganese dust are going to be mitigated. Werner Petrick explained that there is not much proof about the impact of manganese dust on people during its transportation as it is usually sprayed with water before being transported. Health problems are usually

Meeting minutes

experience by people who handle the manganese (at the mines and at the ports), however, a dust specialist has been appointed to undertake the study and measure the amount of dust emitted during transportation.

3.8 Land acquisition/ issues

Peter Inman wanted to know how Transnet plans to acquire land for the construction of the loops. Werner Petrick stated that most of the loops would be constructed within existing Transnet land. At present, it is predicted that only four loops might require the acquisition of private land. In such instances, Transnet will contact the landowner, negotiate and pay market related value for the land. In case negotiation fails then a legal process might need to be followed.

Thuse Manene advised that Transnet should be careful when buying privately owned land, because there are some land restitution issues that need resolving in the province.

3.9 Management of Spillages and Accidents

Andrea von Holdt wanted to know Transnet's responsibility for spillages and accidents during the transportation of the manganese. Werner Petrick responded that he was not sure of Transnet's responsibility and that the issues would be referred to Transnet for clarification.

3.10 Passenger Transportation during 2010

Mthuthuzeli Tokota wanted to know if Transnet is considering transporting passengers from city to city especially during 2010 using this railway line. Werner Petrick responded that passenger trains are not part of this project; however, the question would be forwarded to Transnet.

Peter Inman wanted to know if other capacity building initiatives have been taken by Transnet regarding recruitment of new drivers, new wagons and other related infrastructure. Werner Petrick responded that training is underway as well as buying of new wagons.

3.11 Public Private Partnerships

Peter Inman also wanted to know if public private partnerships are being considered for this project. Werner was not sure about this issue and he suggested referring it to Transnet for clarity.

Primrose Mayana suggested that local consultants should be used for specialist studies to develop their skills.

4 ISSUES FOR CLARIFICATIONS

4.1 Increased Railway Capacity

Meeting minutes

Andrea von Holdt wanted to know how Transnet plans to increase the capacity of the railway line (by using longer trains or the increased frequency of trains per day). Saai Zaayman responded that capacity would be increased by using longer trains (approximately 104 wagons or 1200 meters) and increased frequency from one train to two trains a day.

4.2 Two EIA Applications

Peter Inman wanted to know why two applications were made. Werner Petrick responded that the two applications are for the manganese and containers. This was done to avoid reapplying for the same line once the container terminal is completed.

4.3 Loops and re-introduction of railway line

Thuse Manene needed clarity about the issue of loops and the re-introduction of the railway line between De Aar and Kimberely. Saai Zaayman explained that in the Eastern Cape they are planning to construct or expand loops, whereas between De Aar and Kimberley they will be re-introducing an existing line that has not been utilised.

5 SUGGESTIONS

The Mayor Siphokazi Matinese suggested that the project be presented to the broader council on the 10th of September 2008. Muller Coetzee responded that the suggestion was noted.

Andrew Williams from Addo suggested that reflectors be placed on the sides of the trains to avoid motorists driving into trains especially at night. Saai Zaayman wanted to know if there were any warning signs or level road crossings where these accidents occur. Andrew responded that there are no signs but that there is a level road crossing. Saai Zaayman noted that it might be recklessness on the part of the drivers; however, the suggestion will be forwarded to Transnet.

Andrea von Holdt advised that ERM should look into including a paleontology study as part of the archaeological studies. This has become a requirement of SAHRA and it is hard to find these specialists. Daniel Rogatschnig thanked Andrea von Holdt for her advice and promised to look into it.

Primrose Mayana suggested that local consultants should be used for specialist studies to develop their skills.

6 OTHER MATTERS

Primrose Mayana wanted to know if the Paterson station was part of the project or not. Werner Petrick explained that there would be no development at the Paterson station only in Addo.

**Meeting
minutes**

Andrea von Holdt of CDC informed the house that CDC would be opening a skills development centre that will be providing training for unskilled people for any skills required by the CDC.

7 CLOSURE

The meeting was closed and Muller Coetzee thanked all present for their active participation and valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

Paterson

25/08/08

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Miss Andrea von Holdt	Coega Development Corporation	Environment Project Manager	011-4030 400 080-6574648	011-4030401	andrea.vonholdt@coega.co.za	
DONE ✓						
Livhuwani Wilson Ndou	Transnet Freight Rail	Environment Specialist	083 2789499 051402 2939	051 4081802	livhuwani.ndou@transnet.net	
DONE ✓						
ILSE WELGEMOED	SAMPARKS	SECTION KAMMER	012 238642 084 317 3200	012 233 8443	ilscw@samports	ADD ELEMENT NAT AND RPOD PO BOX 52 6105
DONE ✓						
NELLS DOORNANS	SHARADEL GAME RES.	APL + SECURITY CHAIR	0825777148 012 2251508	012 2351096 2351168	Conservation@Sharadel.com 10 RAILWAYS PATRISON	SHARADEL GAME RESERVE P.O. Box 91 Paterson 6130.
DONE ✓						
TRINOFEMISELE	LIVHUKHELA TRADING CC	MANAGER	0845163983	012 2357168	NP/A	PO BOX 52 PATRISON 6130
DONE ✓						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

Peterson

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
CLLA M. B. 10/10/07 DONE ✓	Nelson Mandela Metro Municipality	Chair	07949000-62	041-5851		Box 116 Port Elizabeth
A. Thomas DONE ✓	Bvi Consulting Engineers	Project leader	041 3734348	041 373 7135	abuta@bvi.co.za	

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

PATERSON

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Miss Lynn Friend Done ✓	coega dev. corp.	Project Manager	082611 0443.		lynn.friend@coega.co.za	
Mr. Danevin Lesch Done ✓	✓	✓	082330 3326.		danevin.lesch@coega.co.za	
MR. PETER INMANI Done ✓	CDC	change? MANAGER ENERGY CONSULTANTS	082 320 5255		peter.inman@coega.co.za	
MR. EDEN J. AUGUST Done ✓	KWAZENZELE CONTRACTORS	OWNER	071456805	042235 1689	edenj@vodamail.co.za	137 BREE STREET PATERSON 6130

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
M NOFEMELE Done ✓	FILION TRADING CC	DIRECTOR	0739623843			PO Box 56 PATERSON / KURKWOOD?
MR. ANDBEIN WILLIAMS Done ✓	NOMPOND LA DEN SERVICES ?	MANAGER	0763802334	0866502984	a.williams@webmail.co.za	71 LINDELA STREET NOMATHAMSHAPDA T/SHIP AREA ... ?
MR MANGENI NONKOPANG Done ✓	LULUTHO Skills TRAINING	DIRECTOR	0738968788	042-2351168	LCES@webmail.co.za	283 DANIEL STE PATERSON 6130
S. H. MATINISE Done ✓	Sundrop's Ruwe Dauvey Municipality (MAYOR)	MAYOR	0192551326	040-230069	reneke@sn.gov.za	PO. Box 47 KURKWOOD 6120.

PUBLIC MEETING HELD IN COOKHOUSE ON 26 AUGUST 2008

<i>Subject/Ref</i>	The proposed upgrade of Transnet Railway Line from Hotazel to the Ports of Ngqura and Port Elizabeth
<i>Venue</i>	Cookhouse Town Hall, 6 Main Road, Cookhouse
<i>Date of Meeting</i>	26 August 2008
<i>Present</i>	Community members and government officials
<i>Distribution</i>	To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. Muller Coetzee introduced himself as well as the other consultants accompanying him Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultant; Daniel Rogatschnig and Janet Mkhabela, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He also encouraged the audience to feel free to speak in their own languages (isiXhosa, English and Afrikaans), to ask for clarity when they do not understand and to use the opportunity to comment or ask question.

Janet Mkhabela of ERM explained to the attendees the stakeholder identification process for this project.

2. PRESENTATION

Daniel Rogatschnig of ERM gave a presentation outlining the key elements of the proposed upgrading and refurbishment as well as the EIA process. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Employment Opportunities

Vusimuzi Dingy wanted to know where the estimated hundred unskilled workers would be sourced. Werner Petrick explained that all unskilled workers would be sourced in local communities close to the railway line. He also wanted to know if residents of Cookhouse would be able to get employment opportunities from other loop sites. Werner Petrick responded that all unskilled workers would be recruited all along the railway line using a recruitment agency; therefore, Cookhouse residents who go to the agency may find employment.

Muller Coetzee suggested that ERM could forward people's contact details to the agencies for their consideration when recruitment begins. He encouraged the attendees to complete their full details in the registration forms.

3.2 Construction Schedule

Cllr Manxiweni wanted to know the length of the employment offered by the project. Saai Zaayman explained that construction time would differ based on the project area, it is predicted that per loop, the construction would take between three to five months to complete.

3.3 Permanency of the employment

Zola Tesana wanted to know if there would be opportunities for permanent employment created by the project. Werner Petrick responded that there would be permanent employment opportunities created by the upgrade of the railway line but not many.

3.4 Training opportunities

Zola Tesana wanted to know if Transnet was going to provide training for the youth so that they can have the necessary skills to do the work required, this includes post construction servicing of the railway line. Werner Petrick responded that such a suggestion had been made in the previous meetings and that it would be forwarded to Transnet for their consideration.

3.5 Number of loops for upgrading and construction

Mr Zamilé wanted to know how many loops Transnet was planning to construct as well as if there would be employment opportunities for Cook House residents. Saai Zaayman explained that the BID (background information document) has all the locations of the loops. There would be 29 loops (25 existing; 4 new) – 23 in the Eastern Cape and 6 in Northern Cape, Upgrade of 5 yards in Beaconsfield and Ronaldsvlei (both near Kimberley), Postmasburg, Mamathwane and Hotazel, new traction substation at Emil and refurbishment of an existing second line between Kimberley and De Aar. In Cook House, there is no planned construction; however, there would be employment opportunities in other construction sites close to the Cook House area.

3.6 The use of local sub-constructors

Ludu January wanted to know if local sub-constructors would be given opportunities to tender for the construction of the railway line. Werner Petrick explained that all constructors would need to tender for the work. In the previous meetings, stakeholders had suggested that provisions be made in the tender documents for big contractors to use local sub-constructors for the project. This suggestion was noted and would be forwarded to Transnet.

3.7 Stakeholder identification

Themba Nsthukumbini wanted to know whom the stakeholders for the project are and when would construction begin. Janet Mkhabela of ERM explained that the stakeholders for this project include national, provincial and local authorities; environmental non-governmental organisations;

**Meeting
minutes**

communities residing in close proximities to the existing railway line, which include farmers or landowners who may be impacted by the project and anyone who is interested in the project.

3.8 Health and safety plan for workers

Ncumisa Magadla wanted to know if a clinic would be provided for the labourers for testing for manganese poisoning during the project. Werner Petrick explained that manganese is classified as a hazardous chemical; however, in this instance it would not be hazardous to anyone during transportation as it is sprayed with water before being transported. He continued to explain that manganese is hazardous to humans during its handling for example mining and loading it. A dust study has also been commissioned to make sure that the manganese is not going to be hazardous to human health.

3.9 Sanitation facilities

Ncumisa Qolo wanted to know if Transnet is going to provide proper sanitation facilities in the construction camps. Werner Petrick explained that the legislation has set out strict construction camp regulations and these makes provisions for sanitation services.

3.10 Air pollution

Ncumisa Qolo wanted to know how Transnet plans to combat air pollution that would be created by the increased railway traffic. Werner Petrick responded that there would be no increase on air pollution as the trains are electrified and the manganese is sprayed with water before being transported.

4 OTHER MATTERS ARISING

Siyavuya suggested the refurbishing of the railway line between Cook House and Somerset East. He stated that when the railway line was still operational it provided easy access to Somerset East for the Cook House community. Muller Coetzee responded that the suggestion would be forwarded to Transnet.

5 WAY FORWARD

Muller Coetzee of ERM told the attendees that the meeting minutes would be forwarded to them. He also encouraged them to take comments sheets and send in any other comments they might have to ERM.

6 CLOSURE

The meeting was closed and Muller Coetzee thanked all present for their active participation and valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Done

26/08

COOKHOUSE

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
ERNEST FOLOLO Done ✓	ERNEST		0722410657 0738726391			838 Mphahleki 3 the Klouse
Renzi Nybave Done ✓	Ward Commit		0728778250			567 Belani Street PO Box 596
Atambiso Done ✓						PO Box 596
Ky Mombiso Bwamezi Done ✓	Agase		0736555364			47MS 658 Engine Str. P.O. Box 760
S. Vralhein Done ✓						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓ MR. T. Nwathi			071 8971970			7 Mgqalici St Leselake
DONE ✓ L.H. Mwenza	-	-	076 9653505	-	-	838 engine str
DONE ✓ CIRIL DE						
DONE ✓ CIRIL DESEK	MEMBER					APPOLIS STN
DONE ✓ Miss Numsisa Qolo	Blue Crane Route Municipality		04222431333 0835738955	042243067	numisa.golo@igneto.org.za	Box 21 Somerset East 5850
DONE ✓ T. C NKEBE	MEMBER		0822646931	042-2471059		1053 SINYANTHA STR COOKHOUSE

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓ Buyile Thonyo	—	—	072344078		602 Dubula St Shongweni Loc	
DONE ✓ ZANISILE MABINDISA	—	—	—		409 BELAMI STR BONGWENI LOC	
DONE ✓ Zukhile MABINDISA	—	—	0780897674		COOKHOUSE 5820	
DONE ✓ Thelma Vens	—	—			384 Dubula St Bongweni Loc	
DONE ✓ Siyabonga SIKHIZE	ANCYLG	—	—		54 Mqomoza	

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓						
Murweni Makwane DONE ✓	ANC					530 Inyanga Street
Nesandiso Tawanda DONE ✓						218 Curatka Street
Simphiwe Mbonya Siyobanga Mbonkela DONE ✓	Goethehuis Youth Development Foundation	Marketing Manager Vice Champion	0188622872 0719474033	042-2471531	N/A N/A	209 Curatka Str. 1046 Nodiyamaka Street
Yolanda Fritze DONE ✓	Goethehuis New Town		084 5071805			270 Jansen Str

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓						932 Zola LOOKHOUSE 5822
Pamelle Dano						
DONE ✓						
Linda Koobke						316 WASSA ST
DONE ✓						
Nesmeti Dinye	Likhanyisoan					422 DUBUKE
DONE ✓						
Northe Madisane	ANC					847 Embak. St
DONE ✓						
Juy Sifilani	ANC					847 Embak St

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

COOKHOUSE

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Francisca van der Merwe	C.D.M.					245 Du Plessis Newtown Cookhouse
Isi Sengunywa	B.C.R.M	C.D.M.	0526716832	0422471271		277 Mlaba St Bongamane Lc Cookhouse
K.M. Mokoena	ANC	Member	078 58 62911			Cookhouse 1062 Mphahlele Street, Cookhouse
B.R. January	ANC					1062 Cookhouse
Dane						143 Mjongile Cookhouse
M. Stemele	ANC		0132125789			5820

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DAWN KOGA DONE ✓	COOKHOUSE YOUTH DEV. FOUNDATION	ADDITIONAL MEMBER	0733795444 OR 042 2471531	-	-	342 CENTRAL STREET.
ZOCA TERRANA DONE ✓	BLDA	PROQ. MMLK	042 2430091 082 8989941	042 2430095	bedar@katic.net	
Rob Beck. DONE ✓	BCAA. Blue Crane Development Corporation	BUS Manager	042 2430015 082 3294547	042 2430095	bedar@katic.net	P.O. 1971 Samsel East 5850
ZOLANI MBOUBIYA DONE			073-1069 241 NO ANSWER	-		85 NITHKA STREET
SABU. MVEKI DONE ✓						428 GANN Bldg STREET

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓						235 Khinastha Cookhouse.
MNCEBI Balmi		AMC.	—	—	—	5820,
Elizee Leti Rokemeyer	Elukhangisweni					215 Appols Street meulfontein loc Cookhouse
DONE ✓						
Sally Smith	Elukhangisweni					234 Duppelersvlei Street Cookhouse
DONE ✓						
Sarah Jacobs	Elukhangisweni					215 Snowtown lok Cookhouse.
215 Snowtown Cookhouse						
DONE						
Members of address ? Help PS's						
Co house		ANC				Cookhouse.

*

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Done ✓ Z. J. MABINDISA			0767207426	-	-	409 Belani Cookhouse 5820
Done ✓ Vooltama						
Ac recakins	ANC					706 Zola STR 744 Mandela Cockhouse 5820
* S. Tasse			0742265131			5820
Done ✓ V. G. Fumati			0824317451	-	-	778 Mmabala DR Cookhouse
Done ✓ ZS Bekishi						741 Mmase ST Bancweni Loc Cookhouse 5820

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

Cookhouse

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓	check address	WERRDI Councilor	082657 1341	042 24 712 71		413 PETER STR NEWTOWN LOCAL COOKHOUSE 5820
B.A. MANNXWENI DONE ✓	BCRM					310 CENTRAL ST. BONGWENI LOC COOKHOUSE.
M.M. DJASI DONE ✓	BCRM.	W/comm.	0196440845	-	-	156 Robert Street Cookhouse Newtown 5820
M.S. Molebeli DONE ✓	C.Y.B.F	C.Y.B.F	0827930666	-	-	
M. Selwa DONE ✓						NEWTON 16 HOPE STREET COOKHOUSE 5820
M. D. Pokuwana DONE ✓			0837266890			

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Done ✓ Irene Nkholobule	Party Choice					618 Khuzela Str Cookhouse
Done ✓ Ma Nobodula	Party Choice					618 Khuzela Str Cookhouse
Done ✓ Rosy Soxuywa	Community member					2445 Nyanga Cookhouse
MR M.A. MGENA			0822536999			83 BENJAMINE STR - ET COOKHOUSE
Done ✓ Jerome Ngobolo			0782896411			509 GOMBI STR - ET COOKHOUSE
Done ✓						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Nompumelele Pondzi Menzi DONE ✓	—	—	083 9960028	—	—	451 Nyanga St coolhouse
kuoloka Twenty DONE ✓	—	—	0737670245	—	—	4446 Wepke Box 411 coolhouse
Nomise Sokwanda Sokwanda DONE ✓	—	—	—	—	—	8 Hoop Street coolhouse
Zoliswa Nomere Done ✓	—	—	—	—	—	31 Spomer coolhouse
Fezile Ellis Kike Done ✓	—	—	—	—	—	129 Emabobani coolhouse

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Mr. H. GEEFF DONE ✓	HAND OWNER.		0412 243 3513 082 899 0983	0412 243 3513	henryanita @ y63	P.O. Box 188 Somerset - East.
MR L. NIELANDI DONE ✓						Gwabakuthasik 257 workhouse E.
S. JANI ✓						J. JANI
						M. SANI
S. MABULELA DONE ✓	-		08840 594789		-	-

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Cookhouse

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
MRS Kockies	ANC	Member	-	-	-	284 Contact Mr Brington Port Moresby
NELEBARND			082 47 26 203	-	-	863 GIMBELSHE COOKHOUSE SR220
MRIEZE Done ✓	ANCLYL	"				
MME I.S. NIEL Done ✓	NP	"	042224 72376	-	-	REIMER WEG 5 Cookhouse
MRS SINDISWA KISWA Done ✓	Sivene CONSTR.	Member	043- 7220628 OR 0835142545	043- 7220648	sivene@webmail. co.za	P.O. Box 3126 Kings Williams Town 5800
Nourisa Mgadla Done ✓	Sivene Constr	Member	043-1220 688 013 047 6930	043- 7220648	Sivene@webmail. co.za	P.O. Box 3126 Kings Williams Town

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Cookhouse

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Phindile BAIC Twenty None	ANC	Chairperson	0734081877			181 Curkra Str Cookhouse 5820
Dumisoni Umofhi January None	S.ACP	Member	0739909846			149 Myongile Str Cookhouse 5820
Mxolisi SANTS None	ANC	Members	0783619007			Raymond Mlabe Str Cookhouse 5820.
Melwakhle Fernando JOHNSON None	ANC	member	0733343988			453 Brankwina Str Cookhouse 5820
B. Koba None	ANC		—			281 MASA Str
D. Nalozin None	ANC		—			568 BILON

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
✓ Done Mondle MENEKI	ANC	-	07255721	-	-	244 KwanaTsha Str
✓ Done Munani THABO	ANC	-	-	-	-	7 Magonaki Str
✓ Done Mabilemi Tlaba	ANC	-	-	-	-	707 Zola Str
✓ Done M. Manzini	ANC	-	0733928811	-	-	126 Str
✓ Done K. Zouwi	ANC	-	-	-	-	312 WASA STR
✓ Done E. West	CALTEX Subway S/Station	Admin	0845082404	047-247252	Wetsand@intercom.co.za	P.O. Box 132 Cookhouse 5820
✓ Done K. N. Sadeuwindini	ANC	-	0737564845	-	-	811 THABO MBEKI Str

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

Cookhouse

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Mbuyiseko JOET Done ✓	A N C	Chairperson	042 24772881			856 Governor Mbeki Street P.O Box 687 Cookhouse 5820.
W. M. MDA Done ✓	A N C	Member	042 24790110			747 Mandela Street Bongweni Cookhouse 5820.
Mowelo Stenele Done ✓	A N C	Member				575 Nyanga Street Bognani Cookhouse 5820
MPHATHI. MDA Done ✓	A N C	Member	0746476689 0422471010			747 Mandela STR Cookhouse 5820
KUNANI MZNANI Done ✓	A N C	Member	0722691070			716 ZOLA STR Cookhouse 5820

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
✓ Done Mr Richard Marzelle	/	/	/	/		710 Zolga Rd Cookhouse
Mr Monmale Singaeg ✓ Done	/	/	/	/	-	1094 Godolosa St Cookhouse
✓ Done Kdani Siso Athosi	-	-	-	-	-	111 Mark St Cookhouse
✓ Done Thengwe Dustje	-				073 1721653	891 Govern Mtsi Str, Cookhouse
✓ Done Monsi Bolelo Nqume Mshelane	-	-	0731088022	-	-	896 Govern Mtsi Cookhouse

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Done ✓ T. QUKWANA						576 Belami Thabo Mbeki
Done ✓ WANDINE JULY	Community member	-	-			
None ✓ NONDA NGCIBE	BERM	CHIEF ENVIRON. HEALTH SERV.	0422431333	0422430867	nonda.ngcibe@ignef.org.za	P.O. Box 21 Somerset East 5710
None ✓ ARALE NTSHUKU	BERM	ICP/LEA	04222431333	04222431549	arale.ntsuku@ignef.org.za	
None ✓ Hansi Snyden	Community member		042 0471150.			Benny St. 8 Cobhouse

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Cookhouse

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Mr Mopoo MENE ✓ Done	BERM	M. M.	082 448 1984	-	mopoo.mene@ignel.org.za	-
Mr. M. Vosloo ✓ Done	Cookhouse.	-	071050103	-	-	Banyasi Rd
Thandlovethu Songqile ✓ Done	Cookhouse		0721016877			
Sivuyile Veki ✓ Done	Zikolobuntu Youth Project	Chairperson	072 2410503	-	-	289 Medwayi Str Bongweni Loc Cookhouse e 5820
Phanduwaazi Sonkhata ✓ Done	Cookhouse, Bruza Project. MASIZAME Trust. Cinic Secretary.	HR. M Sec.	0716218832 4.	-	-	571 Beani Street Bhongweni Loc Cookhouse 5820

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Cookhouse

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
MR. J.A. Manters Done ✓	Love life		0719732442	N/A	N/A	393 Dubula Street Cookhouse Bongweni Location 5820
A.L. Mbemga Done ✓	None		0763279151	N/A	N/A	657 24th St Bongweni, Loc E
A.L. Mbemga Done ✓	None	-	0763279151	N/A	N/A	530 Kuyi St Bongweni, Loc
Z. Maelkane Done ✓			078102988			
A.J.T. YONGO Done ✓	None		0760739452	N/A	N/A	511 Goteoni St Bongweni Loc Cookhouse (S&B)

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓						
MARSHALL, SALL						ZOLA 700
* MABEHLA MABEHLA ✓			0833828010			P.O. BOX 397
DONE ✓						
MONBEKHA JANTANI ✓			0786256753			1193 MDAWI STREET
DONE ✓						
ES MABEHLA ✓	CPE Q House	QMM/BERSON	0737554595 0739555575			836 TINDO MBEKI STR GEORGETOWN
DONE ✓ Mawande Manzini	ANC	-	0733922811	-	-	126 SKULUO STR COOKHOUSE

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
S.V. D. DAVALE	ARRET	EDUCATOR	N/A	N/A	N/A	1073 SIMONDS
MR. MPHUMZI MAHARINA DONE ✓	—	—	0748014518	—	—	71 Hope Street Lackhouse
Minson Kumpeana Done ✓			0751178018			34 Memase Street Lackhouse
MR KHOLISILE TWENTY Done ✓	—	—	0734399988	N/A	N/A	181 CHAKA STREET BONGWENI LOCATION COKHOUSE 5820
MR. DONUNO NDIRINI Done ✓	TEEN HEALTH EDUCATOR	EDUCATOR	076327130	N/A	N/A	567BELANI, Street BONGWENI, location COKHOUSE 5820

PUBLIC MEETING HELD IN CRADOCK ON 27 AUGUST 2008

Subject/Ref The proposed upgrade of Transnet Railway Line from Hotazel to the Ports of Ngqura and Port Elizabeth

Venue Elize Coetzee Hall, Cradock High School

Date of Meeting 27 August 2008

Present Local communities and government officials

Distribution To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. He introduced himself as well as the other consultants accompanying him Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultant; Daniel Rogatschnig and Janet Mkhabela, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He also encouraged the audience to feel free to speak in their own languages (isiXhosa, English and Afrikaans), to ask for clarity when they do not understand and to use the opportunity to comment or ask question.

Janet Mkhabela of ERM explained to the attendees the stakeholder identification process for this project.

2. PRESENTATION

Daniel Rogatschnig of ERM gave a presentation of the key elements of the proposed rail upgrade and refurbishment. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Project scope

Mr Mzondile apologised for arriving late and requested clarity concerning the project scope. Daniel Rogatschnig of ERM explained the scope and assured all present that the presentation would be attached to the meeting record which would be sent to all those who attended the meeting.

3.2 Project cost

Mr Mzondile wanted to know the estimated cost of the project. Saai Zaayman explained that the overall project cost is approximately three billion rand and that the cost of constructing one loop is between 10 and 40 million rand.

3.3 Employment opportunities

Ayanda Mgxasha wanted to know if people who actually attended the public meeting could be guaranteed to get employment on the project. Muller Coetzee stated that attending a meeting does not automatically guarantee a person employment, however at previous meetings it has been suggested that ERM can forward contact details of the people who attended meetings to the recruitment agency for their consideration. This does not serve as a guarantee that a person will get employment.

3.4 Training

Phumlani Thomas wanted to know if Transnet is going to provide training to unskilled workers before construction commences. Muller Coetzee stated that this suggestion has been made at previous meetings and would be forwarded to Transnet for their consideration.

3.5 Loss of biodiversity

Mr Mzondile wanted to know what Transnet planned to mitigate the possible loss of indigenous and endangered plants during construction. Muller Coetzee responded that ecological studies were going to be undertaken and a search and rescue program may be used to protect these plants.

3.6 Use of local specialist

Mr Mzondile suggested that the project team should make use of local specialists who have local knowledge of the surrounding areas instead of those based in Pretoria. Daniel Rogatschnig noted the comment for consideration.

3.7 Follow up meeting

Mr Sheldon wanted to know if ERM was planning to have follow-up meetings to present the results of the specialists' studies. Daniel Rogatschnig stated that there were no follow up meetings planned, however all those who have attended meetings can be sent all the relevant documents.

4 WAY FORWARD

Muller Coetzee of ERM told the attendees that the meeting minutes would be forwarded to them. He also encouraged them to take comments sheets and send in any other comments they might have to ERM.

5 CLOSURE

The meeting was closed and Muller Coetzee thanked all present for their active participation and valuable input.

Meeting
minutes

Table 1 List of Attendants

Name	Organisation	Position
Mzondile	Chris Hani D Municipality	Environmental Control Officer
Ayanda Mgxasha		
Phumlani Thomas		
Sheldon	Chris Hani D Municipality	Community Development Officer

PUBLIC MEETING HELD IN MIDDELBURG ON 28 AUGUST 2008

Meeting
minutes

Environmental
Resources
Management

Subject/Ref The proposed upgrade of Transnet Railway Line from
Hotazel to the Ports of Ngqura and Port Elizabeth

Venue Town Hall, Market Street, Middelburg

Date of Meeting 28 August 2008

Present Community members and government officials

Distribution To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. He introduced himself as well as the other consultants accompanying him Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultant; Daniel Rogatschnig and Janet Mkhabela, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He also encouraged the audience to feel free to speak in their own languages (isiXhosa, English and Afrikaans), to ask for clarity when they do not understand and to use the opportunity to make comments and to ask question.

Janet Mkhabela of ERM explained to the attendees the stakeholder identification process for this project.

2. PRESENTATION

Daniel Rogatschnig of ERM gave the presentation of the key elements of the proposed rail upgrade/ refurbishment as well as the EIA process. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Scarce water resources

Zonke Noncedo Speaker of Parliament raised a concern about the scarcity of water resources in the areas of Rosmead and Middelburg. She wanted to know how Transnet is going to deal with this challenge during construction. Saai Zaayman assured the Speaker that if the weather conditions permit (it rains) the project will not require too much water. In case where water cannot be easily accessed, Transnet will negotiate with the neighbouring farmers or use water trucks.

3.2 Sanitation facilities

Meeting minutes

Zonke Noncedo explained that government has been trying to eradicate the bucket system in the Eastern Cape and the creation of labour camps may restart this problem. She wanted to know Transnet's plans for the provision of sanitation facilities in the campsites. Werner Petrick explained that the legislation has set out strict construction camp regulations and these include provisions for sanitation services.

3.3 Recruitments

Zonke Noncedo wanted to know who would be recruiting workers for Transnet. She suggested that Transnet might use the municipalities to drive the recruitments. Werner Petrick explained that all recruitments would be done by a recruitment agency and tenders would be done by Transnet.

3.4 Social ills

Christian Joosten wanted to know how Transnet plans to mitigate possible increase in social ills related to labour camps (such as increase in HIV infections). Daniel Rogatschnig responded that a social baseline was underway and that the team has a social specialist who would design mitigation measures for the social impacts in the Environmental Impact Assessment. Muller Coetzee stated that all Environmental Impact Assessment have an Environmental Management Plan which outlines the likely impacts and mitigation measures.

3.5 Impact of manganese dust

Xolile wanted to know the impact of manganese dust on people living adjacent to the railway line. Werner Petrick explained that manganese is classified as a hazardous chemical; however, in this instance it would not be hazardous to anyone during transportation. He continued to explain that manganese is hazardous to humans during its handling (for example mining and loading it). A dust study has been commissioned to make sure that the manganese is not going to be hazardous to human health.

3.6 Impact on the electricity supply

Mzwandile wanted to know the impact of increased rail traffic on the electricity supply. Saai Zaayman explained that there would not be any negative impact on the electricity supply; this was proven during an electrification study. Hotazel and the section of the line between De Aar and Kimberley are the only areas that are going to need any electrification.

3.7 Maintenance of service roads

Mr Derrick Handley wanted to know who is responsible for the maintenance of access roads. Saai Zaayman responded that Transnet is only responsible for the maintenance of its service roads; all other roads are the responsibility of provincial authorities.

3.8 Impact of vibrations

Meeting minutes

Estah Waka wanted to know the potential impact of vibrations to houses adjacent to the railway line. Werner Petrick explained that a vibrations study is being undertaken to measure vibrations and determine the possible impacts.

3.9 Endangered wildlife

Bradley Gibbons from the Endangered Wildlife Conservation was concerned about the impact of increased train traffic on birds (breeding next to the line) and tortoises (crossing the line). Daniel Rogatschnig explained that numerous specialists have been engaged to undertake these studies including a zoologist, ecologist and many others. Werner Petrick suggested that Daniel Rogatschnig should keep in touch with Mr Gibbons. Both parties agreed to this resolution.

3.10 Transnet former employees

Christian Jooste wanted to know if any provisions are going to be made for former Transnet employees to work on this project. Werner Petrick responded that he could not speak on behalf of Transnet but he would forward the suggestion to Transnet for its consideration.

3.11 Construction schedule

Derrick Handley wanted to know how long construction of each loop would take. Saai Zaayman stated that construction time would differ based on the project area, it is predicted that construction of each loop will take between three to five months.

4 WAY FORWARD

Muller Coetzee of ERM told the attendees that the meeting minutes would be forwarded to them. He also encouraged them to take comments sheets and send in any other comments they might have to ERM.

5 CLOSURE

The meeting was closed and Muller Coetzee thanked all present for their active participation and valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

28/08

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Wilson Meara DONE ✓			073 2703951			Evolution 1939 Kunhonzame
Mr. Fuzairi DONE ✓			074 48431410			A92 NEW REST Middelburg
MANTLE J. Cota B. Simons DONE ✓			086 045 4403 018 389 8780			X04 Dammien 2169
B. Simons DONE ✓			078 389 8780			46 Newloc Kosmo
Kousra KUGH DONE ✓	KHUBUMANI	Chair person	078 488 2673		11 MoBo.	11 MoBo STR.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Mbbleburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DONE ✓						
M.P. Ndzama			08295790		130 KOF-VA Rosmead 5900	→
REV. XC MBEUBE DONE ✓	SANDT - C.P.M	C.P.M	0724459208 0836371161	0498423063		15 STOCKENS TRCOOM Middenzand ETC 5900
F. VENTER. ✓	Regions. Rosmead, Peyret		0498429640 0834345925	0498424643.		HOUSE 72. ROSMAD,
DONE ✓ C. A. Sammy Catherine Ado	IFM. CONSUMER. MIDDELBURG.		0498423899 08291515091	0498423899	@ e.cmbrgregion@do.org.za.	130 Rosmead

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Slisje Gietari Gietari						Itames lou
Done ✓						
Mouvie Swants						r28 New location Kopanead
Done ✓						
Hanna Botha						NB 4E Rosmead.
Done ✓						
Tot Silverste						NB 119 Rosmead
Done ✓						
Isak Swants						2 Dld location Rosmead -
Done ✓						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Geohardt. Beers. DONE ✓	Land Owner.	—	0722469051	0491 8423340.	—	Posbus 592 Middelburg. 5200.
SAM FER DONE ✓	TFR	MANAGER	0832843619 051-2482565	011-7749224	SAM.FER@TRANSNET	P.O. Box 255 Bosman.
Nicole PERGO. DUBOIS DONE ✓	()		07225879005		—	KOSMEND 5900
TATA Mokoena DONE ✓	—	—			—	KOSMEND 5900

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Michaelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
<i>Done ✓</i> TRENDA MOTO			0736384335			16 Noble street
<i>Done ✓</i> NIKOEWEN PELLCO			0729579005			130 KORTSTRAAT ROSMENA 5900 MIDDENBURG/ETC

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

M. J. J. J. J.

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Donah Makweng Done ✓						8. Rosmead Dunakaei
Cilla Swout Done ✓						8 Rosmead
Cira Bowle Done ✓						170 Rosmead
Roberta Bowline Done ✓						121 New location Rosmead
Elsie Perker Done ✓						Stagtenhuis

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
* Mouira Niswan						120 Rosmead Kort-Straat

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
MR DONALD SMILES Done ✓	DEMOCRATIC ALLIANCE	MEMBER OF E.C. PROVINCIAL LEGISLATURE	0834493408	049-699244	dsmls@ecleg.gov.za	P.O. Box 71 Middelburg, EC 5900
MRS CAROLINE JAN TIES Done ✓			083 581 6367			99CETjwne Street Kwa-Nongame Middelburg E/C 5900
MRS. C.E. MILES Done ✓	DA INKUBA YETHEMBA Mun.	Councillor	083 4603 714	049-842 3899	eunburgcape@ region.dor.01920	P.O. Box 71 Middelburg EC 5900
MR WILFRED SINGENI. Done ✓	A.N.C	MEMBER ANC Youth League	-	-	-	27 SHELL COMPANY House Rossmers 5900
MR & MRS Dorack Staudley Done ✓	hand Overn	Overn	0498424631	-	-	P.O. Box 8 Middelburg S 5900

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middleburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
^{DONE} Katy Appel	Komitee	lid	0784287367			133 Koutskraat
^{DONE} Erralize Botha			082679689			148 Nainelocassie
^{DONE} Belia Swarts			0738292331			52 Kuue lokasia
^{DONE} Hicksona Nea.	Rosmead.	Chairperson		Cell 082 5859 051		P.O. Box 69. Middleburg.
^{DONE} Katie Bosman	Rosmead					
^{DONE} Maria Bergoo	Rosmead					

Rosmead Huis
NO. 15

Award NO. 22

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Middelburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Miss Karin van Zyl Done ✓	Private		072 419155	049 8424640		HOUSE NR 72 ROSMERD P.O. Box 576 Middelburg EC 5700
Miss Ascanda M Baleri Done ✓	Rosmead Committee	Youth	073 974602			121 New location Rosmead
Mrs L. T Zantsi Done ✓	Rosmead Committee	Member	072 702749			Motherwell Rosmead
Mrs Nobantu Maka Done ✓	Rosmead Committee	Member	073 3944 998			Kortstraat
Mrs Noluntu Mbengo Done ✓	Rosmead Committee	Member	073 8567419			Motherwell.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Molburg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
None Mrs. P. Chabezi	Police office	Admini strator	088 464 3315 Volcomal	049 8423394		1 Cetyuwe Str Kwa-Nongoma
None I. C. F. F. F.	landboune		0498421 208.	—		Box 532 Molburg 5902
None IRENE DUBA	Museum		073259 1217. Volcomal	049-84 213310		
None MR M. Daka	community Rosmead		0738403 580	—	—	132 kort str Rosmead Molburg 5900
None Yousa Solani	Parliamentary	Admin	083 2488 015	049-842 4435	—	Center of Brund & Mentros Street.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

M - burg

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
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✓ Done Mrs N.R. Smitz	Imvumba Jitamba Municipality	Clk	07297467 95	049-842 1796	- -	40 Ntshungu Ave Kurt-Norwane
✓ Done Rev. M.L. Nicola	ANGLICAN CHURCH	Priest	0732711850			
✓ Done Mr. J. Jansen	Transnet	Chief Officer	0832813616	051684487		Ntshungu Street Rosedene-Twin
✓ Done BRADLEY CARROLLS	ENDANGERED WILDLIFE TRUST (SOUTH AFRICAN CRANE WORKING GROUP)	FIELD OFFICER	0498421116 0825665803	086049 8421116	bradley@ ewt.org.za	Po Box 40 Middelburg, EC 5900

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

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Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

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Bonkimbisi Maseti Done ✓			0137753230 049-8424572			S1 MACGONISU STREET KWA-NONIZAMA
Singile Gweza Done ✓			01533253			447 Magonis Road, Kwa-Nonizama Middelburg E/C
Mkwanjike Sinyemba Done ✓			0783898780			201-Street Houses Kosmanga
C.S. Sooste Delete the one on system	MIDA SOFTWARE COMMITTEE	Co-Chairman	0734068618 Tel/Fax 6409-8423620			55 SMITHS TR. MIDDELBURG E/C 5900

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

M-bung

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Ashley M Done ✓			072957905			Koef Str Rosehead
Done ✓ Nosopho Gweza	ISGM	Councillor	083 2402 1554 083 2402 1554	07386 07970		9 September Street
PETER Call Man Done ✓			083 2433 2518			9 GONWINE AVE MIDR08
8. Kobasa Done ✓	Woman Forum	Adm Member	0732133651			91 Raude Str

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Mbung

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
Done ✓						
Tim Siyemfui Done ✓						GRITEX ROSEMEAD
MONGERI TSHOKOSHA Done ✓	MONKAUSE PROJECT	EQUIPMENT				SILVER TOWN ROAD
* Markheleladzide Johnson Sthanga Done ✓		???				12th Miller Town
LONWABO NYON Done ✓			0738326672			1 CETHIVE ST
ZONKE MONCEDO Done ✓	TUKUBA YETEMBEU MUNICIPALITY	SPEAKER	078 190 8835	049 842 3864	zankemoncedo@yahoo.com	Dr Smid street Nuddellburg CAPE 59100

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

M. D. D. D.

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M. M. M. M.	QINACLO Office	Ag. in-charge	0738141757	0498142339		1621 gwind
✓ None Booyser	J Booyser Home Bldg Building Contractor	Entrepreneur	0736983778			112 Grens Bokl AAN
V.A. Bokveld None	Community Member	INXUBA JENIWA	0498421028			291 Old location
None N. Quak	W. L.	INXUBA	0785975608			473 New RBT
None						40 Ngqora Street Kumantobane Middelburg 5900
ST M. M. M. M.	Community	INXUBA	08369448	115		

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

M. - 1000

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
WILFRED Sinyemfu None			078 3098 780			27 SHELL HOUSE ROSMERK 5900
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PUBLIC MEETING HELD IN DE AAR ON 29 AUGUST 2008

<i>Subject/Ref</i>	The proposed upgrade of Transnet Railway Line from Hotazel to the Ports of Ngqura and Port Elizabeth
<i>Venue</i>	Multipurpose Centre, Malai Camp Road, De Aar
<i>Date of Meeting</i>	29 August 2008
<i>Present</i>	Community members and government officials
<i>Distribution</i>	All present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email

1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. He introduced himself as well as the other consultants accompanying him Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultant; Daniel Rogatschnig and Janet Mkhabela, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He also encouraged the audience to feel free to speak in their own languages (isiXhosa, English and Afrikaans), to ask for clarity when they do not understand and ask question.

Janet Mkhabela of ERM explained to the attendees the stakeholder identification process for this project.

2. PRESENTATION

Daniel Rogatschnig of ERM gave a presentation of the key elements of the proposed rail upgrade refurbishment project as well as the EIA process. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Poor maintenance of service roads

Hennie Greef raised his concerns regarding the poor state of public roads along side the railway line especially now with the proposed increased traffic. Mr Greef wanted to know who is responsible for the maintenance of these roads. Werner Petrick responded that he was not sure who is responsible for the road maintenance but the question would be referred to Transnet for their consideration.

3.2 Local sub-constructors

Mr K Heyns wanted to know if Transnet would provide the opportunity for small sub-contractors to work on the project. He commented that sub-contractors never benefit from these projects since 80% of the profits are taken by the primary contractor who leaves De Aar once construction is complete and never gives back to the area. Muller Coetzee responded that an open tender system would be used to appoint a contractor for the project. He assured Mr Heyns that his concerns were noted and would be forwarded to Transnet for their consideration.

3.3 Location of power lines

Mr Franscois wanted to know the proposed location of the power lines. Saai Zaayman explained that no power lines are going to be constructed, as there is adequate power supply for the trains on the existing railway line. A small sub-station is going to be constructed in Emil.

3.4 Project schedule

Mr C Jafta wanted to know the project schedule. Saai Zaayman explained that construction time would differ based on the project area, for now though it is predicted that the construction will take between three to five months for each loop to be completed.

3.5 Permanent jobs

K Heyns wanted to know if any permanent jobs are going to be created by the project. Saai Zaayman explained that only a few permanent jobs would be created by the project, in Port Elizabeth and in the mining sector in Postmasburg.

Mr Heyns also wanted to know if there are going to be more jobs in De Aar because of the increased rail traffic. Saai Zaayman that there would not be any jobs created in the area as the trains would simply be passing through the town.

3.5 New Smelter in De Aar

Mr Franscois stated that there was a new smelter to be built in De Aar and he wanted to know how that smelter fits in with the Transnet project. Werner Petrick stated that HMGJV and Transnet were not aware of this project and they will do a follow up.

4 WAY FORWARD

Muller Coetzee of ERM told the attendees that the meeting minutes would be forwarded to them. He also encouraged them to take comments sheets and send in any other comments they might have to ERM.

5 CLOSURE

The meeting was closed and Muller Coetzee thanked all present for their active participation and valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

22/08
De Aar N. Cape

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C.W. Smit None	EMTHAMBEZI Municipality	TOP / ISO OFFICER	053-651 0925	053-651 0905		

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

Dr Aor

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
M S AM F.F.F <i>Done</i>	✓ F.R PISC MANAGEMENT	MANAGER F.H.F.S.	051-408 2555 0852843619	011-7749221	SAM.F.F.F@MANAGEMENT	P.O Box 355 Blaarwater

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

August 2008

ATTENDANCE REGISTER

De Aar

Title, First Name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
<i>Done</i> Karel Heyns	<i>HEYN'S CIVIL CONSTRUCT.</i> Trade Vendors 110 Pretoria	Director	0713882506			7165MPS STREET De Aar 7000
<i>Done</i> Ms Humbulani Nuhangane	DTEC	EO	0536310616	0536310343	hnuhangane@dc.ncape.gov.za	47 Church Street, De Aar 7000
<i>Done</i> Francis Talspeld	Euthangeni Municipalitiy	Director: Infrastructure and Housing Services	0828016869	0536311518	talspeld@euthangeni.co.za	Porbeus 42 De Aar 7000

PUBLIC MEETING HELD IN GREENPOINT ON 10 SEPTEMBER 2008

Meeting
minutes

Environmental
Resources
Management

Subject/Ref The proposed Upgrade of Transnet Railway Line from
Hotazel to the Ports of Ngqura and Port Elizabeth

Venue Greenpoint High School, Redwood Street, Kimberley

Date of Meeting 10 September 2008

Present Community members and government officials

Distribution To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. Muller Coetzee introduced himself as well as the other consultants accompanying him, Werner Petrick, Project Manager of HMGJV; Saai Zaayman, Railway Engineer of R & H Railway Consultant; Daniel Rogatschnig and Daphne Hartney, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He asked whether everyone understood Afrikaans. All those present said they understood and so the meeting was conducted in Afrikaans. He encouraged people to ask for clarity when they do not understand and to ask questions about the project being presented.

2. PRESENTATION

Werner Petrick of HMGJV gave the presentation on behalf of Transnet. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Job Creation Opportunities and Community Benefit

Mr van der Linde wanted to know what benefits the community would derive from the Transnet Project. Werner noted that there would be short-term jobs available and that job opportunities would be limited. He added that it would not be a large construction project. He added that he was not certain of the long-term benefits if the Project and that he would find out from Transnet who has their own policies about such matters. He committed to giving feedback through the minutes of the meeting.

Saai Zaayman provided some detail on the types of contracts that will be required for the Project, namely:

- Foundation
- Building the rail line

Meeting minutes

- Electrification of the line
- Electrical signalling

Other jobs that will be required are:

- Removing trees
- Making the area and rail safe

A community member wanted to know how long people would have to wait before knowing about jobs.

Saai Zaayman indicated that it would take approximately three to six months to construct a loop. More jobs will become available again in a few years time for operation and for maintenance.

Mr van der Linde said that local people should have a say in who gets employment on the project.

Werner Petrick's response was that the joint venture is managing the Project and acquiring contracts. The joint venture will contract workers and companies and put out the tenders. He added that clauses will be included in company contracts to ensure that they employ local people. An employment agency will also be hired to facilitate this for the joint venture.

Mr van der Linde was sceptical saying that companies have in the past come to the area promising that 90% of locals will be employed. However, only 5% were employed.

3.2 Impact on Ronaldsvlei

Birds

Mr van der Linde wanted to know how the birds at Ronaldsvlei would be affected.

Saai Zaayman indicated that he knows Ronaldsvlei as a settlement and he did not know that there is a vlei. He noted that the vlei is close to the train line. He stated that there would be no chemical impact, only dust impacts. There is not much work to be done there.

Dust

Lesedi from the Department of Agriculture wanted to know about the impacts of dust settlement on Ronaldsvlei.

Werner Petrick's response was that where there is dust settlement the roads will be kept wet. He added that this would not be a problem during the operational phase of the Project. He indicated that further impacts would be identified by the dust specialist. He added that dust from the manganese would not be a problem during the transport thereof.

3.3 Safety at Crossings

Meeting minutes

Mr van der Linde inquired about the safety measures that will be applied at the railway crossings. For example, safety signage should be put up at the crossings.

Saai Zaayman said that Transnet has a safety programme in place which will be adhered to during the Project. In addition, the necessary warning signs will go up when the time comes. Werner added that as consultants for Transnet they were not at liberty to make promises on behalf of Transnet, but that they will take people's concerns to them.

A concerned resident said that there used to be a fence between the railway line and their houses but it was stolen. It is not safe without a fence and she requested that Transnet put up a new fence.

A resident said that if the last fence was stolen it is likely that the next one would be too. She added that walkways at crossings might help.

3.4 Accommodation for Workers

Mr van der Linde wanted to know how far workers would have to travel /walk to get to the work site.

Saai Zaayman indicated that a camp would be erected so that workers do not have to travel far to get to the work site. There will also be transport available for workers since the sites of work will change.

3.5 Authorisation and Implementation

Authorisation

Someone wanted to know whether all authorisations from the authorities and government departments had been obtained.

Muller responded that the authorities have approved the process which is now being rolled out. The authorities will have to approve the scoping report, thereafter the Environmental Impact Report. The process is still in the early phase.

Project Constraints

The same resident wanted to know what constraints the project faces, if any.

Werner Petrick's response was that the main constraint is time. The quicker the project can start the better. The roll out of the EIA will identify further constraints.

Project Start-up

Hendrik wanted to know how the community would be informed of the project start up.

**Meeting
minutes**

He was told that the Project is approximately halfway through. Approval still needs to be obtained for the EIA. People will be informed of the final decision. Shortly after approval and if there are no appeals, construction can begin - hopefully in July or August 2009.

3.6 Road Upgrades

Lesedi wanted to know who will upgrade the roads - Transnet or the Department of Roads.

The response was that there will be access roads to the site. There are currently roads that go to the crossing. Construction of the roads will go out on tender.

3.7 Benefits for Local Business

Jerry Williams, a former councillor, alerted people to the fact that the State will benefit tremendously from the project. He wanted to know if the community will benefit in the long term, for example through the donation of a hospital, or whether there will only be short term work.

He added that big companies will be involved and getting all the benefits. He would like to see local business benefiting as well or being created, rather than people just being workers again. He encouraged people to take create businesses so that they can provide Transnet with services and benefit in the long term.

He challenged people to take initiative. He suggested that instead of Transnet contracting large firms to transport all the manganese, small entrepreneurs be contracted for that purpose.

The stakeholder engagement team agreed that it is up to local communities to take the initiative in establishing local businesses and not wait for Transnet to create all the benefits.

4 ISSUES FOR CLARIFICATIONS

4.1 Reopening Beaconsfield Station

Pieter wanted to know if there was a chance that Beaconsfield Station would be upgraded and reopened.

The stakeholder engagement team could no give him an answer since it was not part of the current project.

4.2 Responsibility for Employment

Mr van der Linde wanted to know who would be responsible for employing people.

**Meeting
minutes**

Muller Coetzee indicated that Transnet and its contractors would be responsible.

5 OTHER MATTERS

Councillor Pieterse stated that people have a problem with Transnet because of the process they follow in awarding tenders. Tenders are advertised nationally and they are sometimes awarded to people who are not from the area or even from Kimberley. These contractors have a history of contracting staff who are not from the area. He thanked the stakeholder engagement team for coming out to explain the project to them but he has no expectation that Transnet will employ local people in the Greenpoint area and surrounds.

Councillor Pieterse noted that Greenpoint is poverty-stricken and people do not have enough access to livelihood opportunities. He asked that ERM sponsor one or two children to study further and put something back into the community.

6 CLOSURE

The meeting was closed at 19h00 and Muller Coetzee thanked all for their active participation in the meeting and for their valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

Green Point, Kimberley

ATTENDANCE REGISTER

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Elie Williams	Sunbeba/S. Teacher		8511050			78 Lennox road Street
E.D August	Grampoint		072 435 2008			76 Kemanwood Street
F. PRATER (MS)	Soil Plagte Town Municipality Planner		053-830-6356 079-524-3748		fphatedi@soilplagte.org.za	
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Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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Jane Jacobs Arling Pello	Greenpoint ANIC					181 Bloodwood / Greenpoint 848 Greenpoint Diamond Park
Maureen Sesedi	ANC Womens League		0729194523			37 Redwood 33

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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1. Bob					3 Chestnut	
S Mafinis			07165082857		7 Wondarkboom	
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Lincoln Eberhays	TD		-	-	Theedwoodst	

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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Breuder Frank	Nonnan Agant Crivne					13 Danonkhule a Point
R S Kock						34 DUTCH REFORM ROAD
NORMAN VIRALTYN						13 MARGUERITE
SPAROL						531

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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Pamelle Abel			0781516609			30290 Sederboom
ANNAISIE MATHEUS						30276 Melkbos
Eunice Peters			0733 001962			30343 Serryboom

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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Martha Koopman						30066 JAKK
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Lincoln GELDENHUIS					15 Beauland Avenue	

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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S G-Omphant	Sol Plantie GREENPOINT		0840473185			27 deysnekry STR GREENPOINT Kumberley
R. Olyphant	Greenpoint		0840473185			27 Liphako str Greenpoint Kumberley
K. STEYN	GREENPOINT		0760909009			29 Liphako STR GREENPOINT KIMBERLEY 8301

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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Deidre Methu	Greenpoint		0738851375			6 Umdoni Street
VICTOR APPIE	GREENPOINT		0732246854			84 LERMON WOOD

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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Elize Maloke	Greenpoint		0786853826			30209 Soga Greenpoint Kimberley 8301
Patricia	Phivial					10 Beacon Twa Green Point Kimberley 8301
Cecilia moeng	GreenPoint		0734 99302			31088
Naomi Mathews	Green Point					B 46

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

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EMBARAKH			073116638			9 Horse wood
Morgan Tashlo			084 734665			Benben Tashlo P.O. Box 616
Joyce Muyender						2 Botlebrush.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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Rachel Stander						
Gloria			076215707		244975	Beekbank 100070 TACK AVENUE
D.P. Moshwini						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

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MEN: Sylvia Van Nel	ANC Women's League					08 KEMPHWOOD GREENPOINT KIMBERLEY
Rebecca Methu	—	—	073 125 6155			6 Dundon 1
FRENCH			072915712548			37 REDWOODS
J. WILKINSON	—	—	—			15 MAUCU AVE GREENPOINT

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
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CAROL COETZEE			05396511229			5 OFF MARULA STR
Johanna V/D/Linde			0840389839			5 OFF MARULA STR
Driek Matsamai			0768155554			98 Redwood Str

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
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Ja						543 Thomson Str.
B. Mosele			0820441903			374PHUKUSIR Green Point
R. Visagie						32 Prinses Road.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
MR. THJ S. MATHU.	GREENPOINT		0835883798			06 UMBORNI S.A.P.
S. Matthews	Green Point		0736563131			to Bloodwood assessment
K. Mabupi	Greenpoint		073110942			31130 Daimontspark
PHILLIP						2 Bloodwood. 13 Danner Thuli
Elizabeth Swan						

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
EUGEN PETERSEN / APPER FREDRIK JACOBUS			0533428115			55, Marula Shakes 12 NYAKA STREET
MR MENCHE TERRY WILKINS MR			0727493760 0832921447			102 Thompson Shanties 7 MINGU AVUE
MR RUTH WILKINS			0538511050			7 MINGU AVUE

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
DORRICH MATHIESEN LG			07846 22992			5 MARULA SHACKS
S. Visagie			073 7599109			12 Dutch Reformation
T. Olivier			0162 81687			10 Kuterweform STR
P. LEONARD			078 1315686			19 VANDERL. STR.
Walter V/D LINDE			053 8511050			16 MAGUSU STR.

PUBLIC MEETING HELD IN BEACONSFIELD ON 11 SEPTEMBER 2008

<i>Subject/Ref</i>	The proposed Upgrade of Transnet Railway Line from Hotazel to the Ports of Ngqura and Port Elizabeth
<i>Venue</i>	Du Toitspan Primary School, Cnr Central and Hercules Street, Beaconsfield - Kimberley
<i>Date of Meeting</i>	11 September 2008
<i>Present</i>	Community members and government officials
<i>Distribution</i>	To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email

1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. Muller Coetzee introduced himself as well as the other consultants accompanying him, Werner Petrick, Project Manager of HMGJV; Daniel Rogatschnig and Daphne Hartney, Environmental Consultants from ERM.

Muller Coetzee encouraged the stakeholders to be interactive and listen with an open mind. He asked whether everyone understood Afrikaans. All those present said they understood and so the meeting was conducted in Afrikaans. He encouraged people to ask for clarity when they do not understand and to feel free to ask questions about the project being presented.

2. PRESENTATION

Werner Petrick of HMGJV gave a slide presentation on behalf of Transnet of the proposed upgrade of the rail between the Ports of Ngqura and Port Elizabeth and Hotazel as well as the refurbishment of the rail line between De Aar and Kimberley. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

3.1 Traffic on the Loops

Cornel de Villiers wanted to know how much traffic will pass on each loop. Clarification was also sought on the length of and the frequency of trains.

3.2 Electricity requirements

Cornel de Villiers inquired as to whether Transnet will be able to get enough electricity to power the trains since the country is already in short supply of electricity.

No additional electricity will be needed to run the trains, as the existing substations are enough supply. A small sub station will be constructed in Emil for the refurbished part of the line.

Meeting minutes

No additional electricity will be needed to run the trains, as the existing substations are enough supply. A small sub station will be constructed in Emil for the refurbished part of the line.

Cornel de Villiers indicated that he is going to build a factory in Modderriver which is sensitive to sudden power cuts in the electricity. He wanted to know how Transnet's use of electricity would affect the factory.

Ettiene Schoeman asked how certain Transnet is that they will secure the required electricity supply for electrification of the rail. He added that if this was not secured, goods will eventually end up on the roads and they are too heavy for the roads.

The comment has been noted and will be forwarded to Transnet for their consideration.

3.3 Project Benefits

Residual Benefits for Industry

Cornel de Villiers commented that the Project will be beneficial to the Northern Cape industry. There are many grain farmers and if there were improved rail transport in the area, it will benefit their business.

Job Opportunities

A resident enquired about job opportunities.

The response was that Transnet will aim to appoint an employment agency to employ local people. As a result of several meetings raising the lack of local employment in development projects as a concern, it will be recommended to Transnet that there should be preferential employment for local people as well as skills development.

It was suggested that this project link up with the Northern Cape government's Extended Public Works Programme (EPWP). Their aim is to train people to work on infrastructure development projects and help them create jobs.

The suggestion has been noted and will be forwarded to Transnet.

3.4 Transnet Efficiency

If Transnet does not perform efficiently, for example if it does not stick to its train schedule, users of the rail service are likely to revert to road trucks to transport their goods. However, it was noted that this would further aggravate the situation of South African roads being congested. Concern was also expressed about the impact of road trucks on the tarred road surfaces and the difficulty of maintaining the roads.

The comment has been noted and will be forwarded to Transnet for their consideration.

3.5 Dust Impacts

A resident wanted to know how much dust comes from manganese ore.

Werner Petrick responded that although it is classified as a hazardous substance, it is only a problem if one should someone takes it in by mouth. However, it is more likely to be linked to processed manganese being inhaled. It was noted that no manganese dust will result from transporting manganese. However, handling it (putting it on and taking it off the trains) is a bit more problematic. A dust specialist has been appointed to verify whether a significant amount dust will be produced in handling and the necessary precautions will be put in place.

A resident observed that latent impacts are being experienced from asbestos and that this was only discovered very much later. Since one gets dust settlement from manganese, the impacts may also only show up later and for this reason would need to be monitored.

The suggestion has been noted and will be communicated to Transnet.

3.6 Noise Impacts

A resident asked how the noise and vibration from the trains were going to be controlled. She added that if you live next to a railway line, you must expect noise. One cannot really control the vibrations. Most people living next to the railway line have RDP houses and they cannot afford to live elsewhere.

A noise and vibrations study will be undertaken to determine the impacts.

3.7 Heritage Sites

A resident cautioned that the heritage sites be protected. She recommended that the stakeholder engagement team talk to David Morris from McGregor Museum. He is a local archaeologist who is well acquainted with the heritage sites. She suggested that Steve Ludnerstedt (083 732 3189) also be consulted since he is a local war historian who also knows the battlegrounds and Boer War sites.

An archaeology study has been commissioned for heritage resources.

3.8 Private use of the Railway

It was suggested that Transnet open the railway lines to private entities so that they do not have to rely only on the roads to transport their goods. This will result in more income for Transnet and it can make Transnet more efficient, particularly in terms of scheduling. It will reduce road traffic. This is already happening in the UK, USA and Australia.

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The farming industry can also benefit from getting their produce out to the market by rail. For example goods destined for China can be sent to Port Elizabeth by rail. Another example is that the industrial development zone at Coega will need to transport 800 000 tons of soya beans and the railway line can be used for this.

The suggestion has been noted and will be communicated to Transnet.

3.9 Upington Business Hub

It was noted that a business hub is being established in Upington and that Transnet's rail development is likely to have an impact on the Johannesburg, Cape Town and coastal lines.

3.10 Need to look at the big picture

Concern was expressed about the potential impact on road transport companies if Transnet intends to attract more container transport by rail. If Transnet's focus of rail Transport between Kimberley and PE/ Ngqura is on Manganese, this is likely to negatively affect transport of other commodities by rail (e.g. grain). It was also noted that plans are under way for export of Sugar beet from the region between Rosmead and Cookhouse and that this initiative is likely to need access to rail.

Concern was also expressed about the export of manganese ore rather than a value added product in the form of steel produced at or close to source and along the rail transport route

4 CLOSURE

The meeting was closed at 19h00 and Muller Coetzee thanked all present for their active participation and valuable input.

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

*Det Toits van
Beaconsfield, Kimberley*

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
MR THEMBA RANGO	COMMUNITY MEMBER	—	0538721600 0839568694	053 8720799	—	PO Box 2503 KIMBERLEY 8300

Proposed Upgrade of the Transnet Railway Line between Hotazel and the Port of Ngqura

September 2008

ATTENDANCE REGISTER

Dr Tokpaw

Title, Firstname & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Email Address	Postal Address
FE MANNER CAR.	Son RUMATJE Municipality	COUNCILLOR	0538324570 0824539959	053 8324570	not.	Warrens Rd 11 Market St. Memorial Road Kimberley
E. SCHOEEMAN	GMK	MANAGER LOGISTICS (RPIK)	053-278 8227 082 906 1473	053 278227	e.schoeman@ gmk.co.za	P.O. Box 47 Douglas 8730.
C DE VUIERS	GMK LTD	MANAGER NEW BUSINESS	053 2988220	053 012 0231	cdevuiers@gmk .co.za	Box 47 Douglas 8730

PUBLIC MEETING HELD IN HOTAZEL ON 22 SEPTEMBER 2008

Meeting
minutes

Environmental
Resources
Management

Subject/Ref The proposed Upgrade of Transnet Railway Line from Hotazel to the Ports of Ngqura and Port Elizabeth

Venue Hotazel Recreation Complex, Kupferburger Circle, Hotazel

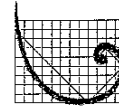
Date of Meeting 22 September 2008

Present Community members and government officials

Distribution To all present at the meeting

Block A, Silverwood House
Silverwood Close
Steenberg Office Park
Steenberg, 7945

Telephone
Facsimile
Email



ERM

1. WELCOME AND INTRODUCTION

Muller Coetzee of ERM facilitated the meeting. He introduced himself as well as the other consultant accompanying him, Werner Petrick, Project Manager of HMGJV.

He encouraged people to ask for clarity when they do not understand and to ask questions about the project being presented.

2. PRESENTATION

Werner Petrick of HMGJV gave a presentation of the key aspects off the proposed rail upgrade/ refurbishment. The presentation is attached in annex A of these minutes.

3 QUESTIONS AND OPEN DISCUSSION

Mr Rudzani Mudau of BHP Billiton mentioned a noise study that was conducted by BHP Billiton at Mamathwane, where they are planning an extension to the existing mine facilities. It was established through this assessment that the mining activities would have a significant impact on the adjacent Transnet houses situated on Transnet property. It was also noted that given the increased traffic anticipated as a result of the proposed mine expansions at Mamathwane, that it was expected that the rail loop at the site would need to be extended. Mr Rudzani undertook to forward a copy of the noise report to ERM.

Mr Ben Olivier from the Kgalagadi District Municipality informed the meeting that at least five new mines are due to start up in the area and that it was important to look at the bigger picture.

It was noted that the five new mines include:

- Kalahari Resources, next to Hotazel
- UMK next to Mamathwane

**Meeting
minutes**

- Opposite Mamathwane
- An iron ore mine on the other side of Kathu
- An iron ore mine at Postmasburg

It was noted that this information may be contained in Transnet's Feasibility Study but that ERM should check.

Concern was nevertheless expressed by Mr Olivier about the fact that these mines make use of road transport contractors and that a significant increase of this traffic is anticipated whilst the roads are not designed for these loadings and volumes and are already showing signs of collapse. It was noted that one of the mines BHP Billiton has 44 trucks running per day from their mine.

Mr Olivier also observed that the increase in mines is likely to result in an increase in demand for rail transport. It was noted that a study is being done by Africon from Pretoria in the form of a Transport Master Plan looking at rail, road and air transport and that this may be relevant to this EIA.

It was observed that the more mines that can buy into the rail upgrade the better, as will be reduce the impact on the roads and make the upgrade project more viable. It was suggested that there should be close liaison between the mines and Transnet.

It was also noted that the DME would have all the information about the proposed mine expansions.

Mr Andries Scheepers a farmer at Silver stream station wished to confirm that the proposed rail upgrade would not have any impact on his farm, where there are rich diamond deposits.

There was consensus amongst the participants that the proposed rail upgrade would be positive for the Northern Cape, but that the benefit would be far greater if a processing plant were to be established in the area rather than taking the resource out of the Northern Cape for processing elsewhere or exporting the raw product.

It was noted that it may not be necessary to establish borrow pits in the area for the rail construction as there is a sufficient supply of crushed stone from the mine overburden and that PPC also has a crusher in the area.

In terms of local job creation, it was noted that:

- Special conditions should be written into the tender documents to ensure local employment
- Tenders should be advertised in the local papers

The meeting closed at 18h00 and Mr Coetzee thanked all participants for their active participation and valuable inputs.

Meeting
minutes

Attendance Register

Name	Organisation	Contact Information
Mr Andries Scheepers	Farmer Silver Stream and educator	0822024133 dscheep@nktk.co.za PO Box 2610 Kimberley 8301
Mr Ben Olivier NOTE: Please copy all correspondence to both e-mail addresses	Kgalagadi District Municipality	0537120548 0537120548 (fax) 0827840261 beno@webafrica.org.za carl@spg.co.za PO Box 1480 Kuruman 8460
Mr Rudzani Mudau	BHP Billiton	0849162179 Rudzani.mudau@bhpbilliton.com 1 Peperboom Ave Hotazel 8490
Mr Mlu.....	Transnet	

Annex A 6

Issues and Responses Report

Table 1 Table of Issues and Responses relating to the EIA process for the proposed upgrade of the Transnet Railway line from Hotazel to the Port of Ngqura

Issues Raised	Commentator(s)	Source	Response
1. PROJECT COST			
What is the estimated cost of the project?	Mzondile, Environmental control Officer, Chris Hani District Municipality; Ms N. Tyabashe-Kesiamang Executive Director: Economic Development & Planning	Public Meeting , Cradock, 27 August 2008; via e-mail 8 September 2008	The overall project cost is approximately R3 billion. The cost of constructing one loop is between R10 and R40 million.
The more mines that can buy into the rail upgrade the better, as this will reduce the impact on the roads and make the upgrade project more viable. Transnet and the mines need to form a close liaison.	Mr Olivier, Kgalagadi District Municipality	Public Meeting, Hotazel, 22 September 2008	Noted
Has Public Private Partnerships been considered by Transnet for this project?	Peter Inman, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	The question will be posed to Transnet.
2. REASON FOR TWO EIA APPLICATIONS			
Why is Transnet making two EIA applications to DEAT?	Peter Inman, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	The two applications are for the containers and the manganese. Application 1 is for all the loops and infrastructure associated with the container requirements. This is a priority and Transnet wish to expedite this application. Application 2 is for the remaining loops infrastructure as well as other activities associated with the manganese ore requirements.
3. PROJECT SCHEDULE			
Over what time period will construction take place?	Condrad Jafta, LED Officer; Cllr Manxiweni	Public Meeting, Cookhouse, 26 August 2008, De Aar 29 August 2008,	Construction time will vary from station to station. The prediction is that it will take three to five months to complete each loop.
4. SOCIAL IMPACTS			
<i>Employment Opportunities</i>			

Issues Raised	Commentator(s)	Source	Response
How will the project benefit the local community?	Mr van der Linde; Cornel de Villiers	Public Meeting, Greenpoint, 10 September 2008; Public Meeting, Beaconsfield, 11 September 2008	This question will be posed to Transnet for further comments
Where will the required 100 unskilled labourers be sourced?	Vusimuzi Dingy, Zola Matusé; N Tyabashe-Kesiamang Executive Director: Economic Development & Planning	Public Meeting, Cookhouse, 26 August 2008; via e – mail 8 September 2008	The 100 unskilled labourers would be sourced locally in the communities closest to the railway line. All the recruitment would be done through a recruitment agency.
Will people who attended these public meetings be guaranteed to getting jobs?	Ayanda Mgxasha	Public Meeting, Cradock, 27 August 2008	Attending a public meeting does not guarantee that a person will be employed for this project, however, in the previous meetings the communities have suggested that all the contact details of those who attended the meetings be forwarded to the recruitment agency for their consideration.
Will the project create permanent employment opportunities?	Zola Thesana and Mr K Haynes	Public Meeting, Cookhouse, 26 August 2008 and De Aar, 29 August 2008	There will be a few permanent employment opportunities created by the project, especially in Hotazel, and in the Ports of Ngqura and Port Elizabeth.
Is the increased rail traffic likely to create more jobs in the targeted areas or stations?	Mr K Haynes	Public Meeting, De Aar, 29 August 2008	No, this is unlikely.
Will the project have any provisions for former Transnet employees to be recruited?	Christian Jooste	Public meeting, Middelburg 28 August 2008	Opportunities will likely exist for people with previous experience in the industry.
Who is going to do the recruitment for Transnet? A suggestion is to use the municipalities to drive the recruitments.	Zonke Noncedo, Speaker of Parliament	Public Meeting, Middelburg, 28 August 2008	During construction, HMGJV will establish a recruitment strategy which will include recruitment agencies to be used by the contractors to appoint labourers. The percentage employment will be done per Transnet policy, which includes advertising in newspapers.
Capacity Building			
Training should be provided for the unskilled labourers before construction commences, so that local people are better equipped to participate and benefit from the project.	Siphokazi Matinese, Mayor of Sundays' River Valley Local Municipality, Phumlani Thomas, Zola Tesana	Public Meeting, Paterson 25 August 2008; Cookhouse 26 August 2008; Cradock 27 August 2008	On the job training will be conducted during the construction period.

Issues Raised	Commentator(s)	Source	Response
Is Transnet investing in capacity building initiatives like training new drivers and investing in related infrastructure (wagons, etc) to meet the new demand?	Peter Inman, Coega Development Corporation; N Tyabashe-Kesiamang Executive Director: Economic Development & Planning	Public Meeting, Paterson 25 August 2008; via e-mail 8 September 2008	Yes, Transnet is investing in new wagons, locomotives and associated infrastructure, as well as the developing the associated human resources capacity to operate and maintain their assets.
Social Ills			
How does Transnet plan to minimise the possible social ills related to the establishment of labour camps in communities?	Christian Jooste	Public Meeting, Middelburg 28 August 2008	Social studies have been commissioned as part of this EIA. The specialist will make recommendations on how to minimise the social impacts. These recommendations will form part of the Environmental Management Plan
5. TENDER PROCESS AND USING LOCAL SUB-CONTRACTORS			
How is the project going to benefit or accommodate small local subcontractors?	Eden August; Ludu January; Mr K Heynes;	Public Meeting, Paterson 25 August 2008; Cookhouse 26 August 2008; De Aar 29 August 2008;	An open tender process would be use and all the interested parties can apply.
Tenders are always awarded to big companies who do not use local sub-constructors. Can special provisions be made in the tender document stating that all principal contractors have to make use of local subcontractors?	Eden August, Mr van der Linde	Public Meeting, Paterson, 25 August 2008; Public Meeting, Greenpoint, 10 September 2008	The suggestion will be investigated. The construction activities are very specialised. There will however be limited opportunities.
6. HEALTH AND SAFETY			
What are the impacts of manganese dust on people living close to the railway line? How does Transnet plan to mitigate this impact?	Xolile; Lesedi, Ettiene Schoeman	Public Meeting, Middelburg, 28 August 2008; Public Meeting, Greenpoint, 10 September 2008; Public Meeting, Beaconsfield, 11 September 2008	Manganese ore is classified as a hazardous chemical; however, there is no evidence that it has any effect on people while it is being transported by rail. Only when the ore is being tipped, stacked, retrieved or loaded is dust generated and if not mitigated properly it may cause problems. Before manganese is transported, it is wetted. A dust study has however been commissioned and the results will be included in the EIA document.
What are the impacts of access roads dust on human health?	Lesedi	Public Meeting, Greenpoint, 10 September 2008	Construction roads will be kept wet during construction and further impacts will be determined by the dust specialist.

Issues Raised	Commentator(s)	Source	Response
Is Transnet going to provide a clinic for the people working on the railway line to test for manganese poisoning?	Ncumisa Magala	Public Meeting, Cookhouse, 26 August 2008	None of the people who will be working on the project will be handling any of the manganese and will not need to be tested.
With the increase in railway traffic there is a possibility of increased rail accidents. How does Transnet plan to combat these accidents?	Thuse Manene	Public Meeting, Paterson, 25 August 2008	The normal signage will be provided, but the EIA study should identify any areas requiring specific attention. The concern will also be passed on to Transnet for their consideration.
Transnet should consider placing reflectors on the sides of the trains to avoid motorist driving into trains especially at night.	Andrew Williams; Mr van der Linde	Public Meeting, Paterson, 25 August 2008; Public Meeting, Greenpoint, 10 September 2008	The normal signage will be provided at level crossing. A separate Rail Safety Regulator process will also investigate these issues.
7. WATER RESOURCES			
Transnet should be aware that there is a shortage of water resources in the areas of Middelburg and Rosmead.	Zonke Noncedo, Speaker of Parliament	Public Meeting, Middelburg, 28 August 2008	The comment has been noted. See also comment below.
Where will Transnet access water where it is scarce?	Siphokazi Matinese, Mayor of Sundays' River Valley Local Municipality	Public Meeting	Water is needed for two purposes in this project, for human consumption in the labour camps and construction. For areas where water is scarce it will be tanked in or negotiate with the closest farmers.
8. ELECTRIFICATION OF THE RAILWAY LINE			
How will the cost and availability of electricity affect the project?	Andrea von Holt, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	There is an increase in electricity demand, as more trains will operate on the line. However, the studies conducted to date indicate no supply problems. If Eskom experiences supply constraints this might affect the number of trains operating.
How is the increase in rail traffic going to impact on the electricity supply in the province?	Cornel de Villiers; Etienne Schoeman	Public Meeting, Middelburg, 28 August 2008; Public Meeting, Beaconsfield, 11 September 2008	There will not be any impact on the electricity supply of the province caused by the project. This was proven during the electrification study. There are only two sections of the line that will need extra electricity, namely in Hotazel and the section between De Aar and Kimberley.

Issues Raised	Commentator(s)	Source	Response
Where are the new powerlines going to be located?	François	De Aar, 29 August 2008	A new Eskom feeder line will be constructed in Emil. Eskom will conduct a separate EIA for this.
9. ECONOMIC CONSIDERATIONS			
How does Transnet plan to increase the capacity of the railway line (by increasing the frequency of trains or by adding more wagons)?	Andrea von Holt, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	The number of trains will be increased from 2 trains to 6 trains a day. The trains will not be longer than 104 wagons (1200 m long), which was determined to be the optimal train length. Shorter train lengths would require more frequent trains which may result in scheduling problems and require additional loops to be constructed.
Rail vitalisation in the Northern Cape is of utmost importance for economic growth in the Province.	A Strachan, Office of the Premier, Development Planning	Letter, 11 September 2008	Noted
The Coega Development Corporation has clients who would also like to make use of the railway line. Does Transnet have any plans to transport other goods on the line in the near future?	Andrea von Holt, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	This project relates to transporting containers and manganese. However, when a business case is put to Transnet for the transportation of other commodities on the line, it will be considered.
10. SANITATION			
The province has been trying to eradicate the basket system for sewage disposal and the creation of temporary labour camps may restart the problem. How is Transnet going to make sure that the basket system is not used at the camps?	Zonke Noncedo, Speaker of Parliament; Ncumisa Qolo	Public Meeting, Cookhouse 26 August 2008; Middelburg 28 August 2008	There will be no baskets used at campsites. The authorities have set out strict guidelines regarding the setup of construction camps and Transnet plans to follow those guidelines.
11. ENVIRONMENTAL ISSUES			
<i>Vegetation</i>			
There are plants, which are endangered and indigenous to the Eastern Cape that may be lost during the clearing of vegetation. How does Transnet plan to minimise the damage to the natural vegetation?	Mzondile, Environmental Control Officer	Public Meeting, Cradock 27 August 2008	An Ecology Study will be done as part of the EIA process. One of the ways to save guard the loss of indigenous and endangered plants is to undertake a search and rescue program before construction commences.
<i>Wildlife</i>			

Issues Raised	Commentator(s)	Source	Response
There are concerns about the impact of increased train traffic on birds breeding closer to the railway line as well as tortoises crossing the line.	Bradley, Endangered Wildlife; HJ Schoeman; Mr van der Linde	Public Meeting, Middelburg 28 August 2008; Response Sheet; Public Meeting, Greenpoint, 10 September 2008	Specialists, including a zoologist have been engaged to undertake studies relating to wildlife conservation. ERM has undertaken to also engage with Bradley, as a local specialist once these studies get underway.
12. SPECIALIST STUDIES			
The Eastern Cape has its own environmental specialist and ERM should consider using them to further the development of their skills.	Primrose Mayana; Mzondile Environmental Control Officer	Public Meeting, Paterson 25 August 2008;	The suggestion was noted by ERM, who will give it due consideration. Also see response above.
13. HERITAGE RESOURCES			
In Terms of the National Heritage Resources Act, heritage resources including archaeological and Paleontological sites over 100 years old graves older than 60 years, structures older than 60 years and intangible aspects of heritage resources and other protected heritage resources may not be disturbed without a permit from a relevant heritage resources authority/ agency.	Heritage Resources Agency	e-mail Correspondence 17 Sept. 2008	Noted
ERM should include a palaeontology study as part of the EIA. Lately, SAHRA has been requiring this and specialist are hard to find.	Andrea von Holt, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	The suggestion is noted by ERM.
14. ACCESS AND SERVICE ROADS			
Access and service roads running along the railway line are poorly maintained. Who is responsible for the maintenance of these roads?	Hennie Greef; Lesedi	Public Meeting, De Aar 29 August 2008; Middelburg 28 August 2008; Public Meeting, Greenpoint, 10 September 2008	Transnet maintains service roads for the purpose of doing rail maintenance. The South African National Roads Agency is responsible for the maintenance of general access roads.
Will the Conway road be upgraded?	Derrick Handley,	Public Meeting, Middelburg 28 August 2008;	No. The Conway road is only used for purposes of rail service and will not be upgraded.

Issues Raised	Commentator(s)	Source	Response
15. SPILLAGES AND CLEAN UPS			
What is Transnet's responsibility in case of spillages or accidents?	Andrea von Holt, Coega Development Corporation	Public Meeting, Paterson, 25 August 2008	In the event of a spillage (e.g. during derailment) TFR uses in-house expertise and contractors where applicable to conduct the site clean-up. All relevant authorities are consulted about the incident and reports regarding progress on the clean up of spillages, they are forwarded to the relevant authorities. An EMP for the construction and operational phases of the Project, which will address measures to manage incidents like spillages will also be prepared by ERM and will be incorporated in the EIA Report
16. VIBRATION			
What is the potential impact of vibrations to houses adjacent to the railway line?	Esta Waka	Public Meeting, Middelburg 28 August 2008; Public Meeting, Beaconsfield, 11 September 2008	A vibration study has been commissioned to measure the potential impacts.
17. LAND ACQUISITION			
How is land going to be acquired for the construction of the loops?	Peter Inman	Public Meeting, Paterson 25 August 2008	Most of the loops will be constructed within existing Transnet land. There might be limited sites where Transnet may need to acquire additional land. In these instances; Transnet intends to enter into direct negotiation with the relevant landowners, with the intention of buying the required land at a market related value.
Transnet should be careful when buying privately owned land, because there are some land restitution issues that need resolving in the province.	Thuse Manene	Public Meeting, Paterson 25 August 2008	Noted.

Issues Raised	Commentator(s)	Source	Response
18. CROSSING OF MAJOR ROADS			
The proposed upgrade of the railway line follows sections of the N10 between the Nanaga Interchange near PE to De Aar, the N9 in Middelburg and Noupoort, the N12 south of Kimberley and crosses the N8 at Kimberley and the N14 east of Upington. In addition, it will require crossing the N2 close to the Port of Ngqura where one bridge structure has been constructed west of the Coega river for access under the N2 to the Port.	Tom Kelly, Acting Regional Manager: Southern Region	Letter via the post	The proposed project will not require any additional infrastructure to cross any major (national) roads.
Transnet must note that any new structures of any kind within 60 meters from a national road reserve or 500meters from an intersection of any road with a national road will require the consideration and approval of SANRAL.	Tom Kelly, Acting Regional Manager: Southern Region	Letter via the post	The comment is noted and will be applied where applicable
The making of or changing the type of use of accesses to and from a national road, advertisements visible from a national road, subdivisions of land adjoining a national road and damaging a national road require SANRAL's approval or are prohibited.	Tom Kelly, Acting Regional Manager: Southern Region	Letter via the post	The comment is noted and will be applied where applicable.
19. EIA PROCESS			
The SDF and council should be kept informed of the EIA process and project as it moves forward.	Mthuthuzeli Tokota; Siphokazi Matiniese, Mayor of Sundays' River Valley Local Municipality	Public Meeting, Paterson 25 august 2008	The suggestion was noted.
Has all authorisations been obtained from the government?		Public Meeting, Greenpoint, 10 September 2008	Various environmental authorisations need to be obtained. These include: <ul style="list-style-type: none"> • EIA – DEAT • General water use licence –DWARF • Borrow pits –DME • Heritage – SAHRA The processes of obtaining these authorisations are currently being conducted.

Issues Raised	Commentator(s)	Source	Response
20. USING THE RAIL LINE FOR PASSENGER TRANSPORT			
Can Transnet re-introduce passenger trains between Cookhouse and Somerset East?	Siyavuya; Cllr Manxiweni; Zola Mathisena	Public Meeting, Cookhouse 26 August 2008	Transnet Freight Rail only handles freight rail and no passenger traffic at all.
Is Transnet considering using the line to transport people from city to city (to Port Elizabeth) especially during 2010?	Mthuthuzeli Tokota	Public Meeting, Paterson 25 August 2008	Transnet Freight Rail only handles freight rail and no passenger traffic at all.
21. OTHER PROPOSED DEVELOPMENTS IN THE PROJECT AREAS			
Is this project related to the Smelter that is going to be built in De Aar	Mr François	De Aar, 29 August 2008	No
BHP is planning to expand its mining activities at Mamathwane	Mr Rudzani Mudau	Public Meeting, Hotazel 22 September 2008	Noted.
<p>There are at least five new mines due to start up in the area. These include:</p> <ul style="list-style-type: none"> • Kalahari Resources, next to Hotazel • UMK next to Mamathwane • Opposite Mamathwane • An iron ore mine on the other side of Kathu • An iron ore mine at Postmasburg <p>It is important for Transnet to look at a bigger picture.</p>	Mr Ben Olivier from the Kgalagadi District Municipality	Public Meeting, Hotazel 22 September 2008	Noted.
BORROW PITS			
It may not be necessary to establish borrow pits in the area for the rail construction as there is a sufficient supply of crushed stone from the mine overburden and that PPC also has a crusher in the area.		Public Meeting, Hotazel, 22 September 2008	Noted and will be investigated further

Annex B

DEAT Approval to proceed with Scoping



environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001 • Fedure Building, 315 Pretorius Street, Pretoria, 0002. Tel: (+27 12) 310 3911 Fax: (+27 12) 322 2682

Reference: 12/12/20/1240

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Ms Sumaya Osman
Environmental Resources Management Southern Africa (Pty) Ltd
Silverwood House, Block A
Steenberg Office Park
Steenberg
CAPE TOWN
7945

Fax no: (021) 701 7900

PER FACSIMILE / MAIL

Dear Ms Osman

APPLICATION FOR ENVIRONMENTAL AUTHORISATION R. 387 and R. 386: THE PROPOSED UPGRADING OF THE TRANSNET RAILWAY LINE BETWEEN DE AAR AND COEGA, LOOPS 1-13 (REFERENCE: 12/12/20/1240).

The Department confirms having received the application form for environmental authorisation of the abovementioned project on 21 July 2008. You may proceed with the scoping process required in terms of the Environmental Impact Assessment Regulations, 2006, and are requested to arrange a future date and time for a site visit and meeting with this department.

The application has been assigned the reference number **12/12/20/1240**. Kindly quote this reference number in any future correspondence in respect of the application.

The Applicant must ensure that all requirements of Section 38 of the National Heritage Resources Act, Act 25 of 1999, are complied with in this EIA process, including comments and recommendations of the relevant heritage resources authority responsible for the area in which the development is proposed.

Muhasho wa zwa Vhupo na Vhuendelamashango • Litiko le Tesimondzawo nstekuVakasha • Isabe IemiCimbi yokusiNgaongl'eyo noKhenketho Ndzawulo ya Tintaka & Mbango • Department: Omgewingsake en Toerisme • Lefapha la Tikoloho le BchaniIsudi • Lefapha la Bajanata Kgoro ya Tikoloho le Boeti • UmNyango wezeBhuduluko nokuVakatha • Umnyango Wezemvelo NokuVakatha

The comments and or response from the relevant heritage resource agency must clearly state that the requirements of the Heritage Resources Act have been met during the study.

You are hereby reminded that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely



Ms Nosipho Ngcaba

Director – General

Department of Environmental Affairs and Tourism

Letter signed by: J Gøeringh

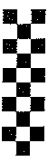
Designation: Officer, Environmental Impact Evaluation

Date: 22/07/2008

CC: Mr Neville Eve

TRANSNET

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Department:
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Reference: 12/12/20/1241

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PER FACSIMILE / MAIL

Dear Ms Osman

APPLICATION FOR ENVIRONMENTAL AUTHORISATION R. 387 and R. 386: THE PROPOSED UPGRADING OF THE TRANSNET RAILWAY LINE BETWEEN HOTAZEL AND DE AAR, LOOPS 1-15 AND RAIL YARDS AT HOTAZEL, MAMATHWANE, POSTMASBURG, KIMBERLEY AND DE AAR (REFERENCE: 12/12/20/1241).

The Department confirms having received the application form for environmental authorisation of the abovementioned project on 21 July 2008. You may proceed with the scoping process required in terms of the Environmental Impact Assessment Regulations, 2006, and are requested to arrange a future date and time for a site visit and meeting with this department.

The application has been assigned the reference number **12/12/20/1241**. Kindly quote this reference number in any future correspondence in respect of the application.

The Applicant must ensure that all requirements of Section 38 of the National Heritage Resources Act, Act 25 of 1999, are complied with in this EIA process, including comments and

recommendations of the relevant heritage resources authority responsible for the area in which the development is proposed.

The comments and or response from the relevant heritage resource agency must clearly state that the requirements of the Heritage Resources Act have been met during the study.

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