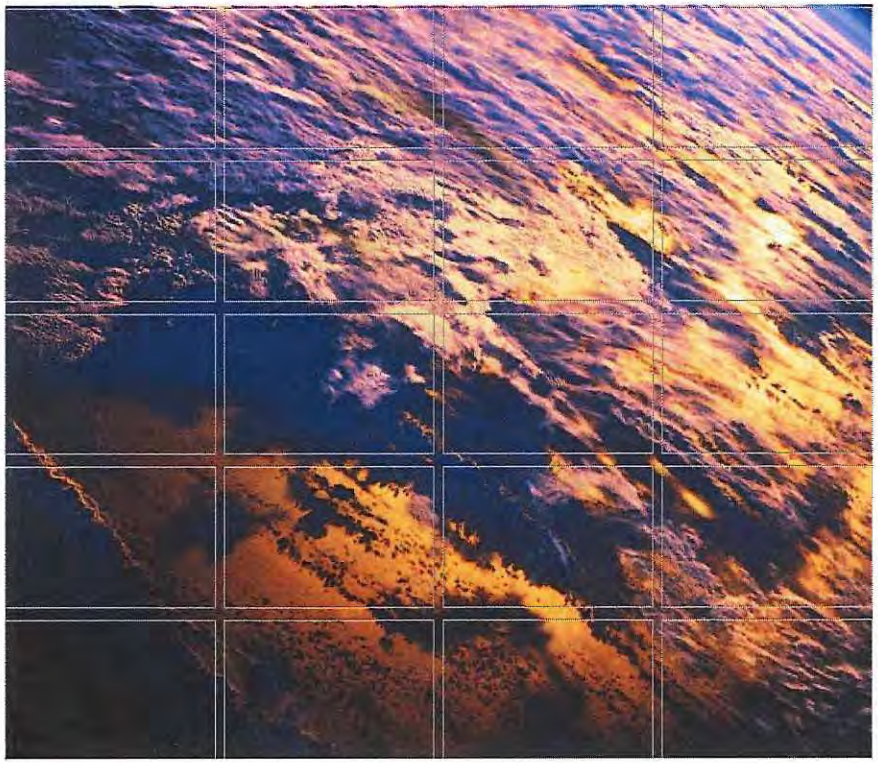
APPENDIX C:

FINAL EIA REPORT AND PUBLIC PARTICIPATION DOCUMENTATION (2009)



Final Environmental Impact Report

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

Volume 1 – Environmental Impact Report

July 2009

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HMGJV

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

Prepared by: ERM Southern Africa

For and on behalf of
Environmental Resources Management

Approved by: Stuart Heather-Clark _____

Signed:

Position: Partner _____

Date: 17 July 2009 _____

Details of the Environmental Assessment Practitioners

Name	Muller Coetzee
Responsibility	Partner in-charge
Degree	MSc (Geography) – UNISA, 1987
Professional registration	Member of SAICE (Civil Engineering)
EIA experience in years	25 years
Experience	Muller Coetzee is a Technical Director within the Impact Assessment and Planning team at ERM Southern Africa based in Cape Town. Muller has extensive experience in managing large-scale, complex and multidisciplinary projects throughout South Africa, with a particular experience in coastal and environmental research and analysis. He has strong analytical and strategic capabilities in the design, formulation and implementation of sustainable development policies and strategies and well-developed skills in multi-stakeholder group facilitation and conflict mediation. Muller has also been extensively involved in a training capacity in the fields of coastal and environmental management, strategic planning, leadership and management training.

Name	Sumaya Osman
Responsibility	Project Manager
Degree	BSc (Hons) (Env.& Geo. Sci.) – UCT, 1998
Professional registration	EAPSA Application in Progress
EIA experience in years	8 Years
Experience	Sumaya Osman is a Principal Consultant with ERM's Impact Assessment and Planning team based in Cape Town. Sumaya's experience includes the co-ordination of Environmental Impact Assessments (EIAs) and Environmental Screening Studies, drafting of Environmental Management Plans and Emergency Response Plans, facilitation of public stakeholder participation, review of EIA processes and undertaking of environmental audits. This experience has involved consultation with a wide range of stakeholders from government authorities to academics, technical specialists and civil society. Sumaya's recent projects (2006-2008) have related to electricity, mine, telecommunications and rail infrastructure developments, steel manufacturing plant upgrades, telecommunications infrastructure, oil and gas sector permitting projects and EIA reviews.

Name	Albert de Jong
Responsibility	Project Consultant
Degree	BSc (Hons) (Env.& Geo. Sci.) – UCT, 2003
Professional registration	EAPSA Application in Progress
EIA experience in years	5 years
Experience	Albert de Jong is a Consultant in the Impact Assessment and Planning Team of ERM Southern Africa. He has managed a wide range of Environmental and Social Impact Assessments, research projects and field survey programmes for clients mainly in the oil and gas and industrial infrastructure sectors. Albert has experience both locally and abroad. His recent South African based work has included EIAs and permitting for projects in the mining and metals, transportation and oil and gas sectors. His field of competence includes environmental planning and management, Environmental Impact Assessments (EIAs), coordination of environmental monitoring surveys, environmental auditing, Geographical Information Systems (GIS) and public participation and facilitation.

Name	Daniel Rogatschnig
Responsibility	Project Consultant
Degree	MSc. (Env.& Geo. Sci.) – UCT, 2005
Professional registration	N/A
EIA experience in years	1 year
Experience	Daniel Rogatschnig joined ERM in 2007 as a Consultant in the Impact Assessment and Planning Team for the Southern Africa region. His recent project experience (2007-2008) has related to various railway infrastructure development projects throughout South Africa. His key competencies are Environmental Screening Studies, Environmental Site Assessment, Geographic Information Systems (GIS), geomorphology, research and analysis.

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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.

CONTENTS: EXECUTIVE SUMMARY

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

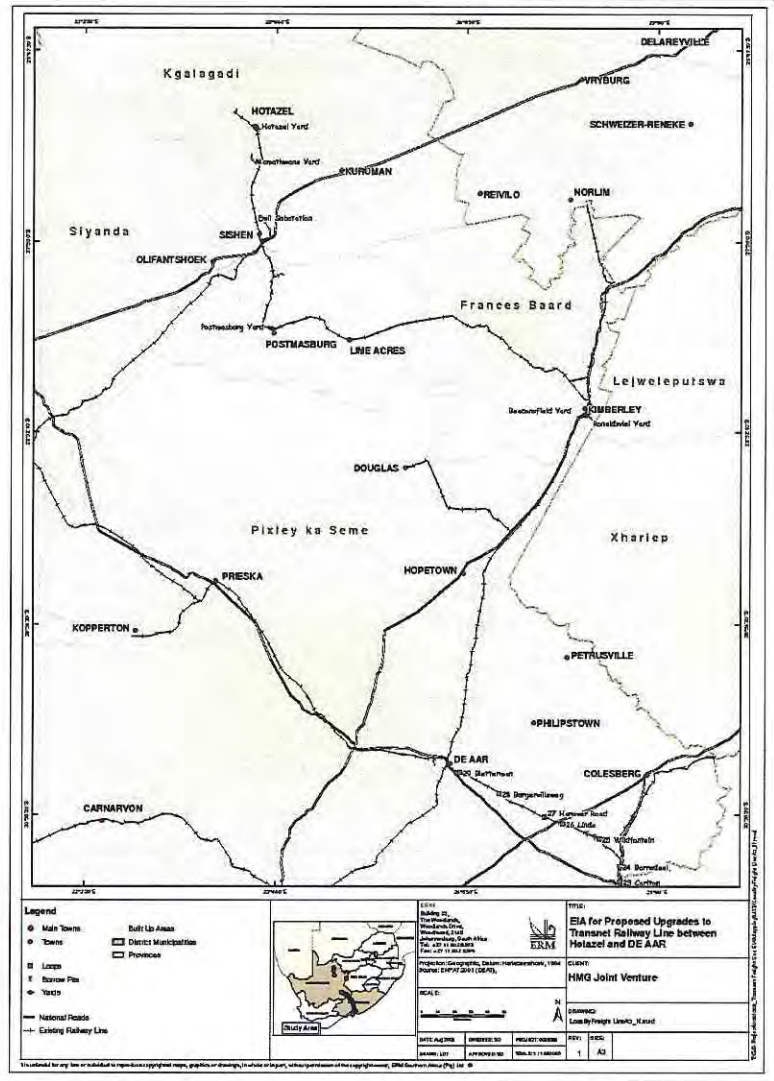
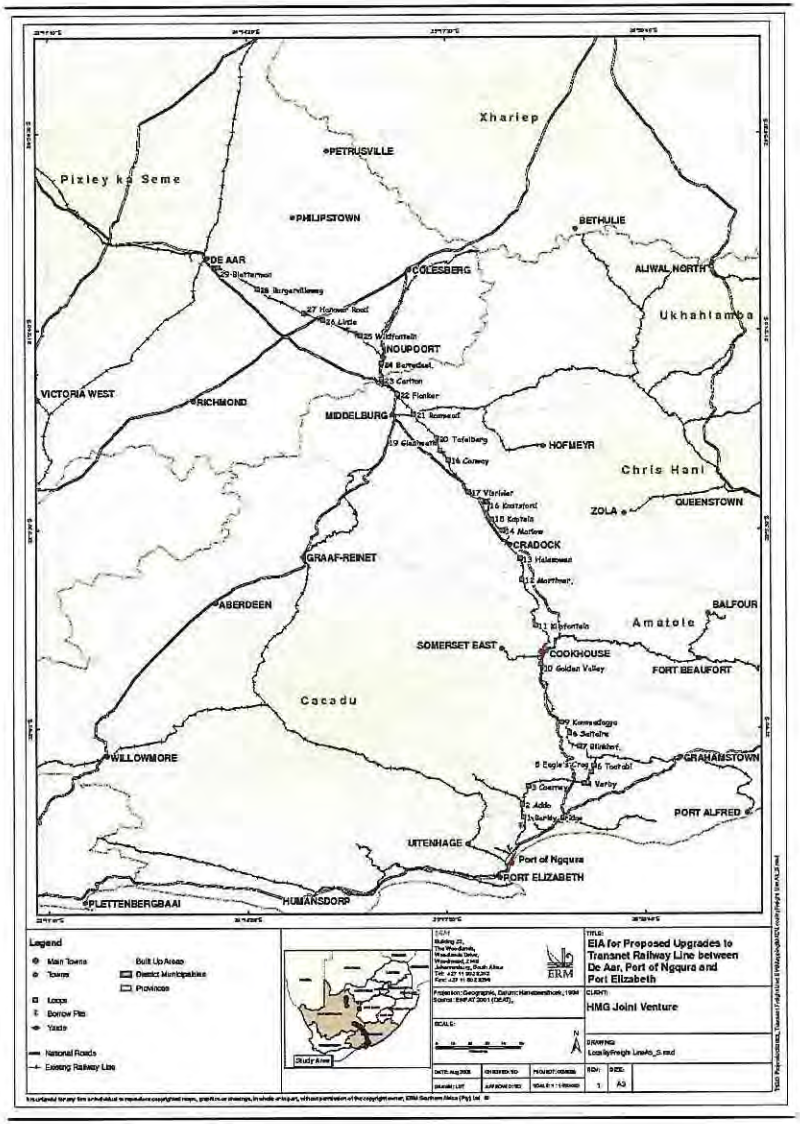


Figure E.2 Locality map: De Aar to Port Elizabeth



E1.3 PROJECT RATIONALE

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.

E2 THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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	How and when the recruitment process will be rolled out. Fairness of the tender process and the real opportunities for local labourers and smaller, local operators. Whether Transnet's primary contractor will use local subcontractors. Nature of employment, skill levels and numbers to be employed. Position of former Transnet employees with respect to getting guaranteed employment on the project. Training and capacity building with respect to unskilled labour. Concern over health and safety of workers who may be exposed to manganese dust. Sanitation and management of waste at labour camps. Social ills associated with labour camps including the spread of HIV. Effect of the project on the already strained electricity supply network. Safety at railway crossings and an increase in rail accidents. Long term community benefits of the project. Benefits to local businesses. Impact of manganese dust on people living adjacent to the line. Impact of potential increases in vibration on houses adjacent to the railway line. Increased rail capacity for the transport of products from Eastern Cape, Metro and Industrial Development Zone to Gauteng and growths of these areas. Assistance with beneficiation of country's mineral wealth at Coega.
Biophysical considerations	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.

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 were 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 *Volume 2*
2	Noise assessment	Jongens Keet Associates	See *Volume 2*
3	Phase 1 archaeological and cultural heritage study	Archaic Heritage Project Management, University of Pretoria	See *Volume 2*
4	Social Impact Assessment	ERM Southern Africa	See *Volume 2*
5	Terrestrial ecology assessment	Natural Scientific Services	See *Volume 2*
6	Traffic impact study	ITS	See *Volume 2*
7	Vibration assessment	Department of Mechanical and Aeronautical Engineering, University of Pretoria	See *Volume 2*

E2.3 *INTEGRATION AND ASSESSMENT PHASE*

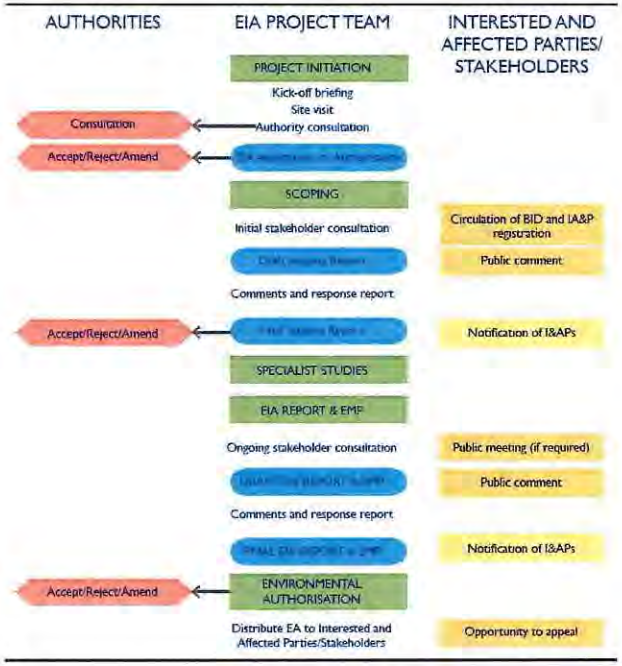
This phase was started after receiving approval from DEAT of the Final Scoping Report and Plan of Study for EIA. In this phase the project team undertook the following tasks:

- 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	• 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	• 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	• 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	• Construct a new electrical traction substation at Emil.
Construction of camps and laydown areas	• 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 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 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 (recommisioned)	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 alternatives 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 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.
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.
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.
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.

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
		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.
Yards	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	-
	No negligible impacts	-
Socio-economic	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.

E4.2 DECOMMISSIONING IMPACTS

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 organisaiton, 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.

E4.5 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 handing. 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.

E5 RECOMMENDATIONS

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.

INHOUD

E1 INLEIDING

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 uitwykspore[1] en die konstruksie van nuwe uitwykspore.

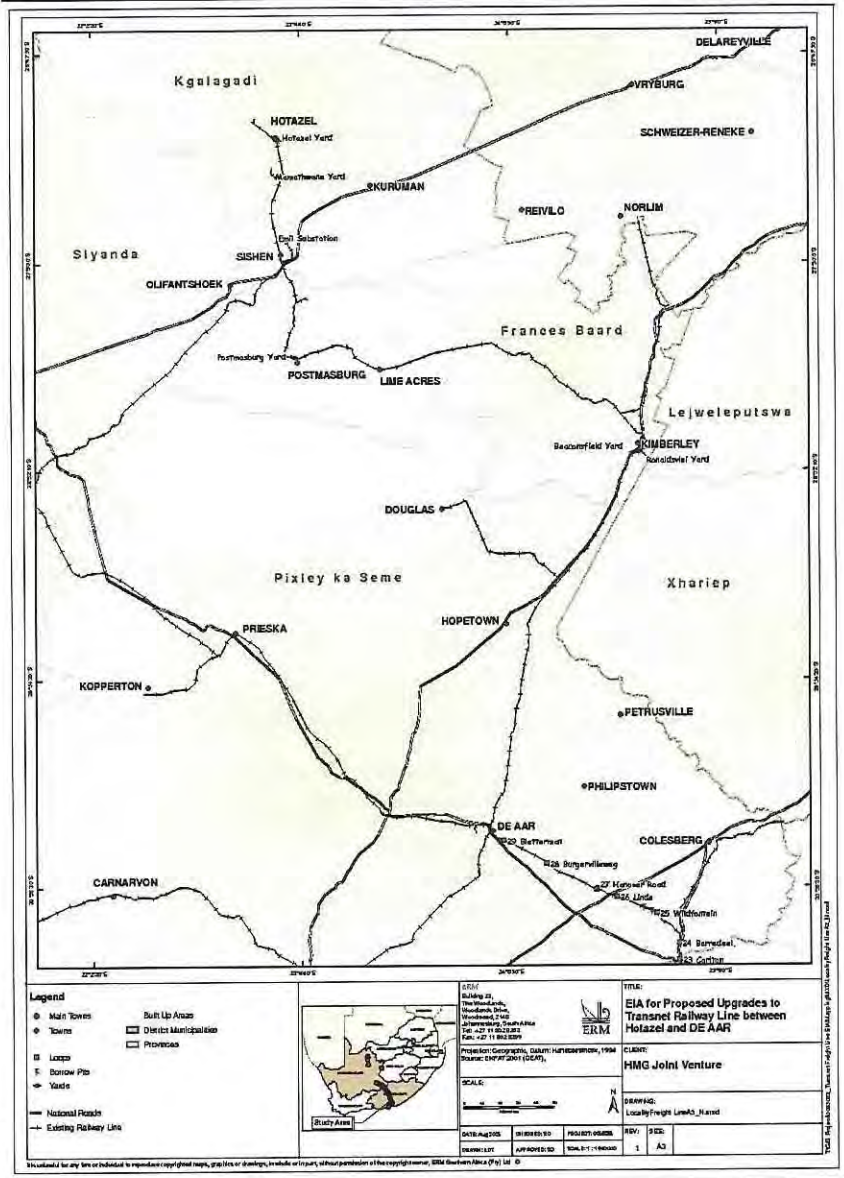
(1) 'n Uitwykspoor, verbygaande of kruisend, is 'n plek op 'n eenbaanspoorweg waar treine wat in teenoorgestelde rigtings reis by mekaar kan verby beweeg. 'n Uitwykspoor wat verbygaande is, het gewoonlik twee eindpunte wat verbind is aan die hoofspoor.

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

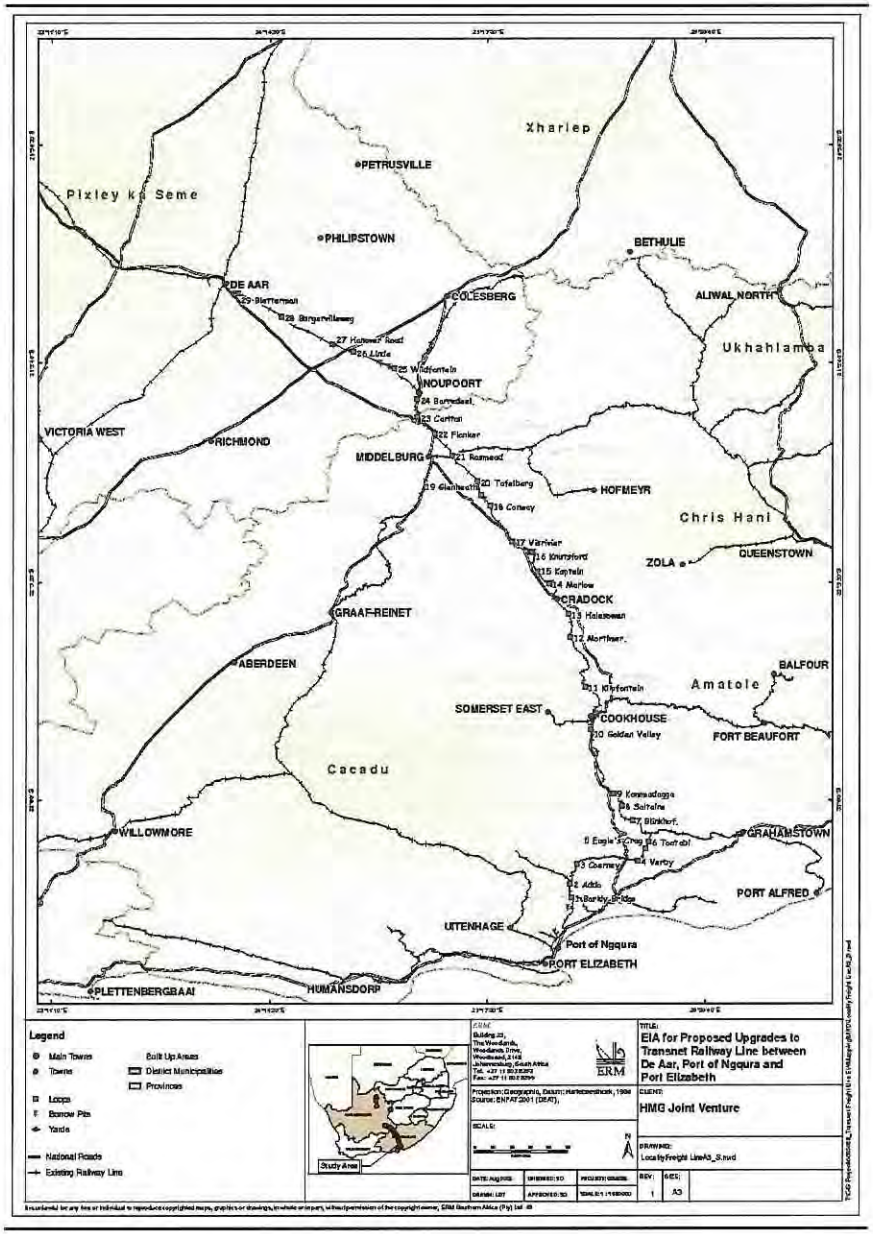
ERM is namens Transnet Freight Rail (voorheen Spoornet, 'n afdeling van Tansnet) aangestel deur HMGJV[2] om op te tree as die onafhanklike omgewingskonsultant op hierdie projek. ERM se taak is om die vereiste proses van Omgewingsinvloedbepaling (OIB) vir hierdie Projek betreffende opgradering van 'n 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



E1.3 OPGAWE VAN REDES VIR DIE PROJEK

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 mangaan nie, 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 aflaaipunte 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 vroëe stadium van die goedkeuringsproses van die Hawe van Ngqura geidentifiseer. Die behoefte is ook geidentifiseer 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 mangaanerts vanaf myne naby Hotazel op die spoorlyn tot by die bestaande eindpunt vir mangaan by Port Elizabeth, vanwaar dit per skip uitgevoer word. Daar is tansd wêreldwyd 'n toenemende aanvraag na mangaan. Hierdie wêreldwye toename in aanvraag beteken dat daar in die toekoms 'n behoefte sal wees vir groter hoeveelhede mangaanerts 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 spoorkapasiteit 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.

E2 PROSES VAN OMGEWINGS-INVLOEDBEPALING

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 geleenthede 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 vloeidiagram *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-aansoeke vir Magtiging om die OIB-proses te loods.

Op 21 Julie 2008 is twee aansoeke by die DOT ingedien. Die rede waarom twee aansoeke ingedien is, hou verband met die tydsbepaling en dringendheid van sekere komponente van die Projek. Alhoewel twee OIB-aansoeke 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 betrokkenheid van belangegroepe ingesluit , sodat hulle standpunte beter verstaan kon word.

Ten einde die doeltreffende betrokkenheid van belangegroepe 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-vlak-opsomming 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 geleenthede vir plaaslike arbeiders, asook kleiner, plaaslike sake-ondernemings. Of Transnet se primêre kontrakteur plaaslike subkontrakteurs 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.mv. 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 Nywerheids-ontwikkelingsone 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	Plaaslike spesialiste en deskundiges behoort in die proses gebruik te word.
Algemeen	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.

Breë Kategorieë	Kwessies geopper
	'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 reëlings 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 potensiële 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 potensiële 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 *Volume 2*
2	Geraasbepaling	Jongens Keet Associates	Sien *Volume 2*
3	Fase 1 Argeologiese-en-kulturele-erfenis-studie	Argaïese Erfenis Projekbestuur, Universiteit van Pretoria	Sien *Volume 2*
4	Sosiale invloedbepaling	ERM Southern Africa	Sien *Volume 2*
5	Landelike ekologie bepaling	Natural Scientific Services	Sien *Volume 2*
6	Verkeersinvloedstudie	ITS	Sien *Volume 2*
7	Vibrasie-invloedbepaling	Departement van Meganiese en Lugvaartkundige Ingenieurswese, Universiteit van Pretoria	Sien *Volume 2*

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:

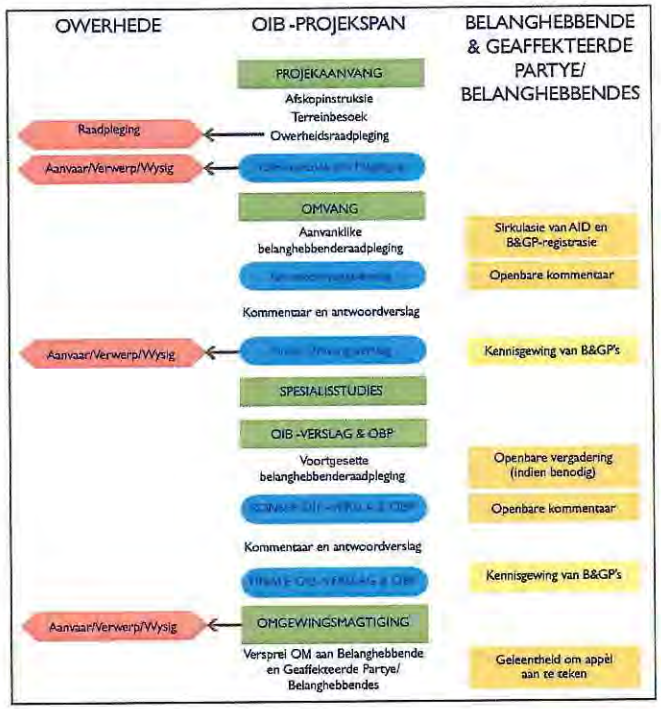
- Kwessies/ geleenthede en potensiële negatiewe invloede en voordele wat tydens die Omvangsfase geïndentifiseer is, te ondersoek;
- Opdrag is gegee vir bykomende studies deur spesialiste waar nodig en/of die omvang van studies wat tydens die Omvangsfase gedoen is, is vergroot;
- Evaluering en bepaling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

- Die voorstel van maatreëls ter versagting van invloede, en die optimalisering van geleenthede.

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 vloeidiagram*



E3 BESKRYWING VAN PROJEK

E3.1 PROJEKGEBIED

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 opgeknap en geëlektrifiseer word.

E3.2 OORSIG VAN VOORGESTELDE PROJEK 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	• 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	• 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	• 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 konstruksieterreine (binne die grense van die spoorreserwe) om geskikte opvulmateriaal te bekom.
Konstruksie van bykomende infrastruktuur	• Konstruksie van 'n nuwe elektriese substasie by Emil.
Konstruksie van kampe asook neerleggingsgebiede	• 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 onteiening 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 spoorwalle, waar nodig, op dieselfde spoorvlak verbreed sal word. Deurlope en strukture vir dreinering 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 opgeknap 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 opgeknapte 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 E.3.3 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 potensiële 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 opgeknap/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 trekkragdoeleindes.

Die 132 kV WS (Wisselstroom) 3-fase voorsiening sal gelewer word deur 'n Eskom verspreidingskraglyn. Hierdie kraglyn en die gepaardgaande registrasieproses van 'n serwituut 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 m^2) 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 konstruksieterrein gevestig word en sal tipies 60 m x 50 m (3 000 m^2) 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 vroëe 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 Hoofkontrakteur 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 handearbeid 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 sekretaresses, 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 privaatsektor en die Nywerheidsontwikkelingsone, die metropolitaanse gebied en die Ooskaap in die algemeen. Gevolglik kan beide die myn- en die verskepingsbedryf 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.

E3.4 *ALTERNATIEWE*

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	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. 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. Substasie – Die terrein van die voorgestelde nuwe substasie naby Emil (Noord-Kaap) is genoodsaak deur 'n onvoldoende voorsiening van krag tussen Sishen en Wincanton.
Alternatiewe ontwerpe	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.
Aanvraag – alternatiewe	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.
Aktiwiteit - alternatiewe	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.
Proses - alternatiewe	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. Korter 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.
Materiaal - alternatiewe	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 asladings en ontwerpvereistes ten einde 'n spoordiens van hierdie aard veilig te bedryf.
Fasering - alternatiewe	Verskeie alternatiewe vir fasering is ondersoek, naamlik 6, 8, 10 en 12 mtpj (Megaton per jaar) mangaanerts en ses bykomende houertreine (langs hierdie spoorgang)

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.

Gegrond 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 potensiëele 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 Projekkomponent 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				
	WAARSKYNLIKHEID	**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

	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 sovêr moontlik ge-optimaliseer is. Nietemin, vir sommige aspekte mag daar ernstige oorblywende negatiewe invloede wees na alle praktiese versagtende 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.
Matige invloed	'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 sover 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.
Klein invloed	'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.
Nietige invloed	'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.

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 invlioede /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	[illegible]	
	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	[illegible]	
	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	[illegible]	
	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	[illegible]	
	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	Geleenthede vir potensiële werkskepping en indiensneming.
	Geen nietige 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	[illegible]	[illegible]
	Geen matige invloede nie	-
	Geen klein invloede nie	-
	3 nietige 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 nietige 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 nietige invloed	Geleenthede vir potensiële werkskepping en indiensneming.

Ander positiewe sosio-ekonomiese invloede wat gedurende die OIB ge-identifiseer 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 spoorkapasitiet 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 geleenthede 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 ongewerwelde 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 her-beplanting en landskapering.	Positief - Direk	Positief - Direk
Skepping van tydelike plaaslike werk en verkryging van geleenthede.	Positief - Direk	Positief – Direk
Verlies van permanente werke of her-verspreiding 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.

E4.4 KUMULATIEWE INVLOEDE

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-proses 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.

E4.5 BEPALING VAN DIE GEEN-AKSIE ALTERNATIEF

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 werksgeleenthede 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 daaraaan 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.

1 INTRODUCTION

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 Cobo 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

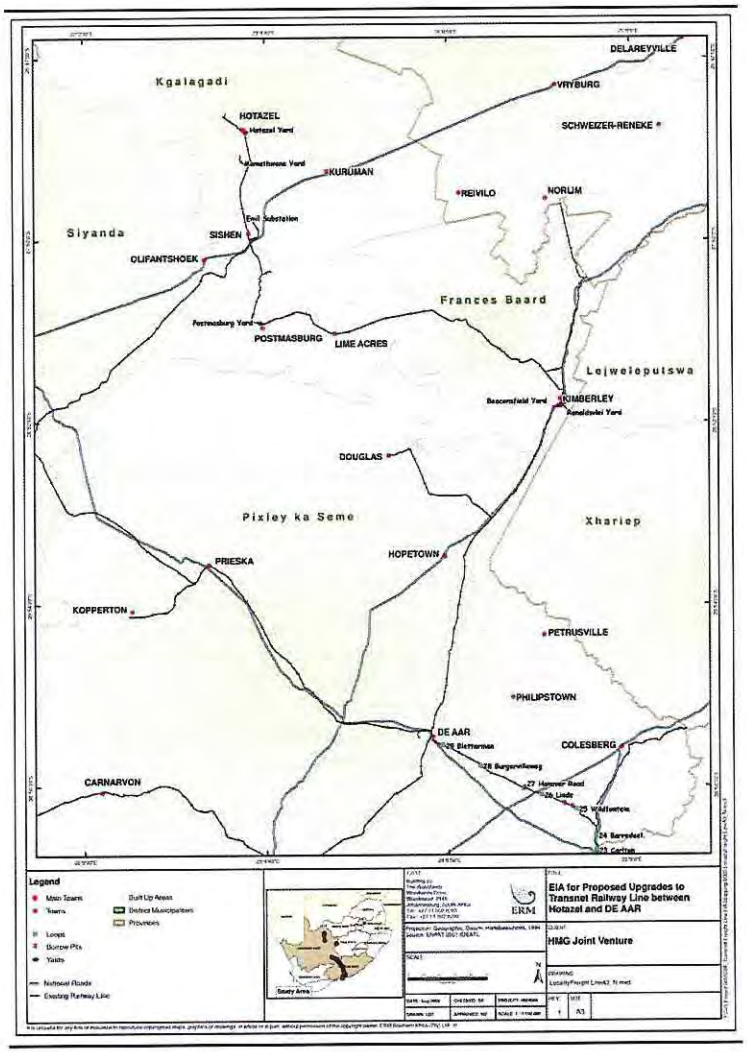
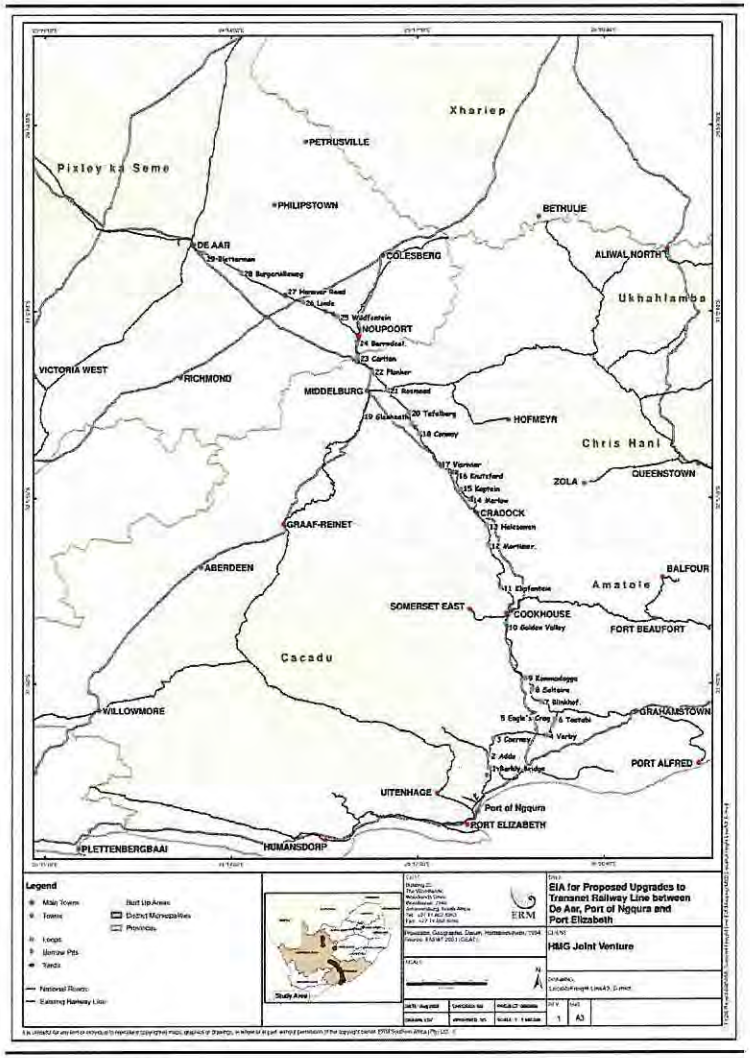


Figure 1.2 *Locality map: De Aar to Port Elizabeth*



1.3 BRIEF DESCRIPTION OF THE PROJECT

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*.

1.4 PURPOSE OF THIS REPORT

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.

2 *LEGISLATIVE, ADMINISTRATIVE AND POLICY FRAMEWORK*

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 • 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 - • 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 • 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.

2.3 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS AND GUIDELINES

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.

3 EIA APPROACH AND METHODOLOGY

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*.