



## **SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT**

**Scoping and Environmental Impact Assessment  
for the proposed Manganese Export Facility and  
Associated Infrastructure in the Coega Industrial  
Development Zone, Port of Ngqura and Tankatara area**

### **DRAFT EIA REPORT**

# **CHAPTER 4: APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION**



# Contents

<b>CHAPTER 4: APPROACH TO EIA PROCESS</b>	<b>4-3</b>
<b>4.1 INTRODUCTION</b>	<b>4-3</b>
<b>4.2 OVERVIEW OF APPROACH TO THE EIA REPORT AND EMP</b>	<b>4-3</b>
<b>4.3 INTRODUCTION TO THE EIA PHASE</b>	<b>4-4</b>
<b>4.4 REGULATORY FRAMEWORK FOR THIS EIA</b>	<b>4-8</b>
4.4.1 NATIONAL LEGISLATION	4-8
4.4.2 INTERNATIONAL TREATIES	4-9
4.4.3 PROVINCIAL LEGISLATION AND POLICY	4-9
4.4.4 NEM: AIR QUALITY ACT (ACT 39 OF 2004) ATMOSPHERIC EMISSIONS LICENCE	4-10
4.4.5 NEM: WASTE ACT (ACT 59 OF 2008): WASTE LICENCE	4-11
4.4.6 NATIONAL WATER ACT (ACT 36 OF 1998): WATER USE LICENSE	4-12
4.4.7 NATIONAL HERITAGE RESOURCES ACT (NHRA) (ACT 25 OF 1999)	4-12
<b>4.5 PUBLIC PARTICIPATION PROCESS</b>	<b>4-13</b>
<b>4.6 AUTHORITY CONSULTATION DURING THE EIA PHASE</b>	<b>4-17</b>
<b>4.7 SCHEDULE FOR THE EIA</b>	<b>4-18</b>
<b>4.8 APPROACH TO SPECIALIST STUDIES AND IMPACT ASSESSMENT</b>	<b>4-20</b>
4.8.1 GENERIC TERMS OF REFERENCE FOR THE ASSESSMENT OF IMPACTS	4-20
4.8.2 SPECIFIC ISSUES TO BE ADDRESSED IN SPECIALIST STUDIES	4-23
4.8.2.1 <i>Marine Ecology Assessment</i>	4-24
4.8.2.2 <i>Terrestrial Ecology Assessment</i>	4-24
4.8.2.3 <i>Aquatic Ecology Assessment</i>	4-25
4.8.2.4 <i>Noise Impact Assessment</i>	4-25
4.8.2.5 <i>Visual Impact Assessment</i>	4-26
4.8.2.6 <i>Integrated Water Management Study</i>	4-27
4.8.2.7 <i>Groundwater Assessment</i>	4-28
4.8.2.8 <i>Air Quality and Human Health Assessment</i>	4-28
4.8.2.9 <i>Avifauna Assessment</i>	4-29
4.8.2.10 <i>Archaeological Impact Assessment</i>	4-30
4.8.2.11 <i>Palaeontological Impact Assessment</i>	4-30
4.8.2.12 <i>Historical and Cultural Heritage Resources Statement</i>	4-31
<b>4.9 APPROACH TO THE ASSESSMENT OF ALTERNATIVES</b>	<b>4-31</b>
<b>4.10 NO-GO ALTERNATIVE</b>	<b>4-32</b>
<b>4.11 LAND USE ALTERNATIVE</b>	<b>4-32</b>
<b>4.12 ACTIVITY AND LAYOUT ALTERNATIVES AS PART OF THE DEVELOPMENT</b>	<b>4-33</b>



---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

4.12.1	STOCKYARD	4-33
4.12.2	OVERLAND CONVEYOR ROUTING	4-34
4.12.3	COMPILATION YARD	4-35
<b>4.13</b>	<b>TECHNOLOGY ALTERNATIVES AS PART OF THE DEVELOPMENT</b>	<b>4-36</b>
4.13.1	DUST CONTROL	4-36

---

## **TABLES AND FIGURES**

---

Table 4.1:	Listed activities in GN R544, R545 and R546 that potentially form part of the proposed Transnet Manganese Ore Export Facility Project	4-5
Table 4.2:	Subcategory 5.1 listed activity in terms of Section 21 of the NEM: AQA (Act 39 of 2004) that potentially form part of the proposed Manganese Ore Export Facility Project	4-10
Table 4.3:	Category A listed activities in terms of Section 19 of the NEM: Waste Act (Act 59 of 2008) that potentially form part of the proposed Manganese Ore Export Facility Project	4-11
Table 4.4:	Authority Consultation Schedule for the EIA Phase	4-17
Table 4.5:	EIA Schedule for the Proposed Transnet Manganese Ore Export Facility Project	4-19
Table 4.6:	Table for rating of impacts	4-22
Figure 4.1:	EIA Process for the Manganese Ore Export Facility Project in the Coega IDZ.	4-16
Figure 4.2:	Preferred (black) and alternative (red) overland conveyor route	4-35
Figure 4.3:	Compilation Yard and Rail Link Alternatives	4-36



## CHAPTER 4: APPROACH TO EIA PROCESS

### 4.1 INTRODUCTION

This chapter presents the approach to the impact assessment phase of the EIA process, including public participation. The EIA phase is shaped by the findings of the Scoping process. For information on the Scoping phase, including the approach to stakeholder engagement, identification of issues, overview of relevant legislation, and key principles and guidelines that provide the context for this EIA process, refer to the Final Scoping Report (CSIR, 2012).

The EIA phase consists of three parallel and overlapping processes:

- Public participation process whereby findings of the EIA phase are communicated and discussed with I&APs and responses are documented;
- Specialist studies that provide additional information required to address the issues raised in the Scoping phase; and
- Central assessment process through which inputs are integrated and presented in documents that are submitted for approval by authorities.

The EIA process is a planning, design and decision making tool used to demonstrate to the responsible authority, DEA, and the project proponent, Transnet Capital Projects, what the consequences of their choices will be in biophysical, social and economic terms. As such it identifies potential impacts (negative and positive) that the project may have on the environment. The EIA makes recommendations to mitigate negative impacts and enhance positive impacts associated with the project.

The DEA General Guide to the EIA Regulations (Guideline 3, 2006) states that when the competent authority has accepted the Final Scoping Report and Plan of Study for EIA, the EIA phase may commence. The purpose of the EIA phase is to:

- Address issues that have been raised through the Scoping Process;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Formulate mitigation measures.

### 4.2 OVERVIEW OF APPROACH TO THE EIA REPORT AND EMP

The results of the specialist studies and other relevant project information have been summarized and integrated into this Draft EIA Report. The Draft EIA Report will be released for a 40 day I&AP and authority review period, as outlined in Sections 4.5 and 4.6. All I&APs on the project database will be notified in writing of the release of the Draft EIA Report for review. It is proposed that during this review period a public meeting is held, as well as focus group meetings with key I&APs. The purpose of these meetings is to provide an overview of the outcome and recommendations from the specialist studies, as well as provide an opportunity for comment. Comments raised through written correspondence (emails, comment forms, etc.) and at meetings (public meeting and focus group meetings) will be captured in a Comments and Responses Trail for inclusion in the Final EIA Report. Comments raised will be responded to by the CSIR EIA team and/or the applicant. These responses will indicate how the issue has been dealt with in the EIA process. Should the comments



## CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

received fall beyond the scope of this EIA, clear reasoning will be provided. All comments received will be attached as an appendix to the Final EIA Report. Comments received on the Final Scoping Report, through written correspondence (letters and emails) or meetings held, have been included in the Comments and Responses Trail in Chapter 15 of this report. A copy of the comments received, via email or in writing, is attached as Appendix H of this report. The notes from meetings held are included in Appendix I.

This Draft EIA Report includes a draft Environmental Management Plan (EMP), which has been prepared in compliance with the relevant regulations. This EMP is based broadly on the environmental management philosophy presented in the ISO 14001 standard, which embodies an approach of continual improvement. Actions in the EMP are drawn primarily from the proposed management actions in the specialist studies for the construction and operational phases of the project. If the project components are decommissioned or re-developed, this will need to be done in accordance with the relevant environmental standards and clean-up/remediation requirements applicable at the time.

An overview of the approach to the EIA process is provided in Figure 4.1.

### 4.3 INTRODUCTION TO THE EIA PHASE

Section 24(1) of NEMA states:

*"In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority charged by this Act with granting the relevant environmental authorization."*

The reference to "listed activities" in section 24 of NEMA relates to the regulations promulgated respectively in Government Notices R 544, R 545 and R 546 (as amended) in Government Gazette 33306, dated 18 June 2010, which came into effect on 2 August 2010. The relevant Government Notices published in terms of NEMA collectively comprise the NEMA EIA Regulations listed activities that require either a Basic Assessment, or Scoping and Environmental Impact Assessment (that is a "full EIA") to be conducted. The Transnet Manganese Ore Export Facility project requires a full EIA, as it particularly includes, inter alia, the following activities listed under Activity Number 15 in Government Notice R 545 in Government Gazette No 33306 of June 2010:

- *Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.*

All the listed activities potentially forming part of this proposed development and therefore requiring environmental authorization are listed in Table 4.1 and are also included in the application form prepared and submitted to the DEA on 29 March 2012. The EIA application for the proposed project was amended on release of the draft scoping report to provide in order to include the doubling of the railway line between the existing marshalling yard within the Coega IDZ and the proposed compilation yard in the scope of work. The amended EIA was accepted by national DEA on 26 June 2012 (Letter from DEA can be found in Appendix B of the Final Scoping Report)

It should be noted that a precautionary approach was followed when identifying listed activities in the application form i.e. if the activity potentially forms part of the project, it is listed. However, the



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

final project proposal will be shaped by the findings of the EIA process and certain activities may be added or removed from the project proposal. The DEA will be informed in writing of such amendments and Interested and Affected Parties (I&APs) will also be informed accordingly.

**Table 4.1: Listed activities in GN R544, R545 and R546 that potentially form part of the proposed Transnet Manganese Ore Export Facility Project**

Government Notice R544 Activity No(s):	Description of the relevant Basic Assessment Activity
2	The construction of facilities or infrastructure for the storage of ore or coal that requires an atmospheric emissions license in terms of the National Environmental Management: Air Quality Act (Act No. 39 of 2004).
9 (i) and (ii)	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water: (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more, excluding where: (a) such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or (b) where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.
11 (iv), (vi), (x) and (xi)	The construction of: (iv) dams; (vi) bulk storm water outlet structures; (x) buildings exceeding 50 square metres in size; (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.
12	The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more.
13	The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic meters.
14	The construction of structures in the coastal public property where the development footprint is bigger than 50 square metres, excluding: (i) the construction of structures within existing ports or harbours that will not increase the development footprint or throughput capacity of the port or harbour; (ii) the construction of a port or harbour, in which case activity 24 of Notice 545 of 2010 applies; (iii) the construction of temporary structures within the beach zone where such structures will be demolished or disassembled after a period not exceeding 6 weeks.
16 (vi)	Construction or earth-moving activities in the sea, an estuary, or within the littoral active zone or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater, in respect of - (vi) infrastructure covering 50 square metres or more - but excluding: (a) if such construction or earth moving activities will occur behind a development setback line; or (b) where such construction or earth moving activities will occur within existing ports or harbours and the construction or earth moving activities will not increase the development footprint or throughput capacity of the port or harbour; (c) where such construction or earth moving activities is undertaken for the purposes of maintenance of the facilities mentioned in (i)-(vi) above; or (d) where such construction or earth moving activities is related to the construction of a port or harbour, in which case activity 24 of Notice 545 of 2010 applies.
18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from: (iv) the littoral active zone, and estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater - but excluding where such infilling, depositing, dredging, excavation, removal or moving (i) is for maintenance purposes undertaken in accordance with a management plan agreed to





*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

	by the relevant authority; or (ii) occurs behind the setback line.
22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.
24	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where at the time of the coming into effect of this Schedule or thereafter such land was zoned open space, conservation or had an equivalent zoning.
40 (iv)	The expansion of infrastructure by more than 50 square meters within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, but excluding where such expansion will occur behind the development setback line.
45 (vi)	The expansion of facilities in the sea, an estuary, or within the littoral active zone or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever is greater, for infrastructure by more than 50 square meters, where such expansion will result in an increase in the development footprint of such facilities
47	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres - excluding widening or lengthening occurring inside urban areas.
<i>Note: Activity 23 of GNR 544 has not been included given that the total surface area of the proposed project exceeds 20 hectares and therefore Activity 15 of notice GNR 545 is triggered.</i>	
Government Notice R545 ActivityNo(s):	Description of the relevant Scoping and EIA Activity
5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the Act will apply.
11	The construction of railway lines, stations or shunting yards, excluding - (i) railway lines, shunting yards and railway stations in industrial complexes or zones; (ii) underground railway lines in a mining area; and (iii) additional railway lines within the reserve of an existing railway line.
15	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; except where such physical alteration takes place for: (i) linear development activities; or (ii) agriculture or afforestation where Activity 16 in this Schedule will apply.
26	Commencing of an activity, which requires an atmospheric emission licence in terms of Section 21 of National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), except where such commencement requires basic assessment in terms of Notice of No. R544 of 2010.
Government Notice R546 Activity No(s):	Description of the relevant Basic Assessment Activity for specific geographical areas
2 (a) (iii) (dd) (ff) (gg)	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.  (a) In the Eastern Cape province: (iii) Outside urban areas, in:  (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.



*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

<p><b>4 (a) (ii) (ee) (gg) (hh)</b></p>	<p>The construction of a road wider than 4 metres with a reserve less than 13.5 metres.</p> <p>(a) In the Eastern Cape province: (ii) Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve; (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>
<p><b>12 (b) (c)</b></p>	<p>The clearance of an area of 300 square metres or more of vegetation where 75 % or more of the vegetative cover constitutes indigenous vegetation.</p> <p>(b) within critical biodiversity areas identified in bioregional plans (c) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.</p>
<p><b>13 (a) [(c)(ii)(ff)(gg)]</b></p>	<p>The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>(a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority. (c) In the Eastern Cape province: (ii) Outside urban areas, in: (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>
<p><b>14 (a) (i)</b></p>	<p>The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>(a) In Eastern Cape province: (i) All areas outside urban areas;</p>
<p><b>16(a) (ii) [(ff) (hh) (ii)]</b></p>	<p>The construction of: (ii) Slipways exceeding 10 square metres in size; (iii) Buildings with a footprint exceeding 10 square metres in size; (iv) Infrastructure covering 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p> <p>(a) In the Eastern Cape province: (ii) Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregions plans; (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (ii) areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>
<p><b>19 (a) (ii) (ee) (gg) (hh) (ii)</b></p>	<p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>(a) In the Eastern Cape province: (ii) Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; (ii) Areas on the watercourse side of the development setback line or within 100 metres from</p>





CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

	the edge of a watercourse where no such setback line has been determined.
<b>24 (a) (ii) (ee) (gg) (hh)</b>	<p>The expansion of infrastructure where the infrastructure will be expanded by 10 square meters or more, where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line</p> <p>(a) In the Eastern Cape province:</p> <p>(ii) Outside urban areas, in:</p> <p>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</p> <p>(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p>
	<i>Note: Activity 10 of GNR 546 has not been included given that the proposed storage of dangerous goods exceeds 80 cubic meters and therefore Activity 13 of notice GNR 544 is triggered.</i>

## 4.4 REGULATORY FRAMEWORK FOR THIS EIA

The following legislation, guidelines and information series documents have been taken into account for the assessment of the potential impacts of the proposed Transnet Manganese Ore Export Facility project on the receiving environment described in this report.

### 4.4.1 National Legislation

- Section 24 of The Constitution of the Republic of South Africa;
- National Environmental Management Act (NEMA) (Act 107 of 1998);
- EIA Regulations published under Chapter 5 of the NEMA on 18 June 2010 (GN R543, GN R544, GN R545 and GN R546 in Government Gazette 33306);
- Guidelines published in terms of the NEMA EIA Regulations, in particular:
  - Guideline on Transitional Arrangements (August 2010)
  - Guideline on Alternatives (August 2010)
  - Guideline on Public Participation (August 2010)
  - Guideline on Exemptions (August 2010)
  - Guideline on Need and Desirability (August 2010)
  - Guideline on Appeals (August 2010)
  - Information Document on Generic Terms of Reference for EAP's and Project Schedules (August 2010)
- National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004);
- National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008);
- National Environmental Management: Air Quality Act (Act 39 of 2004);
- National Environmental Management: Waste Act (Act 59 of 2008);
- National Water Act (Act 36 of 1998);
- National Forest Act (No. 84 of 1998);
- National Heritage Resources Act (NHRA) (Act 25 of 1999);
- National Ports Act (Act 12 of 2005);
- Hazardous Substance Act (Act 15 of 1973);
- Integrated Environmental Management Information Series (Booklets 0 to 23) published by DEA over the period 2002 to 2005;
- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA);
- Nature and Environmental Conservation Ordinance (No. 19 of 1974);



---

CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- Subdivision of Agricultural Land Act (SALA) (Act 70 of 1970);
- Environment Conservation Act (ECA) (Act No. 73 of 1989);
- Road Traffic Act (Act 93 of 1996);
- Promotion of Administrative Justice Act (Act 2 of 2000);
- Records of Decision issued by national DEA and/or the provincial DEAE&T for activities in the Port of Ngqura and Coega IDZ.

Other Acts, standards and/or guidelines which may also be applicable will be reviewed in more detail as part of the specialist studies to be conducted for the EIA.

#### **4.4.2 International Treaties**

The following two international treaties allow for the protection of wetlands and rivers:

- Agenda 21 – Action plan for sustainable development of the Department of Environmental Affairs and Tourism (DEAT) 1998;
- The Ramsar Convention, 1971 including the Wetland Conservation Programme (DEAT) and the National Wetland Rehabilitation Initiative (DEAT, 2000);

#### **4.4.3 Provincial Legislation and Policy**

Various provincial guidelines on buffers have been issued within the province. Currently there is no accepted priority ranking system for wetlands. Until such a system is developed, it is recommended that a 50m buffer be set for all wetlands. The Nelson Mandela Bay Municipality (NMBM) has recently produced a bioregional conservation plan, which does cover the study area. The plan calls for a buffer of 50m, for small closed wetland systems such as those found on the site.

Other policies that are relevant include:

- Provincial Nature Conservation Ordinance (PNCO) – Protected Flora. Any plants found within the sites or were described in Chapter 5 (Impacts on Vegetation and Terrestrial Fauna), which are associated with wetland areas.
- National Freshwater Ecosystems Priority Areas – CSIR 2011 draft. This mapping product highlights potential rivers and wetlands that should be earmarked for conservation on a national basis.

The following sections provide more detail on the NEMA environmental legislation that requires specific permits or letters of no objection being sought from authorities regarding management of air quality, waste, water and heritage resources.



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

**4.4.4 NEM: Air Quality Act (Act 39 of 2004) Atmospheric Emissions Licence**

The proposed project will result in the release of mainly dust and potentially other atmospheric emissions through its operations. An Atmospheric Emissions Licence (AEL) is therefore required in terms of the National Environmental Management: Air Quality Act (39 of 2004), GN 248 published in Government Gazette 33064 on 21 March 2010. The proposed Manganese Ore Export Facility is classified as a Category 5: Subcategory 5.1 listed activity in terms of Section 21 of NEM: AQA. A Category 5 listed activity pertains to “*mineral processing, storage and handling*”. Furthermore, Subcategory 5.1 pertains to the “*storage and handling of ore and coal*”. Table 4.2 indicates the description and application of the aforementioned activities.

**Table 4.2: Subcategory 5.1 listed activity in terms of Section 21 of the NEM: AQA (Act 39 of 2004) that potentially form part of the proposed Manganese Ore Export Facility Project**

Category 5: Mineral processing, storage and handling	
Subcategory 5.1: Storage and Handling of Ore and Coal	
Description	Storage and handling of ore and coal not situated on the premises of a mine or works as defined in the Mines Health and Safety Act 29/1996.
Application	Locations designed to hold more than 100 000 tons of Manganese Ore.

Section 38. (2) and (3) of the NEM: AQA prescribes the procedure for the submission of an AEL and the steps to notify and consult with affected organs of state and I&APs. This procedure will be used to guide the submission of the AEL application for the proposed project to the NMBM. The objective is to align the AEL application process with the EIA process from the outset, particularly with regards to the public participation, in order to generate an overall robust project and to provide the respective competent authorities with a sufficient amount of necessary information in order to make an informed, sound decision. This approach, supported by the National Framework for Air Quality Management in the Republic of South Africa, as published in 2007, will be used throughout the EIA and AEL process for the proposed project. The National Framework for Air Quality Management in the Republic of South Africa (2007) specifies that given that the EIA process requires a more comprehensive public participation process, the alignment of the two processes may benefitiate the AEL process. This will ensure that the public, I&APs, and stakeholders are kept well informed about the AEL process.

Section 38 (3) of the NEM: AQA stipulates the public participation requirements for an AEL application. These requirements state that the Applicant needs to publish a notice in at least two newspapers circulating in the area in which the listed activity will be carried out. The notice should describe the nature and purpose of the application applied for, include the details of the listed activity and its locality, and it should also include a comment period and the details of a relevant contact person should I&APs need to submit comments. These requirements have been fulfilled as a result of the placing of two newspaper adverts and a notice at the commencement of the Scoping Process, as well as in all correspondences to I&APs during the Scoping phase. A copy of the newspaper advertisements placed and correspondence sent to I&APs during the Scoping Process, is included in the Final Scoping Report submitted to National DEA for their decision making. I&APs will continue to be kept informed of the AEL application process and the Air Quality Specialist Study through the EIA phase of the assessment. This approach has also been supported by the AEL Authority, the NMBM.

Based on this, an application for an Atmospheric Emissions Licence (AEL) has been lodged with the Air Quality Division of the NMBM, who serves as the designated AEL Authority (refer to Appendix B)



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

together with the draft EIA Report which specifies the public participation process adopted, and includes responses to comments relating to air quality. Copies of the AEL Application will also be submitted to the Provincial Air Quality Officer from DEDEAT. The NMBM also supports this approach in terms of the actual submission of the AEL application (Discussed with the NMBM during a meeting at Port Elizabeth on 13 April 2012). It is however proposed that regular communication with the NMBM be kept throughout the EIA process in terms of the AEL application and air quality specialist study.

Once the AEL application has been submitted, a case officer will be assigned to the application in order to commence with the processing. In general and in line with NEM: AQA, a decision is made in terms of the AEL within a period of 90 days. If the AEL application is granted, the Licensing Authority then issues a Provisional AEL, which contains conditions and requirements, in order to enable the commissioning of the activity. The Provisional AEL may thereafter be transferred to an AEL if the commissioned facility has been fully compliant with the conditions and requirements of the Provisional AEL for a minimum period of 6 months.

**4.4.5 NEM: Waste Act (Act 59 of 2008): Waste Licence**

The proposed project also requires a Waste Licence in terms of the National Environmental Management: Waste Act (Act No. 59 of 2008), GN R 718 published on 3 July 2009, Category A listed activities. The licensing authority is the National DEA and an application for a Waste Licence was submitted (Appendix B). Table 4.3 illustrates the listed activities that may be triggered as a result of the proposed project. The Waste Licence Application process will be run in conjunction with the AEL and EIA processes.

**Table 4.3: Category A listed activities in terms of Section 19 of the NEM: Waste Act (Act 59 of 2008) that potentially form part of the proposed Manganese Ore Export Facility Project**

Category	Description	Applicability
A2	The storage including the temporary storage of hazardous waste at a facility that has the capacity to store in excess of 35m <sup>3</sup> of hazardous waste at any one time, excluding the storage of hazardous waste in lagoons.	The refuelling and maintenance facilities at the compilation yard and terminal may have to store waste oils, filters, etc. from serviced locomotives. Wastewater from the wash bay facility will also require storage. Low grade manganese mud from the stormwater retention dam may be stored in the stockyard. These wastes may be considered hazardous and may exceed 35 m <sup>3</sup> at any given time.
A11	The treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2000 m <sup>3</sup> but less than 15 000m <sup>3</sup> .	Stormwater runoff from the stockyard, which eventuates into a stormwater retention pond, may need to be treated prior to being re-used in the dust mitigation system for the stockyard. Annual throughput may exceed 2000 to 15000 m <sup>3</sup> .
A18	The construction of facilities for activities listed in Category A.	The construction of facilities for activities listed in Category A.

The Atmospheric Emissions and Waste Licence applications procedure will therefore be integrated into the Scoping and Environmental Assessment for the Environmental Authorisation. In terms of the activities listed in the tables above (Table 4.1, 4.2 & 4.3), a joint Scoping and Environmental Impact Assessment (S&EIR) is being undertaken for this project.



---

CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

**4.4.6 National Water Act (Act 36 of 1998): Water Use License**

Given that the proposed project will cross watercourses in the area, and that it will be within 500m of wetland areas, Transnet SOC Ltd will be required to submit a Water Use License Application to the Department of Water Affairs (competent authority) in terms of the Water Act (Act 36 of 1998). The following potential activities associated with the proposed development will require a water use license, as stipulated by the legislation:

- NWA (Act 36 of 1998) Section 21
  - ✓ Section 21 (a), abstractive use of water (if required) and storage. Any person or body storing water for any purpose in excess of 10 000 cubic meters or where the water area at full supply level exceeds 1 hectare in total on land owned or occupied by that person or body and not in possession of a permit or permission, e.g. the filter basins or reclamation ponds, potential water abstraction from the Coega River for construction
  - ✓ Section 21 (c) and (i) use, i.e. watercourse crossings by, roads, railways or additional infrastructure.
  - ✓ Section 21(f), when discharging waste or water containing waste into a water resource through a pipe, canal or other conduit.
  - ✓ Section 21(g) – disposing of waste in a manner which may detrimentally impact on a water resource.

**4.4.7 National Heritage Resources Act (NHRA) (Act 25 of 1999)**

Parts of sections 35(4), 36(3) (a) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply to the proposed project:

**Archaeology, palaeontology and meteorites**

Section 35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

**Burial grounds and graves**

Section 36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.



---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

**Heritage resources management**

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –

- (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of the site –
  - (i) exceeding 5000m<sup>2</sup> in extent, or
  - (ii) involving three or more erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
- (d) the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

An approval letter will therefore be sought from the relevant authority (i.e. SAHRA) confirming that notification was undertaken and that the process undertaken as part of this EIA process and outcomes in terms of heritage resources are acceptable (Appendix H).

---

## **4.5 PUBLIC PARTICIPATION PROCESS**

---

The key steps in the public participation process for the EIA phase are described below. This approach has been confirmed with the DEA through their approval of the PSEIA. The participation process for the Scoping Process is described in Chapter 4 of the Final Scoping Report.

All I&APs on the project database were notified in writing, via letter 3 dated 3 September 2012, of the submission of the Final Scoping Report and the 21 day comment period. A copy of this correspondence is attached as Appendix F of this report. Comments received from I&APs during and after the 21 day comment period on the Final Scoping Report have been included in the Comments and Responses Trail in Chapter 15 of this report. Copies of the detailed comments received are included in Appendix H. A presentation was also given to the Coega Environmental Liaison Committee (Coega ELC) meeting of the 24 May 2012 and issues raised during this meeting have also been included in the Comments and Responses Trail in Chapter 15. The notes from this meeting are included in Appendix I of this report and a copy of the meeting register is included in Appendix J.





## CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

### TASK 1: REVIEW OF DRAFT EIA REPORT AND EMP

---

The first stage in the process entails the release of the Draft EIA Report for a 40 day public and authority review period. Relevant organs of state and I&APs will be informed of the review process in the following manner:

- **Advertisements** - Placement of an advert in one Provincial newspaper, The Herald, and one Regional newspaper, Die Burger, advertising the availability of the Draft EIA report for review as well as providing details of the public meeting to be held;
- **Correspondence to IA&Ps** – All I&APs on the project database (189 I&APs) will be notified in writing via Letter 4 to all I&APs (including authorities), of the 40 day public review period for the Draft EIA Report and will be invited to attend the public meeting (this letter will include the executive summary of the Draft EIA Report and a Comment Form).
- **Public Meeting** – A Public Meeting, to which all I&APs will be invited, will be held during the 40 day Review process. The purpose of the meeting will be to present key findings of the Draft EIA report and provide the opportunity for comments. Present at the meeting will be members of the EIA team and project proponent.
- **Focus Group Meeting(s)** - Focus Group Meetings will be held with key I&AP groups during the review of the Draft EIA. The purpose of these meetings is to target key I&AP groups (Councillors, community organisations, environmental organisations, affected landowners/ tenants) and proactively invite them to attend a meeting where they are provided with an overview of the project and key findings of the Draft EIA Report.
- Meeting(s) with key authorities involved in decision-making for this EIA.

The Draft EIA Report and EMP will be made available and distributed through the following mechanisms to ensure access to information on the project and to communicate the outcome of specialist studies:

- Copies of the report will be placed at the main library in Port Elizabeth (Govan Mbeki Ave) and in the Motherwell library;
- Relevant organs of state and key I&APs will be provided with a hard copy or CD version of the report;
- Report to be placed on the project website: [www.publicprocess.co.za](http://www.publicprocess.co.za)

In terms of the electronic database, I&AP details are captured and automatically updated as and when information is distributed to or received from I&APs. This ongoing and up-to-date record of communication is an important component of the public participation process. It must be noted that while not required by the regulations, those I&APs proactively identified at the outset of the Scoping Process will remain on the project database throughout the EIA Process and will be kept informed of all opportunities to comment and will only be removed from the database by request. At the time of release of this report the project database includes 189 registered I&APs. A copy of the I&AP database is included as Appendix D of this report.

### TASK 2: COMMENTS AND RESPONSES TRAIL

---

A key component of the EIA process is documenting and responding to the comments received from I&APs and the authorities. The following type of comments on the Draft EIA Report and EMP will be documented:

- Written and email comments (e.g. letters and completed comment forms)



---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

- Comments made at public meetings
- Comments made at focus group meetings
- Telephonic communication with the Public Participation contact person
- One on one meetings with key authorities and/or I&APs
- Comments from/issues raised at the Coega ELC meetings.

The comments received during the review of the Draft EIA Report will be compiled into a Comments and Responses Trail for inclusion in the Final EIA Report. The Comments and Responses Trail will indicate the nature of the comment, the details of the person who raised the comment, as well as the date the comment was submitted. The comments received will be considered by the EIA team and appropriate responses provided by the relevant member of the team and/or specialist. The response provided will indicate how the comment received has been considered in the Final EIA Report, in the project design or EMP for the project. Minutes of the public meetings will also be kept and inserted as an appendix in the report (Appendices H& I).

As noted in Section 4.5 above comments received from I&APs on the Final Scoping Report and at the Coega ELC meeting have been included in the Comments and Responses Trail in Chapter 15 of this report. Copies of the detailed comments received are included in Appendix H and the notes from meeting held are included in Appendix I of this report.

---

***TASK 3: COMPILATION OF FINAL EIA REPORT FOR SUBMISSION TO  
AUTHORITIES***

---

The Final EIA Report, including the Comments and Responses Trail and EMP, will be submitted to the authorities for decision making. Letter 5 will be sent to all I&APs on the project database notifying them of the submission of the Final EIA Report. I&APs will be given a 21 day review period to comment on the changes to the EIA Report. These comments will be sent directly to the competent authority, with a request for a copy to be submitted to the public participation consultant. The Final EIA Report will be distributed as follows:

- Copies of the report will be placed at the main library in Port Elizabeth (Govan Mbeki Ave) and in the Motherwell library;
- Relevant organs of state and key I&APs will be provided with a hard copy or CD version of the report;
- Report to be placed on the project website: [www.publicprocess.co.za](http://www.publicprocess.co.za)



CHAPTER 4 - APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

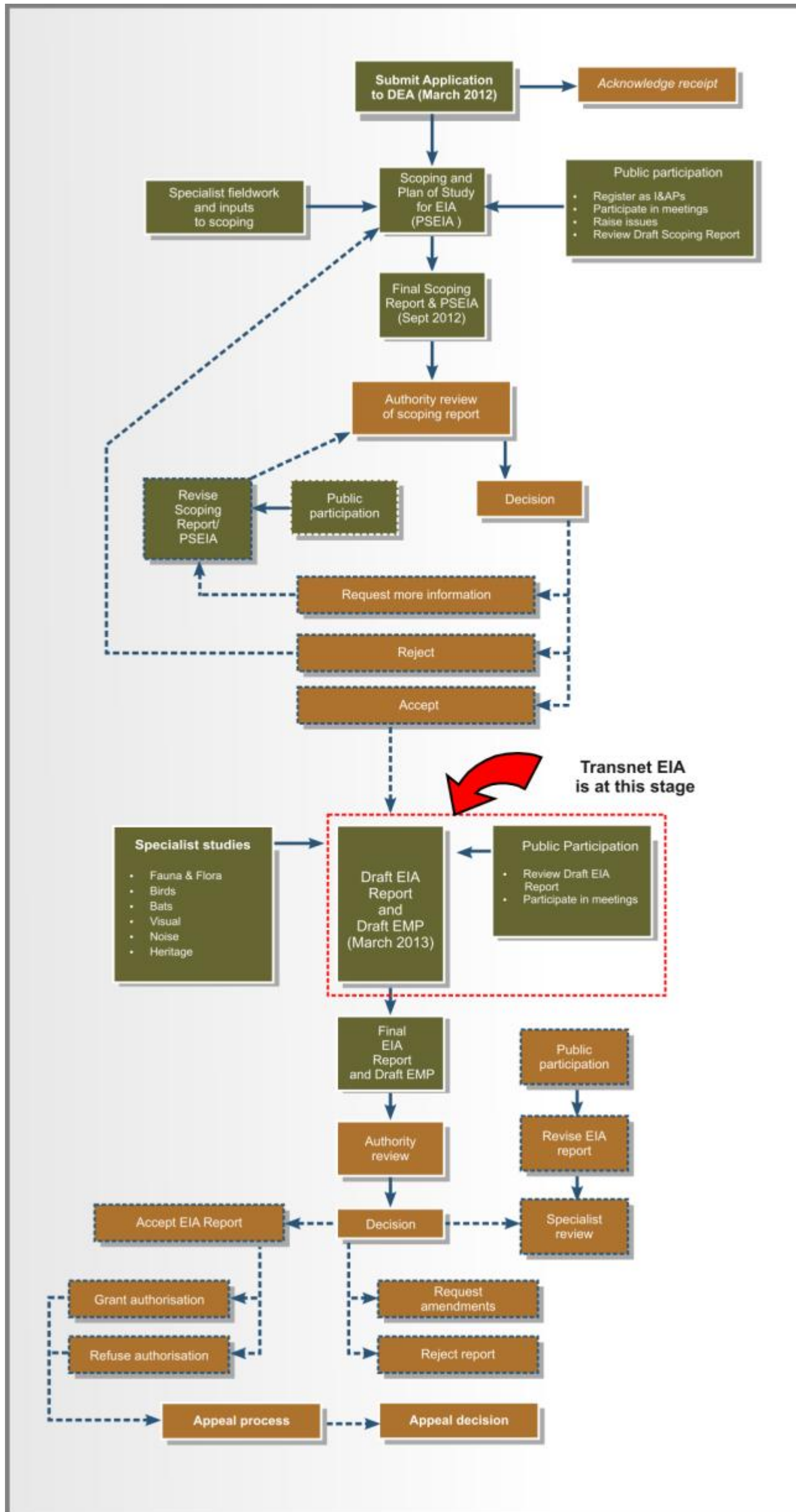


Figure 4.1: EIA Process for the Manganese Ore Export Facility Project in the Coega IDZ.



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

**TASK 4: ENVIRONMENTAL AUTHORISATION AND APPEAL PROCESS**

All I&APs on the project database will be notified of the outcome of the decision making process and the issuing of an Environmental Authorisation and the Appeal period. The following process will be followed for the distribution of the Environmental Authorisation and notification of appeal period:

- Advertisements will be placed in one Provincial and one Regional newspaper notifying I&APs of the environmental authorisation and waste licence;
- Copies of the Environmental Authorisation will be placed at the main library in Port Elizabeth (Govan Mbeki Ave) and in the Motherwell library;
- Letter 6 to be sent to all I&APs (including organs of state), with a copy of the Environmental Authorisation and information on the Appeal Period. I&APs will be notified of the outcome of the Waste Licence application in conjunction with the notification of the Environmental Authorisation; and
- Environmental Authorisation to be placed on the project website: [www.publicprocess.co.za](http://www.publicprocess.co.za)

All I&APs on the project database will be notified of the outcome of the appeal period, this notification will be included in Letter 7 to I&APs. Letter 8 will be sent to all I&APs to notify them of the outcome of the AEL Application.

**4.6 AUTHORITY CONSULTATION DURING THE EIA PHASE**

Authority consultation is integrated into the public consultation process, with additional one-on-one meetings held with the lead authorities where necessary. It is proposed that the competent authority (DEA) as well as other lead authorities be consulted at various stages during the EIA Process. This consultation will primarily take place through the quarterly meetings of the Coega Environmental Liaison Committee (ELC), which includes the lead authorities mandated to issue Environmental Authorisations and licences/permits. Table 4.4 below indicates the proposed consultation schedule for the EIA phase.

*Table 4.4: Authority Consultation Schedule for the EIA Phase*

Stage in EIA Phase	Form of Consultation (including provisional dates)
SCOPING PHASE	CSIR presented the progress of the DSR to authorities at the Coega ELC meeting on 24 May 2012.
SPECIALIST STUDIES PHASE	CSIR presented draft findings from the specialist studies to the Coega ELC meeting on 14 February 2013 for comment.
REVIEW OF DRAFT EIA REPORT AND DRAFT EMP	Review of draft reports: Authorities, together with other stakeholders, will have the opportunity to review the Draft EIA and EMP reports during the 40-day review period and to attend the public meeting. If requested, CSIR can present the Draft EIA Report and EMP reports to the authorities at a dedicated authority meeting during this review period.  Site visit: Offer a site visit for authorities, as and when required. We suggest that, if required, this take place at the same time of the public meeting for the Draft EIA Report and EMP.
FINAL EIA REPORT PHASE	Meetings with dedicated departments, if requested by DEA, with jurisdiction over particular aspects of the project (e.g. Local Authority) and potentially including relevant specialists will be undertaken once the Final EIA Report has been submitted.



---

## **4.7 SCHEDULE FOR THE EIA**

---

The proposed schedule for the EIA, based on the legislated EIA process, is presented in Table 4.5. It should be noted that this schedule might be revised during the EIA process, depending on factors such as the time required for decisions from authorities.



CHAPTER 4 - APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

**Table 4.5: EIA Schedule for the Proposed Transnet Manganese Ore Export Facility Project**

Tasks	Months																			
	2012 April	May	June	July	Aug	Sept	Oct	Nov	Dec	2013 Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov
1	Notify authorities and submit EIA application																			
2	Establish I&AP database, prepare BID and announce EIA																			
3	I&AP registration & meetings with key stakeholders to source issues																			
4	Prepare Draft Scoping Report (DSR) and Plan of Study for EIA (PSEIA)																			
5	Public and authorities comment period (40 days) on DSR and stakeholder meetings and prepare final SR																			
6	Submit Final Scoping Report (FSR) and PSEIA to authorities for decision (30 days to respond and 60 days extension)																			
7	Communicate authority decision to I&APs and process for next phase																			
8	Specialist studies (including fieldwork)																			
9	Prepare Draft EIA Report and EMP																			
10	Public review of Draft EIA Report and EMP (40 days) and prepare final EIA Report																			
11	Submit Final EIA Report and Draft EMP to authorities																			
12	Decision by authorities (107 days plus Xmas holiday closed period from 15 December to 2 January if applicable)																			
13	Communicate authority decision to I&APs																			
14	Appeal process (20 days from date of decision to lodge an appeal and 30 days thereafter to submit the appeal)																			





## 4.8 APPROACH TO SPECIALIST STUDIES AND IMPACT ASSESSMENT

This section outlines the assessment methodology and legal context for specialist studies, as recommended by the Departmental 2006 guideline on Assessment of Impacts<sup>1</sup>.

### 4.8.1 *Generic Terms of Reference for the Assessment of Impacts*

The identification of potential impacts should include impacts that may occur during the construction and operational phases of the activity. The assessment of impacts is to include direct, indirect as well as cumulative impacts. In order to identify potential impacts (both positive and negative), it is important that the nature of the proposed activity is well understood so that the associated environmental aspects can be identified. The process of identification and assessment of impacts will include:

- Determining the current environmental conditions in sufficient detail so that there is a baseline against which impacts can be identified and measured.
- Assessing implications for the socio-economic and natural environment if the project does not proceed (i.e. no go option).
- Develop an understanding of the activity in sufficient detail to understand its consequences; and
- The identification of significant impacts which are likely to occur if the activity is undertaken.

As per DEA Guideline 5: Assessment of Alternatives and Impacts (2006) the following methodology is to be applied to the prediction and assessment of impacts. Potential impacts should be rated in terms of the direct, indirect and cumulative effects:

- **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

The following criteria will be used to assess the significance of the identified impacts:

- **Spatial extent** – The size of the area that will be affected by the impact:
  - Site specific
  - Local (within the Coega IDZ)
  - Regional (within 30 km of site)

<sup>1</sup> DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the EIA Regulations, 2006. *Integrated Environmental Management Guideline Series 5*, Department of Environmental Affairs and Tourism (DEAT), Pretoria.



## CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- National.
- **Intensity** –The anticipated severity of the impact:
  - High (severe alteration of natural systems, patterns or processes)
  - Medium (notable alteration of natural systems, patterns or processes)
  - Low (negligible alteration of natural systems, patterns or processes).
- **Duration** –The timeframe during which the impact will be experienced:
  - Temporary (less than 1 year)
  - Short term (1 to 6 years)
  - Medium term (6 to 15 years)
  - Long term (the impact will only cease after the operational life of the activity)
  - Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Using the criteria above, the impacts will further be assessed in terms of the following:

**Status** - Whether the impact on the overall environment (social, biophysical and economic) will be:

- Positive - environment overall will benefit from the impact
- Negative - environment overall will be adversely affected by the impact
- Neutral - environment overall will not be affected.

**Probability** – The probability of the impact occurring:

- Improbable (little or no chance of occurring)
- Probable (<50% chance of occurring)
- Highly probable (50 – 90% chance of occurring)
- Definite (>90% chance of occurring).

**Reversibility of the Impact** – the extent to which the impacts are reversible assuming that the project has reached the end of its life cycle (decommissioning phase) will be:

- High - impacts on the environment at the end of the operational life cycle are highly reversible
- Moderate - impacts on the environment at the end of the operational life cycle are reasonably reversible
- Low - impacts on the environment at the end of the operational life cycle are slightly reversible
- Non-reversible - impacts on the environment at the end of the operational life cycle are not reversible and are consequently permanent.

**Irreplaceability of Resource Loss caused by Impacts** – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase) will be:

- High - resources at the end of the project life cycle are highly irreplaceable
- Moderate - resources at the end of the project life cycle are moderately irreplaceable
- Low - resources at the end of the project life cycle are slightly irreplaceable
- Replaceable - resources at the end of the project life cycle are replaceable.

**Significance** – Will the impact cause a notable alteration of the environment?

- Low to very low (the impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making)



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- Medium (the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated)
- High (the impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making).

**Confidence** – The degree of confidence in predictions is based on available information and specialist knowledge:

- Low
- Medium
- High.

The template below (Table 4.6) is to be used by specialists for the rating of impacts.

**Table 4.6: Table for rating of impacts**

Impact	Spatial Extent	Intensity	Duration	Probability	Reversibility	Irreplaceability	Mitigation	Significance & Status		Confidence
								Without Mitigation	With Mitigation	
e.g. Loss of vegetation during Construction of the wind farm (Construction Footprint)	Local	High	Short	Highly probable	High	Moderate	Demarcate the construction footprint with hazard tape and ensure that construction personnel remain within this demarcated area, wherever practical. Educate workers on the need to stay on paths and established tracks wherever practical. If possible, establish lay down areas in degraded areas. Construction protocols will require top soil to be removed and separately stored from sub-soil.	Medium	Low	High

Other aspects to be taken into consideration in the assessment of impact significance are:

- Impacts should be assessed for the preferred layout and alternative layouts (Section 4.9 of this Chapter).
- Impacts will be evaluated for the construction and operation phases of the development. The assessment of impacts for the decommissioning phase will be brief, as there is limited understanding, at this stage, of what this might entail. The relevant rehabilitation guidelines and legal requirements applicable at the time will need to be applied.
- Where negative impacts are identified, specialists should set mitigation objectives (i.e. ways of avoiding or reducing negative impacts), and recommend attainable mitigation actions. Where no mitigation is feasible, this should be stated and the reasons given. Where positive impacts are identified, management actions to enhance the benefit must also be recommended.



*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

- Impacts should be described both, with and without the proposed management actions.
- The specialists should set quantifiable standards for measuring the effectiveness of mitigation and enhancement, where possible. In addition, specialists should recommend, in broad terms, the monitoring programme that would be required to assess the effectiveness of mitigation actions.
- The impact evaluation will, where possible, take into consideration the cumulative effects associated with this and other facilities/projects which are either developed or in the process of being developed in the local area, if relevant.
- The impact assessment will attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards and/or international standards are to be used as a benchmark to measure the level of impact.

**4.8.2 Specific Issues to be addressed in Specialist Studies**

Based on an evaluation of issues to date, the following Specialist Studies are proposed as part of the EIA phase:

Specialist Study	Proposed Specialist	Specialist Organisation
Marine Ecology Assessment	Dr. Robin Carter	Lwandle Technologies
Terrestrial Ecology (Particularly Vegetation)	Jamie Pote	Private Consultant
Aquatic Ecology	Brian Colloty	Scherman Colloty and Associates
Noise Impact Assessment	Brett Williams	Safetech
Visual Impact Assessment	Henry Holland	Map(this)
Integrated Water Management Study	Philip De Souza	Emanti Management
Groundwater Assessment	Julian Conrad	GEOSS
Air Quality Assessment (including human health)	1. Dr. Mark Zunckel and Atham Raghundan 2. Rietha Oosthuizen	1. uMoya-NILU Consulting 2. CSIR
Avifauna Assessment	Pat Morant	CSIR
Archaeological Impact Assessment	Dr. Johan Binneman	Eastern Cape Heritage Consultants
Paleontological Impact Assessment	Dr. John Almond	Natura Viva

The EIAs undertaken for the IDZ (rezoning for the Core area and remainder IDZ and for the Port of Ngqura) (CES 2000, CES 2001 & SRK, 2006) assessed the social impacts associated with the IDZ development and surroundings. In addition, the CDC has well established policies and plans with regard to social management for the entire IDZ. Given that the CDC has already a Labour Agreement in place, it is therefore not anticipated that a socio-economic study would be necessary. All construction activities on the Coega IDZ and at the Port of Ngqura require full compliance to the Coega Zone Labour Agreement (Coega ZLA).

Informal dwellings located across the unfenced graveyard along the railway line in Zone 13 (on Transnet land) and near the Coega Hotel were identified through the cultural heritage specialist study. Given their close proximity to the proposed development and the extensive scale of the proposed activities, a consultation process has been initiated to inform this community of the proposed project and to assess their basic activities and movements (i.e. animal stock, daily routine in terms of travelling, railway line crossings, visiting of graves etc.). Recommended management actions have been included in the Environmental Management Plan.



## *CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

The Terms of Reference (TOR) for the specialist studies essentially consists of the generic assessment requirements and the specific issues identified for each study. These issues have been identified through the baseline studies, I&AP and authority consultation, as well as input from the proposed specialists based on their experience. As part of the review of the Draft Scoping Report, specialists also proposed additional issues for inclusion in the specialist studies. Additional issues, identified through public and authority consultation during the Scoping phase, as well as specialist inputs, were included in the final Terms of Reference for specialists (i.e. in the PSEIA of the Final Scoping Report).

### **4.8.2.1 Marine Ecology Assessment**

The marine ecology specialist study includes the following:

- A description of the affected environment and determine the status quo in terms of marine ecology within the proposed project area (with specific reference to the islands off the Port of Ngqura).
- A discussion of any possible gaps in baseline data in terms of the marine ecology in the Port of Ngqura and Algoa Bay.
- A detailed assessment of all potential risks, and the significance of these risks, to the marine ecology. This may include the effects of manganese dust on the marine environment and sediment quality in the Port of Ngqura, and beneficial users in the marine environment.
- Ascertain possible risks that may be presented by the construction and operation of the proposed Manganese Ore Export Terminal on marine ecology in Algoa Bay, including shipping impacts (e.g. ballast water), Manganese handling and outfall discharge.
- Ascertain risks and impacts of the proposed project on beneficial users of the marine environment, such as aquaculture and recreational and commercial fishing, including the squid fishery.
- Provide specialist input relating to the proposed stockyard layout, and siting of the conveyor routings and associated infrastructure (alternatives) in terms of the marine environment.

### **4.8.2.2 Terrestrial Ecology Assessment**

The terrestrial ecology specialist study includes the following:

- Fieldwork carried out to locate and describe the terrestrial vegetation within the study area, focussing mainly on the impact footprint for site.
- A review of the current Coega IDZ Open Space System and recommendations concerning any offsets or compromises that may be required.
- Review of the Nelson Mandela Metropolitan Open Space Plan, Nelson Mandela Bay Spatial Development Framework, NMBM Draft Bioregional Plan and Eastern Cape Biodiversity Conservation Plan to inform no go areas and address alternative routings for the conveyor route and proposed compilation yard. Based on this review, the specialist study will identify and map “no go” areas for the proposed development, including conservation values, disturbance and transformation on site (i.e. sensitivity map).
- Determining whether the study area falls wholly or partially within the distribution range of species listed as Vulnerable, Endangered, Critically Endangered, Protected, IUCN Red Listed or Endemic and providing recommendations on how these must be managed if clearing is required.
- A description of the current state of the vegetation on site supported by relevant photographs.



*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

- Provide specialist input relating to the proposed stockyard layout, doubling of railway; and siting of the conveyor routings and compilation yard (alternatives) in terms of the terrestrial environment.
- Providing recommendations for the EMP relating to flora and vegetation, including generic rehabilitation and revegetation guidelines.
- Identification of licences required for the removal of certain plants (including contact details for relevant government departments to process the licences).
- A faunal specialist study, focusing on occurrence of rare or endangered animal species in the study area, and on how the project infrastructure could impact on the ecological processes (e.g. movement of animals) and what mitigation could be applied effectively.

**4.8.2.3 Aquatic Ecology Assessment**

The aquatic ecology specialist study includes the following:

- A desktop assessment of the study area, which will include the development footprint in relation to available information related to wetland/riverine ecosystems functioning within the region.
- A map demarcating the relevant local drainage area of the respective water bodies, and the respective catchments within a 500 m radius of the study area. This will demonstrate the connectivity between the site and the surrounding regions holistically (i.e. the zone of influence).
- Maps depicting demarcated water bodies delineated to a scale of 1:10 000, following the methodology described by the DWAF (2005) and National Wetland Classification System.
- A site visit in order to verify the maps produced.
- Determining the ecological state of any aquatic systems, estimating their biodiversity, conservation and ecosystem function and importance with regards to ecosystem services.
- Recommended buffer zones and no-go areas around any delineated wetland areas based on the relevant legislation, e.g. Eastern Cape Biodiversity Conservation Plan guidelines, NMBM Draft Bioregional Plan or best practice.
- Mitigation measures regarding project related impacts, including engineering services that could negatively affect demarcated wetland areas.
- Completion of the required Water Use Licence Applications for submission to the Department of Water Affairs, together with all relevant information and supporting documentation.

**4.8.2.4 Noise Impact Assessment**

The noise specialist study includes the following:

- A rapid desktop review of available information that can support and inform the specialist study.
- A description of the current environmental conditions from a noise perspective in sufficient detail so that there is a baseline description/status quo against which impacts can be identified and measured i.e. sensitive noise receptors.
- Identify all noise sensitive receptors within the study area. These include the receptors within 1 km of the site boundary (external to the site).
- The measurement and description of the present ambient noise levels at the proposed development site. This will be quantified by collecting noise measurement samples, in line with relevant specifications and regulations, at representative points and times during a typical weekday and weekend. Noise measurements will be collected with the use of a noise meter.





## CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- Prediction of the future ambient noise levels due to the noise emissions during the construction and operation of the proposed project (and alternatives). This will be carried out by developing a detailed model, in line with relevant specifications and regulations, of the noise emissions during both the construction and operational phases. Where possible, measurements of noise for similar activities/operations will be undertaken and used as proxy inputs in the model.
- List and describe any applicable legislation, policies and guidelines, including the NMBM noise control by-law in preventing a disturbing noise/nuisance from occurring, e.g. SANS standards for industrial and residential/rural areas (as applicable), especially from key sources of noise.

The following legislation and standards will be used to aid the study and guide the decision making process with regards to noise pollution:

- South Africa - GNR.154 of January 1992: Noise control regulations in terms of section 25 of the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989).
- South Africa - GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 1989 (Act No. 73 of 1989).
- South Africa - SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication.
- South Africa - SANS 10357:2004 Version 2.1 - The calculation of sound propagation by the Concawe method.
- South Africa - Nelson Mandela Bay Metropolitan Municipality: Noise Control By-Law GN 2322 March 2010.

### 4.8.2.5 Visual Impact Assessment

The specialist study includes the following:

- A desktop review of existing relevant documentation (e.g. municipal and regional planning policy, spatial development frameworks, legislation, national and international examples of similar developments), and availability of data (sensitive landscapes and visual receptors, spatial data for visibility analyses and landscape assessment), in order to obtain a basis for evaluating the confidence levels for the overall impact assessment.
- A desktop analysis with the use of GIS and available spatial data to determine:
  - Areas of scenic interest (protected areas such as the Greater Addo Elephant National Park, sites of cultural importance, heritage sites).
  - Potential sensitive receptors (viewpoints, residences).
  - Preliminary zone of visual influence.
  - Principal representative viewpoints.
- Description of the affected environment and determination of the status quo in terms of its visual character, visual absorption capacity. Identification of significant visual features or visual disturbances, as well as any sensitive visual receptors within the proposed project area or within viewshed of the proposed project area.
- A photographic survey by conducting fieldwork to provide the following:
  - Photographic record of landscape elements within the study area.
  - Photographic record of the visual baseline for views from principal viewpoints.
  - The actual zone of visual influence by determining the effect of vegetation, buildings and topography on visibility in the study area.
  - Identification of sensitive receptors (viewers and landscape elements that will be affected by the proposed development).



*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

- A description of the landscape baseline incorporating the results from the desktop review and field survey to provide a description of the existing character (such as geology, topography, land cover and human settlements) and condition of the landscape in terms of its current state relating to human impact, as well as considering the development plans for the IDZ and associated changes in visual character in the area.
- Determining the Zone of Visual Influence and the practical extents of the area for the visibility analysis. This will include a description of the visual absorption capacity for the area and the calculation of cumulative viewsheds for various elements of the development where necessary (and for all alternatives).
- Establishment of view catchment area, view corridors, viewpoints and receptors.
- Identification of relevant protocols, legal and permit requirements relating to visual impacts likely to be generated as a result of the proposed project.
- Maps depicting current viewsheds/visual landscape/obstructions, as well as expected visual impacts during both the construction and operational phases of development.
- Schematic portrayals of the visual impact of the proposed project infrastructure on the different viewsheds identified.
- Assessment of visual impacts on the cultural landscape.
- Assessment of visual impacts (in terms of sensitivity of visual receptors, visual exposure and visual intrusion), including potential lighting impacts at night and impacts on sensitive visual receptors within the proposed project area (such as Tankatara Farm, Addo Elephant National Park and surrounding residential areas).

**4.8.2.6 Integrated Water Management Study**

The specialist study includes the following:

- A literature review which will include:
  - A review of existing studies on Manganese Ore Export Terminals or similar terminals (both local and international) to understand best practice, common issues, experiences from existing facilities of a similar nature, etc.
  - A review of any existing EIA Reports and Environmental Authorisations for studies carried out within the project area.
  - A review of any requirements from regulatory bodies, surrounding industries, and financing bodies, including applicable legalisation, policy or regulations.
- Interactions with relevant officials/representatives from relevant institutions such as the DWA, CDC and NMBM.
- A review of the baseline surface water and groundwater environments.
- A review and brief description of the technological aspects of the proposed project relating to water, wastewater and stormwater treatment facilities.
- A description and quantification of water quality and quantity requirements for different uses (e.g. construction, domestic, etc).
- A review of existing water use permits, identification of the source of any potable or recycled water required for the project, and confirmation of the availability within the region for the provision of these water requirements.
- Identification of licensing requirements in terms of wastewater discharges and water storage.
- Assessment of the predicted quality of source water for the project against the design requirements for the project, with discussion of the implications thereof.



---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

- Consideration of domestic wastewater (construction and operational phases), process wastewater (operational phase), and stormwater discharges (construction and operational phases) expected for the proposed project.
- Identification and quantification of all wastewater streams (e.g. sewage, stormwater).
- Identification of potential sources of environmental concern (e.g. erosion), sources of contamination, constituents of concern and their expected concentrations (if possible), and an assessment of the potential impacts thereof.
- A description of the proposed wastewater/stormwater disposal approach and identifying the points of discharge for wastewater/stormwater different streams.
- A review of the proposed product handling methods to minimize/prevent on-site spillages and associated water pollution.
- Review of the proposed spill contingency plan and associated management actions in response to an undesired event (e.g. spillage).
- Discussion of the potential constraints (e.g. legislative, environmental or practical) associated with wastewater/stormwater disposal.
- Description of on-site wastewater treatment facilities (if any) and stormwater protection facilities/features (e.g. bunding, oil/water separators, etc).
- Investigation of the need for treatment, recycle/re-use of process wastewater and stormwater.
- A preliminary water balance and identification of opportunities for improving integrated water management and promoting water conservation (if necessary).
- A review of proposed waste management practices.

#### **4.8.2.7 Groundwater Assessment**

The specialist study includes the following:

- A description of the affected environment and the status quo in terms of the baseline groundwater conditions and geohydrology within the project area.
- A literature review of all relevant data, such as data from the National Groundwater Archive, the Water Quality Management System, the Water Information Management System, the Water Authorisation and Registration Management System, as well as geological and geohydrological maps, and geohydrological reports.
- A description of the current status in terms of groundwater quality, quantity and key features using information gathered.
- A review of available groundwater quality data (pH, EC, TDS and ORP) from existing boreholes within CDC area, which will assist with confirming the groundwater usage in the area.
- A site visit and analysis of all data collected in the field with the use of geohydrological methods.
- A hydrogeological characterisation of aquifers (types, sensitivity, vulnerability, recharge, flow direction and flow into the ocean,) and groundwater (quality, quantity, use, potential for industrial or domestic use) in the area surrounding the proposed project.

#### **4.8.2.8 Air Quality and Human Health Assessment**

The specialist study includes the following:

- Characterising and quantifying all forms of atmospheric emissions during the various phases of the project (construction and operation phases), including both fugitive and point source emissions (e.g. emissions from conveyors, conveyor transfer points, stockpiles and stockyard,



## CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

Mn ore handling operations, diesel refuelling activities, diesel combustion in locomotives, etc), as well as normal and abnormal releases. A comprehensive emissions inventory (particulate matter (PM10) from wind-blown dust and sand, volatile organic compounds, e.g. BTEX etc.) will be compiled. Dust from these activities can result in nuisance effects such as accumulation on materials and vegetation through fallout or deposition, or it may have health implications if the fine respirable fraction (< 10 µm) exceeds health based standards in the ambient environment, i.e. beyond the facility fence line.

- Description of the general surrounding and the site-specific environment with respect to existing sources of atmospheric emissions, baseline ambient air quality (in terms of particulates, volatile organic compounds, e.g. BTEX, etc.).
- Identifying and characterising sensitive potential receptors, including both human and ecological receptors.
- Determination of appropriate air quality standards to be used for the assessment, taking into account:
  - National limits – South African standards as included in the Schedule to the National Environmental Management: Air Quality Act, and limits as outlined in the SANS 1929:2004 publication, and
  - International limits – World Health Organisation guidelines and standards;
- Selection and parameterization of a suitable air dispersion model (either Calpuff or the Fugitive Dust Model);
- Modelling of the potential dispersion of the identified pollutants (e.g. dust, VOCs) with the use of an internationally recognised dispersion model, and compare predicted ambient concentrations with internationally and locally defined standards, limits or other appropriate thresholds.
- Assessment of the efficiency of recommended mitigation measures (e.g. benefits of orientating the stockpile in terms of prevailing winds, recommended dust suppression systems – i.e. covered conveyors, water sprays on stockpiles and at all transfer points (conveyor chutes, loading excavator, stacker, reclaimers, shiploader, tippler etc.).
- Defining how existing sources of emissions, as well as other significant sources in the area may act cumulatively in the manifestation of potential impacts.
- The storage and handling of ore is a Listed Activity in terms of Government Notice 248 of 2010 as contemplated in Section 21 of the National Environmental Management: Air Quality Act (Act 39 of 2004). Complete and submit the AEL Application to the relevant authority (Nelson Mandela Bay Metropolitan). Facilitate the AEL Application Process in order to fulfil the requirements of NEM: AQA, including correspondence with the AEL Authority to ensure that the application fulfils the requirements.
- Identification of any additional permits required in terms of air quality for the proposed project.

A human health risk assessment will also be conducted to determine the possible risks to human health (of the public) due to exposure to air pollutants associated with the proposed development (e.g. dust, VOCs). This will be based on the outcomes of the air quality specialist study that will determine the potential concentrations of identified pollutants at ground level in sensitive receptor areas (communities of concern).

### 4.8.2.9 Avifauna Assessment

The specialist study includes the following:

- A literature review and description of the current environmental conditions and the status quo against which impacts can be identified and measured. The description will include, among



## *CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

others, bird populations, breeding patterns and regions, bird habitat, foraging and important vegetational features, as well as the species of special concern that feed and breed on the Coega Saltpans and around the proposed project areas. The description will also identify the specific areas of the Saltpans/proposed project areas utilised by birds. Different micro-habitats will also be described as well as the species associated with those habitats.

- A description of species composition and conservation status in terms of protected, endangered or vulnerable bird species. This description will include species which are likely to occur within, traverse across or forage within the proposed project area, as well as species which may not necessarily occur on site, but which will potentially be impacted upon as a result of the proposed development.
- A detailed list of bird species of special concern.
- Provision of a sensitivity map of the site indicating the presence of species of special concern, “no-go” areas, as well as red flags or risks associated with the proposed project area. Identification of preferred areas for project implementation from an ecological perspective.
- A disclosure of any gaps in information or assumptions made.

### **4.8.2.10 Archaeological Impact Assessment**

The specialist study includes the following:

- A review report on the archaeology of the proposed Transnet stockyard in zone 9, conveyor through zone 8 of the CDC IDZ, and doubling of the railway line in Zone 13, based on the Coega IDZ Archaeology study undertaken in 2010.
- Provision of a comprehensive and detailed Phase 1 Archaeological Heritage Impact assessment for the proposed construction of the compilation yard and associated infrastructure on Tankatara farm and in Zones 11 and 13 that can inform the design and operation of the facility, as well as establish possible risks and impacts on the archaeology and heritage features/sites in the proposed project area.
- A detailed field survey of the archaeological features in the project area.
- Description of the affected environment and determination of the status quo. The existing environment will be described in terms of the archaeology and heritage sites and features within the proposed project area, including a description of any potential protected areas and any areas of concern, e.g. concentrations of archaeological stone tools (older than 30 000 years and regarded as sensitive) in certain areas.
- A description of the type and location of known archaeological features in the project area.
- Evaluation of the potential of occurrence of archaeological features within the study area.

### **4.8.2.11 Palaeontological Impact Assessment**

The specialist study includes the following:

- A review report on the palaeontology for the proposed stockyard in zone 9, conveyor through zone 8 and proposed compilation yard in zone 11 and 13 of the CDC IDZ, based on the Coega IDZ Fossil Heritage study undertaken in March 2010.
- A desktop study on the fossil heritage in the study area (Zone 8, 9 and 11 of the Coega IDZ and Remainder of Farm Tankatara Trust 643), based on a review of all relevant palaeontological and geological literature (geological maps, previous reports), location



---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

and examination of fossil collections from the study area (e.g. museums), and information relating to the proposed project.

- A detailed field examination of representative natural and artificial exposures of potentially fossil-bearing sediments (rock outcrops, quarries, road and rail cuts etc) within or in the region of the development area.
- A record of observed fossils and associated sedimentological features of palaeontological relevance (photos, maps, aerial or satellite images, GPS co-ordinates, stratigraphic columns).
- Judicious sampling of fossil material, where warranted.
- Curation of any fossil material collected in an approved repository (usually a museum or geological survey collection).
- Collect photography and provisional identification of fossils.
- Analyse stratigraphy, age and depositional setting of fossil-bearing units.
- Identify and rank the highlights and sensitivities to development of fossil heritage within study area.
- Provide recommendations and suggestions regarding fossil heritage management on site, including conservation measures as well as promotion of local fossil heritage (e.g. for public education, schools).

#### **4.8.2.12 Historical and Cultural Heritage Resources Statement**

A statement relating to the presence of grave sites and cultural heritage sites was carried out by the EAPs, based on the Historical Impact Assessment undertaken by J Bennie for the Coega IDZ in 2010.

---

## **4.9 APPROACH TO THE ASSESSMENT OF ALTERNATIVES**

---

The EIA Regulations require that alternatives to a proposed activity be considered. Alternatives are different means of meeting the general purpose and need of a proposed activity. This may include the assessment of site alternatives, activity alternatives, process or technology alternatives, temporal alternatives and/or the no-go alternative.

The EIA Regulations indicate that alternatives that are considered in an assessment process be reasonable and feasible. I&APs must also be provided with an opportunity of providing inputs into the process of formulating alternatives. The assessment of alternatives should, as a minimum, include the following:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of selected alternatives; and
- The provision of reasons for the elimination of an alternative.

When considering alternatives, it is important to present the strategic-level evaluation that was conducted by Transnet in previous studies which led to the Port of Ngqura being selected as the location for the proposed project. As highlighted in Chapter 1 of this report, the proposed Manganese Ore Export Facility was conceptualised based on the need to increase the export volumes of Manganese Ore that is currently being exported via the Port Elizabeth Harbour. Further to this, the existing facility at the Port Elizabeth Harbour is planned to be decommissioned once the proposed new Manganese Export Facility at the Port of Ngqura is ready to operate. The facility at the Port Elizabeth Harbour was originally built in the 1960s and has been operating for over 40 years with limited environmental management features included for in the design.





---

*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

A feasibility study carried out in 2007/2008 assessed various localities for the new Manganese Ore Export Facility. Specifically, Saldanha Bay, the Port of Ngqura, and the option of retaining and refurbishing the existing facility at the Port Elizabeth Harbour were assessed in this study. For several reasons, as described in Chapters 1 and 2 of this Draft EIA Report, the Port of Ngqura (within the Coega IDZ) was chosen as the most feasible location for the proposed new Manganese Ore Export Facility.

---

## **4.10 NO-GO ALTERNATIVE**

The main implication of the no-go alternative is to lose the potential to grow existing international market shares of South African Manganese Ore mines. This in turn will not only influence the economy of South Africa by limiting the exporting potential of the Manganese Ore, but it will also lead to localised socio-economic opportunities being lost as new employment opportunities will not be generated as a result of the proposed project. The no-go alternative would therefore result in the loss of an opportunity of having a facility capable of handling a throughput capacity of 16 Mtpa, which will negatively influence the longevity and growth of the Manganese Ore Mines in the Kalahari Basin.

The no-go option could also require the existing Manganese Terminal in Port Elizabeth to be upgraded in order to meet the increase in Manganese Ore export demands, therefore impeding on other potential developments at the Port of Port Elizabeth upon decommissioning of that Terminal. The current infrastructure would need to be upgraded, additional stockpile areas would be required and new equipment would be introduced. This would also include additional capacity in terms of a railway shunting yard, conveyers as well as quay area for ship loading. It should also be noted that the new terminal design would need an environmental authorisation to upgrade the PE manganese terminal which would result in delays to the ability of Transnet to meet the projected manganese ore demand. Such a delay could result in the SA manganese mining industry losing out on long term contracts to supply high grade manganese ore the international market.

Furthermore, by adopting the no-go alternative, the economic development and realisation of the benefits of the Coega IDZ for South Africa (in particular the Eastern Cape) would be negatively influenced.

---

## **4.11 LAND USE ALTERNATIVE**

Land use alternatives were not identified for the proposed project, as it falls within the Coega IDZ, in an area that has been designated for industry (special land use) since the conception of the IDZ and Port of Ngqura in the mid-1990s. The original EIAs undertaken for the Port of Ngqura explained that a separate EIA will need to be carried out when the relocation of the ore dumps from the Port Elizabeth Harbour to the Port of Ngqura is proposed in order to identify and assess the impacts of the activity independently, which is taking place accordingly as part of this EIA process.

## 4.12 ACTIVITY AND LAYOUT ALTERNATIVES AS PART OF THE DEVELOPMENT

---

### 4.12.1 Stockyard

No alternative location for the stockyard will be investigated as part of the EIA. The environmental screening study (CSIR, 2008) concluded that the proposed location of the stockyard (north of the N2) is the most favourable in terms of environmental and social impacts. In addition, the proposed location of the stockyard within the IDZ was selected by Transnet following consultation with the Coega Development Corporation and taking into consideration factors such as the current land use zoning, existing development proposals, existing and planned infrastructure (such as the port expansion) as well as the Coega Open Space Management Plan.

As part of the technical feasibility study, the project team engaged in an options analysis exercise to determine viable additional design solutions to further reduce dust that may be released during operations. This analysis considered the effectiveness of alternate design options (at the stockyard) and considered stockyard coverings and wind breaks in terms of the overall additional effectiveness in decreasing dust released in comparison to capital cost. The focus of the design requirements identified in this process, was to focus on the most cost effective dust mitigation solution that can meet the design requirements. An initial workshop identified 8 options that was eventually narrowed down to six. These remaining options were compared to the base case and included:

- (Base Case) Basic open stockyard with elevated track slabs. Elevated track slab plus small reduction in stockpile height which effectively reduces stockpile exposure to wind. Eighteen meter high stockpiles with no berms or screens. Water, surfactant, and binder are used for dust suppression.
- Option 1A: Full roof tension membrane with the whole stockyard covered by a tension membrane structure. Water and surfactants are used for local dust suppression within the building.
- Option 1B: Full roof air structure. As in Option 1 but with the whole stockyard covered by an inflatable air structure. Water, surfactant, and binder are used for local dust suppression within the building.
- Option 3: Free standing screen. The stockyard has slipformed concrete columns supporting a screen (18 -30 m high, 30% porosity) to deflect wind (windward screen). Water, surfactant, and binder are used for dust suppression.
- Option 4: Screen & berm. The stockyard has a berm supporting for a screen to deflect wind (windward screen). Water, surfactant, and binder are used for dust suppression.
- Option 5: Berm only Stockyard has a 14m high berm to deflect wind (windward side). Water, surfactant, and binder are used for dust suppression.
- Option 6: Stockpile covers. Stockpiles covered by tarpaulin sections placed and removed by overhead cranes. Water, surfactant, and binder are used for dust suppression during stacking and reclaiming.

The study resulted in two main conclusions:

- Covering of the stockpiles was practical due to the size of the buildings required. Such a building would be prohibitively expensive.



---

CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- Evaluation of screen options showed benefits in terms of the dust control requirements and the berm was therefore selected as a screen option.

The spoil material that will result from the conveyor cutting would result in excess fill material. Using this material as a berm with an added screen further reduces the wind speed across the stockyards aiding in reducing the risk of dust releases during periods of high wind. Furthermore, it provides a cost effective solution for handling spoil material that would otherwise have required disposal at a cost to the project.

#### 4.12.2 Overland Conveyor Routing

The overland conveyor system will link the Manganese stockyard area to the shiploader located at Berths C101 and C100.

The following two alternative routings will be investigated for the overland conveyor system as part of this EIA:

- **Preferred Route:** The preferred route (black route in Figure 4.2 below) starts at the stockyards, located north of the N2 national road and crosses underneath the N2 through the existing rail culvert. It continues along the existing rail alignment and follows a straight line across the extended embankment to a transfer point at the quay where it connects to the quay side conveyors. The selected overland conveyor route was developed with the future port expansion in mind and will not sterilise any future port expansions or quayside activities in this area due to it being placed 400m behind the future quay line.
- **Alternative Route:** The alternative route (red route in Figure 4.2 below) makes use of the culvert that was originally constructed for the planned conveyor route from Berths C100 and C101 to the proposed ALCAN smelter. However, this route does not take into account the potential sterilisation of the future back of quay area that forms part of the future Ngqura Port expansion which would reduce the functionality of this quay area or require the manganese ore terminal to cease operations in the event that a re-alignment is required.

Other alternatives for the overland conveyor route have been considered as part of the site selection process but were excluded for various reasons. Please refer to Section 2.2 in Chapter 2 for further details.



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION



Figure 4.2: Preferred (black) and alternative (red) overland conveyor route

#### 4.12.3 Compilation Yard

Three alternatives for the design and location of the rail compilation yard were originally investigated by Transnet SOC Ltd and comprised the following conceptual options: (i) linear layout rail line; (ii) loop line on the Tankatara farm area; and (iii) loop line in the IDZ. Option (i) and (ii) were excluded by Transnet (refer to Section 2.2 in Chapter 2) and only option (iii) is being taken forward in this EIA process as a reasonable and feasible alternative. Following input from the CSIR team and its ecological specialist (Pote, 2012), three sub-alternatives have been identified and are presented below.

Two location and layout alternatives for the proposed compilation yard within the IDZ will be assessed as part of this EIA (Figure 4.3), as follows:

- Alternative 1 (Preferred route): This alternative will result in an overall reduced impact to the future Open Space Areas planned by the CDC and associated loss of intact Sundays Valley Thicket, as it will overlap with a transformed area, an existing access road and some degraded Bontveld or transitional thicket vegetation. Although this option would also result in the potential for open space fragmentation (based on the future open space expansion plans of the IDZ in this area), these mosaic communities tend to be more conducive to fragmentation than solid thicket units. In order to mitigate impacts, elevated open bridge structures should be considered in the design as opposed to closed culverts or pipe structures to facilitate movement of species and ecological processes along the corridor.



CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

- Alternative 2: This alternative is positioned outside of the solid thicket. The designated open space area is slightly narrower than Alternative 1.

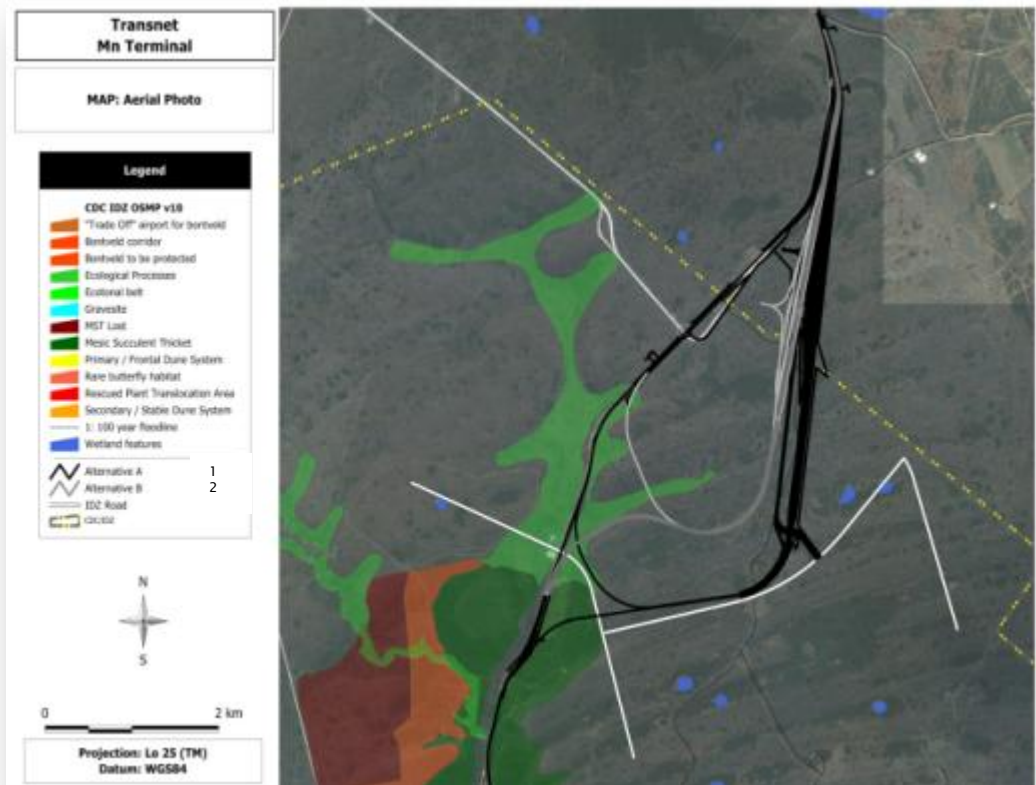


Figure 4.3:  
Compilation  
Yard and Rail  
Link  
Alternatives

### 4.13 TECHNOLOGY ALTERNATIVES AS PART OF THE DEVELOPMENT

No major technology alternatives are applicable for the proposed project. This is due to the fact that the technology proposed for the construction and operation of the Manganese Ore Export Facility will be guided by industry standards and global best practice in the Manganese Ore Storage and Handling industry. This therefore limits the amount of variability in terms of the technology. The applicable technology alternatives for this project relate to the infrastructure being installed and constructed, such as the type of roofing system for the conveyor system, the type of ship loaders, the type of stackers and reclaimers, spill contingency, and stormwater management.

#### 4.13.1 Dust Control

Dust control on bulk ore terminals usually requires water to control dust released during the ore handling process. The project team therefore identified two main dust control measures to consider during the course of the feasibility study. The dust control methods are dust extraction and dust suppression.





*CHAPTER 4 – APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION*

Dust extraction involves the installation of extraction fans equipped with air filters to extract dusty air from buildings where dust is generated (e.g. the tippler building). The extracted dust is then collected in dust bags that require additional storage and handling prior to disposal/re-use. Dust extraction is only possible on enclosed areas, specifically around the unloading facilities (e.g. the tippler) and therefore does not provide additional benefits on other components of the infrastructure and would still require ore wetting during stacking, storage, reclamation and ship loading. A major disadvantage of dust extraction is the resultant dust bags that requires handling and storage and could require additional waste management and dust management on the site.

Dust suppression involves reducing the amount of dust generated by the handling of the ore through a process of binding the dust particles to the ore. Water provides this function, however hot weather and windy conditions reduces the effectiveness of water and results in increased demand for watering at more locations within the handling process to control dust.

Dust suppression effectiveness can be improved by using added suppressant - inert chemical compounds capable of increasing the adhesion of dust particles to the ore. The use of suppressants therefore also reduces the frequency of wetting required and water addition is then limited to processes where the ore is disturbed. The major advantages of this method is that the volume of water required is considerably reduced (by ~60% for this terminal) and the dust is also exported along with the ore rather than directed into new waste streams locally.

Dust suppression (using suppressants and water) has therefore been selected as the preferred method for dust control.