



Environmental Impact Assessment for the proposed extension to the container berth and construction of an administration craft basin at the Port of Ngqura

DEAT EIA Reference Number: EIA 12/12/20/690

DRAFT SCOPING REPORT



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SCOPE OF THIS REPORT

<i>Title:</i>	<p>Environmental Impact Assessment for the proposed extension to the container berth and construction of an administration craft basin at the Port of Ngqura</p> <p>DEAT EIA Reference Number: EIA 12/12/20/690</p> <p>DRAFT SCOPING REPORT</p> <p><i>Prepared in terms of Sub-regulation 5(1)(a) – referred to as the EIA Regulations - of Government Notice No. R1183 of 5 September 1997 under Section 26 of the Environmental Conservation Act (No. 73 of 1989)</i></p>
<i>Purpose of this report:</i>	<p>This EIA process has been designed and conducted in a manner intended to provide sufficient information to enable the authorities to reach a decision at the end of the Scoping phase. The Draft Scoping Report therefore includes the results of specialist studies and an assessment of predicted impacts.</p> <p>The Draft Scoping Report is being made available for comment by interested and affected parties (I&APs), including authorities. All comments and/or additional issues and concerns are to be submitted to Public Process Consultants, to reach them by no later than 7 March 2007.</p>
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Summary

Background

The Environmental Impact Assessment (EIA) for the development of a deep water port at the mouth of the Coega River by the Coega Development Corporation (CDC) and the National Port Authority (NPA), was approved by the then Minister of Environmental Affairs and Tourism, Mr Valli Moosa, in May 2002. The Record of Decision (ROD) conveying the approval covered the following components of the initial port development:

- 1) Two berths at the container terminal;
- 2) Two berths at the dry bulk materials facility;
- 3) One berth for the bulk liquids facility;
- 4) Dredging of the approach channel and turning basin;
- 5) Construction of the quay walls and breakwaters;
- 6) Land excavation for the creation of the container terminal and transport corridor;
- 7) Transportation and disposal of excess spoil at the east headline deposition site;
- 8) Construction of a sand bypass;
- 9) Specified infrastructure and service facilities for the future Industrial Development Zone (IDZ) tenants and port users.

Subsequently, Records of Decision (RODs) have been received for the construction of a railway line from Coega Station to the Port of Ngqura (dated 29 September 2004) and for the port control tower building (dated 7 September 2004). Transnet has proceeded with components 1 - 9 of the approved port development activities listed above. Construction of most of the seaward

components of the port is nearly complete. This initial phase of development is referred to as Phase 1.

In 2006, Transnet undertook a feasibility study that led to the identification of two further developments at the Port that are not covered by the above-mentioned RODs, i.e.:

- a) Extension of the existing quay wall at the container terminal (within the existing earthworks area) to accommodate two additional berths for container vessels (i.e. berths D102 and D103); and
- b) Construction of an administration craft basin for pilot vessels and tugboats next to the root of the eastern breakwater in the port basin (within the existing earthworks area).

These two additional developments (Phase 2) now require environmental authorisation and are the subject of this EIA process.

Application for environmental authorisation

CSIR has been appointed by Transnet as the environmental assessment practitioner to undertake the necessary studies in terms of the EIA Regulations (Sections 21, 22 and 26 of the Environmental Conservation Act, No. 73 of 1989). The Department of Environmental Affairs and Tourism is the lead authority that will assess the development activities. This led to an application for environmental authorisation being submitted by CSIR to the national Department of Environmental Affairs and Tourism (DEAT) in June 2006. Receipt was acknowledged and reference number *EIA*

12/12/20/690 was issued by DEAT on 27th June 2006 for this application.

Need for the proposed project

The need for the two project components covered in this EIA process is presented below:

Container berths: The requirement for the additional two berths on the container quay is driven by the significant growth that continues to be experienced in the shipping and container industry, growing internationally from 244 million TEU's in 1995 to an expected 445 million TEU's by 2010 and 570 million TEU's by 2015. A TEU is a Twenty-foot Equivalent Unit and is a standard container size used to measure the volume of cargo. Rapid container volume growth has resulted in capacity shortfalls and increasing port congestion within South Africa. The Transnet business plan includes the phased development of capacity at the Port of Ngqura from 400 000 TEU's by 2008 (i.e. Phase 1 activities covered by existing RODs) to a projected capacity of 1 250 000 TEU's by 2015/16 (i.e. Phase 2, covered in this EIA). The additional two berths and the associated stacking area behind the berths are needed to support these increased volumes.

Administration craft basin: An administration craft basin is required to support the marine operations of the port. The main function of the administration craft basin is to provide a sheltered mooring basin for tugs and service craft for the Port of Ngqura and to provide a launching facility for ski boats (e.g. police boats and SANParks boats). No provision will be made for pleasure craft, dredgers or floating cranes. In 2001, at the time of preparing the EIA for the overall development of the Port of Ngqura, it was assumed that service vessels

for the new port would be accommodated within the existing harbour at Port Elizabeth. Recent development trends (in particular the growth in container traffic) necessitate that these vessels be accommodated within the Port of Ngqura.

Proposed project

Key components of the proposed project are summarized below and shown in Figure S1.

Container berths: The construction of the two additional container terminal berths will require an extension to the existing quay wall, which has an existing length of 780m for berths D100 & D101, by a distance of approximately 560m to accommodate the new berths D102 & D103. This will result in a quay wall of approximately 1340m for the container berths, providing a container berthing length of 1300m. A similar construction methodology will be adopted as used for the initial phase of the port development. Construction will require the dredging and removal of approximately 1 300 000m³ of marine sediment. It is estimated that the dredging will require a maximum of 8 to 12 months.

Administration craft basin: The proposed administration craft basin will be situated within the eastern portion of the Port of Ngqura at the root of the eastern breakwater. It is to be built with sufficient capacity to allow for long term future berthing demands. Initially there will be 3 tugboats and 1 pilot boat in the basin. However, the basin will be designed to accommodate 6 tugboats and 2 service/pilot boats in the future. The total quay length will measure approximately 360m in length. Dredging will be required in the administration craft basin in order to obtain the required depths. The total dredge volume is estimated to be 380 000m³. Due

to the relatively small volume of dredge material and the potentially restricted areas, a backhoe dredger is considered suitable. The dredging period is estimated at 46 weeks.

The detailed layout and design of the administration craft basin is currently in progress. Refinements in this design will not affect the overall assessment of impacts, provided the general location and dredging volumes do not change significantly from what is presented in this report.

Employment creation: Construction of the two development components is planned to take in the order of 30 months and require a peak labour requirement of 840 to 960 persons, with approximately 70% being unskilled or semi-skilled labour. During operations, the project is projected to create approximately 320 permanent jobs, mostly skilled labour for the operation of the additional two container berths.

Dredge disposal options: During construction, the total volume of material to be removed by dredging (for both project components) is estimated at 1 300 000 cubic meters. This is approximately 10% of the volume of dredge material disposed offshore during Phase 1. Transnet has investigated land-based options for the disposal of this material, but no feasible options have been identified. The proposal is therefore to dispose of the material at an offshore dredge disposal site, in accordance with legal requirements and having obtained the necessary permit from the Marine and Coastal Management (MCM) Directorate of DEAT. Two offshore dredge disposal sites were reviewed at the outset of this EIA (i.e. the site used during Phase 1 of the port construction and a site located further offshore in slightly deeper water). The previously used site was clearly identified as the preferable site, and is the subject of more detailed assessment as part of this EIA.

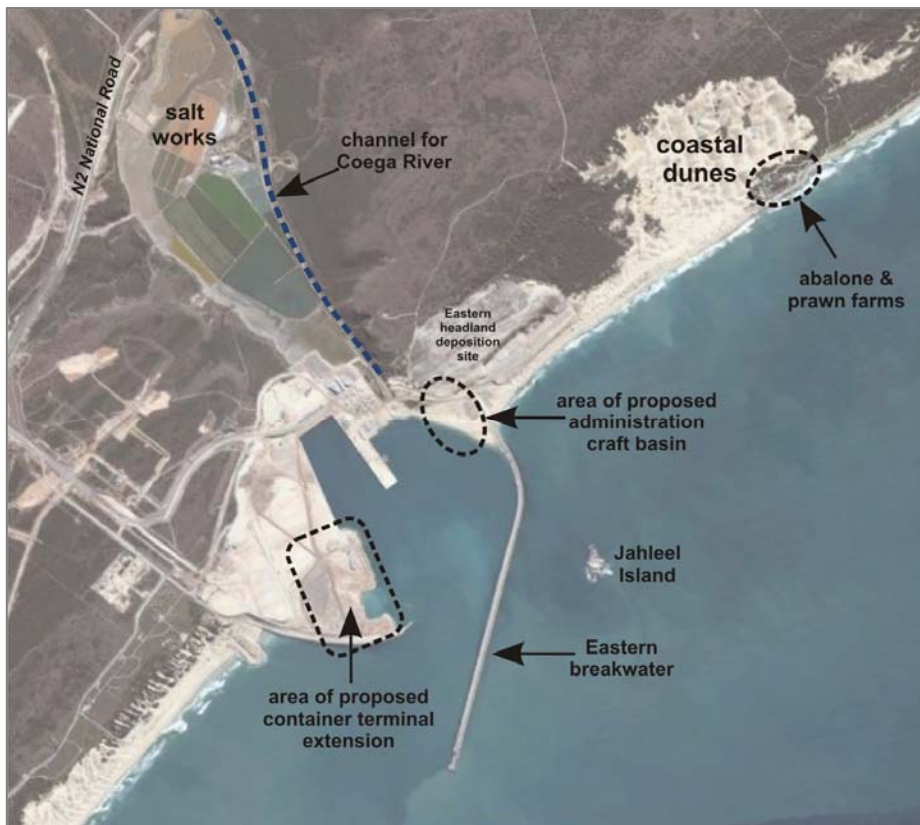


Figure S1: Aerial photo of the Port of Ngqura showing the proposed Phase 2 development (i.e. two additional container berths and administration craft basin) within the context of the existing port development and environmental features.

Approach to this EIA process

The overall approach to EIA in terms of the Environment Conservation Act enables a Record of Decision (ROD) to be issued at the end of the Scoping phase. This is possible if the Scoping Study adequately addresses the key issues and alternatives identified, thus providing sufficient information on which the authorities can base an informed decision. By drawing on the wealth of information and experience from EIAs and public consultation in the Coega area, the CSIR team (including Public Process Consultants) and Transnet have designed and are conducting this Scoping Study in a manner that seeks to **obtain a Record of Decision at the end of the Scoping phase.**

Key factors that make this approach appropriate for this particular application are:

- The considerable volume of existing information from recent EIAs, RODs, EMPs and monitoring studies for the Coega area;
- The extensive I&AP consultation that has taken place recently for the Port and IDZ;
- The construction activities are within the bounds of the existing port basin and relatively small in scale compared to the nature of previous port development;
- The dredge disposal is intended to utilise the existing dredge disposal site and volumes are 10% of the volume of material previously disposed.

This EIA process is supported by a comprehensive public participation process that is being undertaken by Public Process Consultants under the leadership of Sandy Wren. All issues raised during scoping have been identified and included in the Issues

and Response Trail contained in the Draft Scoping Report.

Early in the Scoping Process, the following three specialist studies were identified as being required to provide information needed to address key issues identified for this EIA:

- Specialist Study on marine ecology, sediment toxicology and dredging (supported by a field survey and sediment analysis data report)
- Specialist Study on Social Impact Assessment
- Specialist Study on Traffic and Transportation.

*The following sections summarize the potential positive and negative impacts associated with the proposed development, together with the recommended management actions. In order to focus on the more significant impacts, only those assessed to be of either **medium** or **high** significance (before mitigation) are included below. With mitigation, several of these impacts are reduced to be of **low** significance.*

Impacts on the marine environment

The impacts of the proposed additional developments at the Port of Ngqura on the marine environment are presented in Table S1, with a summary of the key mitigation measures presented below. The three most significant potential marine impacts are:

- Import of alien species by dredgers and their establishment in the harbour and Algoa Bay
- Disruption of squid spawning due to dredge spoil altering bottom sediments at the dredge disposal site

- Deterioration of environmental conditions in important foraging areas for African penguins breeding on the islands, leading to reduced breeding and an overall population decline.

Mitigation procedures for reducing the risk of importing **alien organisms** put forward are those developed by the United Nations International Maritime Organization Global Ballast Water Management Programme. These measures are estimated to reduce risks of import and release by 95%. However, the measures do not address residual sediments that may remain within the hoppers of the dredgers and therefore there will always be a small risk of this being a source of alien species. These can be in the form of spores, larvae or even mature organisms. Monitoring programmes, including the Port of Ngqura biomonitoring, investigating the distribution of alien species in South Africa indicate that the establishment of viable populations of alien species in South African coastal waters is probably a rare event. Hence, the risk would appear to be acceptable despite the long term implications should aliens become established.

No practical and effective mitigation measures for the potential effects on **squid** have been identified. Squid are widely distributed across the Agulhas Bank to as far north as Port Alfred, although they do have apparently preferred spawning locations within the large bays of the Cape south east and south coast. Also, the squid population appears to be variable in size on the scale of years and their availability to the fishery is even more temporally and spatially variable.

No direct links between the potential impacts of the project and the **African penguin** can be discerned. However, the prospects for the global penguin population are stark and

it can now be considered as endangered according to IUCN criteria. Therefore the precautionary principle as envisioned under NEMA and the Biodiversity Conservation Act of 2004 needs to be applied. Accordingly, mitigation is recommended to reduce the probability of further effects on the penguin population in Algoa Bay to improbable.

Given that the Port of Ngqura has already been developed to its present stage and now needs berthing and ship management systems to be put in place so that it can operate, the option of not dredging (in order to avoid related impacts) is not feasible.

Furthermore, on-land options for disposal of dredge material were investigated by Transnet, in consultation with CDC. No feasible land-based options were identified, primarily because currently planned activities balance cut and fill, i.e. no projects that could utilise the significant quantities of material emanating from this dredging programme were identified in the local area.

The possibility of conducting a low intensity dredging programme for the container terminal (e.g. over 9 to 12 months) was also considered, with the intent of reducing the levels of water turbidity by reducing the rate of dredging. This option is not considered viable because the longer period results in: (i) significant increased delay in operationalizing the new container berths; (ii) increased dredge costs; and (iii) extended disruptions to port operations due to longer duration of dredger movements.

The dredging for the administration craft basin involves removal of different and significantly less material to that of the container berths. This dredging is planned to

be conducted as a low intensity programme over approximately 46 weeks.

To **mitigate** this impact, it is recommended that the majority of the proposed dredging programme (i.e. for the container terminal) be conducted rapidly, timing it to coincide with the period when penguins are largely independent of feeding in the immediate vicinity of the islands (i.e. during moulting when penguins remain on the islands for approximately three weeks, and thereafter when they leave the immediate environment of the Algoa Bay islands to feed much further offshore). In Algoa Bay, the optimum period would be October to December (Dr R J M Crawford, DEAT/MCM pers. comm.), This period can possibly be extended to include the latter half of September and the first half of January. It needs to be taken into consideration that the ability to implement this action may be constrained by the availability of a suitable dredger locally or internationally¹.

Additional mitigation within the port area is to implement stringent controls on turbidity levels being exported from the port area through, for example, the use of silt curtains or associated management interventions.

The marine chapter of this report (Chapter 6) also provides **monitoring and control measures** to, firstly, ensure that the proposed activities are operated within environmentally safe limits and, secondly, to determine whether impacts are being generated and the scale thereof.

Table S.1/.....

¹ The international dredging fleet is over-committed for the foreseeable future and it is a major challenge to secure a suitable dredger. Specifying a time period for mobilising a dredger may not be possible, given this shortage (Andries Auret, Transnet, pers. comm., 25-01-2007).

Table S1: Summary of impacts on the marine environment

Nature of Impact	Status	Probability	Significance (no mitigation)	Significance (with mitigation)
CONSTRUCTION PHASE : HARBOUR AREA				
Import and release of alien (exotic) species by dredgers and their establishment within the harbour area	Negative	Probable	Medium	The <u>probability</u> should improve to <u>improbable</u> , and significance reduce to <u>low</u>
CONSTRUCTION PHASE : RECEIVING ENVIRONMENT –DREDGE SPOIL DISPOSAL SITE				
Discharged dredge spoil smothers benthos on the dredge spoil disposal site and disrupts ecological processes	Negative	Definite	Medium	Mitigation will reduce significance to <u>low</u>
Depositing discharged dredge spoil may alter sediment properties in the squid spawning areas in Algoa Bay and disrupt spawning	Negative	Probable	Medium	No practical mitigation was identified. Impact remains <u>medium</u>
Import and release of alien species by dredgers and their establishment at the dredge spoil disposal area	Negative	Probable	Medium	The <u>probability</u> should improve to <u>improbable</u> , and significance reduce to <u>low</u>
CONSTRUCTION PHASE : RECEIVING ENVIRONMENT – ISLANDS (JAHLEEL, ST CROIX)				
Import and release of alien species by dredgers on the dredge spoil dump site and their establishment on Island habitats	Negative	Probable	Medium	The <u>probability</u> should improve to <u>improbable</u> , and significance reduce to <u>low</u>
Dredging and dredge spoil disposal compromises environmental conditions in important foraging areas for African penguins breeding on the islands leading to reduced breeding and overall declines in the penguin population	Negative	Probable	High	Probability of impact occurring improves from <u>probable</u> to <u>improbable</u> , and significance reduced to <u>medium</u>
CONSTRUCTION PHASE : RECEIVING ENVIRONMENT – MARINE GROWERS ABALONE FARM				
Import and release of alien species pathogenic to abalone and their establishment in the farm	Negative	Probable	Low to medium	The <u>probability</u> should improve to <u>improbable</u> , and significance reduced to <u>low</u>
CUMULATIVE EFFECTS OF THE PROPOSED PHASE 2 ACTIVITIES				
Prolonged acute and chronic environmental disturbance with possible implications for squid and the squid fishery, African penguins and the Marine Growers abalone farm	Negative	Probable	Medium for squid, high for penguins	Probability of impact occurring improves from <u>probable</u> to <u>improbable</u> , and significance reduced to <u>medium</u>
Ecological damage from shipping accidents linked to higher container vessel shipping traffic in the approaches to the Port	Negative	Probable	High	Probability of impact occurring improves from <u>probable</u> to <u>improbable</u> , and significance reduced to <u>medium</u>

Impacts on traffic and transportation

Potential impacts of the proposed project on traffic and transportation are summarized in Table S2. It must be borne in mind that: (i) the impacts are assessed for the total traffic volume from the Phase 1 port development (covered by existing RODs) as well as the Phase 2 development; and (ii) the impacts are assessed for worst case scenarios, i.e. peak hour traffic volumes. Eight traffic impacts were assessed in Chapter 7, of which 3 result in negative impacts of medium significance (without mitigation). However, with mitigation these impacts are all reduced to low significance. These three impacts are summarized below.

The first impact is the need for transportation of **abnormal loads** from Port Elizabeth harbour to the Port Ngqura, where these vehicles have a loaded height of above 5m (i.e. too high to pass under bridges). This could be the case for the 6 ship-to-shore cranes to be imported and installed at the container berth. In light of the above, the transportation of the cranes would need to take place on municipal roads which would be disruptive to normal traffic. Where possible, delivery of abnormal loads directly to the Port of Ngqura by ship or barge is recommended to mitigate this impact.

The second impact is the contribution to the **deterioration of road surfaces and structures** by trucks transporting containers to and from the Port. When the container terminal reaches its full operational capacity of 1 250 000 TEU's in approximately 2020, typically there will be approximately 835 container trucks entering or leaving the Port daily. The estimated cumulative impact of container loaded trucks over the 25 year

design life of the roads is approximately 45% of the structural capacity of Neptune Road and 32% of the structural capacity of the N2. Use of rail transport for containers is recommended to mitigate this impact.

The third impact is the increased risk of **casualties and fatalities** due to vehicle trips to and from the Port. These trips include both heavy and light vehicles and are estimated to result in one fatality per year from 2009 when the Port becomes operational. Two mitigation options can be used to reduce this impact, i.e. increased use of rail transport for containers, and improved vehicle inspections and traffic enforcement.

The **mitigation** measures mentioned above are explained in more detail below:

- The delivery of cranes and gantries for the container terminal should, if possible, be done by ship or barge directly to the site in the Port of Ngqura rather than by road from the Port Elizabeth harbour. This will avoid the need for transporting abnormal loads on the roads. If the cranes and gantries have to be transported by road, the height of the loaded vehicle should, if possible, be limited to 5.0 m from the road surface to enable the loads to pass under bridges on the Settlers Freeway (M4) and N2 highway. This will minimize the impact on local roads, which would have to be used to avoid bridges if the abnormal loads are higher than 5.0 m.
- If a greater proportion of containers destined for the hinterland can be transported by rail rather than by road, it will mitigate the accelerated degradation of the road pavement structure and the

increased number of road accidents that will result from increased heavy vehicle traffic. We think that this is possible in the early stages of operation of the container terminal when there is sufficient capacity on the rail line between the Port and the Coega station for Spoornet to convey a proportion greater than 60% of the hinterland containers, particularly in view of the fact that Spoornet has been conveying about 75% of the containers out of the existing Port Elizabeth harbour by rail (CDC, 2000).

- The NMB traffic enforcement officials should make arrangements for the weighing and safety inspection of heavy vehicles entering and leaving the Port. This will curb the overloading of vehicles and ensure that all vehicles are in a roadworthy condition, which will help reduce accidents caused by overloaded and/or unsafe vehicles.

Table S2: Summary of impacts on traffic and transportation

<i>Nature of Impact</i>	<i>Status</i>	<i>Probability</i>	<i>Significance (no mitigation)</i>	<i>Significance (with mitigation)</i>
CONSTRUCTION PHASE				
Reduction in level of service due to presence of abnormally loaded heavy vehicles during construction	Negative	Highly probable	Medium	Low
OPERATIONS PHASE				
Accelerated degradation of road structure due to increase in traffic	Negative	Highly probable	Medium	Low
Increased number of road accidents due to increased traffic	Negative	Probable	Medium	Low

Impacts on the socio-economic environment

Potential impacts of the proposed development on the social and socio-economic environment are summarized in Table S3.

The following **positive** impacts have been identified:

- **Employment creation and opportunities for local labour during construction and operation:** Up to 960 jobs would be created at the peak of the construction phase, of which approximately 70% would be unskilled or semi-skilled labour. During the operations phase, approximately 320 additional jobs would be created, mostly skilled labour. Sourcing of local labour will be done via CDC's Labour Management Services.
- **Opportunities for local contractors:** The construction and operational phases will optimize the use of local contractors.
- **Increased potential for Corporate Social Investment:** There are opportunities for Transnet to establish linkages with local Corporate Social Investment (CSI) initiatives and to be actively involved in CSI in the NMMM through the Transnet Foundation.
- **Training and skills development opportunities:** During construction there are opportunities for individuals to be trained and develop skills that enable them to become more employable in future ventures. Training will be done via the CDC's Labour Management Services.

- **Reduction of congestion at other South African container handling facilities:** The operation of the container terminal would reduce the current congestion at other South African container handling facilities.

The following **negative** impacts have been identified:

- **Potential effect on aquaculture operations:** During construction and operation the silt deposited in the marine environment could potentially clog the intake filters for the abalone and prawn farming operations, which may affect their water supply.
- **Induced migration:** During construction, opportunities for employment could lead to in-migration of job seekers. However, it should be noted there is already a high rate of in-migration to the NMMM and this project would not be the sole contributor.
- **Increased pressure on infrastructure and services:** Increased pressure on infrastructure and services (e.g. bus services) will occur mainly as a result of induced migration and construction activities. Considering that the policy to use local labour will be applied as far as possible, the labour force for this project *per se* will not be responsible for additional pressure on infrastructure and services.
- **Effects on health and safety:** Potential health risks from construction include the increased incidence of communicable diseases resulting from an increase in local population, due to in-migration; and occupational health risks associated with work on a construction site.

- **Potential increase in the spread of HIV/AIDS:** Any construction or development activity which causes movement or migration of people has the potential to increase the spread of diseases. In this case, one of the most important of these is HIV/AIDS.

Induced migration, as well as the movement of contractor construction workers from elsewhere in the country, can potentially increase the spread of HIV/AIDS.

Table S3: Summary of impacts on the socio-economic environment

<i>Nature of Impact</i>	<i>Status</i>	<i>Probability⁽¹⁾</i>	<i>Significance (no mitigation)</i>	<i>Significance (with mitigation)</i>
CONSTRUCTION PHASE				
Employment creation and opportunities for local labour	Positive	Definite (High)	High	High
Opportunities for local contractors	Positive	Definite (High)	Medium	Medium
Training/skills development opportunities	Positive	High	Medium	High
Potential effect on aquaculture operations (abalone and prawn)	Negative	High (Improbable)	Medium	Low
Induced migration	Negative	Probable (High)	Medium	Medium
Increased pressure on infrastructure and services	Negative	Probable	Medium	Low
Effects on health and safety	Negative	Probable	Medium	Low
Potential increase in the spread of HIV/AIDS	Negative	Medium (High)	High	Medium
OPERATIONS PHASE				
Employment creation and opportunities for local labour	Positive	Definite (High)	High	High
Opportunities for local contractors	Positive	High (Probable)	Medium	Medium
Increased potential for Corporate Social Responsibility	Positive	High (Probable)	Low	Medium
Reduction of congestion at other South African container handling facilities	Positive	Definite	Medium	Medium
Increased pressure on infrastructure and services	Negative	Probable	Medium	Low

⁽¹⁾ The ratings in brackets are prior to the implementation of mitigation or benefit enhancement.

Management Actions during Construction Phase

Mitigation to reduce negative impacts on the marine environment

No	Nature of Impact	Mitigation
1	Import and release of alien marine species by dredgers	<ul style="list-style-type: none"> Apply the ballast water management protocols stipulated in the IMO International Convention for the Control and Management of Ship's Ballast Water and Sediments with verification of application.
2	Smothering of Benthos at dredge disposal site	<ul style="list-style-type: none"> When discharging sediments the dredger should ensure that it is deposited in thin layers ensuring diminished mortality in the benthos.
3	Dredging and spoil disposal may compromise environmental conditions in foraging areas for penguins breeding on Jahleel and St Croix Islands	<ul style="list-style-type: none"> Conduct the majority of the proposed dredging programme rapidly, timing it to coincide with the periods when penguins are more or less independent of the islands. In Algoa Bay the optimum period would be October to December (Dr R. J. M. Crawford, DEAT/MCM pers. comm.). This can possibly be extended to include the latter half of September and the first half of January. If this option is followed stringent controls on turbidity levels being exported from the port area would need to be implemented through, e.g. the use of silt curtains or associated management interventions.
4	Import and release of alien species pathogenic to abalone by dredgers	<ul style="list-style-type: none"> Apply the ballast water management protocols stipulated in the IMO International Convention for the Control and Management of Ship's Ballast Water and Sediments with verification of application.

Mitigation to reduce negative impacts on traffic and transportation

No	Nature of Impact	Mitigation
5	Reduction in level of service due to presence of abnormally loaded heavy vehicles during construction	<ul style="list-style-type: none"> The delivery of cranes and gantries for the container terminal should be done by ship or barge directly to the site in the Port of Ngqura rather than by road from the Port Elizabeth harbour. This will avoid the need for transporting abnormal loads on the roads. If the cranes and gantries have to be transported by road, the height of the loaded vehicle should be limited to 5,0 m from the road surface to enable the loads to pass under bridges on the Settlers Freeway (M4) and N2 highway.

Mitigation to reduce negative socio-economic impacts

No	Nature of Impact	Mitigation
6	Potential effect on tourism	<ul style="list-style-type: none"> Retain the exclusion zone south west of the western breakwater, but keep allowing shore anglers access to the area outside of the exclusion zone. Maintain a complaints register for tourism operators or any aggrieved party to register complaints.
7	Induced migration of job seekers	<ul style="list-style-type: none"> Ensure that measures designed to minimize the number of induced migrants, such as the CDC's recruitment process and disallowing any unlicensed informal trading. Actively downplay (through clear, simple, and persistent communication) inflated expectations of employment opportunities. Communicate that recruitment will take place through the CDC's Labour Management System only, and at recruitment centres only, and not on site. Provide assistance to the Business Against Crime and Community

No	Nature of Impact	Mitigation
		<p>Policing Forums, to address the potential for increased criminal activity.</p> <ul style="list-style-type: none"> ▪ Liaise with existing CSI bodies, as well as PERCCI, in order to coordinate efforts in providing CSI projects in areas such as health services (clinics etc.), education (provision of infrastructure and teacher training), and housing.
8	Increased pressure on infrastructure and services	<ul style="list-style-type: none"> ▪ Liaise closely with the relevant NMMM and traffic and disaster management authorities, regarding the movement of any unforeseen construction vehicles. ▪ Construction vehicles should only use the Neptune Road off-ramp from the N2 to get into the IDZ, and avoid the Markman/Motherwell road. ▪ Encourage the use of lift clubs among construction and operation employees travelling to the Port by private vehicle.
9	Effects on health and safety	<ul style="list-style-type: none"> ▪ Erect proper warning signage at points along the access roads where construction vehicles and machinery may turn ▪ All construction vehicles should adhere to official speed limits on national and district road, and a maximum of 40 km/h on the construction site. ▪ Include road safety and general safety as part of contractor induction. ▪ Keep an accident log of vehicles involved in accidents, which access the site from outside of the IDZ. ▪ Comply with required health and safety procedures and standards, particularly the Occupational Health and Safety Act of 1993, and associated Construction Regulations promulgated in 2003. ▪ Compile and implement an occupational health and safety programme
10	Potential increase in the spread of HIV/AIDS	<ul style="list-style-type: none"> ▪ Establish linkages with existing CDC HIV/AIDS programmes. ▪ Include an HIV/AIDS component in the induction programme of all construction workers coming on site. ▪ Ensure adequate access to HIV/AIDS-related information and condoms for all construction employees.

Management actions to enhance positive socio-economic benefits

No	Nature of Impact	Mitigation
11	Employment creation and opportunities for local labour (+)	<ul style="list-style-type: none"> ▪ Maximize the use of local labour through the use of the CDC's Labour Management Services. ▪ Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained through the use of the CDC's Training Management Services. ▪ Ensure that contractors stipulate percentages of local labour employment, use of SMEs, and training in their contract (as stipulated in the Zone Labour Agreement and Project Labour Agreement). ▪ Ensure recruitment measures are aimed particularly at construction workers classified as designated employees in terms of the Employment Equity Act (black people, as defined in the Act, women, and disabled people). ▪ Consider employment opportunities and the needs of disabled people during the planning of construction activities.
12	Opportunities for local contractors (+)	<ul style="list-style-type: none"> ▪ Prioritize sub-contracting to local SMEs and ABEs. ▪ Establish linkages with the CDC's SME Development

No	Nature of Impact	Mitigation
		<p>Management, to determine which areas of SME expertise are in existence, and which can be used during construction.</p> <ul style="list-style-type: none"> Establish linkages with institutions involved in the development and promotion of SMEs, in order to benefit from existing SME initiatives.
13	Training/skills development opportunities (+)	<ul style="list-style-type: none"> Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained through the use of the CDC's Training Management Services. Make multi-skilling of construction workers an important priority, as employment opportunities during construction are only temporary. This is not necessary for operational jobs in the Port, but for application in other industries in the Coega IDZ and the NMMM.

Management Actions during Operational Phase

Mitigation to reduce negative impacts on the marine environment

No	Nature of Impact	Mitigation
14	Import and release of alien marine species by dredgers	<ul style="list-style-type: none"> Apply the ballast water management protocols stipulated in the IMO International Convention for the Control and Management of Ship's Ballast Water and Sediments with verification of application.
15	Hydrocarbon spills whilst fuelling tug boats and other administrative craft and associate ecological damage in the port	<ul style="list-style-type: none"> The mitigation measure proposed and current practice for all SA ports is not to overfill vessels with fuel; and to have spill containment areas on the boats at the refuelling point.
16	Acute and/or chronic environmental disturbances generated within the harbour by the increased container ship traffic using berths D101 & D102	<ul style="list-style-type: none"> Port authorities need to implement a rigorous environmental management and control plan to limit ecological risks from operational accidents as well as ensuring efficient and safe operation of the port.
17	Ecological damage from shipping accidents linked to higher container vessel shipping traffic	<ul style="list-style-type: none"> Ensure shipping movements into and out the Ports is efficiently managed with compulsory pilotage and vessel traffic separations schemes. Ensure port control is informed by real time weather and sea state information used in the control of shipping movements. Develop procedures for emergency assistance to ships in the port by use of harbour tugs.

Mitigation to reduce negative impacts on traffic and transportation

No	Nature of Impact	Mitigation
18	Increased number of road accidents due to increased traffic during construction	<ul style="list-style-type: none"> Where applicable and appropriate aim for containers destined for the hinterland to be transported by rail rather than by road.
19	Increased number of road accidents due to increased traffic (operation)	<ul style="list-style-type: none"> Liaise and develop linkages with the NMB traffic enforcement officials to make arrangements for the periodic weighing and safety inspection (i.e. spot checks) of heavy vehicles entering and leaving the Port.

Mitigation to reduce negative socio-economic impacts

No	Nature of Impact	Mitigation
20	Increased pressure on infrastructure and services	<ul style="list-style-type: none"> ▪ Liaise closely with the relevant NMMM and traffic and disaster management authorities, regarding the movement of any unforeseen construction vehicles. ▪ Construction vehicles should only use the Neptune Road off-ramp from the N2 to get into the IDZ, and avoid the Markman/Motherwell road. ▪ Encourage the use of lift clubs among construction and operation employees travelling to the Port by private vehicle.

Management actions to enhance positive socio-economic benefits

No	Nature of Impact	Mitigation
21	Employment creation and opportunities for local labour	<ul style="list-style-type: none"> ▪ Maximize the use of local labour as far as possible, through the use of the CDC's Labour Management Services. ▪ Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained through the use of the CDC's Training Management Services. ▪ Ensure that contractors stipulate percentages of local labour employment, use of SMEs, and training in their contract (as stipulated in the Zone Labour Agreement and Project Labour Agreement). ▪ Ensure recruitment measures are aimed particularly at construction workers classified as designated employees in terms of the Employment Equity Act (black people, as defined in the Act, women, and disabled people). ▪ Consider employment opportunities and the needs of disabled people during the planning of construction activities.
22	Opportunities for local contractors	<ul style="list-style-type: none"> ▪ Prioritize sub-contracting to local SMEs and ABEs. ▪ Establish linkages with the CDC's SME Development Management, to determine which areas of SME expertise are in existence, and which can be used during construction. ▪ Establish linkages with institutions involved in the development and promotion of SMEs, in order to benefit from existing SME initiatives.
23	Increased potential for Corporate Social Responsibility	<ul style="list-style-type: none"> ▪ Through the Transnet Foundation, establish linkages with local PERCCI and NPA in the Port of Port Elizabeth, to determine the type of CSI programmes currently being implemented. ▪ Identify CSI opportunities through liaison with PERCCI and local development forums. ▪ Focus CSI locally i.e. close to the site, e.g. Motherwell and the NMMM.
24	Reduction of congestion at other South African container handling facilities	<ul style="list-style-type: none"> ▪ Ensure the on-going effective operation of the container terminal. ▪ Effectively strategize the movement of containers to optimize the distribution from the Port to other points in the country.

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Appendices

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Definitions and terminology

<i>Acute effect</i>	Rapid adverse effect (e.g. death) caused for example by contaminants or physical processes. The term can be used to define either the exposure or the response to an exposure (effect).
<i>Alternatives</i>	In relation to a proposed activity, alternatives refer to the different means of meeting the general purpose and requirements of the activity, which may include alternatives to: <ul style="list-style-type: none"> ▪ the property or location where it is proposed to undertake the activity; ▪ the type of activity to be undertaken; ▪ the design or layout of the activity; ▪ the technology to be used in the activity; and ▪ the operational aspects of the activity.
<i>Amphipod</i>	A kind of malacostracan crustacean
<i>ANOVA</i>	Analysis of variance; statistical test to determine differences in an attribute or attributes between groups and/or treatments
<i>Anthropogenic</i>	Produced or caused by humans
<i>BCLME</i>	Benguela Current Large Marine Ecosystem
<i>Benthic</i>	Referring to organisms living in or on the sediments of aquatic, estuarine and marine habitats
<i>Benthos</i>	The sum total of organisms living in, or on, the sediments of aquatic habitats
<i>Bentonite</i>	An absorbent aluminium silicate clay formed from volcanic ash
<i>Biodiversity</i>	The variety of life forms, including the plants, animals and micro-organisms, the genes they contain and the ecosystems and ecological processes of which they are a part
<i>Biogeochemistry</i>	The study of the relationship between geochemistry of a region and the biology in that region
<i>Biomass</i>	The living weight of a plant or animal population, usually expressed on a unit area basis
<i>Biota</i>	The sum total of the living organisms of any designated area
<i>Bivalve</i>	A mollusc with a hinged double shell
<i>Chart Datum (CD)</i>	A reference point linked to the low water mark (ordinary spring tide) and used for measuring sea water depth. In South Africa, a unique Chart Datum is identified for each port.
<i>Chronic effect</i>	Effect lingering or continuing for a long time; often for periods from several weeks to years. Can be used to define either the exposure of an aquatic species or its response to an exposure (effect).
<i>Community</i>	An assemblage of organisms characterized by a distinctive combination of species occupying a common environment.
<i>Community composition</i>	All the types of taxa present in a community

Definitions and Terminology

<i>Community structure</i>	All the types of taxa present in a community and their relative abundances
<i>Contaminant</i>	Biological (e.g. bacterial and viral pathogens) and chemical introductions capable of producing an adverse response (effect) in a biological system, seriously injuring structure and/or function
<i>Crustacea</i>	A highly diverse class of organisms containing crabs, shrimps, lobsters, isopods, amphipods etc
<i>Detritus</i>	Unconsolidated sediments composed of both inorganic and dead and decaying organic material
<i>Dewatering</i>	To remove water from an object, in this case sediment
<i>Dragline</i>	An excavating machine with a digging bucket attached by cables to a long jib and operated by being dragged back toward the machine by another cable
<i>Echinoderms</i>	Phylum of marine invertebrates that includes sea urchins, starfish, brittle stars, sea cucumbers. All are characterized by tube feet and five-part radially symmetrical bodies
<i>Endangered</i>	A taxon is regarded as endangered when it faces a high risk of extinction in the wild. This is defined as a 20% probability of extinction within 20 years
<i>Environment</i>	The biophysical, social, economic, cultural, political and historical context within which people live and within which development takes place.
<i>Environmental impact</i>	A change resulting from the effect of an activity on the environment, whether desirable or undesirable. Impacts may be the direct consequence of an organisation's activities or may be indirectly caused by them.
<i>Environmental impact assessment (EIA)</i>	Environmental Impact Assessment (EIA), as defined in the NEMA EIA Regulations and in relation to an application to which scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application.
<i>Environmental issue</i>	A concern felt by one or more parties about some existing, potential or perceived environmental impact.
<i>Epifaunal</i>	Organisms, which live at or on the sediment surface being either attached (sessile) or capable of movement.
<i>ESD</i>	Equivalent spherical diameter (sediment particle size metric)
<i>GIPME</i>	Global Investigation of Pollution in the Marine Environment.
<i>Granulometry</i>	The determination of the different grain size in a granular material
<i>Habitat</i>	The place where a population (e.g. animal, plant, micro-organism) lives and its surroundings, both living and non-living.
<i>IMO</i>	International Maritime Organisation
<i>Industrial Development Zone (IDZ)</i>	An Industrial Development Zone is an area identified for industrial development. The aim is to attract domestic and foreign investment into industrial and commercial parks by providing serviced industrial sites with purpose-built infrastructure.
<i>Infauna</i>	Animals of any size living within the sediment. They move freely through interstitial spaces between sedimentary particles or they build burrows or tubes.

<i>Integrated Environmental Management (IEM)</i>	An integrated approach for environmental assessment, management, and decision-making and to promote sustainable development and the equitable use of resources. Principles underlying IEM provide for a democratic, participatory, holistic, sustainable, equitable and accountable approach.
<i>Interested and affected party (I&AP)</i>	Individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, consumers, environmental interest groups and the general public.
<i>Isopod</i>	Any of various small terrestrial or aquatic crustaceans with seven pairs of legs adapted for crawling
<i>ISQG</i>	Interim sediment quality guideline
<i>IUCN</i>	International Union for Conservation of Nature and Natural Resources
<i>Lithogenic</i>	Derived from rocks and/or soils
<i>Macrofauna</i>	Animals >1 mm
<i>Macrophyte</i>	A member of the macroscopic plant life of an area, especially of a body of water; large aquatic plant
<i>MARPOL</i>	IMO international convention for the control of marine pollution from ships
<i>Molluscs</i>	A phylum of organisms containing snails, mussels, oysters
<i>Mysids</i>	Small shrimp-like crustaceans
<i>NTU</i>	Nephelometric Turbidity Units
<i>Oxic</i>	Containing oxygen, aerobic
<i>PCB</i>	Polychlorinated Biphenyls
<i>PEL</i>	Probable effective levels
<i>Piscivorous</i>	Feeding on fishes
<i>Pollution</i>	The introduction of unwanted components into waters, air or soil, usually as result of human activity; e.g. hot water in rivers, sewage in the sea, oil on land
<i>Polychaetes</i>	A class of mainly marine worms
<i>Population</i>	Population is defined as the total number of individuals of the species or taxon
<i>Recruitment</i>	The replenishment or addition of individuals of an animal or plant population through reproduction, dispersion and migration
<i>Re-suspension</i>	A renewed suspension of particulates
<i>RSA</i>	Republic of South Africa
<i>SAN Parks</i>	South African National Parks
<i>Scoping</i>	This refers to the process of determining the spatial and temporal boundaries (the extent) for the EIA and key issues to be addressed in an environmental assessment.
<i>Sediment</i>	Unconsolidated mineral and/or organic particulate material

Definitions and Terminology

<i>Significant impact</i>	An impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.
<i>Sipunculids</i>	Small unsegmented marine worm that when disturbed retracts its anterior portion into the body giving the appearance of a peanut.
<i>Species</i>	A group of organisms that resemble each other to a greater degree than members of other groups and that form a reproductively isolated group that will not produce viable offspring if bred with members of another group.
<i>Suspended material</i>	Total mass of material suspended in a given volume of water, measured in mg/l.
<i>Taxon (Taxa):</i>	Any group of organisms considered to be sufficiently distinct from other such groups to be treated as a separate unit (e.g. species, genera, families)
<i>TEL</i>	Threshold effective levels
<i>Terrigenous</i>	Derived naturally from rocks and/or soils
<i>TEU</i>	Twenty-foot Equivalent Units, a unit referring to a standard twenty foot container size and used to measure the volume of cargo, and used to measure the operations and capacity of a container terminal.
<i>Toxicity</i>	The inherent potential or capacity of a material to cause adverse effects in a living organism
<i>Turbidity</i>	Turbidity is the attenuation of light in water caused by the sum of suspended particles and any dissolved chemicals in the water which may alter the passage of light through scattering (generally inorganic and organic particles) and/or absorption (generally particulate or dissolved biological material).
<i>Vulnerable</i>	A taxon is vulnerable when it is facing a medium risk of extinction in the wild in the medium-term future, defined as a 10% probability of extinction within 100 years.

Abbreviations and acronyms

<i>ABE</i>	Affirmative Business Enterprise
<i>ABS</i>	Algoa Bus Services
<i>AIDS</i>	Acquired Immune Deficiency Syndrome
<i>BAC</i>	Business Against Crime
<i>BEE</i>	Black Economic Empowerment
<i>BEEF</i>	Black Economic Empowerment Forum
<i>BEEP</i>	Black Economic Empowerment Project
<i>BID</i>	Background Information Document
<i>BMS</i>	Business Management Services
<i>CBD</i>	Central Business District
<i>CDA</i>	Core Development Area
<i>CD</i>	Chart Datum, which is the lowest astronomical tide
<i>CDC</i>	Coega Development Corporation
<i>COMSEC</i>	Community Self Employment Centre
<i>CSIR</i>	Council for Scientific and Industrial Research
<i>DEAE&T</i>	Department of Economic Affairs, Environment & Tourism (Eastern Cape)
<i>DEAT</i>	Department of Environmental Affairs and Tourism (National)
<i>DEAT:MCM</i>	Department of Environmental Affairs and Tourism: Directorate for Marine and Coastal Management
<i>DSR</i>	Draft Scoping Report
<i>DWAF</i>	Department of Water Affairs and Forestry
<i>EAP</i>	Environmental Assessment Practitioner
<i>ECA</i>	Environmental Conservation Act (Act 73 of 1989)
<i>ECSAA</i>	Eastern Cape Shore Anglers Association
<i>EIA</i>	Environmental Impact Assessment
<i>ELC</i>	Environmental Liaison Committee
<i>EMP</i>	Environmental Management Plan
<i>EMS</i>	Environmental Management System
<i>GGP</i>	Gross Geographic Product
<i>HIV</i>	Human Immune Deficiency Virus
<i>I&AP</i>	Interested and Affected Party
<i>IDP</i>	Integrated Development Plan
<i>IDZ</i>	Industrial Development Zone
<i>IR</i>	Industrial Relations
<i>LMBS</i>	Labour Management Business Services

Abbreviations and Acronyms

<i>LMS</i>	Labour Management Services
<i>MPA</i>	Marine Protected Area
<i>MURP</i>	Motherwell Urban Renewal Programme
<i>NEMA</i>	National Environmental Management Act (Act 107 of 1998)
<i>NMBM</i>	Nelson Mandela Bay Municipality
<i>NMMM</i>	Nelson Mandela Metropolitan Municipality
<i>NPA</i>	National Ports Authority of South Africa, a division of Transnet
<i>Ntshebe</i>	Ntshebe Consulting: Socio-environmental and Development Consultants
<i>NU</i>	Neighbourhood Unit
<i>PE</i>	Port Elizabeth
<i>PEFES</i>	Port Elizabeth Fire and Emergency Services
<i>PELRHA</i>	Port Elizabeth Land Restitution and Housing Association
<i>PERCCI</i>	Port Elizabeth Regional Chamber of Commerce and Industry
<i>PERMAC</i>	Port Elizabeth Regional Manufacturing Advisory Centre
<i>PLA</i>	Project Labour Agreement
<i>PPP</i>	Public Participation Programme
<i>ROD</i>	Record of Decision (in terms of the EIA Regulations)
<i>RTG</i>	Rubber tyred gantry crane
<i>SANParks</i>	South African National Parks
<i>SANRAL</i>	South African National Roads Agency Limited
<i>SAPS</i>	South African Police Services
<i>SDI</i>	Spatial Development Initiative
<i>SEA</i>	Strategic Environment Assessment
<i>SIA</i>	Social Impact Assessment
<i>SME</i>	Small and Medium Enterprise
<i>SMME</i>	Small-, Medium- and Micro-Enterprise
<i>TOR</i>	Terms of Reference
<i>VFR</i>	Visiting Friends and Relatives
<i>ZLA</i>	Zone Labour Agreement

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