

**Proposed Upgrade to Berths 601, 602,
603 and 604 and Associated
Deepening of the Ben Schoeman
Dock,
Port of Cape Town**

Draft Environmental Impact Report

Report Prepared for
Transnet Limited

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Proposed Upgrade to Berths 601, 602, 603 and 604 and Associated Deepening of the Ben Schoeman Dock, Port of Cape Town

Draft Environmental Impact Report

Transnet Limited

SRK Project Number 367079

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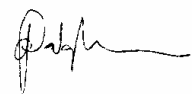
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Glossary

Archaeology	The scientific study of aspects of the human past, primarily through material evidence.
Artifact	An object used or produced by people in the past.
Ballast Water	Use of water in specialised ballast tanks to aid in controlling a ship's trim and draft, especially when sailing empty or with light cargoes.
Bathymetry	The sea bed "topography" derived from measurements of depths of water.
Before Present	An archaeological term denoting the number of years before 1950 ("present"), when Carbon Dating was introduced.
Benthic	Referring to organisms living in, or on, the sediments of aquatic habitats (lakes, rivers, ponds, sea etc.).
Benthos	The sum total of organisms living in, or on, the sediments of aquatic habitats
Biodiversity	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.
Bulking	The process whereby the volume of sand or sediment is increased by increasing the porosity or institial spaces between the individual grains within the sediment. This typically occurs when sediments are excavated/dredged.
Chart Datum	Reference measure of depth. In the Port of Cape Town, Chart Datum is 0.7 m below mean sea level (i.e. 14 m below Chart Datum is the same as 14.7 m below mean sea level).
Community	An assemblage of organisms characterised by a distinctive combination of species occupying a common environment and interacting with one another.
Community structure	All the types of taxa present in a community and their relative abundance.
Contaminant	Biological (e.g. bacterial and viral pathogens) and chemical introductions capable of producing an adverse response (effect) in a biological system, seriously injuring structure or function or producing death.
Cope line	The outer edge of the quay wall.
dBA	Unit of sound level. The weighted sound pressure level by the use of the A metering characteristic and weighting specified in ANSI Specifications for Sound Level Meter.
Decibel (dB)	A measure of sound. It is equal to 10 times the logarithm (base 10) of the ratio of a given sound pressure to a reference sound pressure. The reference sound pressure used is 20 micropascals, which is the lowest audible sound.
Effluent	A complex waste material (e.g. liquid industrial discharge or sewage) that may be discharged into the environment.
Environment	The external circumstances, conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Impact Assessment (EIA)	A study of the environmental consequences of a proposed course of action.
Excavation	The practice of documenting, uncovering and recovering of artifacts and finds, together with associated information
Habitat	The place where a population (e.g. animal, plant, micro-organism) lives and its surroundings, both living and non-living.
LC Annex I substances	Annex I substances are defined in the London Convention to include organohalogen compounds, mercury and mercury compounds, cadmium and cadmium compounds, persistent plastic or similar synthetic compounds, crude oil and associated wastes, radioactive wastes, material for biological and chemical warfare. The London Convention prohibits the dumping of wastes or other matter listed in Annex I.

LC Annex II substances	Annex II substances include wastes containing significant amounts of arsenic, beryllium, chromium, copper, lead, nickel, vanadium, zinc and compounds of these metals, organosilicon compounds, cyanides, fluorides, pesticides and their by-products and any other material, though of a non-toxic nature, that may become harmful due to the quantities in which they are dumped. The dumping of wastes or other material listed in Annex II requires a prior special permit from the relevant national authority.
Macrofauna	Animals >1 mm in size
Maritime archaeology	The scientific study of people's past relations to the sea through surviving material evidence and all available additional evidence of whatever nature
Pollution	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.
Probable Effect Level (PEL)	A threshold above which in situ adverse biological effects are probable (<i>i.e.</i> a threshold value above which adverse biological affects usually or always occur).
Prohibition category	Substances at concentrations exceeding a level (Prohibition Level) that will cause significant deleterious biological responses. These materials may not be dumped unless made acceptable for dumping through the use of management techniques or processes that could include treatment, such as separation of contaminated fractions and disposal management techniques such as placement on or burial in the sea floor followed by clean sediment capping, utilization of geo-chemical interactions and transformations of substances in dredged material when combined with sea water or bottom sediment, selection of special sites such as abiotic zones, or methods of containing dredged material in a stable manner.
Recruitment	The replenishment or addition of individuals of an animal or plant population through reproduction, dispersion and migration.
Scoping	A procedure to consult with stakeholders to determine issues and concerns and for determining the extent of and approach to an EIA, used to focus the EIA.
Scoping report	A written report describing the issues identified to date for inclusion in an EIA.
Scour protection trench	A trench created to contain the scour protection system to ensure that the top of the scour protection does not protrude above the dock bed level.
Scour protection	A protection system used to prevent undermining of a structure through scour by ship propellers, bow thrusters, currents or waves. It is proposed to protect the quay wall in this instance.
Sediment	Unconsolidated mineral and organic particulate material that settles to the bottom of the aquatic environment.
Special care category	substances at concentrations lying above a lower limit below which there are little environmental concerns and below an upper limit that avoids acute or chronic effects on human health or on sensitive marine organisms representative of the marine ecosystem. Dredge material in the Special Care require a more detailed assessment before their suitability for dumping can be determined.
Species	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.
Surficial sediments	Those sediments on the seabed located at the seawater - seabed interface.
Suspended material	Total mass of material suspended in a given volume of water, measured in mg/l.
Taxon (Taxa)	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).
Threshold Effect Level (TEL)	A threshold value below which in situ adverse biological effects are considered unlikely (<i>i.e.</i> represents no significant hazard to aquatic organisms
Toxicity	The inherent potential or capacity of a material to cause adverse effects in a living organism.
Turbidity	Measure of the light-scattering properties of a volume of water.
Visual absorption capacity	The potential of an area to conceal the proposed development, or absorb the visual impact.
Vulnerable	A taxon or species is vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term.

Abbreviations

ANZECC	Australian and New Zealand Environment Conservation Council
BHD	Backhoe Dredger
BP	Before Present
BSD	Ben Schoeman Dock
CD	Chart Datum
CSD	Cutter Suction Dredger
CSIR	Council for Scientific and Industrial Research
DEA&DP	Department of Environmental Affairs and Development Planning (Provincial)
DEAT	Department of Environmental Affairs and Tourism (National)
ECA	Environment Conservation Act
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Plan
GN	Government Notice
HWC	Heritage Western Cape
IAPs	Interested and Affected Parties
IUCN	International Union for Conservation of Nature and Natural Resources
LOS	Level of Service
MCM	Marine and Coastal Management Directorate of DEAT
MPA	Marine Protected Area
NEMA	National Environmental Management Act
NP	National Park
NPA	National Ports Authority of South Africa
PoSEIA	Plan of Study for EIA
PCP	Public Consultation Process
PPV	Peak Particle Velocity
SAHRA	South African Heritage Resources Agency
SAMSA	South African Maritime Safety Authority
SDF	Spatial Development Framework for Port of Cape Town
TEU	Twenty-foot Equivalent Unit
TSHD	Trailing Suction Hopper Dredger
RoD	Record of Decision
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VAC	Visual Absorption Capacity

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Proposed Upgrade to Berths 601, 602, 603 and 604 and Associated Deepening of the Ben Schoeman Dock at the Port of Cape Town - Draft Environmental Impact Report

1 General Introduction and Approach

1.1 Background

As part of a programme for improving the efficiency of the Port of Cape Town, Transnet Limited (“Transnet”), including the two divisions of the National Ports Authority of South Africa (NPA) and South African Port Operations (SAPO), proposes to undertake the following activities:

- Deepening the Ben Schoeman dock (BSD);
- Conduct upgrades to berths 601, 602, 603 and 604; and
- Replace gantry cranes with new cranes with a higher and wider reach.

These upgrades are necessary to accommodate larger container vessels that have a greater draught (i.e. require a greater basin depth) and beam (i.e. width). In terms of the Environmental Impact Assessment (EIA) Regulations promulgated under section 21 of the Environment Conservation Act (Act No. 73 of 1989) (ECA)¹, the proposed activities require environmental authorisation from the relevant authority prior to commencement.

¹ Since the EIA application was lodged prior to the promulgation of the new EIA Regulations issued under the National Environmental Management Act (Act No. 107 of 1998) in 2006, the remainder of the process is to be completed in terms of the Environmental Conservation Act (Act No. 73 of 1989).



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1.2 History of EIA Process

1.2.1 Scoping Process

In 2005, NPA commissioned Shangoni Consulting to undertake the Scoping Phase of the EIA for the “Proposed Upgrade to Berths 601, 602, 603 and 604 and Associated Deepening of the Ben Schoeman Dock at the Port of Cape Town” (“Berth Deepening EIA”). The Scoping Study was concluded and submitted to the provincial Department of Environmental Affairs and Development Planning (DEA&DP) for authorisation in April 2005².

The Scoping Report was accepted by the national Department of Environmental Affairs and Tourism (DEAT) on 9 June 2005 and a Plan of Study for the EIA phase (PoSEIA) of the Berth Deepening EIA was subsequently submitted by the CSIR to DEAT/DEA&DP for authorisation in April 2006.

At the time of compilation and submission of the Scoping Report and PoSEIA, the proposed activities investigated in the Berth Deepening EIA were linked to the proposed Container Terminal Expansion project. This linkage gave rise to the identification of particular alternatives that were to be assessed in the Berth Deepening EIA. However, Transnet has subsequently separated the two projects, which are independent of each other, and will be assessed in separate EIA’s. As a result, the scope of activities and alternatives to be assessed in this Berth Deepening EIA have been amended.

1.2.2 Revision of Plan of Study for EIA

In August 2006, SRK Consulting (SRK) was appointed to undertake the EIA phase of the Berth Deepening EIA (i.e. the deepening of Ben Schoeman dock, and upgrade to the berths, but excluding the container terminal expansion). SRK revised the PoSEIA previously submitted to take account of the amended scope of activities and alternatives.

The revised PoSEIA contained the following key amendments:

- Details of the new EIA Consultants (i.e. SRK Consulting);
- Revised scope of works and changes in alternatives to be assessed in the EIA; and
- Changes in applicants details³

This PoSEIA was submitted to DEAT on 5 September 2006 and was accepted on 31 October 2006.

²The decision-making authority for this application was initially delegated from the national Department of Environmental Affairs and Tourism (DEAT, charged with issuing authorizations lodged by state organisations) to the provincial Department of Environmental Affairs and Development Planning (DEA&DP) in June 2005. SRK has however been instructed that decision-making will revert to DEAT who will request DEA&DP to provide comment on relevant documents. SRK will thus submit documents to and communicate primarily with DEAT (and copy all such correspondence and documentation to DEA&DP)

³Although the original application was submitted under the name of NPA, it has since been confirmed that the NPA does not constitute a legal body in its own right. Applications are thus to be submitted under the name of Transnet.

1.3 Objectives and Approach to the EIA

1.3.1 Objectives of the EIA

The main objectives of the EIA are to:

- Inform the broadest possible range of Interested and Affected Parties (IAPs) about the proposed project and the EIA process followed;
- Obtain contributions of IAPs (including the applicant, consultants, relevant authorities and the public) and ensure that all issues, concerns and queries raised are fully documented and addressed in this report;
- Gather issues and concerns of IAPs to identify, screen and evaluate potential "fatal flaws" in the proposals⁴;
- Identify and assess significant impacts associated with the proposed deepening of Ben Schoeman dock, and associated upgrades to berths 601, 602, 603 and 604;
- Indicate whether the two possible sites identified for the disposal of dredge spoil are environmentally acceptable locations;
- Formulate mitigation measures to minimise impacts and enhance benefits; and
- Produce a Final Environmental Impact Report (EIR) which will help DEAT to decide whether (and under what conditions) to authorise the proposed project.

1.3.2 Approach to EIA Phase

The general approach adopted in this study has been guided by applicable legislation (see Chapter 2), and by the principles of Integrated Environmental Management (IEM).

The IEM principles require that environmental factors associated with a proposed development are considered timeously so that appropriate design and planning modifications can be made to address critical environmental concerns. In accordance with the Integrated Environmental Management guidelines, an open, transparent approach, which encourages accountable decision-making, has been adopted.

The underpinning principles of IEM require:

- informed decision making;
- accountability for information on which decisions are made;
- a broad meaning to the term "environment";
- an open participatory approach in the planning of proposals;
- consultation with interested and affected parties;
- due consideration of alternative options;

⁴ Note that the gathering of issues and concerns of IAPs to screen the proposal and identify fatal flaws was primarily undertaken during the scoping phase of the project, although the issues and concerns are addressed during the EIA phase.

- an attempt to mitigate negative impacts and enhance positive impacts of proposals;
- an attempt to ensure that the social costs of development proposals are outweighed by the social benefits;
- democratic regard for individual rights and obligations;
- compliance with these principles during all stages of the planning, implementation and decommissioning of proposals; and
- the opportunity for public and specialist input in the decision-making process.

The approach has also been governed by the National Environmental Management Act, No 107 of 1998 (NEMA) and the ECA EIA regulations. The EIA regulations are more focused and practical and help to determine the detailed approach to, and define the objectives of, the EIA. Figure 1-1 below shows schematically the various elements which comprise the EIA process and the sequence in which they occur.

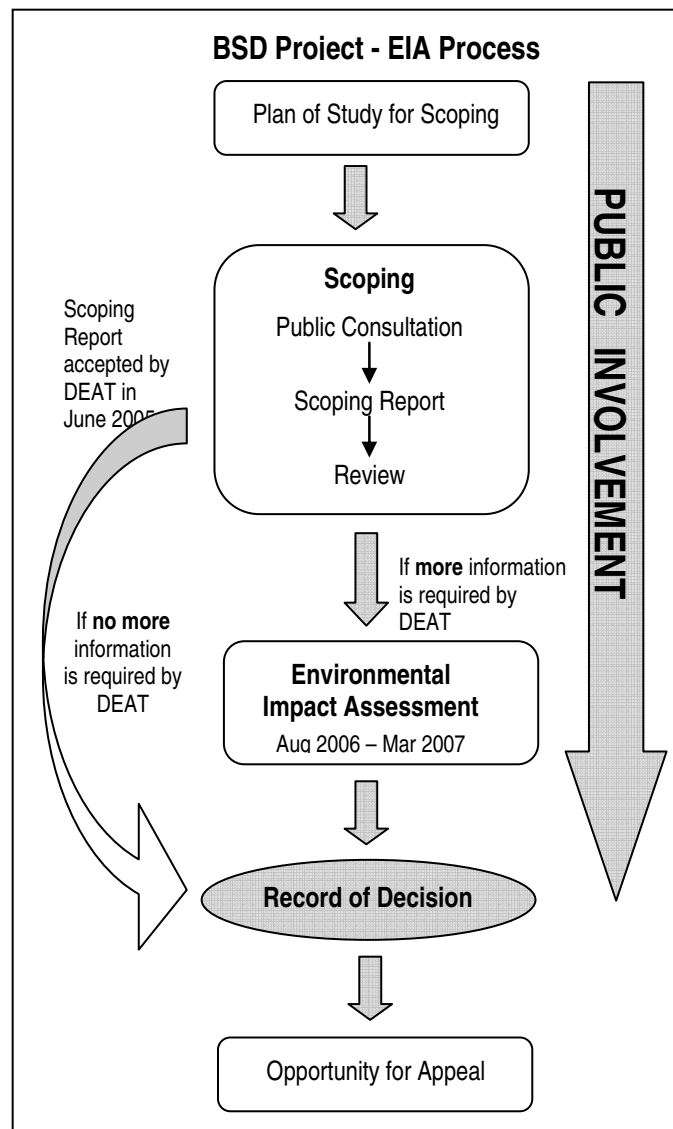


Figure 1-1: The EIA Process

The activities undertaken to date in the EIA Phase, following the completion and acceptance of the Scoping Study submitted by Shangoni Consulting, are outlined in Table 1-1.

Table 1-1: Activities undertaken during the berth deepening EIA

Activity	Objectives	EIR Reference
Submission of (revised) Plan of Study for EIA	Inform authorities of the proposed EIA Process; Inform authorities of the change in scope of the EIA and alternatives to be considered in the EIA; Inform authorities of the proposed terms of reference for specialist studies; and Gain input on the required scope and content of the Environmental Impact Report and associated Specialist Studies.	Appendix A
Stakeholder consultation	Notify all IAPs registered during the scoping process of the change in scope of the EIA and alternatives to be considered in the EIA; Ensure that the requirements of key stakeholders (including DEAT Marine and Coastal Management [MCM] and the Two Oceans Aquarium) were identified.	Appendix B
Specialist Studies	Provide a description of the affected environment; Identify the impacts of the project and assess the significance of the impacts; Recommend mitigation measures to reduce the impacts; and Provide an indication of the suitability of the location, blasting method, dredge spoil disposal sites and the proposed berth extension.	Chapter 6 Appendix C-G
Draft Environmental Impact Report	Integrate and evaluate the assessment of environmental impacts undertaken by specialists; Indicate the environmental suitability of the activities involved in the berth deepening project; Identify the preferred alternative site (if applicable) for the disposal of dredge spoil, based on all specialist studies; and Present the overall findings of the EIA in a draft format for public and authority comment.	SRK Draft Report 367079/2

The range of specialist studies undertaken during the EIA phase were informed by the issues identified in the Final Scoping Report as warranting further investigation. The specialist studies are listed in Table 1-2. Results from those studies have been incorporated into the EIR, particularly into the project description (Chapter 3), description of the affected environment (Chapter 5), and impact assessment (Chapter 7).

Table 1-2: Specialist studies undertaken during the EIA Phase

Specialist Study	Specialist
Integrated Marine Specialist Study, summarising the following marine specialist studies:	Roy van Ballegooyen, CSIR
Dredge Disposal Site Selection and Characterisation	Roy van Ballegooyen, CSIR
Dredging and Disposal of Dredge Spoil Modelling Specialist Study	Roy van Ballegooyen, CSIR
Sediment Toxicology and Marine Ecology Specialist Study	Dr. Robin Carter, Lwandle Technologies
Shoreline Stability Specialist Study	Geoff Smith, CSIR
Noise and Vibration Specialist Study	Demos Dracoulides, DDA Environmental
Traffic Specialist Study	Stef Naudé, HHO Africa
Visual Specialist Study	Belinda Gebhardt, SRK Consulting
Maritime Archaeology Specialist Study	Bruno Werz

1.4 Assumptions and Limitations

The findings of the report are affected by the following:

- It has been assumed that information provided by other consultants, specialists and the proponent is accurate with respect to the proposed deepening of the BSD, upgrades to the berths and associated activities; the construction methods and equipment to be used;
- It is assumed that the assessment of the nature and significance of the impacts associated with the project is objective and not influenced by any bias on the part of any party;
- Assessment of the significance of impacts of the proposed development on the affected environment has been based on the assumption that the activities will be undertaken within the constraints of the project description provided in Chapter 3 of this report. If there are any substantial changes to the project description, the significance of impacts may need to be reassessed;
- The extensive public participation process undertaken during the scoping phase of this project has identified all relevant concerns of Interested and Affected Parties (IAPs) related to the proposed berth deepening at Port of Cape Town; and
- Transnet will in good faith implement the mitigation measures identified in this report.

1.5 Report Structure

This report describes the proposed activity and its context, details the public participation process followed, rates the impacts of the proposed upgrading of the berths and deepening of the dock, indicates the acceptability of each of the alternative dredge disposal sites and presents a suite of findings and recommendations.

Chapter 1: Introduction

Provides an introduction and background to the proposed project and outlines the approach to the study.

Chapter 2: Legislative Framework and Regulatory Requirements

Provides an overview of the main South African environmental legislation as well as the key policies and guidelines applicable to the proposed project.

Chapter 3: Project Description

Provides Transnet's motivation for the project and a description of the proposed development activities.

Chapter 4: Project Alternatives

Provides a brief description of the alternatives that have been considered during scoping, providing motivation for the exclusion of certain alternatives from the EIA phase. Alternatives which are assessed in the EIA are discussed in more detail.

Chapter 5: Affected Environment

Briefly describes the biophysical and socio-economic receiving environments that DEAT will consider in their assessment of the project.

Chapter 6: Public Consultation Process

Details the approach to public consultation and the key issues and concerns raised by IAPs.

Chapter 7: Assessment of Environmental Impacts

Identifies and rates environmental impacts associated with the proposed project and recommends mitigation measures.

Chapter 8: Evaluation and Recommendations

Indicates the environmental acceptability of the proposed project and each of the two alternative dredge disposal sites, evaluates the proposed project and presents the principal findings, key decision factors for DEAT to consider and recommended mitigation measures, which it is assumed will be implemented.

Chapter 9: Way Forward

Outlines the remaining steps in the EIA process, including the issuing of a Record of Decision (RoD) by DEAT.

Please note: Appendices C to G, containing copies of the specialist studies conducted for this EIA, are contained in a separate volume.