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national ports authority

PORT OF RICHARDS BAY
STRATEGIC ENVIRONMENTAL ASSESSMENT

SCOPING REPORT

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EXECUTIVE SUMMARY

The Transnet National Ports Authority (TNPA) recognised the need to undertake a Strategic Environmental Assessment for the Port of Richards Bay in light of the various projects earmarked for this Port, as stipulated in the Port Development Framework Plan and the Master Plan. This report represents the first deliverable of the Strategic Environmental Assessment and includes a Scoping exercise to determine the context and focus of the overall assessment. This includes the identification of the potentially significant impacts associated with the Master Plan, which will set the scene for the ensuing stages of the Strategic Environmental Assessment.

An overview is provided of the Port of Richards Bay as well as the Mater Plan, including the proposed end states of the Bayvue, South Dunes and Newark Precincts. Significant environmental plans, programmes and legislation which may influence the Master Plan and development within the Port are also listed.

The approach to the Strategic Environmental Assessment is presented, together with an explanation of the following key steps associated with the process:

- Scoping (*focus of this report*);
- Situation Assessment;
- Impact Assessment;
- Strategic Environmental Management Plan;
- Stakeholder Engagement; and
- Acceptance and Approval.

The Scoping exercise includes the following steps:

1. Determining a Vision for the Port of Richards Bay;
2. Determining the spatial and temporal scope of the Strategic Environmental Assessment;
3. Identifying strategic issues to be investigation further by –
    a. Identifying key environmental features to be considered;
    b. Screening the developments proposed as part of the Master Plan against a preliminary sensitivity map;
    c. Establishing potentially significant impacts associated with the proposed developments; and
    d. Providing a framework for undertaking a strategic assessment of the potentially significant impacts.

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BSP	Biodiversity Sector Plan
CBAs	Critical Biodiversity Areas
CMP	Coastal Management Programme
CoM	City of uMhlathuze
CSIR	Council for Scientific and Industrial Research
CVI	Coastal Vulnerability Index
DBT	Dry Bulk Terminal
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DEDTEA	Economic Development, Tourism and Environmental Affairs
DFFE	Department of Forestry, Fisheries and the Environment
DPSIR	Driving Force - Pressure - State - Impact - Response
DWS	Department of Water and Sanitation
EFZ	Estuarine Functional Zone
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EKZNW	Ezemvelo KZN Wildlife
ESAs	Ecological Support Areas
ESMP	Environmental Services Management Plan
EstMP	Estuarine Management Plan
GIS	Geographical Information System
GN	Government Notice
GPS	Global Positioning System
IAPs	Interested and Affected Parties
ICM	Integrated Coastal Management
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
IWMP	Integrated Waste Management Plan
KCDM	King Cetshwayo District Municipality
KZN	KwaZulu-Natal
KZN HA	KZN Heritage Act (Act No. 04 of 2008)
KZN NCMA	KZN Nature Conservation Management Act (Act No. 9 of 1997)
LNG	Liquefied Natural Gas
MLRA	Marine Living Resources Act (Act No. 18 of 1989)
MPRDA	Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)
MPT	Multi Purpose Terminal
MUCH	Maritime Underwater Cultural Heritage
NEMA	National Environmental Management Act (Act No 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act (Act 10 of 2004)

NEM:ICMA	National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008)
NEM:PAA	National Environmental Management: Protected Areas Act (Act No. 57 of 2003)
NEM:WA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NFA	National Forests Act (Act No. 84 of 1998)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NPA	National Ports Act (Act No. 12 of 2005)
NWA	National Water Act (Act No. 36 of 1998)
OECD	Organisation for Economic Co-operation and Development
PDFP	Port Development Framework Plan
PIANC	Permanent International Association of Navigation Congress
PoRB	Port of Richards Bay
PPPs	Policies, Plans and Programmes
RBCT	Richards Bay Coal Terminal
SA	South Africa
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
S&EIR	Scoping and Environmental Impact Reporting
SIPs	Strategic Infrastructure Projects
TNPA	Transnet National Ports Authority
TPT	Transnet Port Terminals
WUL	Water Use Licence

1 INTRODUCTION

1.1 Background

The Transnet National Ports Authority (TNPA) is a division of Transnet Limited and is mandated to control and manage all eight commercial Ports on the South African coastline to ensure efficient and economic functioning while improving safety, health and environmental management. The TNPA operates within a legislative and regulatory environment and is governed by the National Ports Act (Act No. 12 of 2005) (NPA).

The **Port of Richards Bay** (PoRB) is one of the country's largest ports in size, with total land and water surfaces of 2 174 hectares and 1 443 hectares, respectively. Approximately half of the PoRB has been developed. While numerous mining and other products move through the Port, coal remains the single largest export commodity in terms of volumes.

Various development opportunities were identified at the PoRB in terms of the Port Development Framework Plan (PDFP) and the PoRB Master Plan 2021 – 2035 (the "Master Plan"). TNPA must ensure that a fair and reasonable balance is achieved between the protection of the environment and the development and maintenance of the Port. Hence, TNPA recognised the need to undertake a Strategic Environmental Assessment (SEA) for the PoRB.

1.2 Purpose of this Report

This report represents the first deliverable of the SEA process and includes a **Scoping** exercise to determine the context and focus of the overall assessment. This includes the identification of the potentially significant impacts associated with the Master Plan, which will set the scene for the ensuing stages of the SEA.

2 OVERVIEW OF THE PORB

2.1 Port Location

The PoRB is located approximately 160 km north-east of Durban and 465 km south of Maputo, on the eastern seaboard of South Africa (SA). The Port is situated on the north-eastern coast of KwaZulu Natal (KZN) and falls within the City of uMhlathuze (CoM) Local Municipality and King Cetshwayo District Municipality (KCDM) (previously known as uThungulu District Municipality). The GPS location of the Port's entrance is 28°48'36.32"S, 32° 5'42.00"E. Refer to the locality map contained in **Figure 1** below.

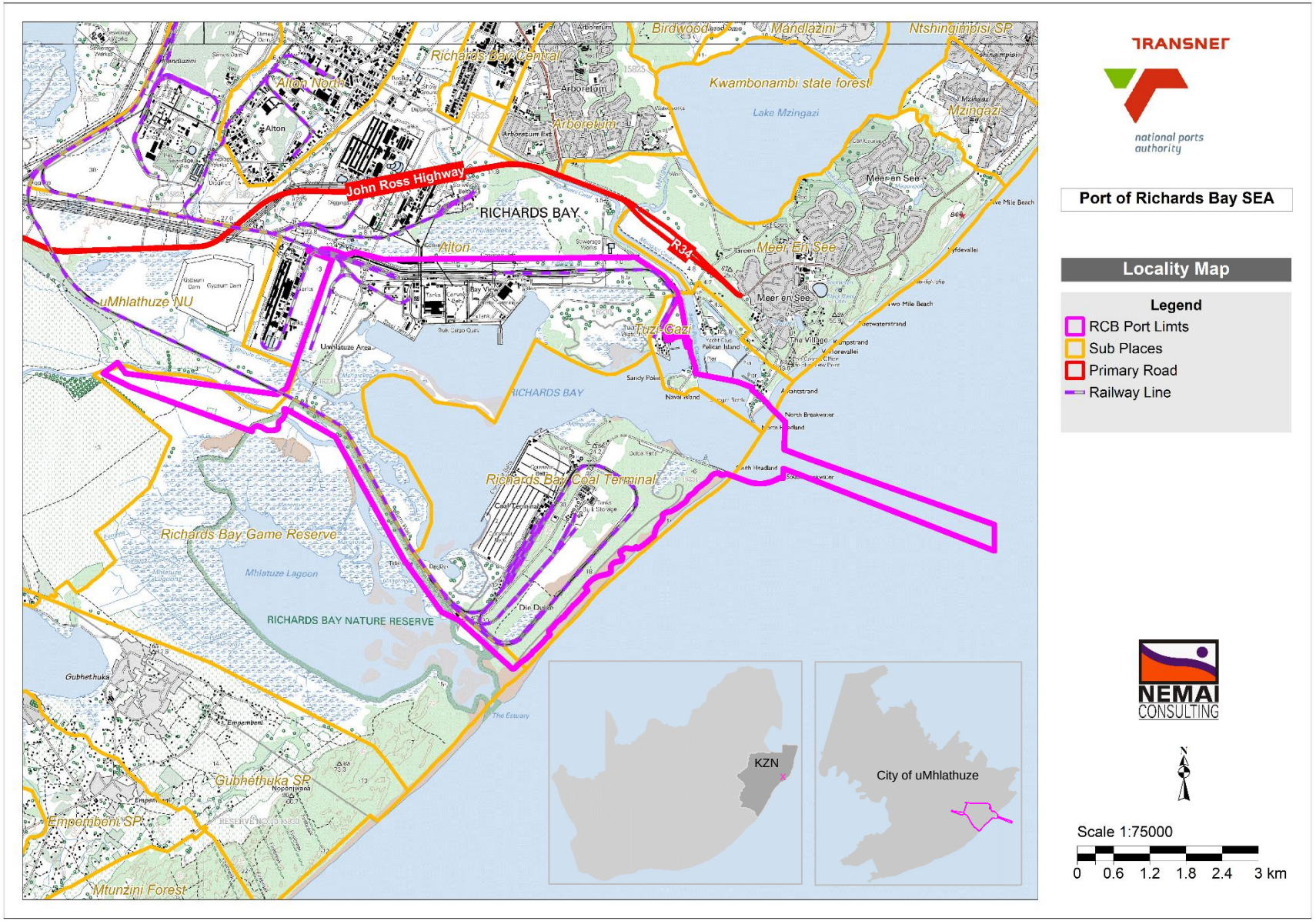


Figure 1: **PoRB – 1:50 000 Topographical Map**

2.2 History of the Port

The configuration of the original Richards Bay estuarine system is shown in **Figure 2** below, which comprised two main parts that included a broad shallow lake and a narrower channel to the sea (Weerts, 2002). Five rivers flowed into the original system, namely the Mtantatweni (draining Lake Cubhu), the Mhlathuzi (the major river that drained through a delta area of swamp vegetation into the western part of the basin), the Bhizolo and Manzinyama (currently serving as drainage canals) and the Mzingazi (draining Lake Mzingazi) (DEA, 2018).

According to Lord and Geldenhuys (1986), the development of the Port involved the division of the estuarine system into two sections by the construction of a 4 km berm-wall (refer to **Figure 2** below). To the north-east of this berm, unrestricted harbour and industrial development was to proceed, whilst to the south-west of the berm the bay was to be left undeveloped and was designated as a nature reserve (Mhlathuze Estuary) after the creation of a new mouth to the sea and the diversion of the Mhlatuze River into the sanctuary.

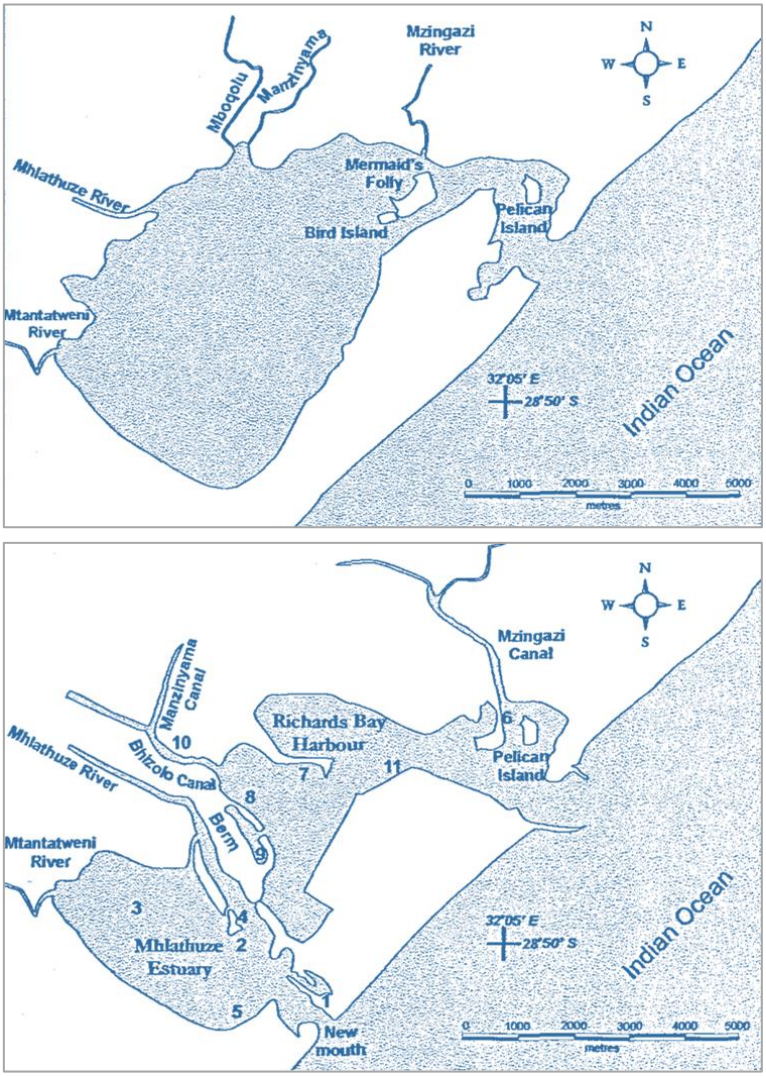


Figure 2: Top: Richards Bay prior to harbour development (1964); and bottom: Richards Bay Harbour and Mhlathuze Estuary alter harbour development (1997) (Weerts, 2002)

The PoRB was officially opened on 1 April 1976. Since then, the development of the town of Richards Bay accelerated as a direct consequence of the construction of the Port and related heavy industries (http://www.safiri.co.za/mpfdb/maritime-port-of-richards-bay.html). The Port was essentially designed as a bulk exporting harbour, with the coal terminal section starting the export of coal.

2.3 Port Layout

The PoRB is divided into the following three precincts (shown in **Figure 3** below):

- **Bayvue** –
  - Accommodates the Multi Purpose Terminal (MPT) and Dry Bulk Terminal (DBT);
  - Total area of 765 ha (349 ha leased and 416 ha available);
  - Total number of Berths = 14; and
  - Number of Terminal Operators = 3.
- **South Dunes** –
  - Accommodates coal and liquid bulk terminals;
  - Total area of 1,121 ha (843 ha leased and 278 ha available);
  - Total number of Berths = 8; and
  - Number of Terminal Operators = 3.
- **Newark** –
  - Includes small craft harbour, repair quay and tug jetty; and
  - Total area of 48.6 ha (15.1 ha leased and 33.5 ha available).

Technical attributes of the operational berths are presented in **Table 1** below.

Table 1: Overview of the PoRB 's Precincts

Precinct	Overall Effective Quay length	Terminal	Number of Berths	Design Capacity	Throughput
Bayvue	2320m	MPT	7 (Berths 606 to 609 & 706 to 708)	7 750 000 tpa	6 663 562 tpa
		DBT	7 (Berths 701 to 705, 801 & 804)	21000 000 tpa	16 159 327 tpa
South Dunes	2464m	Richards Bay Coal Terminal (RBCT)	6 (Berths 301 to 306)	91 000 000 tpa	67 322 416 tpa
		Liquid Bulk	2 (Berths 208 & 209)	3 280 000 m^3	1 925 158 m^3
Newark	300	*Non-Operational Areas: Repair Quay, Tug Jetty, Naval & Pelican Islands*			

Figure 3: Port of Richards Bay Layout (Google Earth ™)

2.4 Port Commodities

With 22 commercial berths (14 dry bulk, 6 break bulk, 2 liquid bulk), the PoRB's key commodities include the following:

- Coal;
- Ferro Chrome;
- Magnetite;
- Alumina;
- Phosphoric Acid;
- Liquid Pitch;
- Petroleum;
- Granite;
- Paper; and
- Aluminium Ingots.

2.5 Services

The PoRB is served by road, rail, pipelines and conveyor networks. Rail is the dominant carrier of goods due to the established existence of the bulk coal handled by the Port. Road traffic is restricted to the multi-purpose and dry bulk terminals on the northern end of the Port with mainly staff and general business traffic utilizing the road network to the coal terminal. In addition, conveyors link to neighbouring industries.

The external road network, which services the PoRB directly, includes John Ross Highway (R34), National Route 2, West Central Arterial, Harbour Arterial, Medway Road and Bayview Boulevard.



3 Overview of the Master Plan

3.1 Introduction

The NPA prescribes that TNPA is to prepare and periodically update a PDFP for each port. This process ensures that the development plans remain current, aligned with national policies

and inclusive of changes in the respective ports' environments. The PDFP addresses the projected demand and capacity requirements of each port. The Master Plan serves to fast track priority developments identified for the PoRB for 2021 – 2035.

3.2 Master Plan Objectives

According to the Permanent International Association of Navigation Congress (PIANC) (2014), the objectives of a Port Master Plan are as follows:

- Communicates the history of a port;
- Articulates the vision for a port to a wide range of stakeholders;
- Adds significant economic value;
- Clarifies the potential port footprint;
- Develops the port in accordance with international and national legislation and guidelines;
- Integrates economic, engineering, environmental and safety considerations in the overall plan;
- Promotes the strategic long-term development and growth of the port by establishing functional areas for port facilities and operations;
- Allows the port to respond to changing technology, cargo trends, regulations, legislation and port competition;
- Tests proposed land allocations;
- Defines future infrastructure requirements; and
- Outlines and organises infrastructure programming and delivery; and drives external policy alignment (i.e., land use planning, transport, environmental policies, etc.).

3.3 Master Plan Overview

3.3.1 Original Master Plan

The original version of the PoRB Master Plan, which includes the proposed 17 developments, is shown in **Figure 4** below.

3.3.2 Revised Master Plan

The information presented below was sourced from PRDW, as part of the Technical Concepts Expert Validation.

The Revised Master Plan is shown in **Figure 5** below

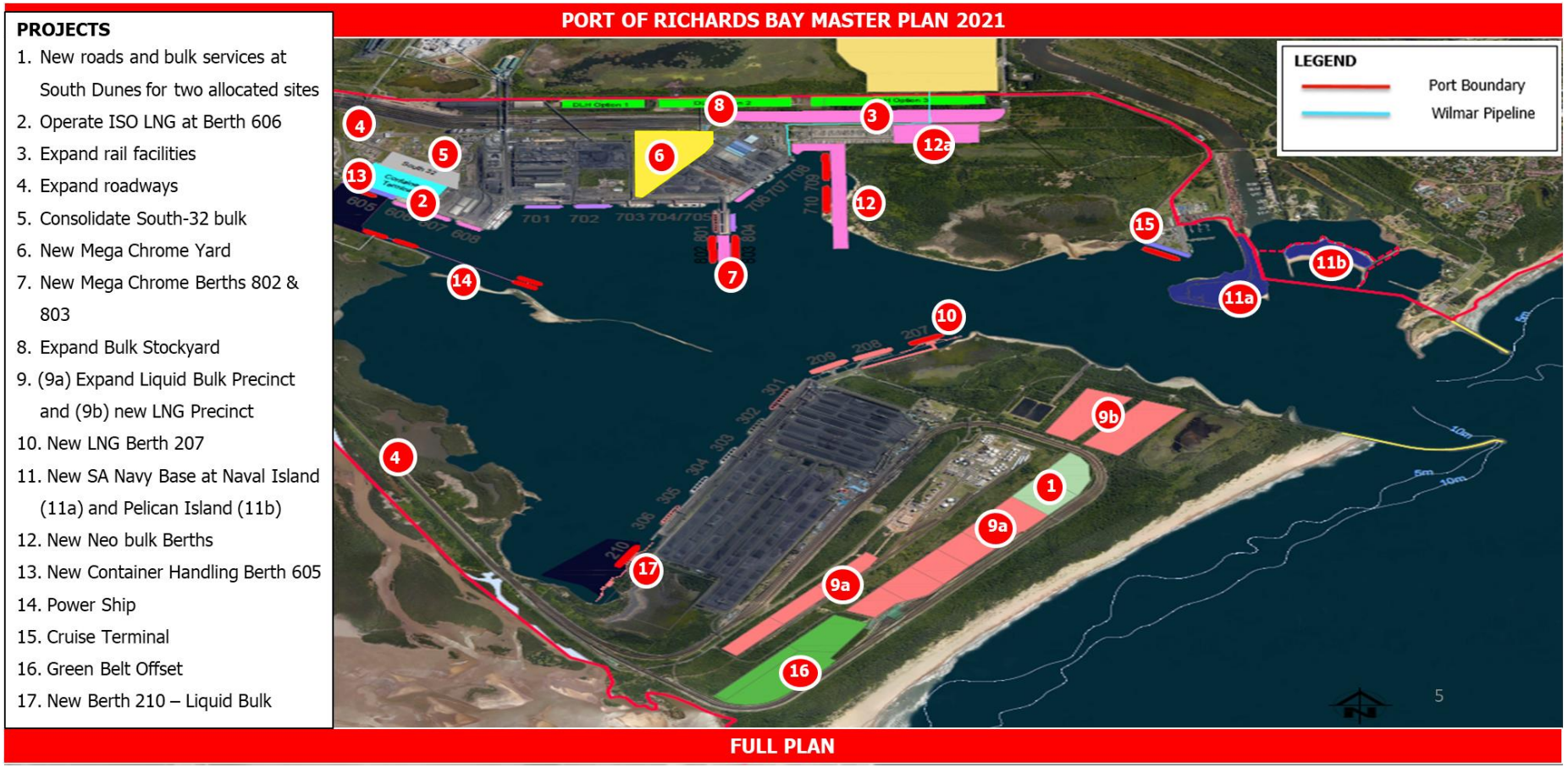


Figure 4: **Original Master Plan for PoRB**

Figure 5: Revised Master Plan for PoRB

The subsections to follow present the projects proposed as part of the Revised Master Plan in each of the precincts in the PoRB. The short-, medium-, and long-term plans were informed by the preceding Master Plan analysis.

3.3.2.1 Bayvue Precinct

The following projects are proposed for the Bayvue Precinct (see **Figure 6** below):

- Short term (by 2030) –
  - PSP TPT terminal;
  - Mega Chrome including Berth 802 & 803 and Tippler 3;
  - Rail yard upgrade – Phase 2 (75 wagon train);
  - Powership;
  - Gate and road upgrade; and
  - Berth 708 lengthening.
- Medium-term (by 2040) –
  - Rail yard upgrade – Phase 3 (150 wagon train).
- Long-term (beyond 2040) –
  - Mixed bulk berth and yard;
  - 600 series; and
  - Container berth.

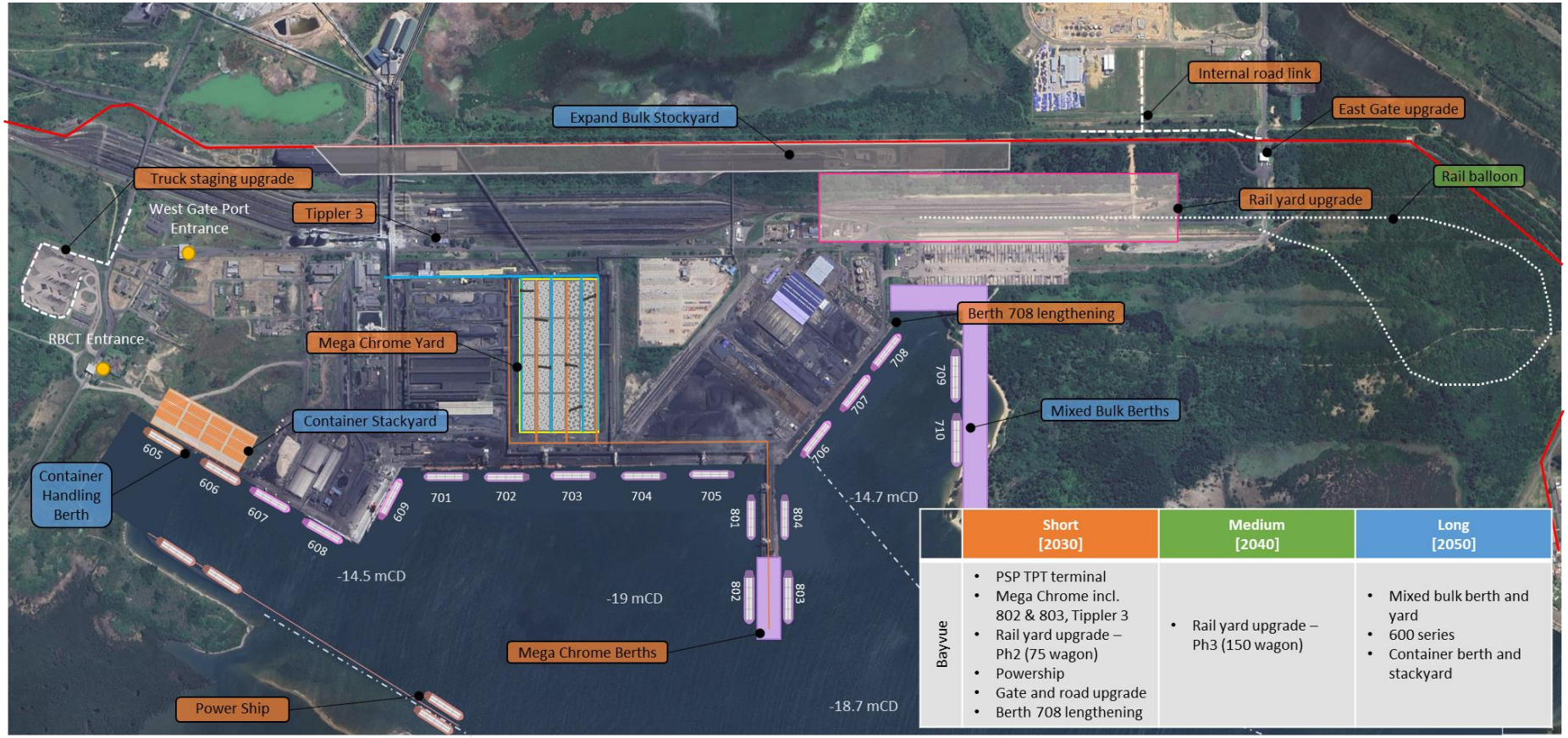


Figure 6: **Revised version of PoRB Master Plan showing the proposed end state of Bayvue Precinct**

3.3.2.2 South Dunes Precinct

The following projects are proposed for the South Dunes Precinct (see **Figure 7** below):

- Short term (by 2030) –
  - Vopak (rail and road upgrade); and
  - Berth 207 LNG.
- Medium-term (by 2040) –
  - Liquid bulk precinct expansion; and
  - Green belt offset.
- Long-term (beyond 2040) –
  - LNG storage facility; and
  - Berth 210.

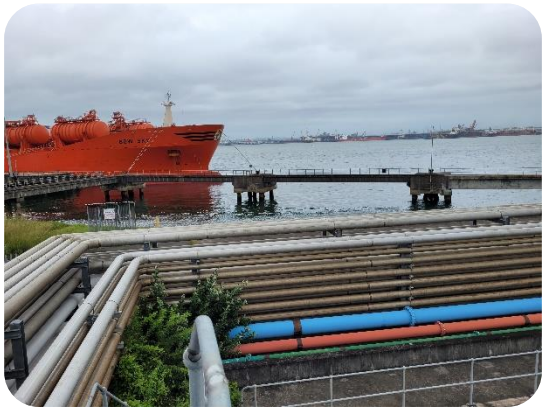


Figure 7: **Revised version of PoRB Master Plan showing the proposed end state of South Dunes Precinct**

3.3.2.3 Newark Precinct

The following projects are proposed for the Newark Precinct (see **Figure 8** below):

- Short term (by 2030) –
  - Naval Base; and
  - Port boundary.
- Medium-term (by 2040) –
  - No plans.
- Long-term (beyond 2040) –
  - Cruise terminal.

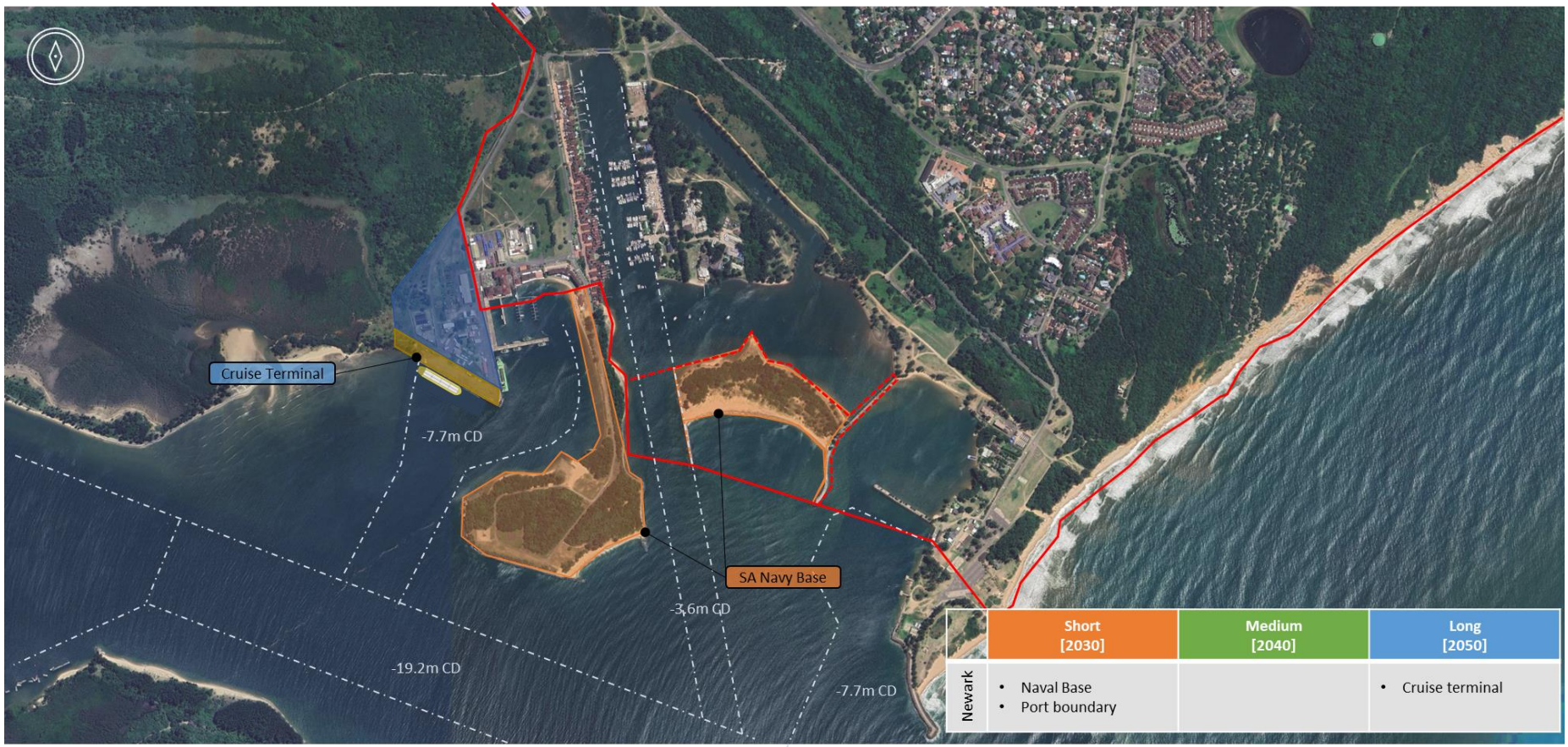


Figure 8: **Revised version of PoRB Master Plan showing the proposed end state of Newark Precinct**

4 POLICY CONTEXT

Significant environmental plans, programmes and legislation which govern the environment at the PoRB, and which could influence the Master Plan, are listed below (list is not exhaustive). Note that the Situation Assessment will provide a detailed legal framework for the Port and its environmental features.

- **National and Provincial Legislation:**
  - Constitution of the Republic of SA;
  - National Ports Act (Act No. 12 of 2005);
  - National Environmental Management Act (Act No 107 of 1998) (NEMA);
  - Environmental Impact Assessment (EIA) Regulations –
    - Government Notice (GN) No. 326 of 7 April 2017 – EIA procedure;
    - GN No. 327 of 7 April 2017 (Listing Notice 1) – activities that need to be subjected to a Basic Assessment process, as prescribed in Regulations 19 and 20 of the EIA Regulations;
    - GN No. 325 of 7 April 2017 (Listing Notice 2) – activities that need to be subjected to a Scoping and Environmental Impact Reporting (S&EIR) Process, as prescribed in Regulations 21 - 24 of the EIA Regulations; and
    - GN No. 324 of 7 April 2017 (Listing Notice 3) – activities in specific identified geographical areas that need to be subjected to a Basic Assessment process, as prescribed in Regulations 19 and 20 of the EIA Regulations.
  - National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008) (NEM:ICMA);
  - National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM:AQA);
  - National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEM:BA);
  - National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA);
  - National Environmental Management: Protected Areas Act (Act No. 57 of 2003) (NEM:PAA);
  - Marine Living Resources Act (Act No. 18 of 1989) (MLRA);
  - National Water Act (Act No. 36 of 1998) (NWA);
  - National Forests Act (Act No. 84 of 1998) (NFA);
  - Environmental Conservation Act (Act No. 73 of 1989);
  - National Heritage Resources Act (Act No. 25 of 1999) (NHRA);
  - Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA);
  - Occupational Health & Safety Act (Act No. 85 of 1993);

- Hazardous Substance Act (No 15 of 1973);
- The Seashore Act (Act No. 21 of 1935);
- Spatial Planning and Land Use Management Act (Act No. 16 of 2013);
- Maritime Zone Act (Act No. 15 of 1994);
- SA Maritime Safety Authority Act (5 of 1998);
- Merchant Shipping Act (Act No. 57 of 1951);
- Sea Birds and Seals Protection Act (Act No. 46 of 1973);
- White Paper for Sustainable Coastal Development in SA (2000);
- White Paper on National Environmental Management of the Ocean (2014);
- Dumping at Sea Regulations (GN No. R 711 on 21 July 2017);
- Dumping at Sea Control Act (Act No. 73 of 1980);
- Conservation of Agricultural Resources Act (Act No. 43 of 1983);
- National Estuarine Management Protocol (GN No. 341 of 10 May 2013);
- National Keypoints Act (Act. No 102 of 1980);
- Municipal Systems Act (Act No. 32 of 2000);
- Coastal Policy for KZN (2004);
- KZN Heritage Act (Act No. 04 of 2008) (KZN HA); and
- KZN Nature Conservation Management Act (Act No. 9 of 1997) (KZN NCMA).

❑ **Additional Relevant Policies, Strategies, Plans & Programmes:**

- KCDM Environmental Management Framework (EMF);
- EMF for the Richards Bay Industrial Zone and Port Expansion (2015);
- CoM Integrated Development Plan (IDP) for 2022/2027;
- CoM Spatial Development Framework (SDF) for 2022/2023 – 2026/2027;
- CoM By-Laws;
- CoM Environmental Services Management Plan (ESMP);
- CoM Climate Change Action Plan (2018);
- CoM Integrated Waste Management Plan (IWMP) (2021);
- CoM Disaster Management Plan;
- Strategic Infrastructure Projects (SIPs);
- National Ports Plan 2016;
- Port Regulations of 2007;
- Port Rules of 2009;
- National Estuary Biodiversity Plan (2011);
- Ezemvelo KZN Wildlife (EKZNW) Marine Systematic Conservation Plan;
- EKZNW Terrestrial Systematic Conservation Plan;
- EKZNW Freshwater Systematic Conservation Plan
- EKZNW Estuarine Systematic Conservation Plan;

- uThungulu Biodiversity Sector Plan (BSP) (2014);
- KZN Coastal Management Programme (CMP) 2017 - 2022;
- uThungulu Coastal Management Programme;
- uMhlathuze & Richards Bay Estuarine Management Plan (EstMP) (2018);
- Operation Phakisa: The Oceans Economy;
- Blue Flag Programme; and
- Working for the Coast Programme.

❑ **International Conventions & Other Legislation:**

- International Convention for the Prevention of Pollution from Ships, 1973/1978;
- United Nations Convention on Law of the Sea, 1982;
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention) and the 1996 Protocol (the Protocol);
- International Convention relating to Intervention on the High Seas in case of Oil Pollution Casualties (1969) and Protocol on the Intervention on the High Seas in Cases of Marine Pollution by substances other than oil (1973);
- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (1989); and
- Convention on Biological Diversity (1992).

5 OVERVIEW OF THE SEA

5.1 Defining an SEA

Chapter 5 of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) identifies various environmental management instruments and tools for application in SA. An SEA is an example of such a tool that is used in strategic environmental planning (DEA, 2014).

According to the White Paper on Environmental Management Policy for SA of 1998, an SEA is "*a process to assess the environmental implications of a proposed strategic decision, policy, plan, programme, piece of legislation or major plan*". One of its primary objectives is to aid decision-making by considering the environment earlier on in a planning process.

According to the Council for Scientific and Industrial Research (CSIR) (2007), the understanding of an SEA varies in different parts of the world due to the context within which the assessment is conducted. This relates to the variation in its scope, comprehensiveness, duration and links to either evaluating policies, plans and programmes (PPPs).

The following generic definitions apply to PPPs (CSIR, 2007):

- **Policy**: A general course of action or proposed overall direction that an organisation is, or will be, pursuing and which guides ongoing decision-making;
- **Programme**: A coherent, organized agenda or schedule of commitments, proposals, instruments and/or activities that elaborates and implements policy; and
- **Plan**: A purposeful, forward-looking strategy or design, often with coordinated priorities, options and measures, that elaborates and implements policy.

Within the context of this study, the SEA is primarily focused on the Master Plan from the perspective of the PoRB.

5.2 The Origins of SEA in SA

SA has a voluntary SEA system and thus does not implement SEA according to a legally prescribed process (Rebelo & Guerreiro, 2016). Some of the significant milestones in the development of SEA in SA include the following:

1. The White Paper on Environmental Management Policy for SA (1998) provided a national policy initiative to address the need for SEA;
2. Chapter 5 of NEMA promotes the application of appropriate environmental management tools in order to ensure the Integrated Environmental Management (IEM) of activities. IEM has evolved to be an underlying philosophy and set of principles, supported by a range of environmental assessment and management tools that are

aimed at promoting sustainability and providing a framework for environmental decision-making. SEA is one of the commonly used tools that support IEM;

3. Guidelines for SEA were developed in 2000 by the then National Department of Environmental Affairs and Tourism (DEAT). These Guidelines were not legislated, and reflected the emerging approach to an SEA at that point in time;
4. The Municipal Systems Act (Act No. 32 of 2000) provides the context for municipal planning in SA. This Act requires that local authorities adopt a single plan that integrates development plans; aligns the resources and capacity of the municipality and forms the policy framework on which annual budgets are based. The Municipal Planning and Performance Regulations promulgated in 2001 in terms of this Act, state that a strategic assessment must be undertaken of the environmental impact of the SDF contained in the municipality's plan (CSIR, 2004);
5. The White Paper on Spatial Planning and Land Use Management (2001) states that each municipality in SA must compile an SDF. One of the four components of this framework is an SEA;
6. SEA was the main topic of the IEM Information Series 10 (DEAT, 2004), where the aim of this document series is to provide general information on techniques, tools and processes for environmental assessment and management;
7. In 2007 the CSIR developed the SEA Resource Document, which provided an introduction to the process, principles and application of SEA (CSIR, 2007); and
8. The SEA Guidelines were revised in 2007 by DEAT under the Integrated Environmental Guideline Series 4 (DEAT, 2007), based on further experience in the practice of SEA including the application of this tool on local and international fronts.

5.3 Why is an SEA required for the PoRB?

The main reasons for embarking on an SEA for the Port include the following:

1. The proposed developments associated with the Mater Plan have the potential to result in significant impacts to the environment. Carrying out an SEA will allow for the early consideration of these environmental issues and the identification of commensurate environmental management requirements; and
2. The SEA aims to integrate environmental considerations into the future development of the PoRB to ultimately promote sustainable planning and development, based on inherent qualities of the receiving environment.

5.4 The position of an SEA in IEM

Figure 9 below shows the position of an SEA as part of a suite of commonly applied IEM tools in a generic project life-cycle. As implied in its name, an SEA occupies a strategic high-level niche as a result of the following:

- Its appraisal of strategic activities (included in PPPs);

- Its outcomes, such as sustainability parameters;
- Its function in terms of strategic decision-making; and
- The overarching context that it provides for a project-level EIA.

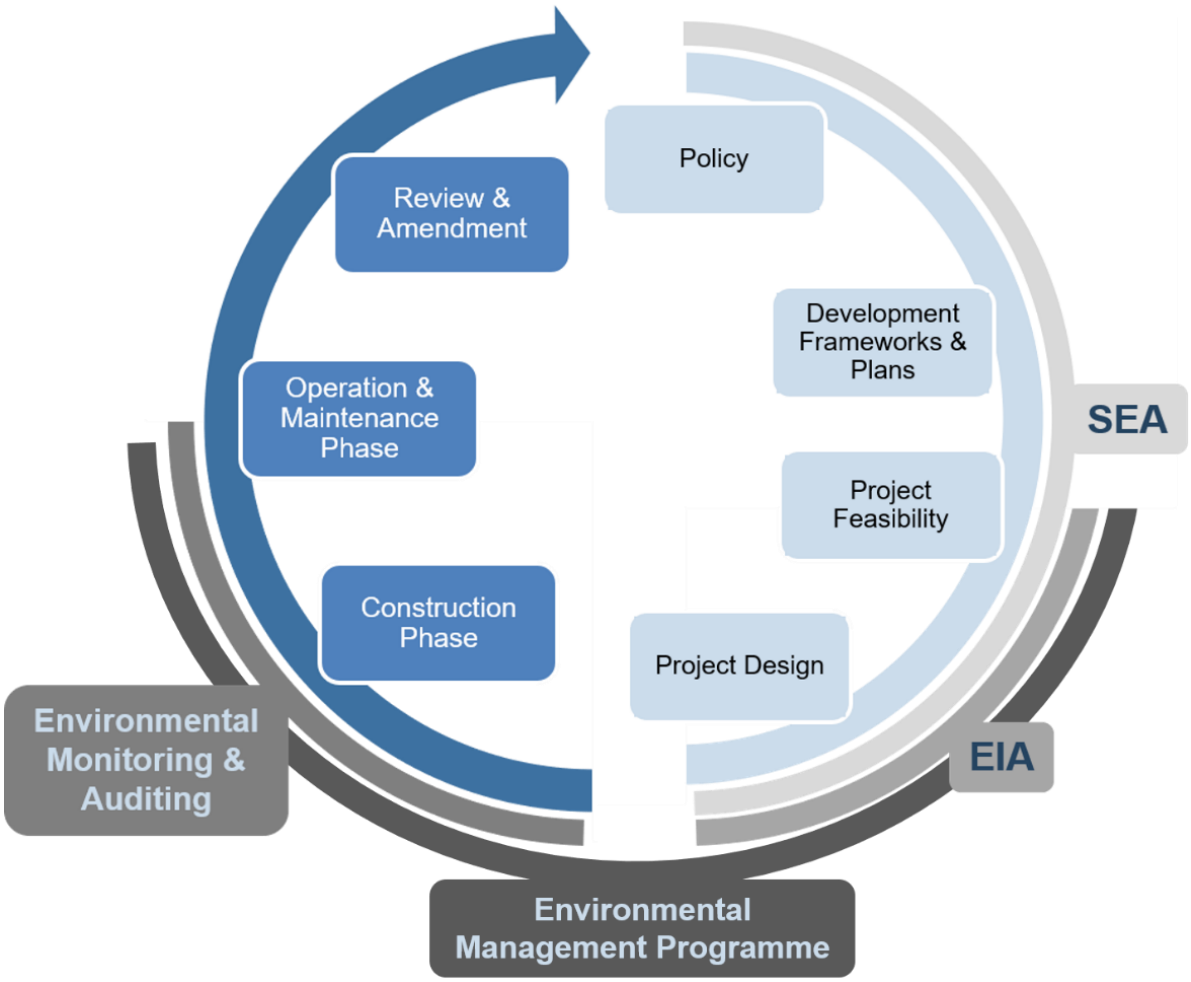


Figure 9: **Suite of commonly applied IEM tools in a generic project life-cycle**

5.5 Scope of the SEA

The scope of the SEA, as stipulated in TNPA's specifications, entails the following:

- Identification of key stakeholder for involvement in the SEA process;
- Identification of significant strategic issues (consolidating the ones which have already been identified in the PoRB Long-Term Development Plan);
- Determine the compatibility of the Port's Aspects and Impacts Register with the identified strategic issues as well as the Long-term Development Framework Plan;
- Address the causes of significant environmental impacts identified in the Port's Aspects and Impacts Register;
- Align the SEA with the current PDFP and any other proposed plans for the Port and streamline subsequent EIA's for individual projects through the identification of limits of acceptable change;

- Identification of opportunities and constraints posed by the social, biophysical, and economic environments to achieve sustainability objectives;
- Identify and incorporate all legislation, policies, plans and programmes that are required in order to inform the SEA including maritime legislation;
- Investigate and determine the potential environmental impact of commodities in the Port's natural hinterland that are existing or that are planned to be explored which can be handled/exported through the Port;
- Evaluate and highlight fatal flaws that will prohibit certain developments and the handling of a particular commodity in the Port;
- Engage EXCO members of TNPA, the Port and other relevant personnel as required;
- Develop management guidelines for the implementation of sound environmental principles during the decision-making processes;
- Provide recommendations in line with planned development and applicable legislation;
- Study the PDFP and provide overview of short- to long-term environmental impacts;
- Develop the baseline conditions (physical, biophysical, social and economic) of the Port and review relevant environmental specialist studies developed as part of capital infrastructure development or environmental management plans in the Port;
- Review and update the legal framework and ensure it's aligned to current legislation;
- Identify, describe and evaluate all significant effects associated with the PDFP, including programmes implemented outside the PDFP;
- Provide recommendations aimed at achieving optimal local Integrated Development Planning and provide the TNPA and the municipality with useful tools to evaluate the environmental sustainability of the projects and overall development planning process;
- Provide guidelines for sustainable development that encompasses, goals, targets, sustainability initiatives and reporting indicators;
- Engage with all relevant authorities including the KZN Department of Economic Development, Tourism and Environmental Affairs (DEDTEA), Department of Forestry, Fisheries and the Environment (DFFE) Forestry section, EKZNW, etc.; and
- Provide recommendations in line with planned development and applicable legislation.

5.6 SEA Development Approach

Although a single SEA methodology cannot be prescribed for all circumstances, factors that influence the design of context-specific SEA processes include the following:

- What type of policy, plan or programme is being formulated/assessed?
- In what way does the SEA relate to the decision-making process?
- What components of the environment are being considered?
- Are there any requirements (e.g., legislation / guidelines) that should guide the formulation of the SEA process?

The SEA process for the PoRB, which is guided by the scope defined in **Section 5.5** above, is presented in **Figure 10** below. It consists of the stages listed in **Table 2** below. The SEA will

aim to be aligned with guidelines and best practices, such as the IEM Information Series 10 (DEAT, 2004) and prevailing guidelines.

Table 2: SEA Process Overview

No.	SEA Step	Description	Deliverable
1	**Inception**	• Project inception serves to clarify and expand upon the project brief.	**Inception Report**
2	**Scoping**	• Articulate a vision for the Port. • Understand the projects associated with the Master Plan. • Determine information requirements. • Identify the strategic issues to be considered. • Set the boundaries of the assessment. • Define the terms of reference for the remainder of the assessment.	**Scoping Report**
3	**Situation Assessment**	• Establish the environmental governance framework. • Describe the current status of the receiving environment within the Port to which the Master Plan relates. • Identify critical environmental features, based on sensitivity (consider legal status, protection level, vulnerability to change, etc.). • Assess projected baseline and trend analysis (and associated drivers) of critical environmental features. • Determine sustainability parameters.	**Situation Assessment Report & Sustainability Framework**
4	**Strategic Impact Assessment**	• Understand the projects associated with the Master Plan (including associated infrastructure, activities, alternatives, etc.). • Overlay Master Plan onto baseline environment. • Assess potential environmental impacts and determine the significance. • Determine impacts on sustainability. Assess impacts against predetermined sustainability parameters. • Recommend mitigation measures. • Undertake a fatal flaw analysis (e.g., unavoidable significant impacts that exceed acceptable limits). • Recommend preferred alternatives to projects under the Master Plan (as relevant), based on the availability of information.	**Strategic Impact Assessment Report**
5	**Strategic Environmental Management Plan (SEMP)**	• Develop an Implementation Plan for the SEA. • Develop a Monitoring and Evaluation Framework.	**SEMP**

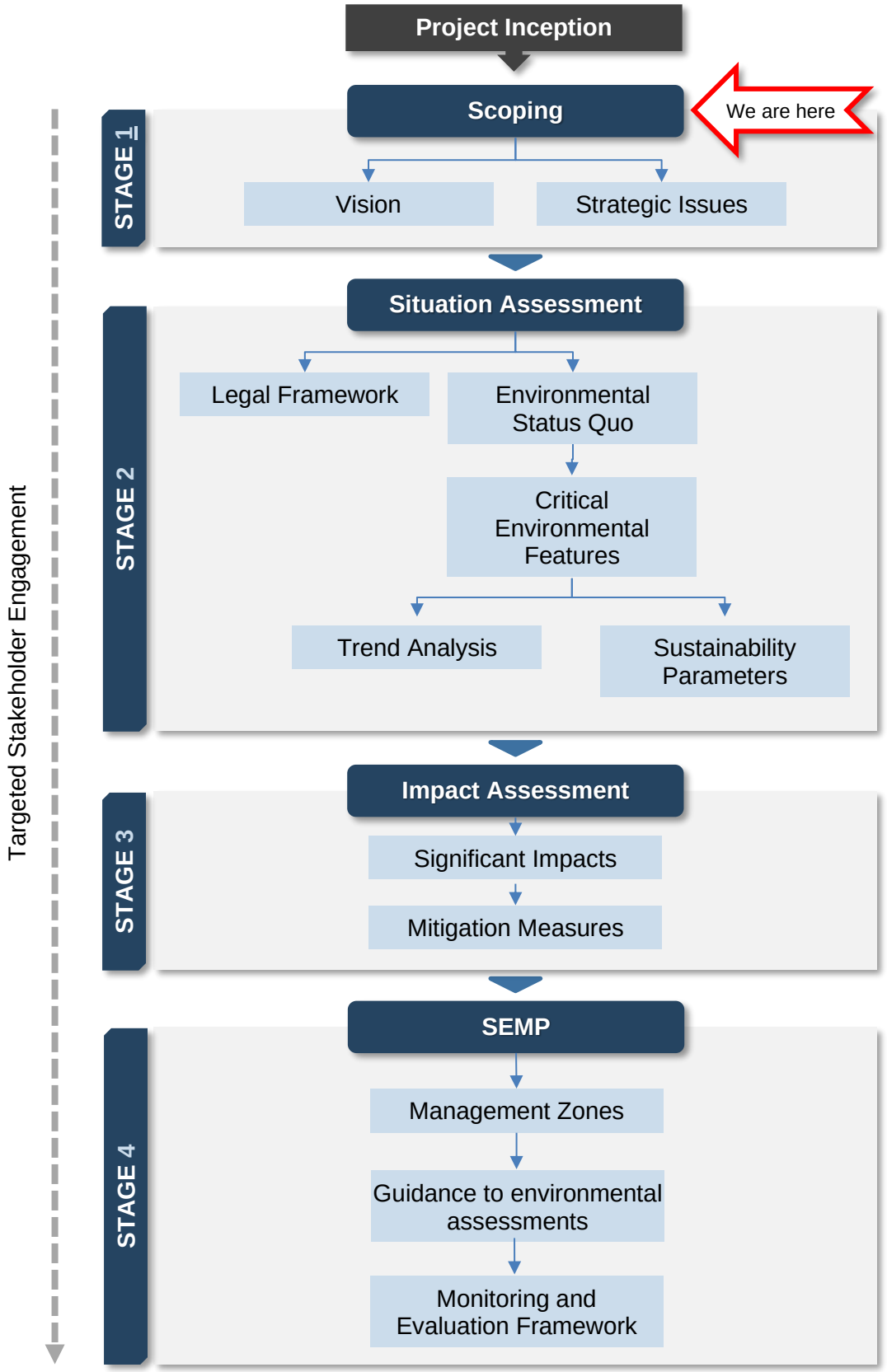


Figure 10: Outline of SEA Approach for the PoRB

5.7 SEA Development Principles

The following principles, in accordance with the SEA Resource Document (CSIR, 2007), guide the development of the SEA for the PoRB:

- ❑ The SEA is driven by the concept of sustainability;
- ❑ The SEA identifies the opportunities and constraints that the environment places on the Master Plan;
- ❑ The SEA sets the criteria for levels of environmental quality or limits of acceptable change;
- ❑ The SEA is a flexible process that is adaptable to the planning and sectoral development cycle in terms of the Port;
- ❑ The SEA is a strategic process;
- ❑ The SEA is part of a tiered approach to environmental assessment and management;
- ❑ The scope of an SEA is defined within the wider context of environmental processes;
- ❑ The SEA is a participative process; and
- ❑ The SEA includes the concepts of precaution and continuous improvement.

5.8 Stakeholder Engagement

The level of participation with stakeholders during an SEA process is tailored to the specific context and objectives of the assessment.

The proposed stakeholder engagement tasks to be conducted during the various stages of the SEA for the Port are listed in **Table 3** below. Note that these tasks may be adapted during the course of the assessment to ensure that stakeholder engagement remains effective and relevant.

Table 3: Proposed Stakeholder Engagement Tasks during the SEA Process

No.	SEA Step	Stakeholder Engagement Tasks

1	**Scoping**	• Determine stakeholder engagement requirements relevant to the SEA.
		• Develop a database of stakeholders.
		• Develop a Background Information Document and Questionnaire specific to the SEA.
		• Notify stakeholders contained in database of the SEA process via emails.
		• Provide general notification via other media.
		• Allow for input to be provided in terms of the scoping exercise for the SEA via the following:
		  ○ Completion of the questionnaire; and
		  ○ Participation during stakeholder meetings (separate meetings for authorities and general stakeholders).

2	**Situation Assessment**	• The same questionnaire listed above will include information pertaining to the **situation assessment**, which will allow for input to be elicited from stakeholders.

No.	SEA Step	Stakeholder Engagement Tasks
		• Targeted interviews may be held with key stakeholders to discuss specific elements of the receiving environment.
3	**Strategic Impact Assessment**	• The same questionnaire listed above will include information pertaining to **strategic impacts**, which will allow for input to be elicited from stakeholders. • Targeted interviews may be held with key stakeholders to discuss strategic impacts.
4	**SEMP**	• Allow stakeholders 30 days to review the SEMP. • Present the draft SEMP to stakeholders. • Compile a Comments and Responses Report.

5.9 SEA Acceptance and Approval

The current understanding is that the intention behind this SEA is to ultimately guide sustainable development within the PoRB. Hence, the SEA will not be submitted to the DFFE for formal approval. TNPA will instead commit to the implementation of the outputs of the SEA. This will include the institutionalisation of the SEA within TNPA.

5.10 Limitations

The following limitations accompany the SEA Scoping Study:

1. The Scoping Study only identifies potentially significant impacts on a strategic level. Detailed investigations will follow in Stage 3 of the SEA (Impact Assessment) following a better understanding of the receiving environment within the PoRB, which will be established during Stage 2 of the SEA (Situation Assessment).
2. The preliminary sensitivity map for the PoRB was compiled using the best available spatial information at the time when this report was compiled and the accompanying Geographical Information System (GIS) was developed. It is accepted that more accurate and supplementary information may become available during Stage 2 of the SEA (Situation Assessment).
3. Detailed information pertaining to the alternatives of certain developments proposed for the PoRB was not available during the Scoping Phase. This did not preclude the completion of the scoping exercise, as alternatives will only be assessed during Stage 3 of the SEA (Impact Assessment).

6 VISIONING EXERCISE

6.1 Introduction

The vision ultimately provides the management context for the PoRB. The approach to defining the Vision is based on evaluating and integrating the factors shown in **Figure 11** below.

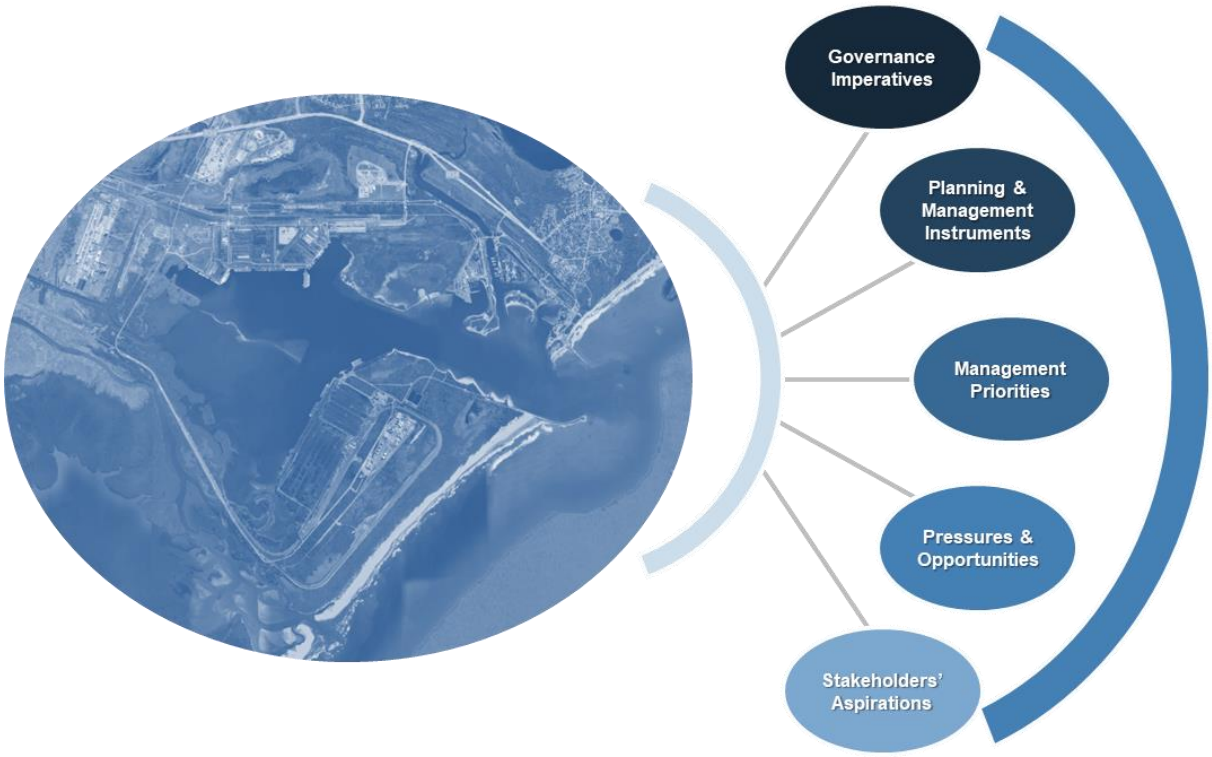


Figure 11: Factors considered in crafting a vision

6.2 Stakeholders' Aspirations

Stakeholder engagement is a critical component of the SEA. During the announcement phase a Background Information Document and questionnaire were distributed to stakeholders. This served to provide an overview of the Project, and to elicit upfront comments from stakeholders.

The comments provided by the stakeholders to date have greatly assisted in understanding the current state of the PoRB, including critical issues that need to be addressed. In addition, their comments also highlighted focus areas for future management endeavours and the key stakeholders that need to be involved. It emphasises the need for coordinated and diligent management by the regulatory bodies, with the necessary collaboration with civil society.

Some of the key management priorities highlighted by stakeholders, which provides valuable direction to the vision, include the following:

Enhance ecological status of sensitive ecological features in the Bay.
Encourage protection of the remnant habitats and biodiversity.
Improve ecosystem goods and services.
Prevent reduction in biodiversity due to the earmarked development activities near the sensitive marine and landside environments.
Protect the Bay's fish nursery areas.
Protect the Bay's fishing values and promote beneficiation.
Promote climate change resilience.
Promote an inclusive cruise tourism sector that will yield sustainable benefit sharing opportunities.
Ensure air quality management.
Ensure water quality management.
Promote employment opportunities.
Ensure a comprehensive stakeholder engagement process.

6.3 Existing Visions

The Master Plan establishes a vision for the end state of the PoRB, based on TNPA's development ambitions to satisfy the Port's demand and capacity requirements. According to the CSIR (2007), an SEA is undertaken within the context of broader visions, goals and objectives that strive towards a desirable future for an area in question.

The sub-sections to follow highlight some key visions that have a bearing on the PoRB, and which need to be considered during the SEA. These visions take into consideration governance imperatives for the Port.

6.3.1 KZN Coast Vision

The vision, mission and principles for the KZN coast, based on the KZN CMP (KZN DEDTEA, 2017), follow.

VISION	"A vibrant, healthy and safe coast with sustainable access to resources for all."
MISSION	Through co-operative governance and best practice the intrinsic value of the coast is protected, restored and enhanced for future generations, while promoting equitable access and sustainable use of coastal resources for all stakeholders and user groups.
PRINCIPLES	- NATIONAL AND PROVINCIAL ASSET ○ The coast must be retained as a national and provincial asset, with public rights to access and benefit from the many opportunities provided by the coast. - ECONOMIC DEVELOPMENT

- Economic development opportunities must be optimised to meet society's needs and to promote the well-being of coastal communities.

- SOCIAL EQUITY
  - Coastal management efforts must be optimised to meet societies' needs and to promote the wellbeing of coastal communities.
- ECOLOGICAL INTEGRITY
  - The diversity, health and productivity of coastal ecosystems must be maintained and where appropriate rehabilitated.
- HOLISM
  - The coast must be treated as a distinctive and indivisible system, recognising the interrelationships between coastal users and ecosystems and between the land, sea and air.
- ASSIMILATIVE CAPACITY LIMITATIONS
  - Coastal ecosystems have finite assimilative capacity to accommodate development and exploitation in a sustainable manner, both living and non-living resources.
- VULNERABILITY
  - The coast is an ecosystem of great value but inherently vulnerable to development and the impacts of climate change.
- RISK AVERSION AND PRECAUTION
  - Coastal management efforts must adopt a risk-averse and precautionary approach under conditions of uncertainty.
- ACCOUNTABILITY AND RESPONSIBILITY
  - Coastal management is a shared responsibility and all people must be accountable for their actions, including financial liability for negative impacts.
- DUTY OF CARE
  - All people and organisations must act with due care to avoid negative impacts on the coastal environment and coastal resources.
- INTEGRATION AND PARTICIPATION
  - A dedicated, co-ordinated and integrated approach must be developed and conducted in a participatory, inclusive and transparent way.
- DIFFERENTIATED APPROACH
  - While a generic management framework is important, mechanisms of implementation cannot be rigid as ICM is contextual.
- ADAPTIVE MANAGEMENT
  - Incrementally adjusting practices based on learning through common sense, experience, experimenting and monitoring "learning-by-doing".
- COOPERATIVE GOVERNANCE
  - Working together to ensure consistency in approach among all spheres of government and stakeholders.

6.3.2 Municipal Vision

According to the municipal IDP for 2022/2027IDP (CoM, 2022a), the municipal vision and mission are as follows:

VISION	"The Port City of uMhlathuze offering a better quality of life for all its citizens through sustainable development and Inclusive Economic Growth."
MISSION	The CoM commits itself to: - Job creation and inclusive economic growth through accelerated economic development and transformation;

- Enhancing industry-based skills development and strategic support to education priority programmes;
- Community based initiatives to improve quality of citizen's health and well-being;
- Creating safer city through integrated and community-based public safety;
- Planned and accelerated rural development interventions;
- Promotion and maintenance of spatial equity and transformation;
- Optimal management of natural resources and commitment to sustainable environmental management;
- Use of Information, Communication and Technology Systems to improve productivity and efficiencies in line with Smart City principles;
- Good governance, capable and developmental municipality.

The SDF recognises *inter alia* that developments at the PoRB are one of the strategic investments in the municipal area.

6.3.3 uMhlathuze & Richards Bay EstMP

The EstMP applies to the Estuarine Functional Zone (EFZ) for the uMhlathuze/Richards Bay Estuaries (excluding Lake Cubhu and Lake Mzingazi) (see **Figure 12** below).

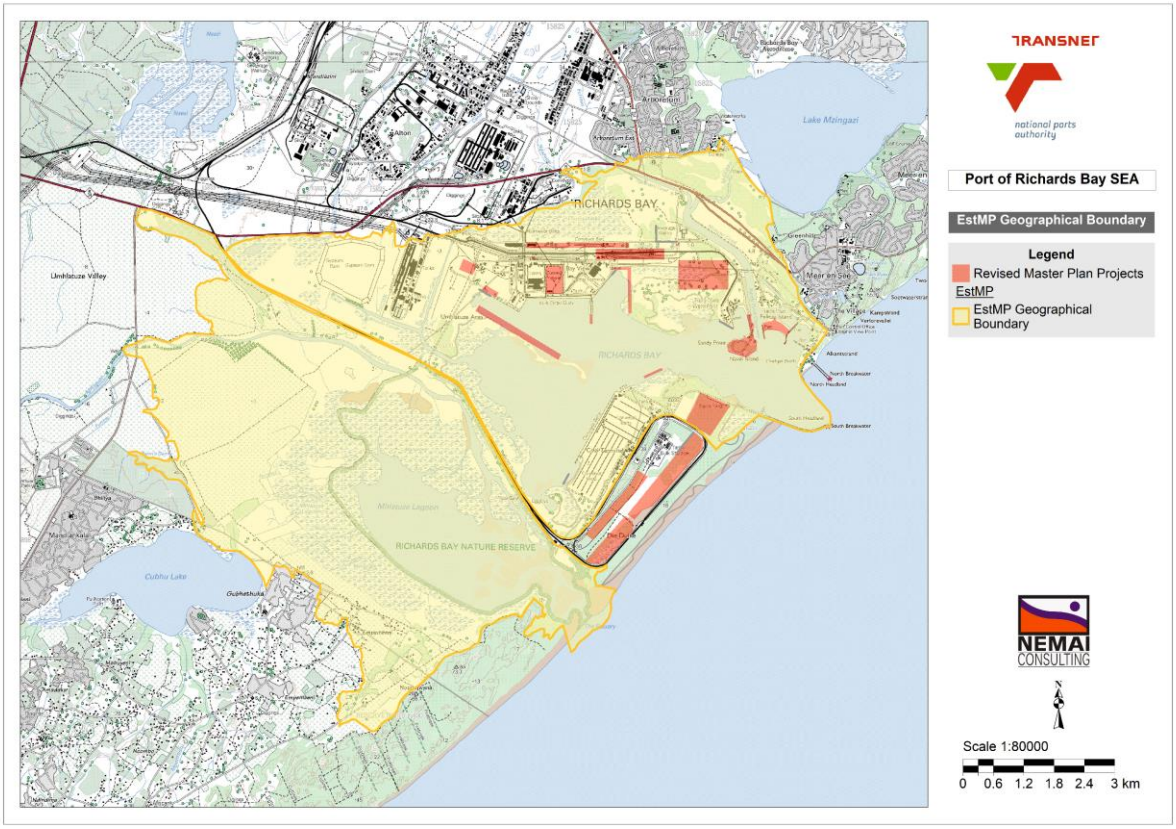


Figure 12: **EstMP Geographical Boundary showing the Revised Master Plan projects**

According to DEA (2018), the vision established for uMhlathuze/Richards Bay Estuary in the EstMP, as well as the accompanying strategic objectives, are as follows:

VISION	"The uniqueness and socio-economic values of our beautiful estuaries are sustainably protected for future generations through responsible, holistic and inclusive management approaches."

STRATEGIC OBJECTIVES	- Ecological:
	  ○ Estuarine ecological health meets the desired ecological state (e.g., agreed upon during Classification process), including successful rehabilitation of unacceptably impacted areas in EFZ.
	  ○ Important estuarine habitats are fully enclosed within the Richards Bay Game Reserve and granted formal protected area status.
	- Social:
	  ○ Community youth understand and value the ecological importance and socio-economic benefits of estuaries.
	  ○ Socially dependent communities benefit from estuarine resources through sustainable practices.
	  ○ Communities and public have access to share in estuarine resource values through safe and sustainable access routes.
	- Economic:
	  ○ Small businesses, with strong local community involvement, benefit from estuarine ecosystem services in a responsible manner (e.g., non-destructive eco-tourism).
	  ○ Large-scale industrial development contributes to economic growth in an environmentally - and socially sound manner (i.e., balancing ecological-social-economic benefits).
	- Governance:
	  ○ Successful cooperative management are achieved, involving all spheres of government, and based on mutual agreement on implementation of EstMP.
	  ○ Empowered local communities participating in management decisions and implementation of EstMP.
	  ○ Private sector participates in cooperative management, sharing their skills and resources to ensure protection of biodiversity and socioeconomic value.
	  ○ Environmental integrity is ensured through effective compliance informed by continuous, science-based monitoring programmes.

Even though the EstMP's geographical boundary (shown in **Figure 12** above) excludes the Liquid Bulk Precinct Expansion and Green Belt Offset projects in the South Dunes Precinct, it nonetheless captures the bulk of the SEA's study area. According to DEA (2018), the vision and strategic objectives were discussed and articulated during the consultations conducted with the relevant stakeholders. Based on the aforementioned factors, it was deemed that the same vision and accompanying strategic objectives be adopted for the PoRB SEA.

7 SCOPING EXERCISE

7.1 Purpose of Scoping

Scoping is regarded as the process of deciding the content and level of detail of a SEA, including the key environmental issues, likely significant environmental impacts and alternatives which need to be considered (as relevant), the assessment methodology to be employed, and the way forward for the SEA.

7.2 Spatial Extent of Assessment

The SEA's study area will be limited geographically to activities occurring within the functional area of the Port, based on the proposed developments contained in the Master Plan, where TNPA have direct jurisdiction. The geographic scope of the assessment within the SEA will however be flexible and will depend on the physical extent of potential impacts (zone of influence) from implementing the Master Plan. These impacts will be assessed during Stage 3 of the SEA.

7.3 Temporal Scope of Assessment

The revised Master Plan covers the proposed developments within the PoRB for the following periods:

1. Short term (2030);
2. Medium term (2040); and
3. Long term (2050).

In addition to the timeframes of the development phasing, there will be the consideration of short, medium and long-term impacts (including reference to secondary, cumulative, synergistic, permanent and temporary, positive or negative impacts).

7.4 Strategic Issues

7.4.1 Introduction

This step of the SEA serves to narrow the focus in terms of potentially strategic issues, which require further investigation. The proposed end state maps for the Bayvue, South Dunes and Newark Precincts are shown in **Figures 6 – 8** above.

The detailed investigation of potentially significant issues, including baseline data collection and impact predictions, will be carried out during Stage 2 (Situation Assessment) and Stage 3 (Impact Assessment) of the SEA.

7.4.2 Key Environmental Features

One of the tasks associated with the Scoping exercise is to appraise the relevant environmental protection objectives established through statutory provisions and other Plans and Programmes, which are relevant to the PoRB. The identification of these objectives further assists with evaluating the significance of impacts in Stage 3 (Impact Assessment) and setting management requirements in Stage 4 (SEMP) of the SEA.

Some of the key environmental features, which are linked to protection objectives, which need to be considered during the identification of strategic issues as well as during the future stages of the SEA are listed in **Table 4** below.

Table 5: Key environmental features to be considered during the SEA (*not exhaustive*)

No.	Strategic Plan / Programme	brief Description	SEA Considerations
1.	**uThungulu BSP**	▪ The BSP is precursor to a bioregional plan. ▪ The uThungulu Biodiversity Sector Plan comprises of three main products (EKZNW, 2014): o A report which includes descriptions and maps detailing the biophysical characteristics of the District, descriptions of methodology employed and protocols followed in the development and identification of the Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs); and recommended land use guidelines for biodiversity feature areas. o A digital map of the uThungulu District summarising the biodiversity priorities, linkages and management guidelines of the Biodiversity Sector Plan. o A supporting GIS layer containing biodiversity features. ▪ The BSP is to be used by all sectors that are involved in land use planning and decision making and multi sectoral spatial planning.	▪ Determine the biodiversity conservation status of the study area and incorporate CBAs and ESAs in sensitivity mapping and assessment (Stage 2 of SEA) and in evaluating the impacts of the Master Plan on the related features (Stage 3 of the SEA). ▪ Seek alignment with the management guidelines in Stages 3 and 4 of the SEA.
2.	**uMhlathuze & Richards Bay EstMP**	▪ Kay components of the EstMP include the following – o Situation Assessment. o Vision, Strategic Objectives & Key Principles.	▪ Consider Vision and Strategic Objectives in Stage 1 of the SEA. ▪ Situation Assessment to feed into Stage 2 of the SEA.

No.	Strategic Plan / Programme	brief Description	SEA Considerations
		○ Management Objectives & Associated Actions. ○ Prioritisation of Management Actions. ○ Proposed Zonation Plan. ○ Integrated Monitoring Plans. ▪ Proposed Institutional Arrangements.	▪ Determine implications of Master Plan in terms of the vision, management objectives and zonation plan in Stage 3 of the SEA. ▪ Seek alignment with the vision, management objectives, action plans, monitoring plans and institutional arrangements in Stages 3 and 4 of the SEA.
3.	**Coastal Protection Zone** forestry, fisheries & the environment Department: Forestry, Fisheries and the Environment REPUBLIC OF SOUTH AFRICA	▪ In terms of NEM:ICMA, the coastal protection zone aims to ensure the protection of the ecological integrity, natural character and economic, social and aesthetic values of the coast. The coastal protection zone includes *inter alia* land falling within 100 m of the high-water mark in urban areas and within 1 km in rural areas.	▪ Consider extent of Coastal Protection Zone in relation to the PoRB. Include suitable measures to safeguard features within this zone in Stages 3 and 4 of the SEA.
4.	**KZN CMP 2017 – 2022** edtea Department : Economic Development, Tourism and Environmental Affairs PROVINCE OF KWAZULU-NATAL	▪ Provincial policy directive for the management of the coastal zone and includes strategies and plans for the effective implementation of the NEM:ICMA (KZN DEDTEA, 2017). ▪ KZN has identified nine priority areas for implementation of Integrated Coastal Management under the CMP, each of which has a goal, a management objective, an action and a performance indicator attached to it.	▪ Consider vision for the KZN Coast, mission and underpinning principles in Stage 1 of the SEA. ▪ Consider key priorities for Integrated Coastal Management (ICM) in KZN and seek alignment with the associated goals, management objectives, actions and performance indicators in Stages 3 to 4 of the SEA.
5.	**KCDM EMF** KING CETSHWAYO DISTRICT MUNICIPALITY	▪ Support mechanism in the EIA process, in the evaluation and review of development applications. ▪ Inform decision making regarding spatial land use planning applications. ▪ Facilitate cooperative governance through integration of different regulatory responsibilities. ▪ Co-ordinate management of strategic spatial environmental information concerning a KCDM specific geographic area.	▪ Environmental and social baseline determined as part of EMF to feed into Stage 2 of the SEA. ▪ Determine implications of Master Plan in terms of the environmental management zones in Stage 3 of the SEA. ▪ Seek alignment with the environmental management zone guidelines in Stages 3 and 4 of the SEA.
6.	**EMF for the Richards Bay Industrial Zone and Port Expansion**	▪ The purpose of this EMF includes (Thornhill & van Vuuren, 2009): ○ Provide information that support the compilation of EIA's, enable informed participation by Interested and Affected Parties	▪ Environmental and social baseline determined as part of EMF Status Quo Phase to feed into Stage 2 of the SEA. ▪ Determine implications of Master Plan in terms of the

No.	Strategic Plan / Programme	brief Description	SEA Considerations
		(IAPs) and inform decisions by authorities. o Identify areas where activities could potentially be excluded from EIA. o Identify areas where additional EIA's may need to be undertaken. o Provide guidelines to inform the decision-making process. o Provide a mechanism to monitor and evaluate the EMF's success.	environmental management zones in Stage 3 of the SEA. ▪ Seek alignment with the environmental management zone guidelines in Stages 3 and 4 of the SEA.
7.	**CoM ESMP**	▪ Kay components of the ESMP include the following – o Environmental services and the uMhlathuze Environment Asset System. o Environmental management instruments. o Institutional concepts. o Catchment plans.	▪ Environmental services to feed into Stage 2 of the SEA. ▪ Determine implications of Master Plan in terms of CoM's environmental services and associated management zones in Stage 3 of the SEA. ▪ Seek alignment with the catchment plans and institutional arrangements in Stages 3 and 4 of the SEA.
8.	**uThungulu Coastal Management Programme**	▪ In order to accommodate the diverse mix of human activity, harness the coastal assets and services in an efficient and equitable manner, and ensure the sustainable development of the coast and its people, integrated planning and management is required. In response, the Coastal Management Programme for the uThungulu Coast was developed.	▪ Consider the vision for the uThungulu Coast in Stage 1 of the SEA. ▪ Determine implications of Master Plan in terms of the strategic programmes and Coastal Conservation Corridor in Stage 3 of the SEA. ▪ Seek alignment with the vision in Stages 3 and 4 of the SEA.
9.	**CoM IDP & SDF**	▪ Key mentions of the PoRB in the SDF include the following (CoM, 2022b): o Developments at the PoRB are one of the strategic investments in the municipal area. o Proposed expansion of the PoRB is discussed in the SDF as one of the areas of economic growth and development. The Port's long-term potential layout is incorporated into the SDF mapping. o The Consolidated SDF primarily shows waterbodies, formal urban areas and environmental	▪ Consider implications of the Master Plan in terms of the municipal SDF under Stages 3 and 4 of the SEA.

No.	Strategic Plan / Programme	brief Description	SEA Considerations
		management zones occurring within the PoRB.	
10.	**Coastal Vulnerability**	▪ The Coastal Vulnerability Index (CVI) assessment for KZN is based on remote sensing data, processed by means of GIS methodology. The CVI assesses the relative physical coastal vulnerability based on a set of physical coastal parameters which serve as indicators of risk or vulnerability. This assessment also tries to address social, economic and ecological factors by identifying indicators and assessing them in relation to the findings of the CVI to determine which populations and associated infrastructure are potentially at risk.	▪ Incorporate CVI (as relevant) in sensitivity mapping and assessment of the study area (Stage 2 of SEA) and evaluating the impacts of the PDFP on the related features (Stage 3 of the SEA).

The legal framework, institutional arrangements, and current environmental management activities in the PoRB will be included in the Situation Assessment (Stage 2 of the SEA).

7.4.3 Sensitivity Screening

"Sensitivity" is regarded as the inherent quality of an environmental feature, which is derived from the following traits:

- ❑ Goods and services offered;
- ❑ Scientific importance (e.g., research purposes, uniqueness, biodiversity significance);
- ❑ Legal status / protection level; and
- ❑ Vulnerability / tolerance to change.

A preliminary sensitivity map of the PoRB was compiled (shown in **Figure 13** below), based on the following spatial information:

- ❑ CBAs and ESA;
- ❑ EFZ;
- ❑ Protected areas;
- ❑ eChwebeni Natural Heritage Area;
- ❑ Wetlands;
- ❑ Rivers (perennial and non-perennial);
- ❑ Threatened ecosystems;
- ❑ Landscape corridors;
- ❑ Coastal forests;
- ❑ Mangroves;
- ❑ Freshwater pans and lakes;
- ❑ Mudflats;

- Oyster beds;
- Prawn breeding habitats;
- Reed frog habitats;
- Important aquatic mammal /croc habitats;
- Floodlines; and
- Various specialist studies conducted for the PoRB in the past.

It is noted that the preliminary sensitivity map was compiled using a broad range of sensitivity spatial data from various sources. The sensitivity of the PoRB's environment will be refined during the Situation Assessment (Stage 2 of the SEA).

The footprints of the developments proposed as part of the Revised Master Plan were then overlaid onto the preliminary sensitivity map (shown in **Figures 13 – 16** below) to identify potential impacts to the receiving environment. The findings for each of the precincts are presented in **Section 7.4.5** below.

7.4.4 Identification of Potentially Significant Impacts

The criteria employed to categorise potentially "significant" impacts at a Scoping level include where there are effects to:

1. Sensitive natural environmental features;
2. Land uses of strategic importance;
3. Cultural and heritage resources; and
4. Conflicts with other formally adopted policies, strategies, plans or programmes.

The potentially significant aspects and impacts for the proposed projects associated with the Revised Master Plan are presented in **Section 7.4.5** below. These impacts were identified on a cursory level, for Scoping purposes. The following definitions apply:

- Environmental aspects are regarded as those components of projects that are likely to interact with the environment and cause an impact; and
- Environmental impacts are the changes to the environment resulting from an environmental aspect, whether desirable or undesirable.

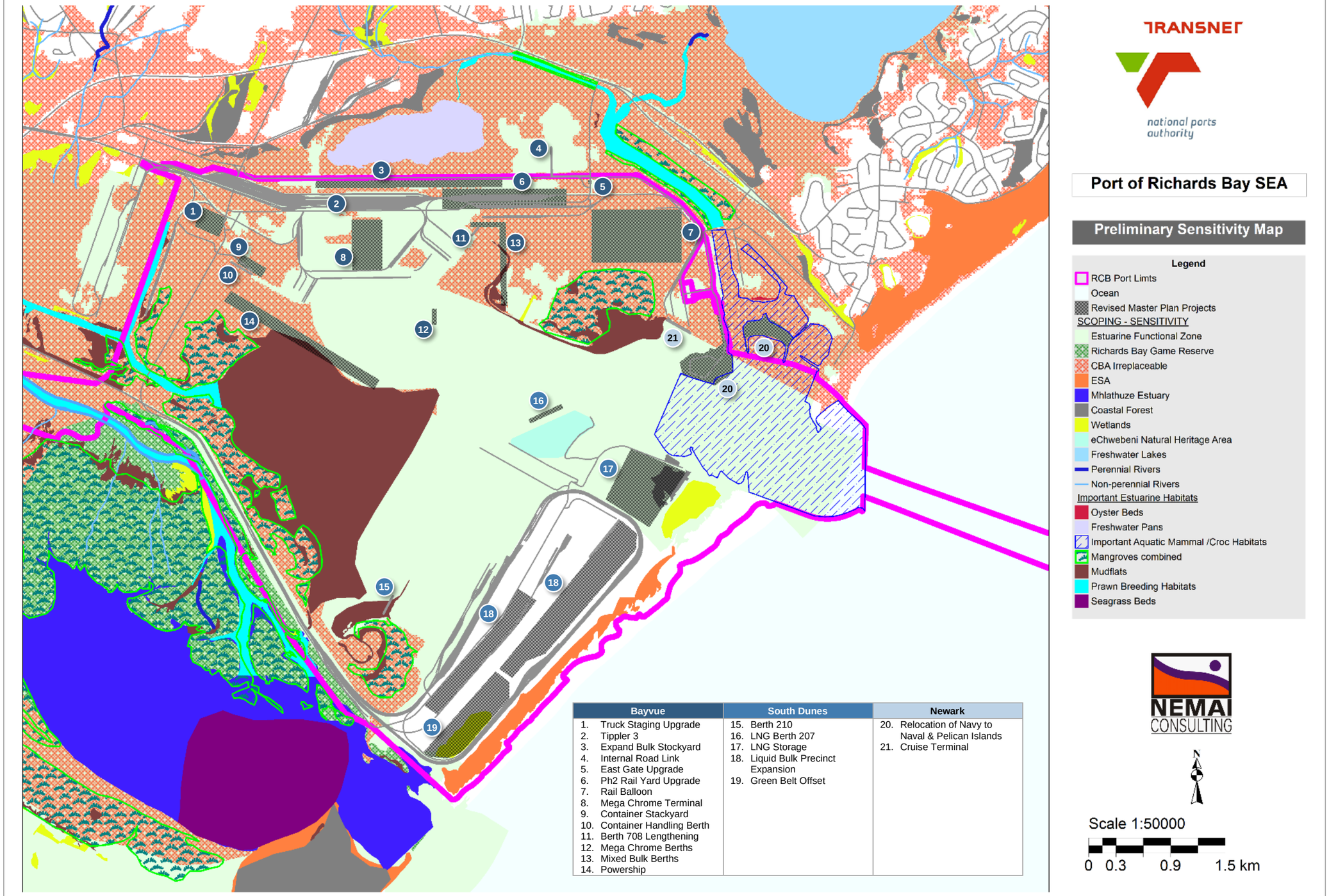


Figure 13: **Preliminary Sensitivity Map for PoRB showing Revised Master Plan Projects**

7.4.5 Scoping Findings

7.4.5.1 Bayvue Precinct

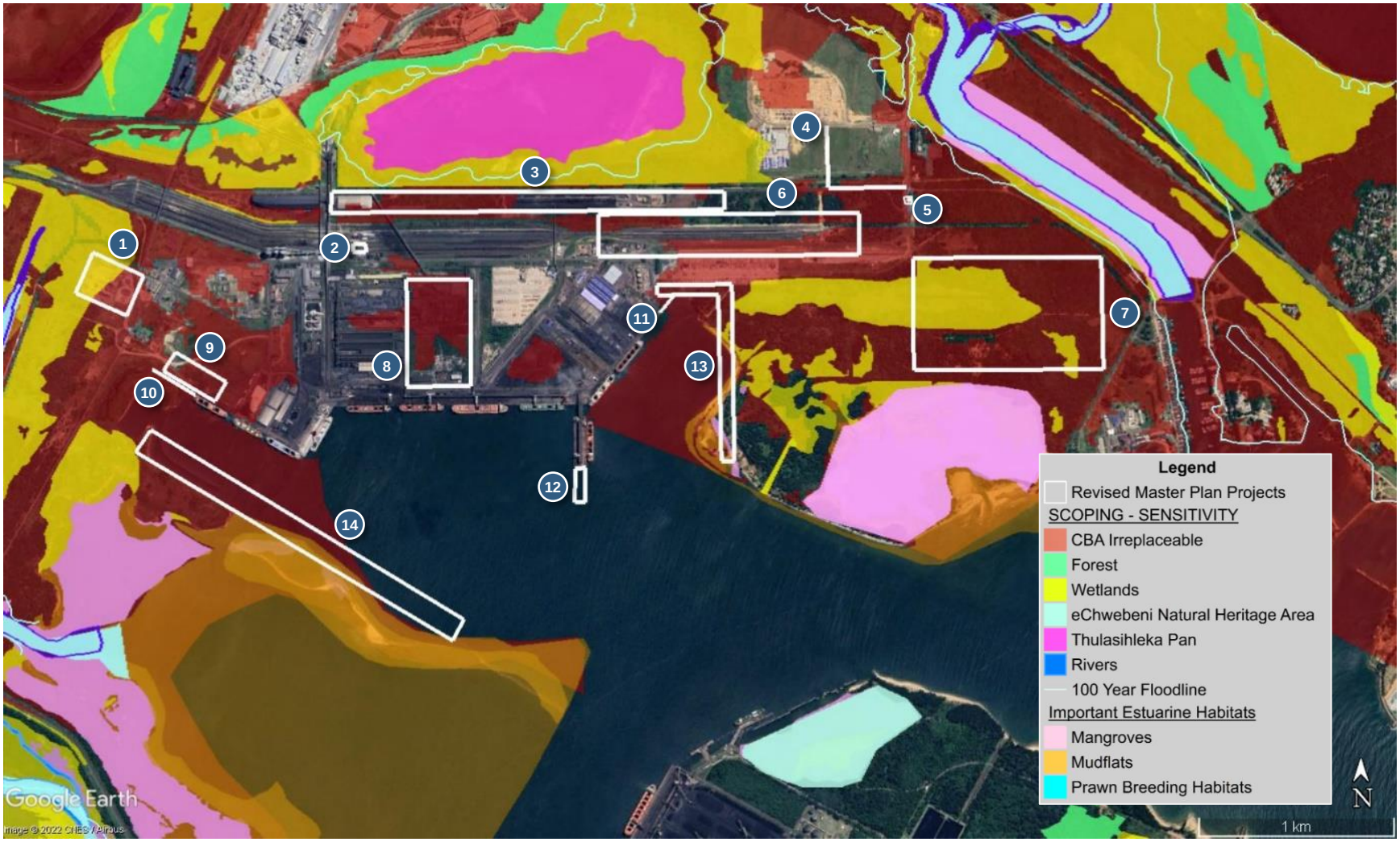


Figure 14: Preliminary Sensitivity Map for PoRB showing Revised Master Plan Projects for Bayvue Precinct

Project	1. Truck Staging Upgrade

Environmental Approvals Triggered	- No clear triggers for Environmental Authorisation (EA) in terms of NEMA if no additional clearance of indigenous vegetation is planned outside of existing footprint of truck staging area. - The existing truck staging area is located within the regulated area of a watercourse (i.e., 500m radius of a wetland) located to the immediate west. The nature of the upgrade will need to be evaluated, in consultation with the Department of Water and Sanitation (DWS), to determine the form of entitlement to be pursued in terms of Section 21(c) and (i) of the NWA.
Sensitive Features Potentially Affected	Although the immediate site for the proposed Truck Staging Upgrade is transformed, it is associated with the following surrounding sensitive areas: - The existing staging area falls within the EFZ of the Mhlathuze/Richards Bay estuary and within a CBA; - According to the CoM ESMP, the staging area encroaches into a wetland; and - The site is surrounded by the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
A1.	Traffic disruptions.	- The impacts of the port-related traffic generated by trucks extend beyond the port limits. The upgrade of the truck staging area will improve port inefficiencies regarding truck staging. - Poor management of the movement of trucks at the staging area will affect other traffic entering and exiting the Port. - Temporary impacts may occur if insufficient provision is made for truck staging during the upgrade.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
A2.	Environmental pollution.	- Soil and groundwater pollution may occur on the site (e.g., oils and fuel leaks, poor waste management).
A3.	Activities that may impact on adjacent wetland and surrounding natural areas.	- Adverse impacts caused by project to wetland structure and function. - Disturbance to fauna due to construction and operational activities. - Loss of fauna and flora species if natural areas are to be affected by the project.
A4.	Alteration of site drainage and poor stormwater management.	- Offsite environmental contamination and erosion.
A5.	Nuisance factors.	- Impacts to social environment (e.g., noise, vibration, visual, safety, air quality, etc).

Project	2. Tippler 3

Environmental Approvals Triggered	- No clear triggers for EA in terms of NEMA. - The proposed Tippler 3 site is located within the regulated area of a watercourse, namely 500m radius of a wetland located to the north. The nature of the project will need to be evaluated, in consultation with DWS, to determine the form of entitlement to be pursued in terms of Section 21(c) and (i) of the NWA.
Sensitive Features Potentially Affected	- Although the site is located within the EFZ of the Mhlathuze/Richards Bay estuary, it is transformed.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
B1.	Emissions during construction and operational phases.	- Air quality deterioration caused by fugitive emissions (particulate matter and dust) and exhaust gases.
B2.	*Landside Environment*	- *Pollution - refer to content in row A2 above.* - *Surrounding wetlands and natural areas - refer to content in row A3 above.*

Project	3. Expand Bulk Stockyard

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a Basic Assessment or full S&EIR process. - NWA: Water Use Licence (WUL) from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse, namely 500m radius of a wetland located to the immediate north. - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The proposed expansion will occur within areas classified as CBA Irreplaceable. - According to the CoM ESMP, a wetland is located to the immediate north of the site. - According to the uMhlathuze and Richards Bay EstMP, a freshwater pan (Thulasihleka Pan) is located to the north. - The site is surrounded by the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
C1.	Development in natural areas – impacts to ecology.	- Loss of biodiversity (including ecosystems as well as protected fauna and flora species) associated with the encroachment of the project footprint into natural areas. - The natural areas to be lost by the project are located within a CBA Irreplaceable. - Adverse impacts caused by project to structure and function of wetlands.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
C2.	Environmental pollution.	- Soil and groundwater contamination from poor construction practices and seepage of dirty water during operation. - Surface water and marine water pollution from contaminated drainage over site. - Air pollution from fugitive emissions (particulate matter and dust).
C3.	Brownfield remediation.	- Impacts associated with undertaking construction within existing contaminated areas, including handling, transportation and disposal of hazardous waste.
C4.	Development in natural areas – impacts to heritage resources.	- Loss of heritage resources associated with encroachment of footprint into natural areas.
C5.	Relocation of existing Port facilities and activities.	- Impacts to operations of port tenants.
C6.	Loss of natural areas.	- Visual impacts associated with loss of natural areas.
C7.	*Landside Environment*	- *Pollution - refer to content in row A2 above.* - *Impacts to adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 above.*
C8.	*Atmospheric*	- *Emissions - refer to content in row B1 above.*

Project	**4. Internal Road Link**

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a Basic Assessment (depending on road dimensions). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachments into the regulated area of watercourses, namely 500m radius of wetlands located to the west and east. - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected.

	- NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. Although the environment appears to be disturbed along the majority of the proposed road alignment from a desktop perspective, sections of the route traverse areas classified as CBA Irreplaceable. Wetlands are also located to the west and east of the site, according to the CoM ESMP. It is further noted that the site is surrounded by the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
D1.	*Landside Environment*	- Adjacent wetlands and surrounding natural areas - refer to content in row A3 above. - Stormwater - refer to content in row A4 above. - Development in natural areas (impacts to ecology) - refer to content in row C1 above. - Environmental pollution - refer to content in row C2 above. - Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.
D2.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	**5. East Gate Upgrade**

Environmental Approvals Triggered	- No anticipated triggers for environmental authorisations, permits or licences. - The existing East Gate is located within the regulated area of a watercourse, namely 500m radius of a wetland located to the north-east. The nature of the project will need to be evaluated, in consultation with DWS, to determine the form of entitlement to be pursued in terms of Section 21(c) and (i) of the NWA.

Sensitive Features Potentially Affected	- Although the site is located within the EFZ of the Mhlathuze/Richards Bay estuary, it is transformed. Surrounding sensitive areas include CBA Irreplaceable, wetlands and the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands (classified as vulnerable).

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
E1.	*Landside Environment*	- *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.*

Project	**6. Ph2 Rail Yard Upgrade**

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a Basic Assessment (depending on additional clearance of indigenous vegetation). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachments into the regulated area of watercourses (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The proposed upgrade will occur within areas classified as CBA Irreplaceable. - According to the CoM ESMP, wetlands are located to the north and south of the site. - According to the uMhlathuze and Richards Bay EstMP, a freshwater pan (Thulasihleka Pan) is located to the north-west. - The site is surrounded by the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
F1.	*Landside Environment*	- *Impacts to adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Brownfield remediation- refer to content in row C3 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.*
F2.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

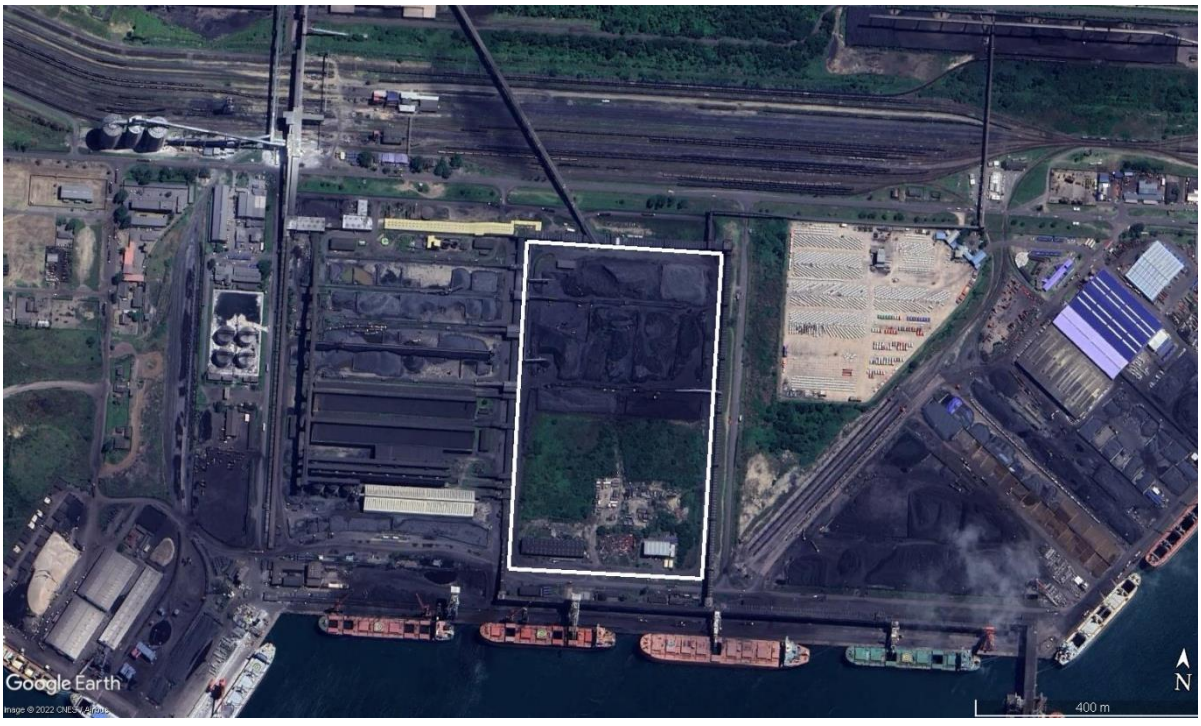
Project	**7. Rail Balloon**

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a Basic Assessment or S&EIR process. - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachments into the regulated areas of watercourses (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected.

	- NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The proposed development occurs entirely within CBA Irreplaceable. - According to the CoM ESMP, wetlands are located along the rail alignment and to the south and north-east. - According to the uMhlathuze and Richards Bay EstMP, mangroves occur to the immediate south of the site. - The vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable, occurs on the site.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
G1.	*Landside Environment*	- *Impacts on adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.*
G2.	*Socio-Economic Environment*	- *Nuisance factors (including waterfront to the south-east)- refer to content in row A5 above.*

Project	**8. Mega Chrome Terminal**



Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a Basic Assessment or S&EIR process. - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse (500m radius of wetlands).
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary - The site encompasses areas classified as CBA Irreplaceable. - According to the CoM ESMP, a wetland is located to the north of the site. - The natural areas within the site include the vegetation type Freshwater Wetlands: Subtropical Freshwater Wetlands (classified as vulnerable).

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
H1.	Generation of waste and wastewater.	- Risk to human health (occupational and community health and safety). - Soil pollution (spillages and leachate). - Surface and groundwater pollution (spillages and leachate). - Air pollution (e.g., smoke if set alight and emissions) and odours. - Compromised aesthetics (e.g., poor storage, windblown litter). - Vermin.
H2.	Improper storage of dangerous goods.	- Risk to human health (occupational and community health and safety). - Soil pollution (spillages and leachate). - Surface and groundwater pollution (spillages and leachate). - Air pollution (e.g., smoke if set alight and emissions) and odours.
H3.	Increase in Port's overall surface area.	- Increase in stormwater runoff, with associated impacts to marine water quality.
H4.	*Landside Environment*	- *Impacts to adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Brownfield remediation- refer to content in row C3 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.*
H5.	*Atmospheric*	- *Emissions - refer to content in row B1 above.*
H6.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	9. Container Stackyard

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for Environmental Authorisation (EA) from DFFE by undertaking a Basic Assessment. - NWA: Water Use Licence (WUL) from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - Most of the site occurs within an area classified as CBA Irreplaceable. - According to the CoM ESMP, a wetland is located to the north-west of the site. - The site falls within the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
I1.	Traffic disruptions and increase in traffic volumes.	- Impacts to traffic within and outside of the Port.
I2.	Development that places a strain on municipal services.	- Insufficient capacity of municipal services to cater for development.
I3.	Relocation of transport infrastructure.	- Impacts to existing access road in north-western part of proposed site.
I4.	*Landside Environment*	- *Impacts to adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.*

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
		- *Brownfield remediation- refer to content in row C3 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Waste and wastewater - refer to content in row H1 above.* - *Dangerous goods - refer to content in row H2 above.*
I5.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	**10. Container Handling Berth**
	
Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.

Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary; - The part of the Bay and untransformed landside area affected by the berth are classified as CBA Irreplaceable; - According to the CoM ESMP, a wetland is located to the west of the proposed berth site; and - The untransformed landside area affected by the berth falls within the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
J1.	Activities that may cause impacts to the hydrodynamics of the Bay.	- Impacts to the hydrodynamics of the Bay. - Changes to the tidal currents and wave patterns. - Potential change in tidal flushing associated with changes in the tidal prism. - Changes in tidal velocities across the mudflats. - Slumping of or erosion to mudflats. - Changes to bathymetry. - Impacts on Avifauna that utilise the mudflats.
J2.	Activities associated with dredging that may causes impacts to water quality in the Bay.	- Ecological effects to biota. Loss and disturbance of water column habitat and associated biota. - Sediment deposition around the dredging site. - Suspension of fine sediment and increased turbidity. - Toxicity resulting from the suspension of heavy metals, hydrocarbons and polychlorinated biphenyls associated with the suspended dredge material. - Impacts on Avifauna.
J3.	Disposal of dredge material.	- Determine restrictions to using TNPA's existing offshore disposal site. - Smothering of benthic organisms. - Presence of contaminants and possible impacts to bottom-dwelling organisms, fish and subsistence fisherman. - Dispersion plume and increased turbidity due to disposal. - Impacts on the shoreline.
J4.	Sourcing of construction material from new offshore sandwinning site (as relevant).	- Changes to bathymetry. - Changes in the local wave and current patterns. - Changes to local erosional and depositional patterns. - Impacts related to marine sediments. - Impacts to marine ecology. - Erosion of beaches due to a reduction of sediment supply to the coast. Shoreline accretion. - Increased storm surge heights and intensities, which may impact on sandwinning activities. - Impacts on recreational activities. - Impacts of increased sedimentation, as well as shoreline erosion or accretion. - Impacts to underwater heritage resources.
J5.	Development activities that influence the navigation of vessels within the Port.	- Impeding the movement of vessels related to Port traffic.
J6.	Development activities in proximity to Maritime Underwater Cultural Heritage (MUCH) sites.	- Loss of MUCH sites.

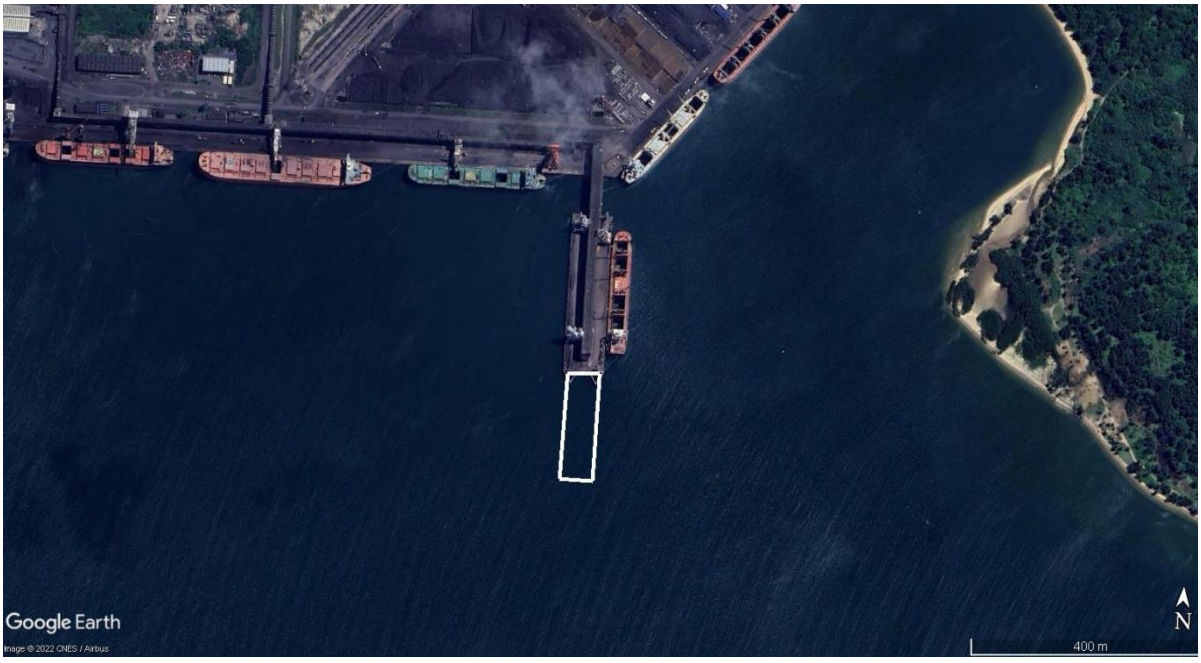
No.	Potential Significant Aspects	Potential Significant Impacts & Risks
J7.	Improper planning and adaptation for Climate Change.	- Potential impacts of climate change to Port operations and infrastructure. Risks posed by climate change, such as increased storm surge heights and intensities, as well as changes in seasonable precipitation amounts. - Disturbance of carbon sinks and associated carbon sequestration properties.
J8.	*Landside Environment*	- *Impacts to adjacent wetlands and surrounding natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 and H3 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Brownfield remediation- refer to content in row C3 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.*
J9.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	11. Berth 708 Lengthening

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required).
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The part of the Bay affected by the berth lengthening is classified as CBA Irreplaceable.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
K1.	*Landside Environment*	- *Environmental pollution - refer to content in row C2 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.*
K2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - see content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
K3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - see content in row J7 above.*
K4.	*Socio-Economic Environment*	- *Nuisance factors - see content in row A5 above.*

Project	**12. Mega Chrome Berths**



Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required).

	- MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required).
Sensitive Features Potentially Affected	- The site falls within the EFZ of the Mhlathuze/Richards Bay estuary.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
L1.	*Landside Environment*	- *Environmental pollution - refer to content in row C2 above.* - *Stormwater - refer to content in row H3 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - refer to content in row H1 above.* - *Dangerous goods - refer to content in row H2 above.*
L2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - refer to content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
L3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - refer to content in row J7 above.*
L4.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	**13. Mixed Bulk Berths**

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The part of the Bay, as well as the central and northern portions of the untransformed landside area, that are affected by the berths are classified as CBA Irreplaceable. - According to the CoM ESMP, wetlands are located on the site and also occur in the immediate surrounding areas. - The untransformed landside area affected by the berths falls within the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands, which is classified as vulnerable. - The site affects mudflats habitat.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
M1.	*Landside Environment*	- *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 and H3 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Development in natural areas (impacts to heritage resources) - refer to content in row C4 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - refer to content in row H1 above.* - *Dangerous goods - refer to content in row H2 above.*
M2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - refer to content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
M3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - refer to content in row J7 above.*

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
M4.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	14. Powership
	The Powership project was not screened as it is already subject to an Environmental Impact Assessment process.

7.4.5.2 South Dunes Precinct

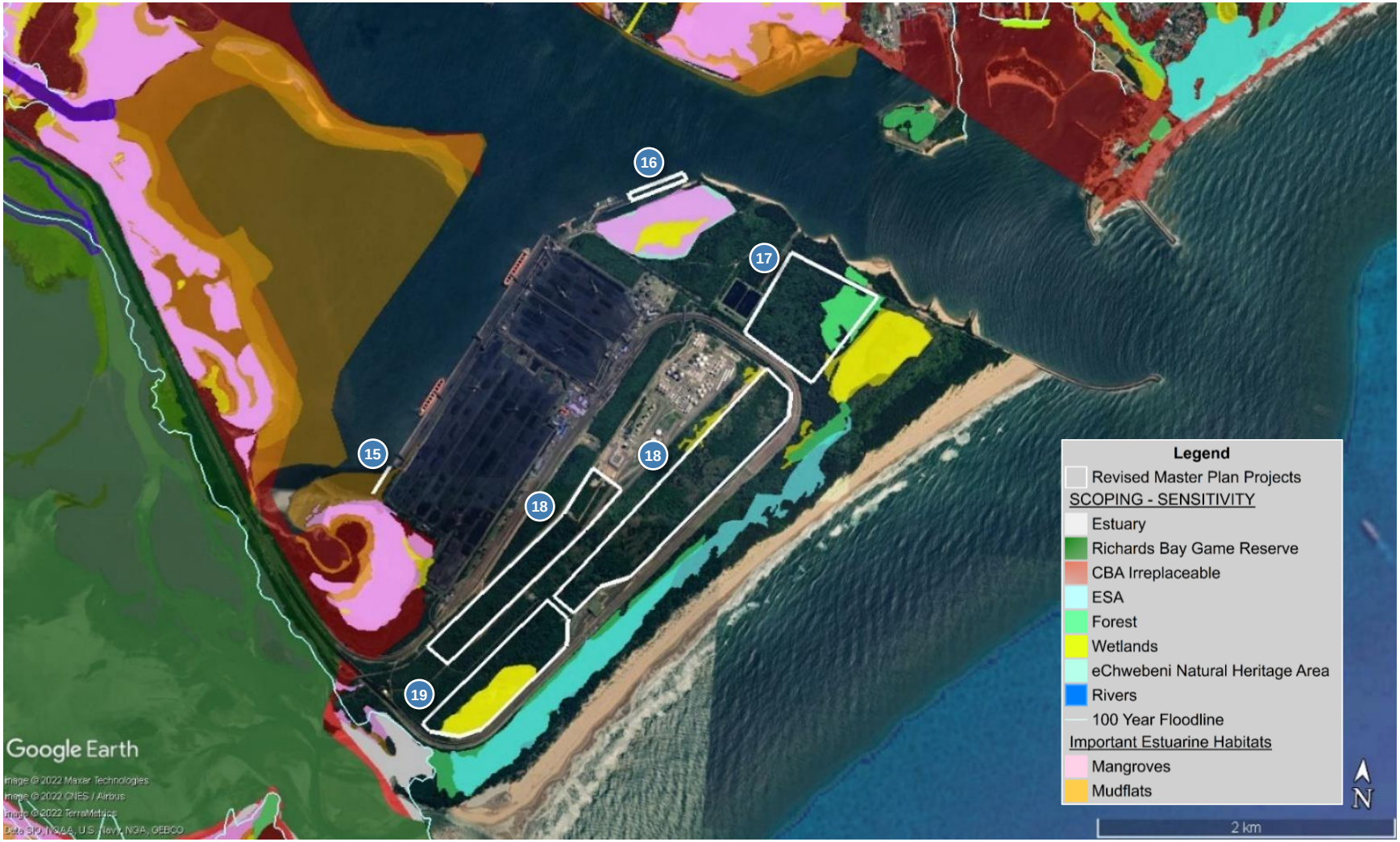
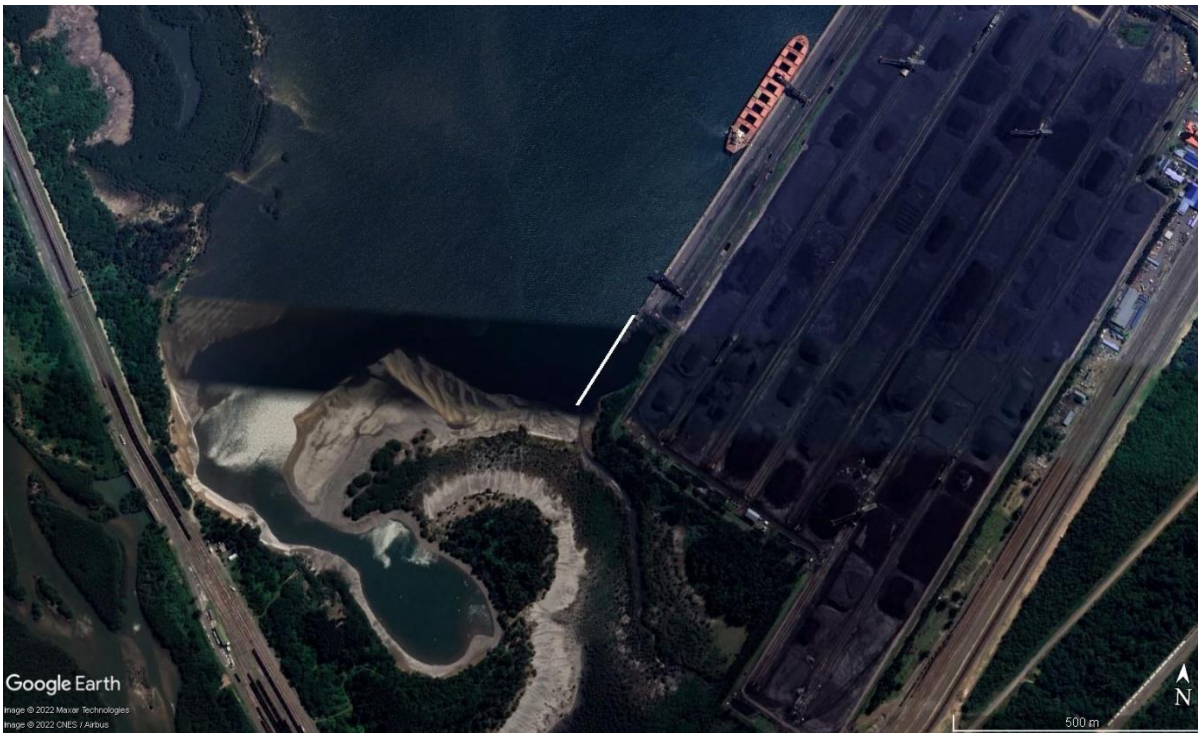


Figure 15: **Preliminary Sensitivity Map for PoRB showing Revised Master Plan Projects for South Dune Precinct**

Project	15. Berth 210



Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required).
Sensitive Features Potentially Affected	- The site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The site affects mudflats habitat. - Mangroves occur to the immediate south of the site.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
N1.	*Landside Environment*	- *Environmental pollution - refer to content in row C2 above.* - *Stormwater - refer to content in row H3 above.*
N2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - refer to content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
N3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - refer to content in row J7 above.*
N4.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	16. LNG Berth 207

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required).
Sensitive Features Potentially Affected	- The site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The site is located adjacent to the eChwebeni Natural Heritage Area and mangroves.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
O1.	*Landside Environment*	- *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 and H3 above.* - *Environmental pollution - refer to content in row C2 above.*
O2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - refer to content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
O3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - refer to content in row J7 above.*
O4.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A5 above.*

Project	17. LNG Storage

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:AQA: Apply for Atmospheric Emission Licence (AEL) (if required). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachments into the regulated areas of watercourses (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- The site falls within EFZ of the Mhlathuze/Richards Bay estuary. - According to the CoM ESMP, wetlands are located on the site and also occur to the east and south. - The eChwebeni Natural Heritage Area is located to the north-west of the proposed site. - The proposed site is located within the vegetation type: KwaZulu-Natal Dune Forests: Maputaland Dune Forest, which is classified as endangered.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
P1.	Improper handling and storage of LNG.	- Environmental and human health risks.
P2.	*Landside Environment*	- *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.* - *Stormwater - see content in row A4 & H3 above.* - *Development in natural areas (impacts to ecology) (note that areas classified as CBA Irreplaceable are not directly affected) - refer to content in row C1 above.*

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
		- *Environmental pollution - see content in row C2 above.* - *Natural areas (impacts to heritage resources) - see content in row C4 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - refer to content in row H1 above.* - *Dangerous goods - refer to content in row H2 above.*
P3.	*Marine Environment*	- *Stormwater - see content in row A4 & H3 above.*
P4.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - see content in row J7 above.*
P5.	*Socio-Economic Environment*	- *Nuisance factors - see content in row A5 above.*

Project	**18. Liquid Bulk Precinct Expansion**

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachments into the regulated areas of watercourses (500m radius of wetlands). - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- CBA Irreplaceable areas and a landscape corridor are located to the south-east (linked to the foredune and forest). - According to the CoM ESMP, wetlands are located on the site and to the south.

	- The vegetation types encountered at the proposed site include KwaZulu-Natal Dune Forests: Maputaland Dune Forest and Maputaland Coastal Belt, which are both classified as endangered.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
Q1.	*Landside Environment*	- *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.* - *Stormwater - see content in row A4 &d H3 above.* - *Development in natural areas (impacts to ecology) (note that areas classified as CBA Irreplaceable are not directly affected) - refer to content in row C1 above.* - *Environmental pollution - see content in row C2 above.* - *Natural areas (impacts to heritage resources) - see content in row C4 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - refer to content in row H1 above.* - *Dangerous goods - see content in row H2 above.*
Q2.	*Marine Environment*	- *Stormwater - see content in row A4 & H3 above.*
Q3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - see content in row J7 above.*
Q4.	*Socio-Economic Environment*	- *Nuisance factors - see content in row A5 above.*

Project	19. Green Belt Offset
	The Green Belt Offset project was identified to mitigate impacts associated with the unlocking of future liquid bulk lease sites in South Dunes Precinct. This is thus not a project that proposes development in the Port, but rather entails setting aside land for conservation purposes as a form of mitigation.

7.4.5.3 Newark Precinct

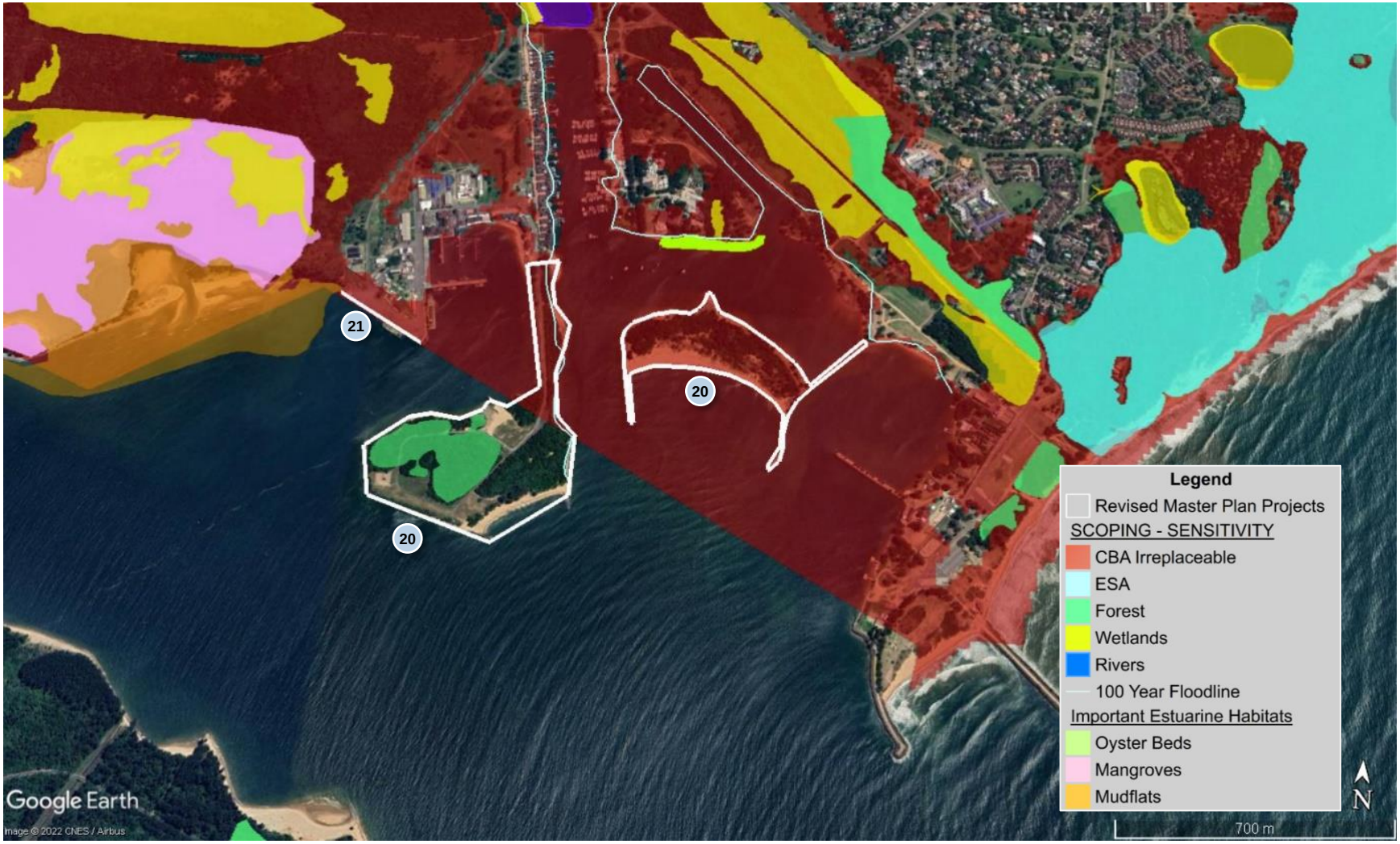


Figure 16: **Preliminary Sensitivity Map for PoRB showing Revised Master Plan Projects for Newark Precinct**

Project	20. Relocation of Navy to Naval & Pelican Islands

Environmental Approvals Triggered	- NEMA - EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Section 7B - reclamation of land for state infrastructure. - NEM:BA & KZN NCMA: Permit from EKZNW if protected species are to be affected. - NFA: Licence from DFFE if protected trees are to be affected. - NHRA & KZN HA: Permit from Amafa and Research Institute if heritage resources are to be affected.
Sensitive Features Potentially Affected	- Both islands fall within Mhlathuze/Richards Bay EFZ. - The entire Pelican Island and northern part of Naval Island fall within CBA Irreplaceable. - According to the CoM ESMP, the estuarine environment surrounding the islands provide important habitats for aquatic and marine mammals and crocodiles. - Naval and Pelican Islands are used for recreational purposes. - The Richards Bay Waterfront is located to the north of Naval and Pelican Islands. - The vegetation type encountered at both the islands include Freshwater Wetlands: Subtropical Freshwater Wetlands (classified as vulnerable). KwaZulu-Natal Dune Forests: Maputaland Dune Forest (classified as endangered) also occurs at Naval Island.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
R1.	Development within areas and near facilities used for recreational purposes and used by subsistence fishermen.	- Loss of recreational areas at Islands. - Impairment of subsistence fishing activities. - Impairment of recreational activities (e.g., fishing, boating). - Visual impacts to Richards Bay Waterfront.
R2.	Improper integration with municipal planning.	- Conflict with the CoM planning initiatives. - Resistance from stakeholders.
R3.	Nuisance factors associated with port operations.	- Impacts to social environment associated with noise, vibration, visual, safety, air quality, etc.

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
R4.	*Landside Environment*	- *Impacts to surrounding natural areas - refer to content in row A3 above.* - *Stormwater - see content in rows A4 & H3 above.* - *Development in natural areas (impacts to ecology) - refer to content in row C1 above.* - *Environmental pollution - refer to content in row C2 above.* - *Brownfield remediation- see content in row C3 above.* - *Natural areas (impacts to heritage resources) - see content in row C4 above.* - *Visual impacts associated with loss of natural areas - refer to content in row C6 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - see content in row H1 above.* - *Dangerous goods - see content in row H2 above.*
R5.	*Marine Environment*	- *Stormwater - see content in rows A4 H3 above.* - *Additional impacts to marine environment will depend on the nature of the proposed development, including the construction of structures in the estuary (e.g., mooring of vessels). The full scope of this development is not known as this stage and additional marine-related impacts could thus not be identified during screening.*
R6.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - see content in row J7 above.*
R7.	*Socio-Economic Environment*	- *Nuisance factors - see content in row A5 above.*
R8.	*Built Environment*	- *Municipal services - see content in row I2 above.*

Project	21. Cruise Terminal

Environmental Approvals Triggered	- NEMA EIA Regulations of 2014 (as amended): Apply for EA from DFFE by undertaking a S&EIR process. - NEM:ICMA: Coastal authorisation (e.g., dumping at sea, coastal discharge) (if required). - MPRDA: Mining Permit / Right for sourcing of offshore construction material (if required). - NWA: WUL from DWS for Section 21(c) and (i) water uses associated with the encroachment into the regulated area of a watercourse (500m radius of wetlands). - NEM:BA, KZN NCMA, NFA, NHRA & KZN HA: It is assumed that there will not be encroachment into landside natural areas and that these pieces of legislation will not apply.
Sensitive Features Potentially Affected	- The overall site falls within the EFZ of the Mhlathuze/Richards Bay estuary. - The site is located to the immediate east of mudflats and mangroves. - The surrounding natural areas are classified as CBA Irreplaceable. - According to the CoM ESMP, a wetland is located to the north-west of the site. - The untransformed landside areas to the west and north-west fall within the vegetation type: Freshwater Wetlands: Subtropical Freshwater Wetlands (classified as vulnerable).

No.	Potential Significant Aspects	Potential Significant Impacts & Risks
S1.	*Landside Environment*	- *It is assumed that there will not be encroachment by this development into landside natural areas.* - *Impacts to surrounding wetlands and natural areas - refer to content in row A3 above.* - *Stormwater - refer to content in row A4 and H3 above.* - *Environmental pollution - refer to content in row C2 above.* - *Relocation of existing Port facilities and activities - refer to content in row C5 above.* - *Traffic disruptions and increase in traffic volumes - refer to content in row I1 above.* - *Waste and wastewater - refer to content in row H1 above.*
S2.	*Marine Environment*	- *Hydrodynamics - refer to content in row J1 above.* - *Water quality - refer to content in row J2 above.* - *Disposal of dredge material -refer to content in row J3 above.* - *Navigation of vessels - refer to content in row J5 above.* - *MUCH sites - refer to content in row J6 above.*
S3.	*Atmospheric*	- *Emissions - refer to content in row B1 above.* - *Climate change - refer to content in row J7 above.*
S4.	*Socio-Economic Environment*	- *Nuisance factors - refer to content in row A4 and R3 above.* - *Impacts to recreational activities - refer to content in row R1 above.* - *Improper integration with municipal planning - refer to content in row R2 above.*
S5.	*Built Environment*	- *Municipal services - refer to content in row I2 above.*

8 FRAMEWORK FOR ASSESSING POTENTIALLY SIGNIFICANT IMPACTS

The Situation Assessment that forms part of Stage 2 of the SEA will assist in gathering detailed information pertaining to the environmental features within and surrounding the PoRB, and in particular those sensitive features that are especially susceptible to impacts that may be caused by the projects under the Master Plan. This will afford a better understanding of the potential impact receptors during the subsequent Impact Assessment (Stage 3 of the SEA).

The approach to be adopted as part of the Impact Assessment will include applying the **Driving Force - Pressure - State - Impact - Response** (DPSIR) model (shown in **Figure 17** below). The model was developed by the Organisation for Economic Co-operation and Development (OECD) and has been used by the United Nations and European Environmental Agency.

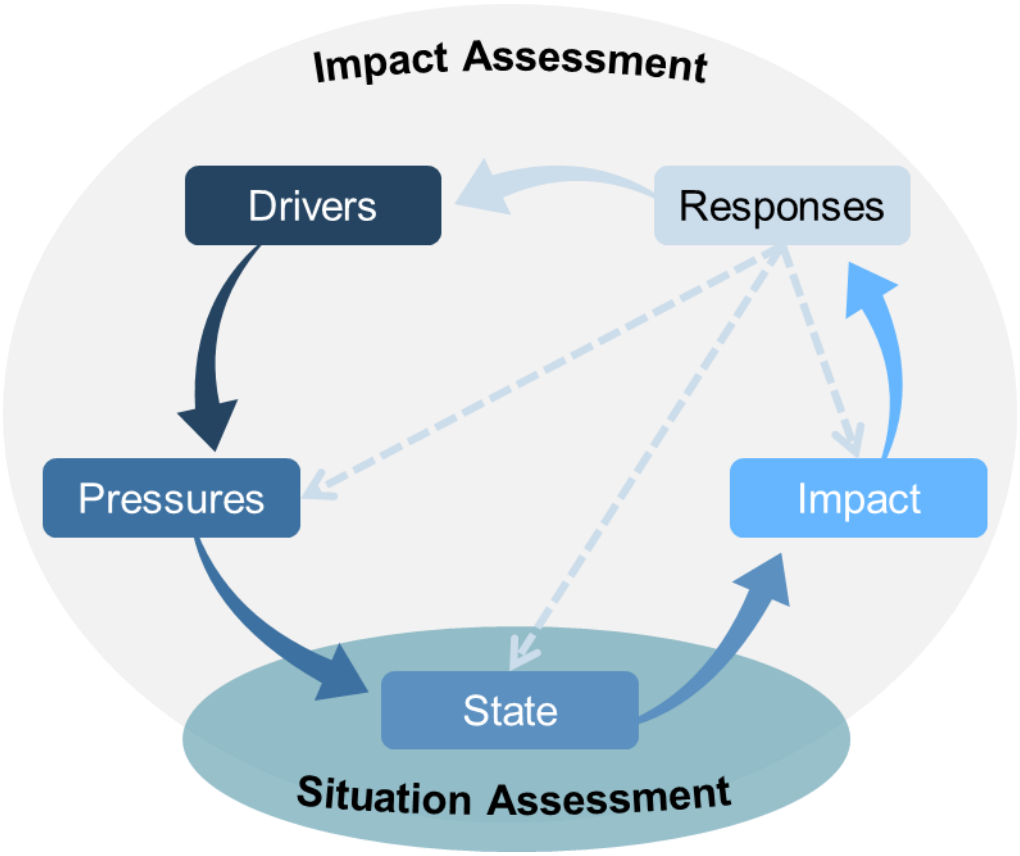


Figure 17: DPSIR Model

The DPSIR model was deemed to be favourable for the SEA due to the following reasons:

- It provides a flexible framework that can be used to assist in various stages of the decision process;
- It is relatively uncomplicated and uses five well-known concepts that are easily understandable, which also enhances communication with stakeholders;

- It allows particular linkages or interactions to be isolated while retaining conceptual relevance to the larger system;
- The elements of DPSIR can be mapped onto other frameworks;
- Although it may not capture every situation perfectly, is a reasonable means to organise the many social, economic and ecological interactions that may be related to the PoRB;
- It can be used for a variety of applications including –
  - Deriving sustainability indicators which can feed into monitoring programmes;
  - Summarising and categorising information from a variety of sources; and
  - Providing a framework for developing models or decision support tools which can be used to evaluate and compare decision outcomes.

Each of the DSPIR concepts is briefly explained in **Table 6** below.

Table 6: Explanation of the DSPIR Concepts

Concept	Definition
Driving Forces	- Changes in the social, economic and institutional system that directly and indirectly trigger pressures on the environmental state. - **Drivers** function through human activities which may intentionally or unintentionally exert **Pressures** on the environment.
Pressures	- Anthropogenic factors inducing environmental change (**Impacts**). - Pressures depend on the source activities and can vary across geographic regions and spatial scales.
State	- Can refer to a wide range of features, such as the condition of the abiotic and biotic components of the ecosystems in a certain area. - The combination of the current **State** and the existing **Pressures** explains **Impacts**.
Impact	- Changes in environmental structures or functions affecting social, economic and environmental dimensions, which are caused by changes in the **State** of the system.
Responses	- Responses from society that ultimately aim at mitigating the **Impacts** by directly addressing the driving forces, pressures, state or impacts.

Impacts will be assessed against a 'no Port expansion' scenario, as the basis for comparison with the Master Plan. Apart from the developments that form part of this plan, no other alternatives will be assessed as part of the SEA. This assessment will be strategic, with the aim of reporting likely impacts at a level to reflect the scale at which the PoRB Master Plan is set.

9 CONCLUSIONS

This Scoping exercise of the SEA for the PoRB was undertaken at a strategic level to determine the scope and guide the remainder of the SEA process.

The Scoping Report aims to address the following:

1. **What is being assessed?** The Master Plan for the PoRB.
2. **What are the key concerns?** Salient environmental issues were identified based on proposed projects that form part of the Master Plan and sensitive features and attributes of the receiving environment that may be affected.
3. **How will the SEA be undertaken?** An overview is provided of the SEA for the PoRB.

A preliminary sensitivity map was compiled using a broad range of sensitivity spatial data from various sources. The sensitivity of the PoRB's environment will be refined during the Situation Assessment (Stage 2 of the SEA).

Various environmental risks were identified for the projects associated with the Master Plan, for which measures will need to be identified to adequately mitigate the related impacts. These impacts will be assessed further during the Impact Assessment (Stage 3 of the SEA).

Crucial factors that were distilled from the Scoping exercise include, amongst others, the following:

- The risks to sensitive environmental features;
- The need for a comprehensive stakeholder engagement process;
- The integration of climate change resilience into developments within the port;
- The need to engage with CoM regarding planning of the Port / City Interface (particularly related to waterfront area);
- The strategic evaluation of feasible alternatives to the proposed developments;
- The management of traffic-related impacts;
- The management of impacts to existing port operations and tenants;
- The remediation of brownfield areas (particularly in the Bayvue Precinct);
- The management of risks related to LNG handling, conveyance, storage and regasification;
- Confirming the loss of natural areas catered for in the Green Belt Offset project;
- The identification of viable sources of construction material that will be required for the project. This may include the identification a new offshore sandwinning site; and
- The disposal of large volumes of spoil material, which includes determining restrictions related to using TNPA's existing offshore disposal site.

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