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Port Development in South Africa By Hamilton Nxumalo



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Please be guided accordingly.





- Transnet National Ports Authority Overview
- Port Planning & Development Methodology
- The South African Ports System
- The Port of Durban as an Example of Port Development





Transnet National Ports Authority Overview

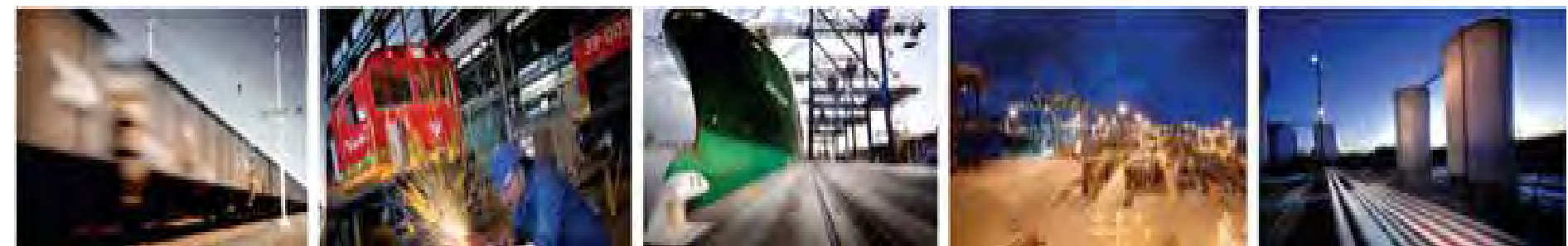
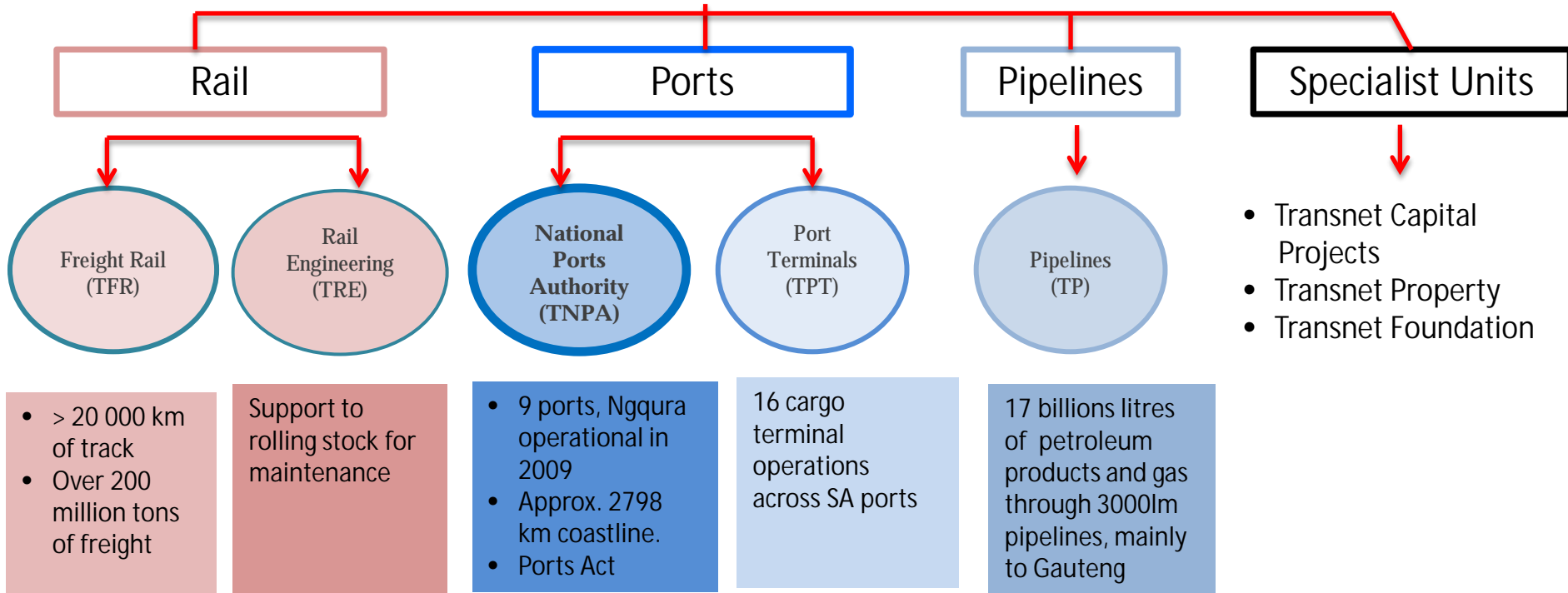




TRANSNET STRUCTURE



TRANSNET





TNPA OVERVIEW



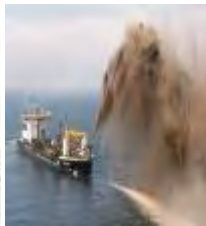
Four Core Business Activities



Infrastructure



Marine Services



Dredging



Lighthouses

Eight Operational Ports



The National Ports Authority (TNPA) is the landlord Port Authority established through the Ports Act. TNPA is responsible for the safe, efficient and effective economic functioning of the national ports system, which it manages, controls and administers in a landlord capacity.

✚ R 74.4Bn assets;

✚ 9 ports along coastline of approximately 2 798km;

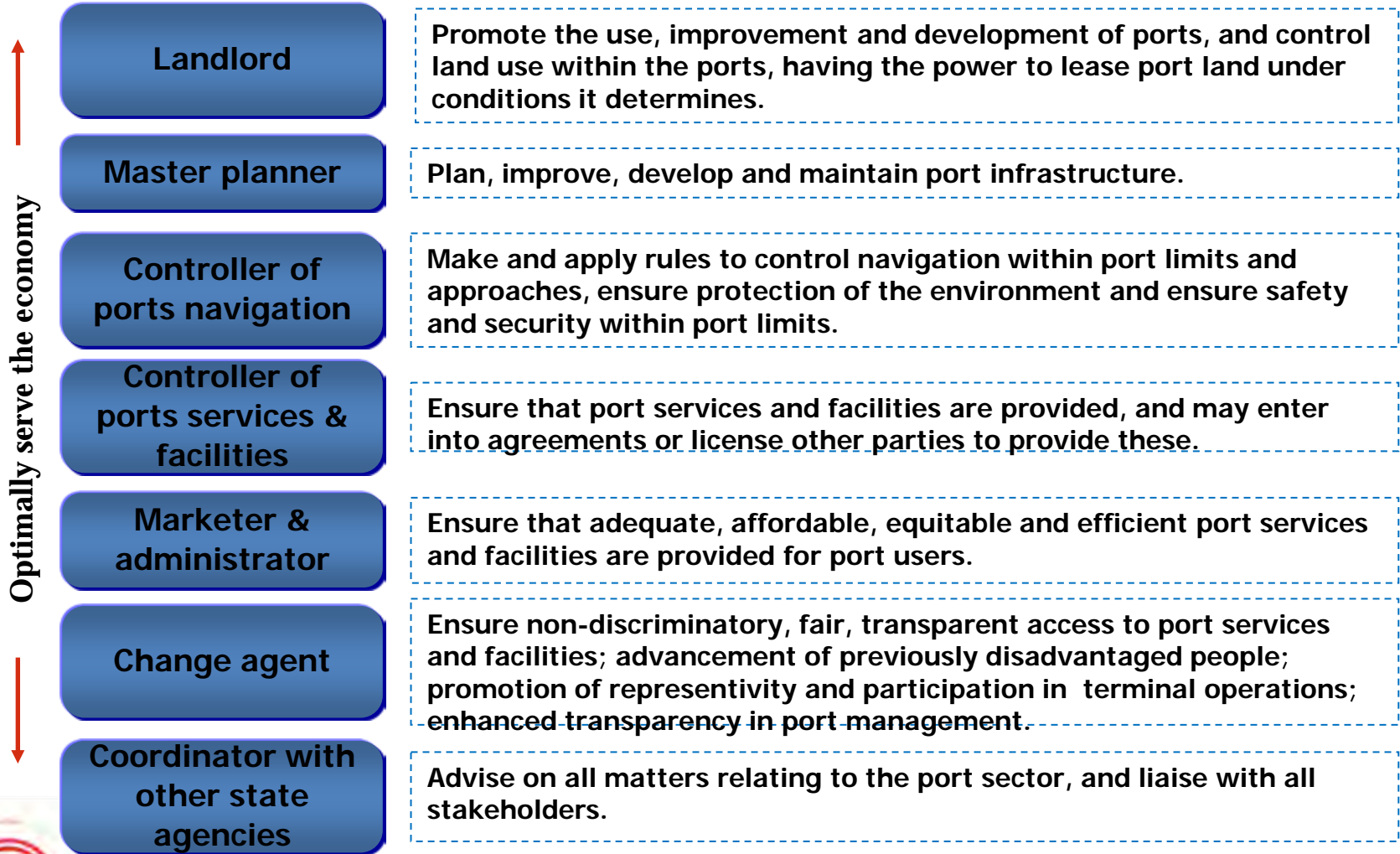
✚ 106 berths (20 container, 26 dry bulk, 38 break-bulk, 16 liquid bulk, 6 automotive);

✚ 57 maritime craft (30 tugs, 9 pilot boats, 7 workboats, 3 pilot helicopters, 5 dredgers, 4 survey boats);

✚ 4 178 permanent employees;



TNPA CORE FUNCTIONS





TNPA'S CORE SERVICES



Maritime Operations

Marine Operations

Pilotage, towage (tug assistance) and vessel berthing services. Pilotage is a compulsory service responsible for the safe navigation of vessels in and out of the port.

Dredging Operations

Responsible for maintenance dredging and hydrographic survey of all ports.

Lighthouse and Navigational services

Providing, maintaining and operating 45 lighthouses along the South African coastline.

Port Infrastructure

Responsible for Port planning, development and maintenance of basic port infrastructure. This is executed through port development framework plans, capital investment plans, and port infrastructure maintenance programme.





Port Planning & Development Methodology





PORT PLANNING METHODOLOGY

- The **Transnet Freight Demand Model** forecast is the basis of demand planning.
- Fit with **global; regional and national policies**.
- Integrate and **align port, rail and road capacity planning**.
- Optimise **capital investment** across all ports (ensuring ports are complementary) to ensure capacity meets demand .
- **Port specialisation** through planned complementarity.
- Ensure a **sustainable** response to environmental opportunities and constraints.
- Utilise available port space to **maximise freight capacity**.
- **Improve** infrastructural and operational **efficiencies** and **reduce transport and logistics costs**.
- Ensure world class freight handling services in terms of **reliability, safety and cost-effectiveness**.
- Maintain **flexibility** in order to respond to changing technological and economic conditions.
- Minimize the disruption to existing port activities.
- Ensure adequate provision for **non-freight services** and facilities.
- Align with the requirements of stakeholders.
- PDF Plans are **annually revised**.





PORT DEVELOPMENT FRAMEWORK PLANS

Port Development Framework Plans

- Annually revised
- Periodically updated
- Continuously adjusted as the environment changes (economies; policies; demand; technology)

Why do we need Port Plans?

- To ensure that the ports are prepared for demand
 - Volume
 - Sustainability
 - Technology
- To manage land use
- To provide an optimised investment framework for the Port Authority





KEY PLANNING TRENDS & CHALLENGES

- Increase in international seaborne trade due to demand from emerging economies
- Slow down in resources required in developed economies
- Worldwide trend towards greater specialisation, centralisation and economies of scale
- Exponential increases in vessel and parcel sizes due to economies of scale in transporting cargo
- Innovative regional and global port operational models such as hub and spoke system
- Restructuring logistics networks, and improving hinterland congestion and intermodal transport links
- Worldwide trend in declining road use, as rail becomes more competitive
- Port reforms due to high costs and constraints of port infrastructure, such as port governance restructuring and deregulation
- Awarding of concessions to global terminal operators to improve productivity, efficiencies and profitability of ports
- Advanced port operational systems and more efficient cargo handling equipment
- Transport and handling of alternative forms of energy, such as LPG and LNG
- The need for sustainability in infrastructure solutions, as well as increased stakeholder engagement on issues such as carbon footprint, cleaner technologies, green and eco-ports, and end user costs





The South African Ports System

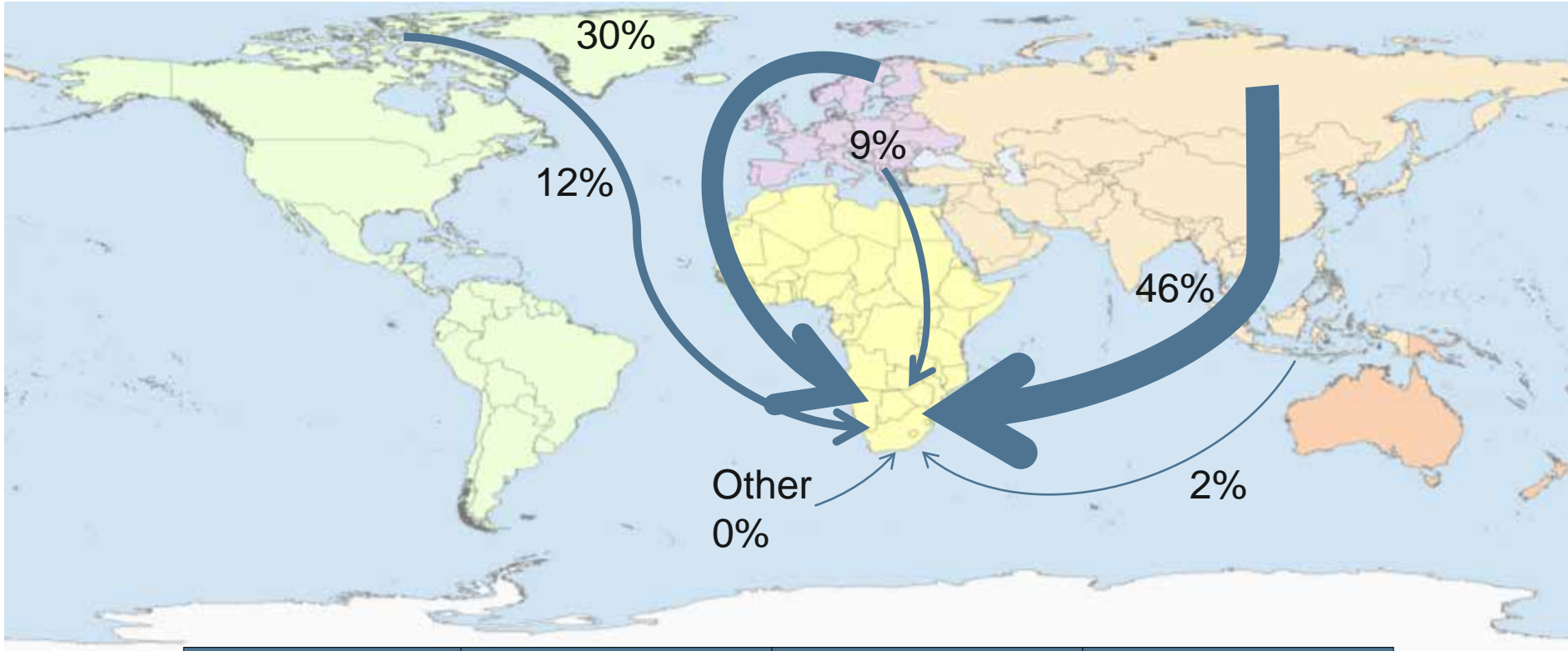




THE SOUTH AFRICAN PORTS



SOUTH AFRICAN TRADE PARTNERS - IMPORTS BY VALUE



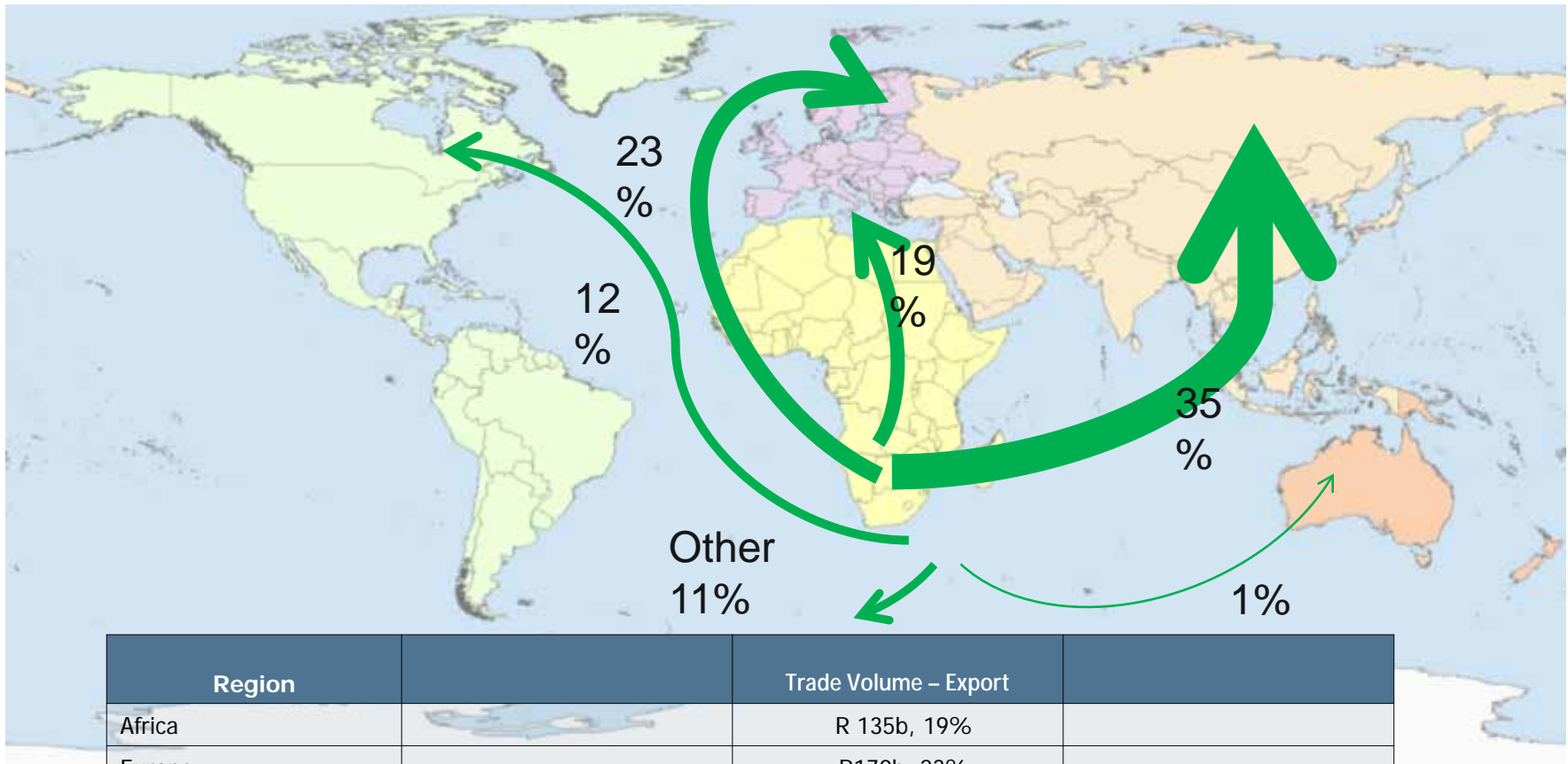
Region	Trade Volume – Import		
Africa	R80b, 9%		
Europe	R256b, 30%		
Americas	R100b, 12%		
Asia	R392b, 46%		
Oceania	R14b, 2%		



SOUTH AFRICAN TRADE PARTNERS - EXPORTS BY VALUE



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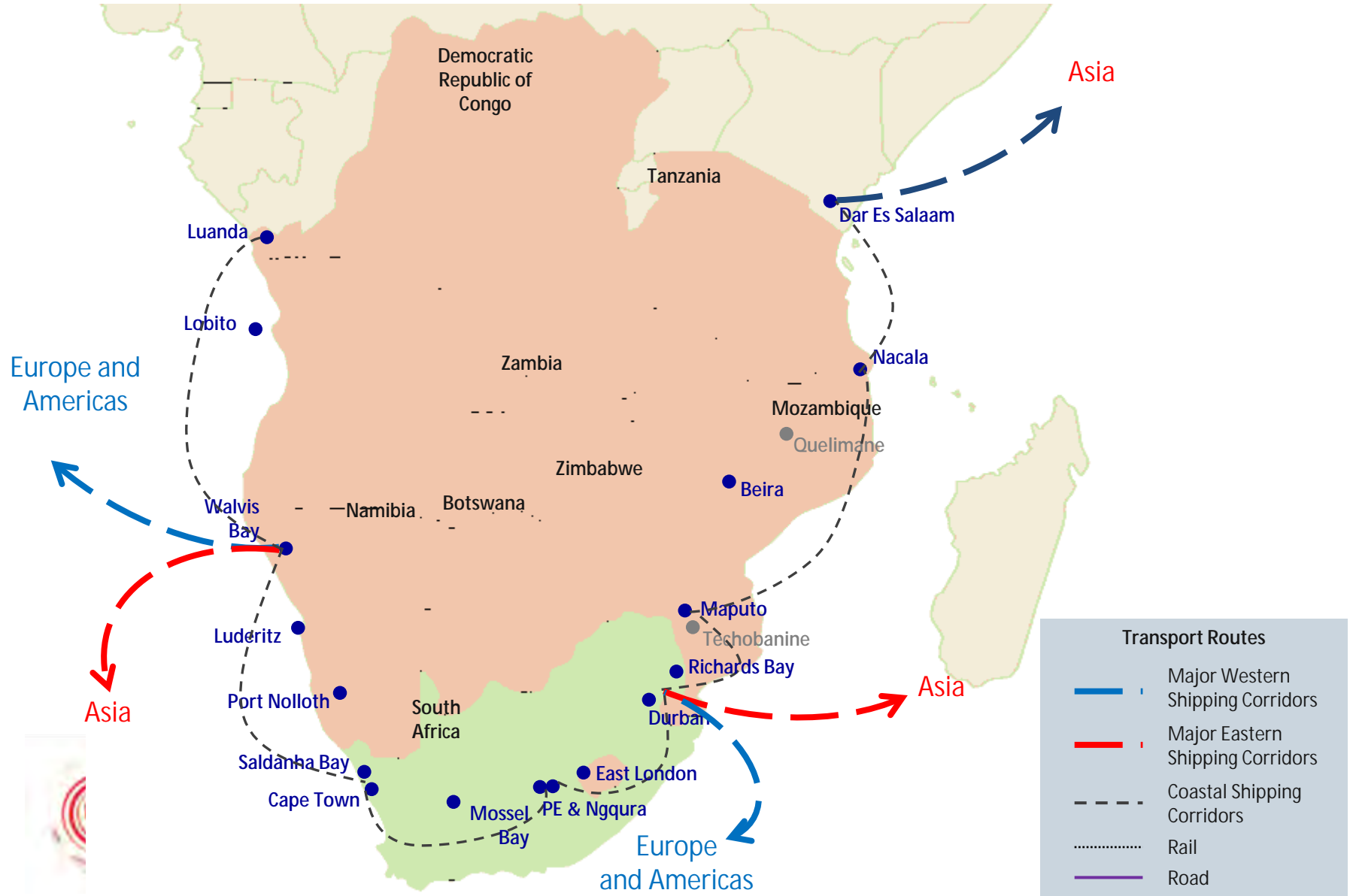


Region	Trade Volume - Export
Africa	R 135b, 19%
Europe	R170b, 23%
Americas	R84b, 12%
Asia	R251b, 35%
Oceania	R9b, 1%
Other, Unclassified Goods	R76b, 11%
Total	R725 billion





SOUTHERN AFRICA REGIONAL CONTEXT, SHIPPING ROUTES





SOUTH AFRICAN PORTS SYSTEM

WESTERN PORTS



Saldanha Bay



Cape Town



Mossel Bay



Port Nolloth

CENTRAL PORTS



Port Elizabeth



Ngqura



East London

EASTERN PORTS



Durban



New Durban Dig-Out Port

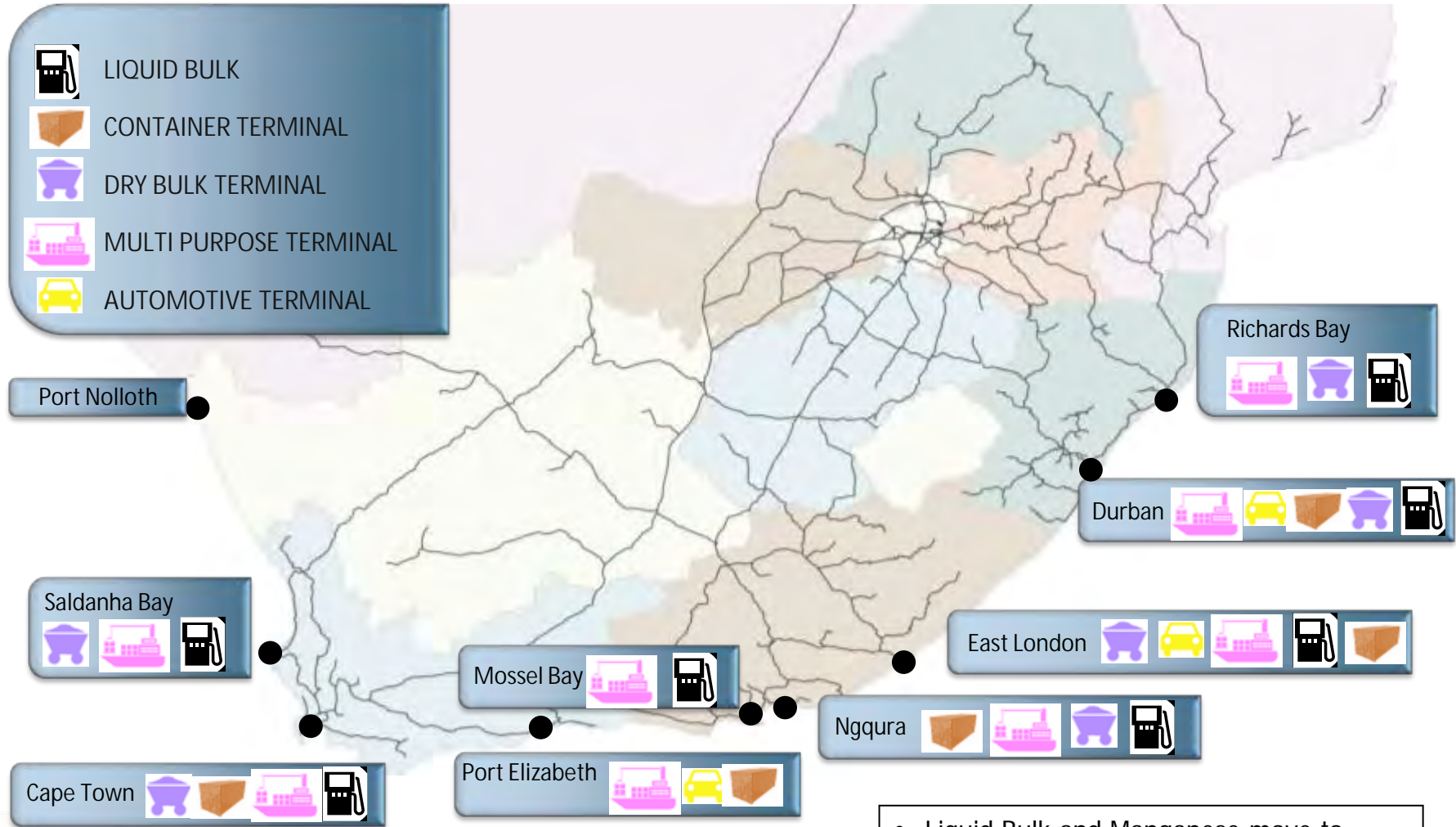


Richards Bay





ROLE OF SOUTH AFRICAN PORTS



- Liquid Bulk and Manganese move to Ngqura from PE
- Roles remain same for the Medium Term





PORT PLANNING – LAND USE

Land Use: Legend definition

No	Item	Description
1	Containers	Container cargo – import/export.
2	Break Bulk / MTP	General cargo to be loaded individually (e.g. bags, crates, wind turbines).
3	Liquid Bulk	Import of crude oil, refined product, potential LNG (does not include SPM/CBM). Other bulk liquid products include e.g. phosphoric acid, vegetable oils.
4	Dry Bulk	Products exported/imported in large, unpackaged volumes, e.g. coal, iron-ore, manganese.
5	Automotive	Import/Export of vehicles.
6	Maritime Engineering	Repair and refurbishment of vessels and rigs (heavy or light industrial activities); Potential ship-building activities – part of Phakisa initiatives.
7	Fishing	Facilities for industry: loading/offloading of product and processing.
8	Comm. Logistics	Logistical activities and facilities associated with import and export of goods (e.g. distribution centres, storage/warehouses and offices, trade facilities).
9	Open Space	Environmentally sensitive areas, natural recreational areas (e.g. Naval Island in Richards Bay), flooding areas and zones not earmarked for development.
10	TNPA Other	Areas associated with administrative activities in port, e.g. offices. In addition, areas reserved for further developments.
11	Maritime Commercial	Passenger liner terminals. People's port activities such as recreational fishing, entertainment areas, Waterfront and residential development as well as retail areas – forming part of Phakisa initiatives.



The Port of Durban as an Example of Port Development



PORT OF DURBAN – VOLUMES AND CAPACITIES

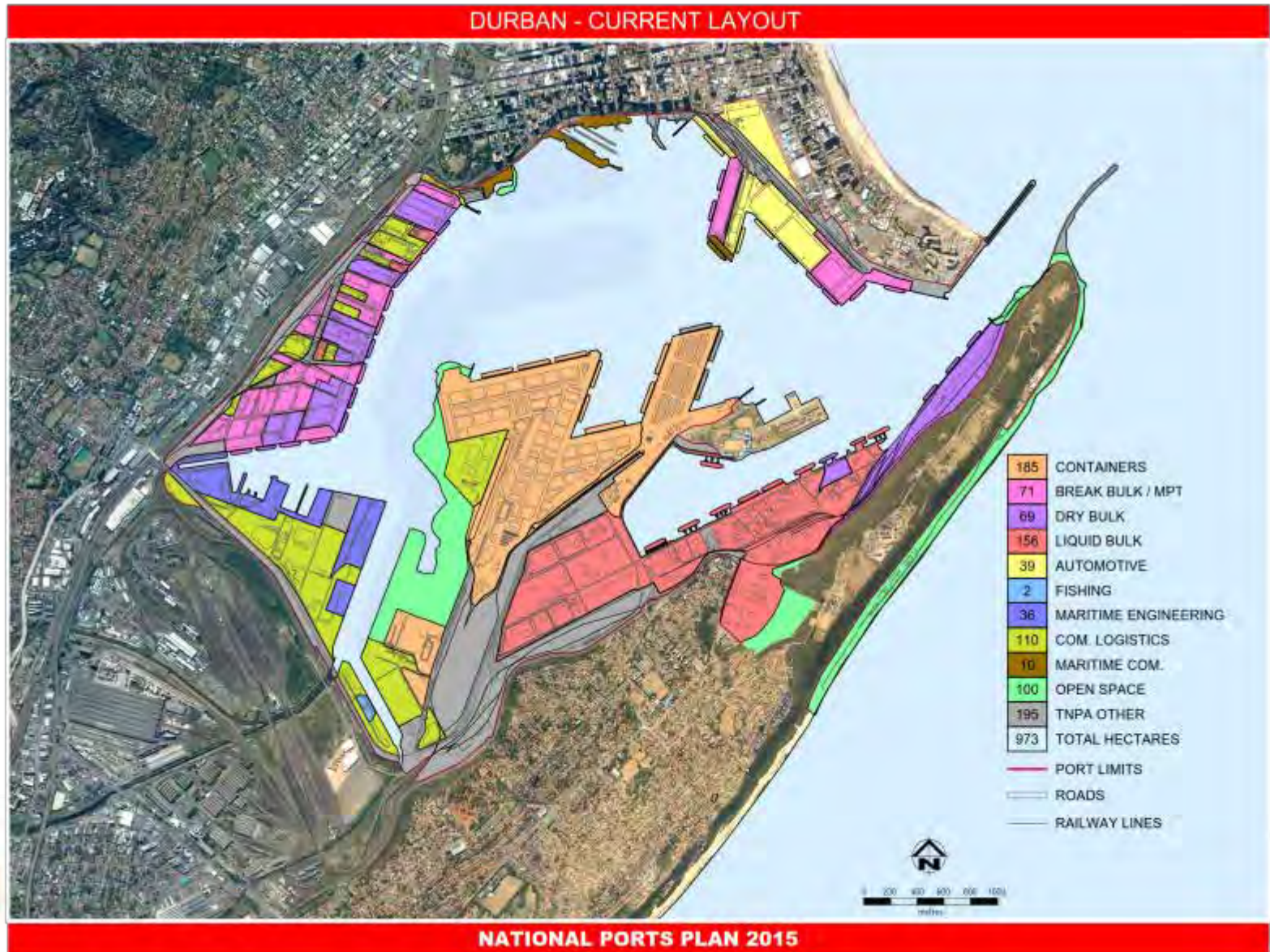
Capacity per Cargo Type

Cargo Type	Berths	No. Berths	Volume 2014	Theoretical Capacity	Unit
Container	105+106, 106+107, 108+109, 200+201, 201+202, 203, 204, 205, MW12, Point D, Point E	11	2 694 166	3 500 000	TEU's
Dry Bulk	IV3, MW2, MW5, MW8, MW10, MW11, MW14, Bluff1+2 Bluff 3, Bluff 4	10	9 793 402	11 000 000	Tons
Break Bulk	Point B, Point C, Point O, Point P, MW3, MW4, MW6, MW7, MW9, MW13, MW15	11	3 010 377	4 000 000	Tons
Automotive	G, M, Q+R	3	462 821	900 000	Units
Liquid Bulk Op. 1,2&3	IV1, IV2, IV4, IV5, IV6, IV7, IV8, IV9	8	7 563 088	21 000 000	Kilolitres
SBM	SBM	1	17 003 136	24 000 000	Kilolitres ₂₃

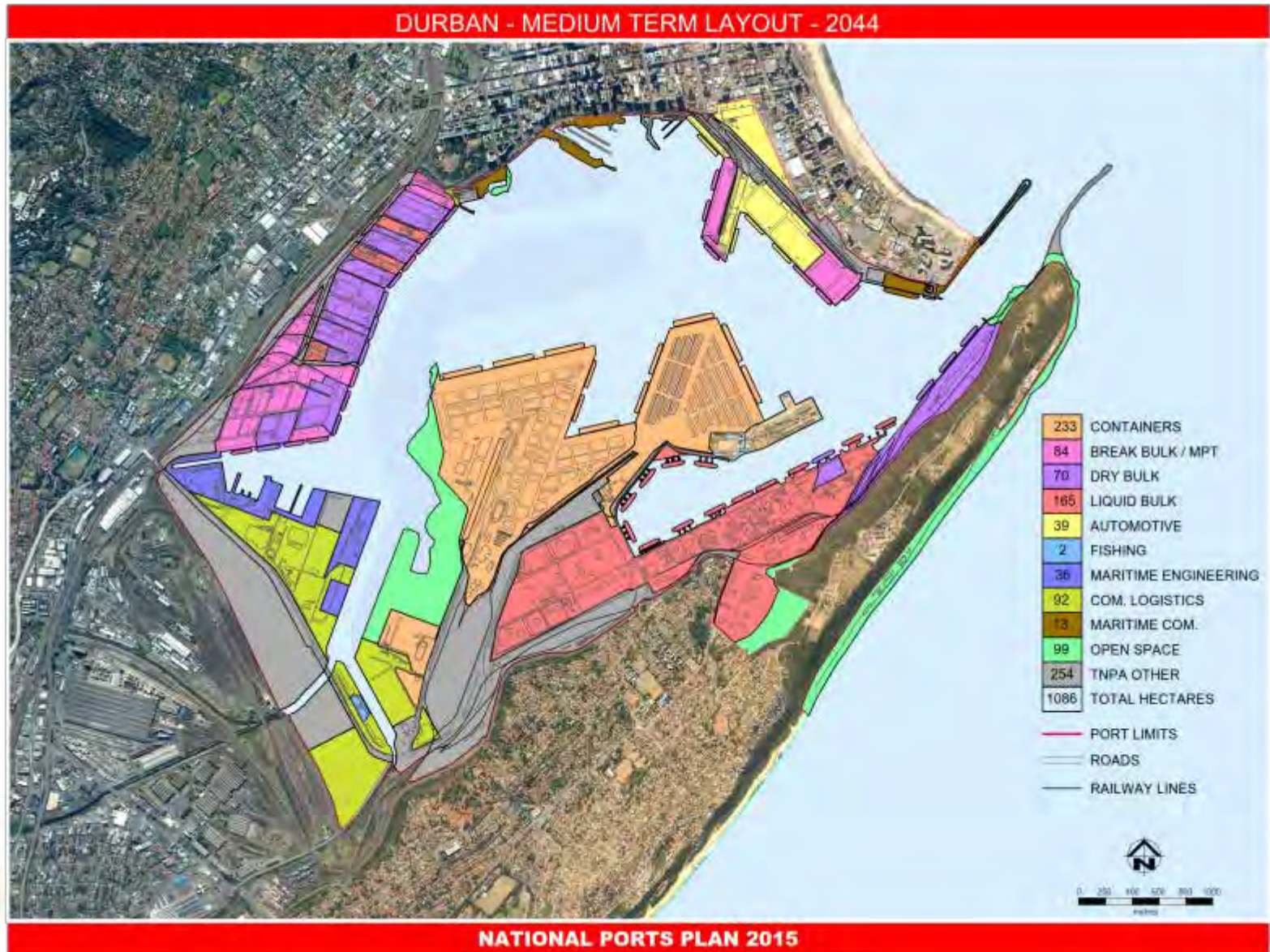
PORT OF DURBAN – CURRENT LAYOUT



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PORT OF DURBAN - MEDIUM TERM LAYOUT



PROPOSED DURBAN DIG OUT PORT - CURRENT LAYOUT



PROPOSED DURBAN DIG OUT PORT - CURRENT LAYOUT





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PROPOSED DURBAN DIG OUT PORT - MEDIUM TERM LAYOUT - 2044





Infrastructure In Port Nolloth and Port Nolloth





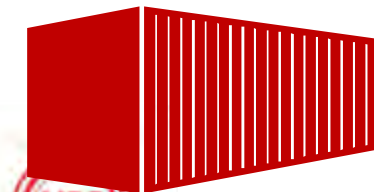
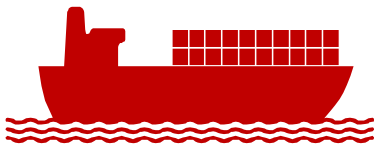
UPGRADE OF PORT INFRASTRUCTURE IN PORT NOLLOTH



PORT NOLLOTH - CURRENT



PORT NOLLOTH - FUTURE



HIGH LEVEL STATUS:

§ The primary Transnet port infrastructure consists of an L-shaped concrete deck on pile jetty which includes a landing quay with a length of approximately 67m and has a useable area of 1450 m2

§ The port is currently leased to De Beers Group Services (Pty) Ltd for a period of ten years which began on 1 August 2006. De Beers uses the port as an offshore supply base for conducting diamond prospecting activity in Namibia. Smit Amandla supply vessels are stationed in Port Nolloth and are used for transferring frozen and dry foods, medicine, clothing, oil and lubricants, fuel, steel, gas and fresh water to De Beers' offshore prospecting vessels. No general cargo or fish is landed at the port.

§ FEL 4 sanction issued in July 2015

§ Tender RFP was advertised on 27 July 2015.

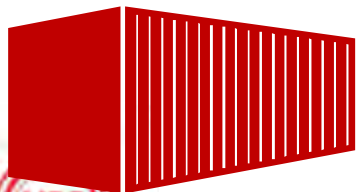
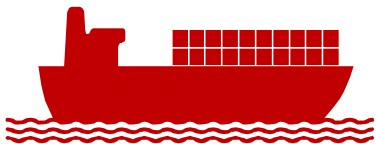
§ Site briefing took place on 05 August 2015.

§ Tender closed 01 September 2015.

§ Construction completion expected in 2017

HIGH LEVEL STATUS:

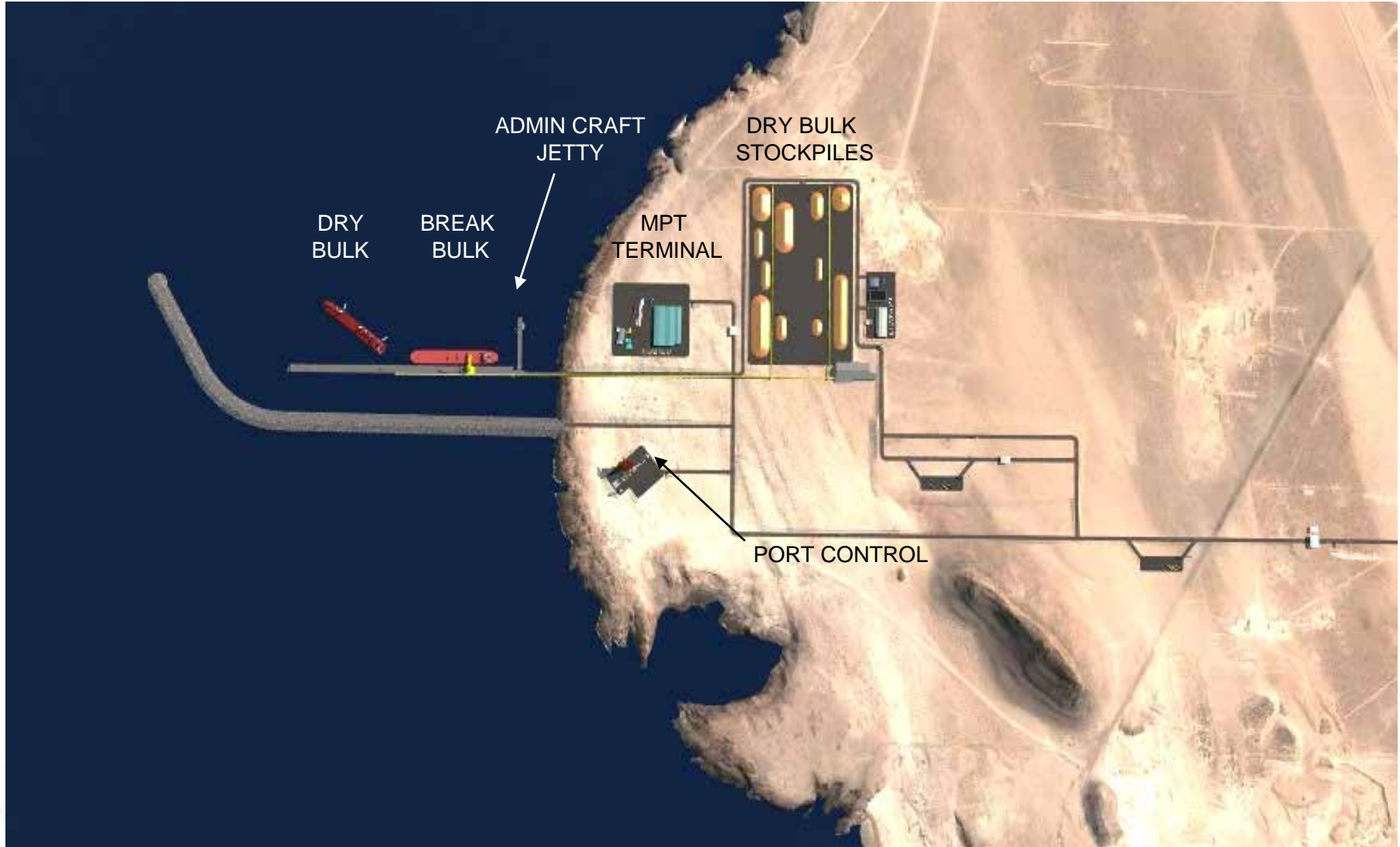
- ü Government voiced a need for possible economic development in the region.
- ü An assessment was embarked upon by the Provincial Government Northern Cape and Department of Transport which identified the following: -
 - ü The region can service the existing mining industry in its hinterland
 - ü An assessment of economic drivers identified that the region should conceptualise a new port development for commercial activities
 - ü TNPA was approached to partner in the planning for development with the provincial government
 - ü A steering committee (Chaired by TNPA) manages the strategic engagement
 - ü An MOU is being drafted to manage the engagement on strategic issues of mutual significance
 - ü A technical working group reports to the steering committee on development progress (TNPA and DoT)
 - ü TNPA is responsible for the port development
 - ü Provincial Government is responsible for the back of port logistics development and the demand validation.





CONCEPT FOR A NEW PORT - BOEGEBAAI

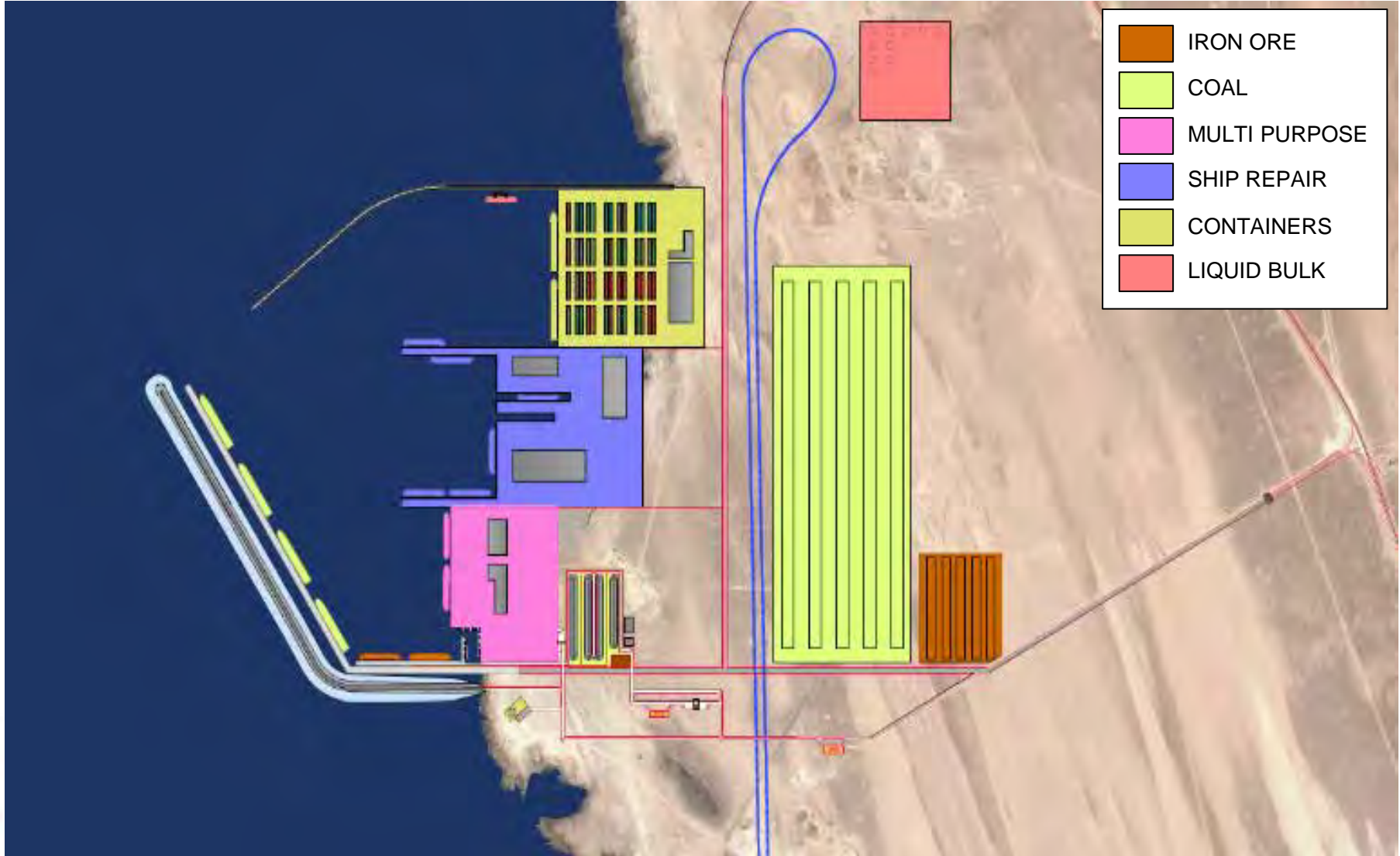
PREFERRED PHASE 1 LAYOUT





CONCEPT FOR A NEW PORT - BOEGEBAAI

PREFERRED MASTER PLAN LAYOUT





Cape Town Cruise liner facility



PEOPLE PORT CONCEPT CAPE TOWN: CRUISE LINER



FIGURE 23. CRUISE LINER TERMINAL OPTIONS FOR THE PORT OF CAPE TOWN: TOP - SHORT TERM PHASE ONE, BOTTOM - LONG TERM PHASE 3 (TRANSNET, 2013)



FIGURE 24. LONG-TERM CRUISE LINER TERMINAL DRAFT SCENARIO PROPOSALS (MDA, 2013)

1. A gateway to Africa, strategically situated between the West and East.
2. An international tourism destination that has a unique lifestyle offering.
3. A region of global excellence in ecological, creative, scientific and social innovation.
4. An international entrepreneurial destination of choice
5. V&A is the appointed terminal



FIGURE 26. THE WINNING PROJECT FROM GROUP 18, "THE FORESHORE [RE] ACTION" WHICH LINKS THE HIGHWAYS WITH AN URBAN PARK



FIGURE 27. GROUP 17 "RE-IMAGINING THE FORESHORE" PROJECT WHICH RE-CONNECTS THE CITY WITH THE OCEAN BY BRINGING WATER BACK INTO THE FORESHORE

Port of Cape Town – Artist's Impression

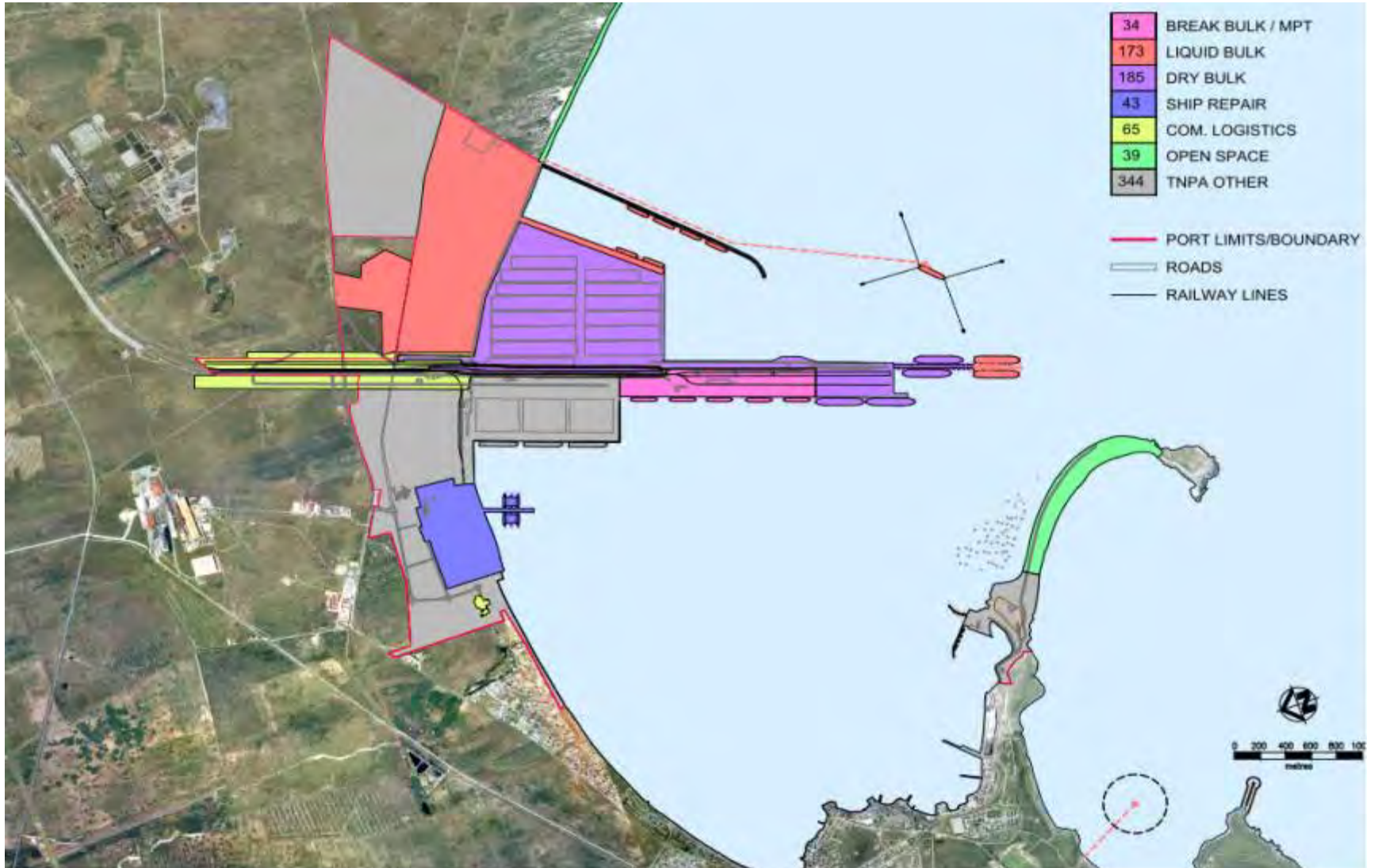




Saldanha Oil and gas



Port of Saldanha – Long Term Layout



Saldanha Bulk Liquid - Before



Saldanha Bulk Liquid - After



Saldanha Oil & Gas - Before



Saldanha Oil & Gas - Before



Saldanha Iron Ore - Current



Saldanha Iron Ore and Rig repair facility - Future



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THANK YOU