

SCOPING REPORT

BAY TERMINALS GROUP COEGA TANK FARM

DRAFT FOR PUBLIC REVIEW

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Date	Report Reference Number		Description of Amendment
23/04/2018	21803_DSR_1	21803_DSR_2	Public Participation Information and Dates and Inclusion of Appendices

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1 INTRODUCTION

The Coega Industrial Development Zone (IDZ) was established in 1999 and is adjacent to the modern deep-water Port of Ngqura, a transshipment hub facilitating trade with the rest of Africa and providing access to international markets. The approximately 11 362 ha of land divided into 14 zones provides the perfect investment environment for local and foreign investors.

The Coega Industrial Development Zone (Coega IDZ), located close to the bustling Nelson Mandela Bay Metropolitan Municipality, is South Africa's foremost investment hotspot for industries with a global perspective.

Developed and managed by the Coega Development Corporation (CDC), this pioneering multi-billion Rand project aims to drive local and foreign direct investments in export-oriented industries - positioning South Africa as the hub for Southern African trade.

The Coega IDZ, while offering global competitiveness through world-class infrastructure, tax incentives, rebates and a duty-free zone, is purpose-built for manufacturing including beneficiation of export goods, investment and local socio-economic growth - skills development and job creation.

Adjoining this, the largest IDZ in the Southern Hemisphere, is the Port of Ngqura - a modern multi-user deep-water harbour developed by the National Ports Authority of SA as a gateway to global markets.

The Coega IDZ is zoned for 'Special Purposes' in terms of the Land Use Planning Ordinance of 1985 and the proposed development site is located in Zone 7 of the Coega IDZ earmarked as the chemical and petrochemical cluster.

In line with the above, Bay Terminals Group proposes to develop a new bulk petrochemical fuel store with ship to shore offloading, transfer piping, custody metering and numerous tanks and road tanker loading at a new facility in the Coega Industrial Development Zone 7, near Port Elizabeth, on Erf 351 of Coega.

Bay Terminals Group has appointed Prism Environmental Management Services (Prism EMS) as the independent Environmental Assessment Practitioner (EAP) to undertake the required environmental authorisation processes required by a host of environmental legislation. Such process referred to as an Environmental Authorisation process and the details of which are discussed and described in the contents of this report.

1.1 Process

1.1.1 Application

An application for the Environmental Authorisation was lodged with the competent authority on the 23rd of March 2018.

1.1.2 Public Notification and Public Review of the Scoping Report

An Interested and Affected Party (I&AP) database was compiled and included adjacent landowners, businesses and authorities. I&APs were provided with 30 days to register as an I&AP (from 23 March 2018 – 26 April 2018). An advert was also placed in the Herald Live and “Die Burger” newspapers on 23 March 2018. In addition, site notices were displayed in the office of the Coega Development Corporation. All comments received were added to the Comments and Response Report.

A Scoping Report was compiled in line with the requirements contained in Appendix 2 of the EIA Regulations, 2014 promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended. The Scoping Report was available for public review between 23 March 2018 and 26 April 2018. All comments received were considered in the Final Draft Scoping Report which are now available again for public review from **26 April 2018 to 28 May 2018**. All comments received on the final draft scoping report will be incorporated into the Final Scoping Report to be submitted to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (EC DEDEAT).

1.2 Report Outline

The format of the Scoping Report has been aligned with the requirements contained in Appendix 2 of the Environmental Impact Assessment Regulations, 2014 [as amended] (EIA Regulations) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA). The required report contents and how it is structured in this report is indicated in Table 1.

Table 1: Required contents of the scoping report

Appendix 2 of the EIA Regulations, 2014	Reference in Report
2(a) Details of the: <ul style="list-style-type: none"> (i) EAP who prepared the report; and (ii) Expertise including CV 	Section 1.3 Appendix 1
2(b) Location of the activity including: <ul style="list-style-type: none"> (i) 21-digit SG code of each parcel (ii) Physical address of farm (iii) Co-ordinates of property boundary 	Section 1.6 Section 1.6 Section 1.6
2(c) Plan locating the proposed activity	Section 1.6 Section 4.3
2(d) description of the scope of the activity <ul style="list-style-type: none"> (i) Listed activities 	Section 4.2

Appendix 2 of the EIA Regulations, 2014	Reference in Report
(ii) Description of the activities to be undertaken (structures and infrastructure)	Section 4.3
2(e) Policy and legislative context including legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments	Section 2
2(f) Motivation for the need and desirability for the proposed development	Section 5
2(h) Description of the process followed of the proposed activity, site and location of the development footprint within the site, including: <ul style="list-style-type: none"> (i) Alternatives; (ii) Public participation process (iii) Summary of issues raised by I&AP's (iv) Environmental attributes (v) Potential Environmental Impacts (vi) Methodology to determine potential impacts (vii) Positive and negative impacts (viii) Possible mitigation measures (ix) Outcome of the site selection matrix (x) Motivation for not considering alternatives (xi) Concluding statement indicating preferred alternatives 	<p>Section 6</p> <p>Section 7</p> <p>Section 7.2.5 & Appendix 2.7</p> <p>Section 3</p> <p>Section 8.1</p> <p>Section 8.3</p> <p>Section 1</p> <p>Section 8.4</p> <p>Section 6</p> <p>Section 6</p> <p>Section 6</p>
2(i) Plan of Study <ul style="list-style-type: none"> (i) Alternatives (ii) Environmental Impact Assessment process (iii) Specialists (iv) Method of assessing environmental impacts (v) Method of assessing duration and significance (vi) Stages when competent authority is to be consulted (vii) Public participation particulars (viii) Tasks to be undertaken in EIA process (ix) Management measures and monitoring 	<p>Section 8</p> <p>Section 7 & 8</p>
2(j) Undertaking: EAP	Section 9
2(k) Undertaking: Level of Agreement	Section 9
2(l) Information specified by the competent authority	Section 10.7
2(m) Any other matter	Not currently applicable

1.3 Environmental Assessment Practitioner

Prism EMS have been appointed to undertake the required Environmental Authorisation process in terms of the required Environmental Impact Assessment. Details and expertise of the Environmental Assessment

Practitioner (EAP) who prepared the Scoping Report is provided in Table 2 and Curriculum Vitae is appended in Appendix 1.

Table 2: Details of the EAP

EAP:	Monica Niehof			
Company:	Prism Environmental Management Services			
Qualifications:	BSc. (Hons) Environmental Management			
Experience:	11 Years			
Address:	PO Box 1401, Wilgeheuwel, 1736			
Tel:	087 985 0951			
Fax:	086 601 4800			
Email:	monica@prismems.co.za			
Designation	Name	Qualification	Professional Registration	Specialist Assessment
Prism EMS Team				
Contact Details	Post: PO Box 1401, Wilgeheuwel, Johannesburg, 1736		Tel: 087 985 0951 Fax: 086 601 4800 Email: prism@prismems.co.za www.prismems.co.za	
Designation	Name	Qualification	Professional Registration	Experience:
Project Director	De Wet Botha	M.A. (Env.Man.) (PHED)	Founder Member of Environmental Assessment Practitioners Association of South Africa (EAPASA) Member of the International Association for Impact Assessors (IAIAsa) Member of the Gauteng Wetland Forum Member of the South African Wetland Society	15 Years
Project Principle	Vanessa Stippel	MSc. Ecology, Environment and Conservation	SACNASP- Pr. Sci. Nat.(116221).	7 Years

1.4 Authorities

The following competent authorities are involved in the decision-making process:

- The Eastern Cape Department of Economic Development, Environmental Affairs and Tourism with reference to activities triggered in terms of the:

- National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA);
and
- The Nelson Mandela Bay Metropolitan Municipality with reference to activities in terms of the:
 - National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) [as amended] (NEMAQA).

1.5 Applicant

The applicant is the entity that will assume responsibilities as the holder of the environmental authorisation and Air Emissions License, if granted. Details of the applicant are contained in Table 3.

Table 3: Details of the Applicant.

Applicant:	Bay Terminals Group
Responsible Person:	Ms Thami Mjacu Director
Trading Name:	Bay Terminals Group
Landowner:	Coega Development Corporation
Contact Person:	Mr Brian Alexander
Address:	153 Grahamstown Road, Deal Party, Port Elizabeth, 6001
Tel:	041 180 4010
Cell:	083 969 0688 / 083 463 4828
Fax:	086 719 7668
Email:	thami@latita.co.za / brian@bayterminalsgroup.co.za

1.6 Location

The proposed development is planned to be situated within Zone 7 of the Coega Industrial Development Zone (IDZ), located along the Algoa Bay coastline to the north-east of the Port of Ngqura (refer to Figure 1).

The Surveyor General 21-digit diagram number for the affected properties is provided in Table 4.

Table 4: Surveyor General Diagram Number

Erf	Surveyor General Diagram number
351	C07600230000035100000

Refer to Figure 1 for a visual indication of the sites location in relation to major roads and towns.



Figure 1: Locality map of the site

2 LEGISLATIVE FRAMEWORK

This section aims to provide an overview of key policy, legislation, plans, guidelines and municipal development planning frameworks triggered by the proposed project. The requirements set out in these Acts and Regulations will be adhered to through the scoping and impact assessment phases of the project.

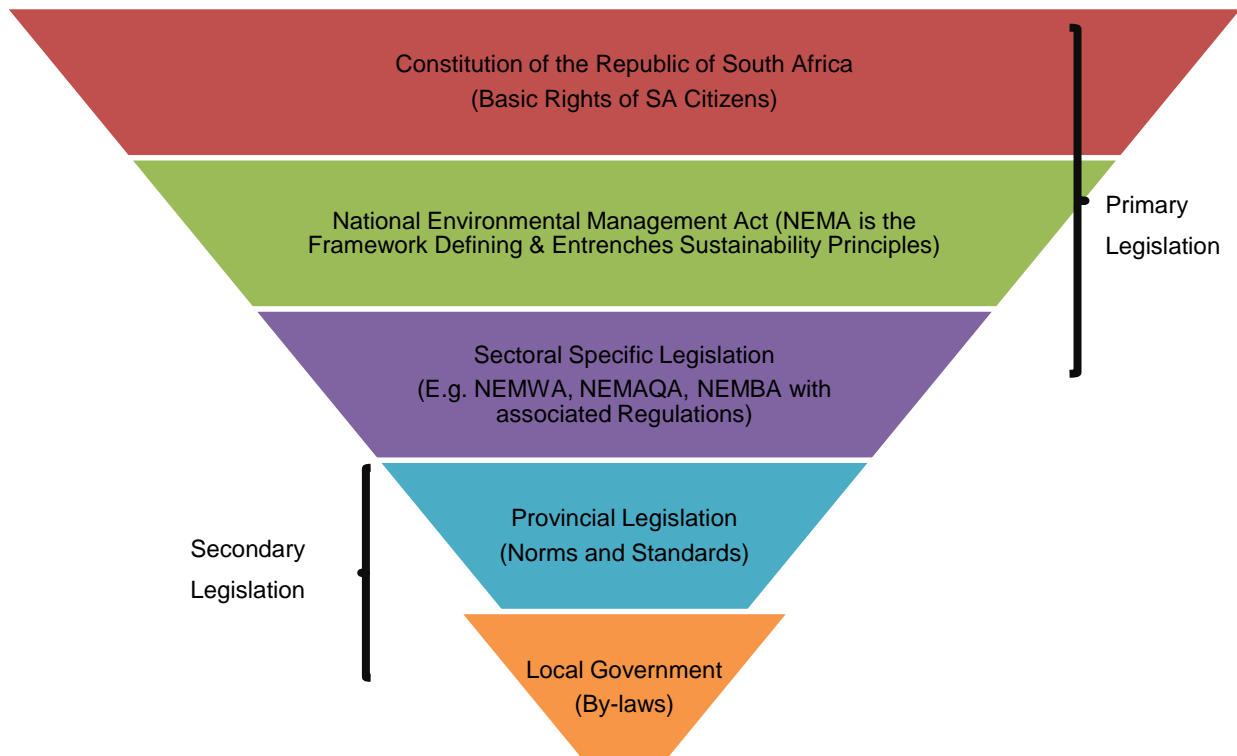


Figure 2: South African Environmental Legislation Hierarchy

The following Acts, Regulations, By-Laws and Guidelines are applicable to the proposed Tank Farm development.

2.1 Constitution of the Republic of South Africa 1996 (Act No. 108 of 1998) [as amended] (CSA)

Section 24 of the Constitution states that –

“Everyone has the right to -

- a) an environment that is not harmful to their health or well-being; and*
- b) have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
 - (i) Prevent pollution and ecological degradation;*
 - (ii) Promote conservation; and*
 - (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”*

To ensure that the development is sustainable, an EIA process is being undertaken to identify impacts related to the development and propose mitigation measures where possible.

2.2 National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998)

NEMA is the umbrella framework for all environmental legislation, primarily to assist with implementing the environmental rights of the Constitution (refer to Section 2.1). NEMA provides fundamental principles required for environmental decision making and to achieve sustainable development. It also makes provision for duty of care to prevent, control and rehabilitate the effects of significant pollution and environmental degradation, and prosecute environmental crimes. These principles must be adhered to and taken into consideration during the impact assessment phase.

NEMA defines “environment” as –

“the surroundings within which humans exist and that are made up of –

- (i) the land, water and atmosphere of the earth;*
- (ii) micro-organisms, plants and animal life;*
- (iii) any part or combination of (i) or (ii) and the interrelationship among and between them; and*
- (iv) the physical, chemical, aesthetic and cultural, properties and conditions of the foregoing that influence human health and well-being.”*

Section 24D and 24(2) of the NEMA makes provision for the publication of lists and associated regulations containing activities identified that may not commence without obtaining prior environmental authorisation from the competent authority. These regulations are referred to as the Environmental Impact Assessment Regulations and are interpreted hand in hand with the various listed activities discussed further below.

Section 28 imposes a duty to avoid pollution and environmental degradation on every person.

2.2.1 Environmental Impact Assessment Regulations, 2014 (GN R 982 of 4 December 2014) [as amended]

The EIA regulations were promulgated in terms of Section 24 of the NEMA, for providing methodologies and specific requirements for the undertaking of an EIA. The Regulations stipulate that any proposed activity listed in the associated notices must undertake either a Basic Assessment (BA) or Scoping & Environmental Impact Report (S&EIR) to obtain an environmental authorisation (if granted by the competent authority) before the commencement of the specified listed activity. The EIA Regulations provide the minimum requirements for appointing an Environmental Assessment Practitioner (EAP) and for undertaking the relevant Public Participation Process (PPP) as required. They also detail the contents of the impact assessment reports and all other aspects associated with BA and/or EIAs.

The following listed activities have been identified in terms of the subsequent Government Notices:

2.2.1.1 Listing Notice 1: GN R 983 of 4 December 2014 [as amended]

Activities listed under this process require a Basic Assessment process to be undertaken. No activities under this Listing Notice are triggered by the proposed development.

2.2.1.2 Listing Notice 2: GN R 984 of 4 December 2014 [as amended]

Activities listed under this process require Scoping and EIA to be undertaken. Refer to Section 4.1 for a description of the specific listed activities that pertain to this project. Since activities listed in this Listing Notice are triggered by the proposed development, a Scoping and EIA process is undertaken to apply for Environmental Authorisation.

2.2.1.3 Listing Notice 3: GN R 985 of 4 December 2014 [as amended]

Activities listed under this process require a Basic Assessment process to be undertaken but only in specified geographic areas. Refer to Section 4.1 for a description of the specific listed activities that pertain to this project.

2.3 National Water Act (NWA), 1998 (Act No. 36 of 1998)

The NWA is the primary regulatory legislation; controlling and managing the use of water resources as well as the pollution thereof and is implemented and enforced by the Department of Water and Sanitation (DWS). Section 21 of the NWA lists water uses that must be licensed unless it is listed in the schedule (existing lawful use) and/or is permissible under a general authorisation, or if a responsible authority waives the need for a Water Use Licence. Section 21 water uses include:

- Section 21(a): taking water from a water resource
- Section 21(b): storing water
- Section 21(c): impeding or diverting the flow of water in a watercourse
- Section 21(d): engaging in a stream flow reduction activity contemplated in section 36
- Section 21(e): engaging in a controlled activity as identified in Section 37 (1) or declared under Section 38 (1).
- Section 21(f): discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall, or other conduit.
- Section 21(g): disposal of waste (i.e. effluent from sewage works) in a manner which may detrimentally impact on a water resource;
- Section 21 (h): disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process.
- Section 21 (i): altering the bed, banks, course or characteristics of a watercourse.
- Section 21 (j): removing, discharging, or disposing of water found underground if it necessary for the efficient continuation of an activity or for the safety of people.
- Section 21(k): using water for recreational purposes.

As the DWS is a commenting authority in terms of the S&EIA process, a copy of the Draft Scoping Report was submitted to the Department for comment. At this stage, no water uses as described in Section 21 of the Act are triggered by the proposed development, and, therefore, the Applicant is not required to apply for a water use license. However, a sludge treatment facility is planned for the site and it will be determined during the EIA phase whether the facility will handle seawater. Should the facility handle seawater, seawater need to be discharged back to the sea and this might be determined to be a water use under Section 21 of the Act. Should it be determined that this activity is a water use in terms of the Act, the type of authorisation required will be determined, and if necessary, the water use will be either registered or a water use license application will be submitted to the Department of Water and Sanitation.

The Applicant also needs to comply with provisions of this Act, especially in terms of its obligation of “Duty of Care” for water resources in terms of Section 19 and 20 of the Act.

Part 4: Section 19

Prevention and remedying effects of pollution

Part 4 of the act deals with pollution prevention and remedying effects of pollution prevention, and in particular the situation where pollution of a water resource occurs or might occur as a result of activities on land. The person who owns, controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources. If these measures are not taken, the catchment management agency concerned may itself do whatever is necessary to prevent the pollution or to remedy its effects, and to recover all reasonable costs from the persons responsible for the pollution.

Part 5: Section 20

Control of emergency incidents

Part 5 of the Act deals with pollution of water resources following an emergency incident, such as an accident involving the spilling of a harmful substance that finds or may find its way into a water resource. The responsibility for remedying the situation rests with the person responsible for the incident or the substance involved. If there is a failure to act, the relevant catchment management agency may take the necessary steps and recover the costs from every responsible person.

2.4 National Heritage Resource Act (NHRA), 1999 (Act No. 25 of 1999)

The NHRA provides for the protection and management of South Africa’s heritage resources. The South African National Heritage Resources Agency (SAHRA) is the administering authority regarding all matters relating to heritage resources. A heritage resource refers to any historically important feature such as graves, trees, archaeology, culturally significant symbols, spaces, landscapes and fossil beds as protected heritage resources. In terms of Section 38 of the NHRA, SAHRA can call for a Heritage Impact Assessment (HIA) for certain categories of development. The NHRA also makes provision for the assessment of

heritage impacts as part of an EIA process and indicates that if such an assessment is deemed adequate, a separate HIA is not required.

Section 38 (1) of the NHRA notes that the relevant heritage authority should be notified provided with details such as location, nature and extent of the following developments:

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50 m in length;
- (c) any development or other activity which will change the character of a site—
 - (i) exceeding 5 000 m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m² in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

Historical, archaeological and palaeontological studies have been conducted for this area previously and no known heritage resources occur at the proposed site, however, the recommendations of these studies will be incorporated into the Environmental Management Programme for the project. The Provincial Heritage Resources Agency and SAHRA were notified and a copy of the Scoping Report was uploaded to the South African Heritage Information System (SAHRIS). Proof of this will be appended in in the Final Scoping Report.

2.5 National Environmental Management: Biodiversity Act (NEM:BA), 2004 (Act No. 10 of 2004)

The NEM:BA aims to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA. The purpose of the NEM:BA is to protect ecosystems and the species within as well as the promoting of sustainable use of indigenous biodiversity. During any environmental authorisation process the following regulations are considered and researched if at any stage the following regulations are applicable:

- Alien and Invasive Species Regulations, 2014;
- Alien and Invasive Species Lists, 2016;
- Lists of Critically Endangered, Endangered, Vulnerable and Protected Species, 2007; and
- Threatened or Protected Species Regulations, 2007.

An Ecological Impact Assessment will be undertaken to confirm the presence of any sensitive species on the study area.

2.6 National Environmental Management: Waste Management Act (NEMWA), 2008 (Act No. 59 of 2008)

NEMWA aims to regulate waste management in South Africa to protect health and the environment through the provision of reasonable measures for the prevention of pollution and ecological degradation.

The Act includes regulations which provide a list of waste management activities that require a waste management licence in terms of NEMWA (GN 921 of 29 November 2013). Activities related to the treatment of effluent, wastewater or sewage are however excluded and do not require a waste management licence but are regulated under NEMA and the NWA.

Based on the above, no waste management license is required for the proposed development. General waste will be collected by municipal waste collectors and disposed of at the municipal landfill. Hazardous waste from the Slops Treatment Facility will be collected by a registered service provider and disposed of at a registered facility.

Storage facilities in excess of 100m³ (general waste) or 80m³ (hazardous) (if required), is listed under Category C of the listed waste management activities and will comply with the National Norms and Standards for the Storage of Waste (GN. R 926 of 29 November 2013).

2.7 National Environmental Management: Air Quality Act (NEMAQA), 2004 (Act No. 39 of 2004) and the National Dust Control Regulations, 2013

The aim of NEMAQA is to regulate air quality to protect the environment from pollution and ecological degradation. The proposed development triggers a listed activity in terms of this Act and, therefore, requires the Applicant to apply for an Air Emissions License from the Competent Authority. Refer to Section 4.1 for a description of the specific listed activities that pertain to this project.

2.8 National Veld and Forest Fire Act, 101 (Act No. 101 of 1998)

The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. The Act provides for a variety of institutions, methods and practices for achieving the purpose.

- Chapter 4 places a duty on owners to prepare and maintain firebreaks; and
- Chapter 5 places a duty on all owners to acquire equipment and have available personnel to fight fires.

2.9 National Forests Act, 1998 (Act No. 84 of 1998)

The purposes of this Act are to-

- promote the sustainable management and development of forests for the benefit of all;
- create the conditions necessary to restructure forestry in State forests;
- provide special measures for the protection of certain forests and trees;

- promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes;
- promote community forestry;
- promote greater participation in all aspects of forestry and the forest products industry by persons disadvantaged by unfair discrimination.

In terms of section 15(1) of the National Forests Act, 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Protected trees are listed in the: List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998) as published in Government Notice Number 690, September 2017.

An Ecological Impact Assessment will be undertaken to confirm the presence of any protected tree species on the study area.

2.10 Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) [as amended] (OHSA)

The purpose of the Act is:

To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

- Hazardous Chemical Substances Regulations, 1995

These regulations apply to an employer or a self-employed person who carries out work at a workplace which may expose any person to the intake of a Hazardous Chemical Substance at the workplace.

2.11 Hazardous Substances Act, 1973 (Act No. 15 of 1973) [as amended]

The purpose of the Act is to provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances, and for the control of certain electronic products; to provide for the division of such substances or products into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products; and to provide for matters connected therewith.

2.12 Other Legislation and Guidelines

2.12.1 Bylaws

The following By-laws have been published by Nelson Mandela Bay Municipality to provide a framework for its operation and management and must be adhered to by the proposed development.

- Noise Control Bylaw;
- Roads, Traffic and Safety Bylaw;
- Air Pollution Control Bylaw;
- Fire Safety Bylaw;
- NMBM Water Services Bylaw;
- NMBM Electricity Supply Bylaw;
- Waste Management Bylaw;
- Water and Sanitation Bylaw

2.12.2 Guidelines

The following guidelines have been adopted by the applicant in the pursuit of best practice and sustainable development and are considered in the management measures and mitigation of impacts identified.

- DEA, 2014 – IEMS Guideline series
 - Integrated Environmental Management Guideline: Guideline on Need and Desirability
 - Integrated Environmental Management Guideline Series (Guideline 7)
 - Public Participation in the Environmental Impact Assessment Process
 - Guidelines on Alternatives
- National Development Plan 2030.

The National Development Plan identifies five principles for spatial development: spatial justice, spatial sustainability, spatial resilience, spatial quality and special efficiency. It confirms that South African cities are highly fragmented, as little has been achieved in reversing apartheid geography. The Plan proposes that the situation be addressed by establishing new norms and standards: among others by densifying cities, improving transport and locating jobs where people live. The containment of urban sprawl is particularly highlighted in the Plan, confirming that sprawl be contained and reversed (if possible), "...as denser forms of development are more efficient in terms of land usage, infrastructure cost and environmental protection."

The proposed development aligns with the vision of the National Development Plan, as it will promote compaction of the city and limiting urban sprawl (by means of infill development), as well as by establishing a place of work near residential opportunities, which will result in reduced travel times. More housing opportunities will be provided within the municipal area, which will include low to medium density housing opportunities.

- **Eastern Cape Vision 2030 – Provincial Development Plan (PDP)**

The Eastern Cape Development Plan is grounded in the National Development Plan but has specifically been developed taking cognizance of the critical priorities that face the Eastern Cape. The Plan was developed in 2014 and involved collaboration with citizens, organisations and institutions within and outside of the Eastern Cape. The following principles underpin the implementation of the Eastern Cape Development Plan:

- Understanding context
- Social justice
- Spatial equity and justice
- Intergenerational equity
- People centred development
- Keeping the public good public
- Distributed agency and shared agenda setting
- Integrated coordination and efficiencies
- Resourcing the PDP

Arising from the above, five related goals have been developed for the Eastern Cape. Each goal has a vision, key objectives and strategic actions. The goals are interrelated. The Plan has a specific focus on rural development, due to the specific absence of spatial equity in the Eastern Cape.

- **Spatial Strategy of the Municipality**

The spatial strategy of the Municipality is embedded in three interrelated strategy documents, these are:

- The Metropolitan Spatial Development Framework (MSDF).
- The Sustainable Community Planning Methodology.
- The Built Environment Performance Plan (BEPP).

The documents exist as separate documents, and the MSDF and BEPP are required to be legally compliant. The Metropolitan Spatial Development Framework (MSDF) is the primary spatial plan of the City and represents the spatial manifestation of the IDP. All matters of a spatial nature concerning the Municipality are encapsulated in the MSDF. It includes the Sustainable Community Planning Methodology and the Built Environment Performance Plan. The initial MSDF was approved by Council in 2009; a second version was approved in December 2015. A revised MSDF is required to be approved together with the new IDP in the year following the 2016 local government elections (i.e. 2017). A Draft MSDF exists, and this Chapter includes the revised Spatial Development Framework Strategy. The Spatial Planning and Land Use Management Act 2013 (SPLUMA) sets the legal framework for the SDFs of South African municipalities. A new and legally compliant SDF will be adopted within the 2017/18, following the adoption of the new post-election IDP. The core principles of the SDF have remained intact over multi-year periods and political cycles.

➤ **Metropolitan Spatial Development Framework (MSDF)**

The Metropolitan Spatial Development Framework (MSDF) and the associated, more detailed, Local Spatial Development Frameworks (LSDFs) seek to guide overall spatial form and identify current and future desirable land uses within the Municipality at a broad level to give physical effect to the vision, goals and objectives of the IDP. The MSDF identifies major transport routes, future transport links, environmentally important areas and key potentials and constraints. The MSDF also aims to sequence future development areas in a manner that makes the best use of infrastructure services and limits the leap-frogging of development and the unnecessary expansion of infrastructure networks. The legal importance of the MSDF is contained, inter alia, in the Spatial Planning and Land Use Management Act 2013 (SPLUMA), Chapter 4, which states that: “a Municipal Planning Tribunal or any other authority required or mandated to make a land development decision in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal spatial development framework, unless if site specific circumstances justify a departure from such provisions.”

- **Nelson Mandela Bay Municipal Bioregional Plan (NMBMBP).**
- **Coega IDZ Open Space Management Plan**
- **Eastern Cape Biodiversity Conservation Plan (ECBCP)**
- **Coega Development Corporation Architectural and Landscape Design Guidelines**

The Coega Industrial Development Zone and Port of Ngqura goal is to provide a world class, internationally attractive and competitive IDZ with purpose-built infrastructure and a first-class bulk cargo deepwater port. The Architectural and Landscape Design Guidelines set out the design directives and guidelines within which individual sites are to be developed. The Design Guidelines seek to achieve an attractive development of distinction without impinging on the creativity of designers or detracting from the corporate identity of individual developers and tenants. An overall integrity of the development is sought which adds address-value and appreciated property values to each development within the Coega IDZ. Working within the framework provided by the Design Guidelines, a Design Review Committee will review the developments intended for individual sites. The reason of subjecting individual developments to design review is intended not only to protect the value of the overall development but also the interests of individual developers who will have the security of knowing that all developments and investors within the Coega IDZ will undergo the same process.

3 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section describes the biophysical and socio-economic environment that may be affected and the known baseline conditions, which may be affected by the proposed Tank Farm development.

3.1 Local Climate

The climatological data for the area is provided below. The information in this section was obtained from meteoblue weather.

3.1.1 Overview

The climatic zone of the Coega Industrial Development Zone (IDZ) is transitional between the temperate southern coastal belt and the subtropical eastern coast and, therefore, has warm summers and temperate winters.

3.1.1.1 Temperature and Precipitation

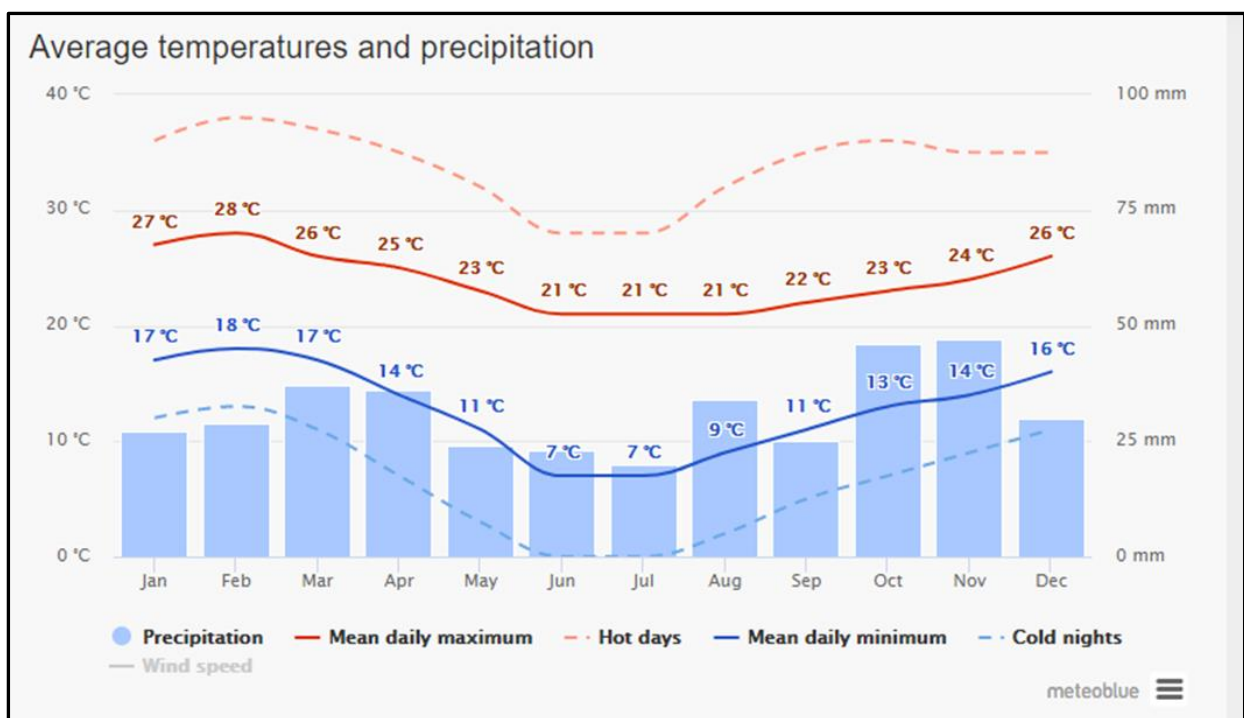


Figure 3: Average temperatures and precipitation for Coega

The mean annual temperature for the Coega area is 17.9 °C. The highest daily average maximum temperatures occur in January, February and March, with a high of 28 °C for February.

Precipitation occurs in all seasons with a slight increase in autumn and spring. The average annual rainfall is 412 mm per annum.

3.1.1.2 Wind

Figure 4 shows that strong winds are prevalent throughout the year in the area and Figure 5 shows that the prevailing wind direction is from South with some easterly winds during spring and summer and north-westerly winds occurring during autumn and winter.

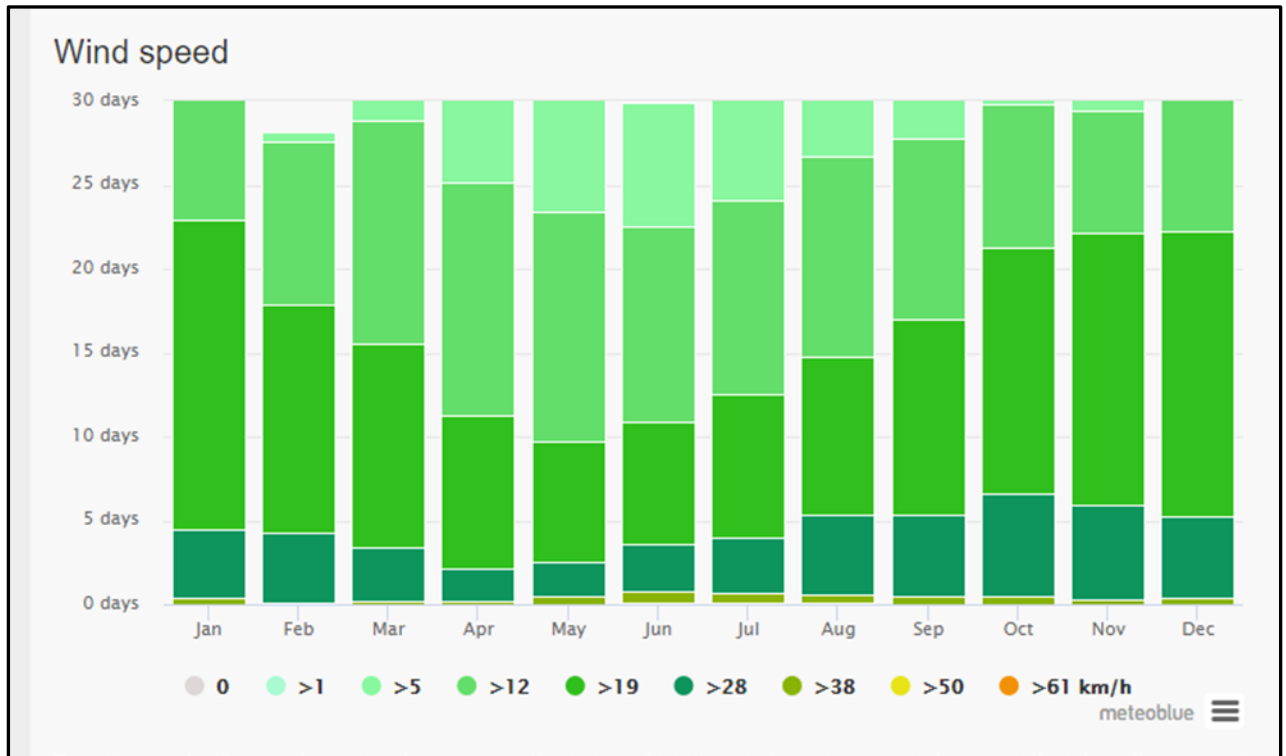


Figure 4: Wind Speed at Coega

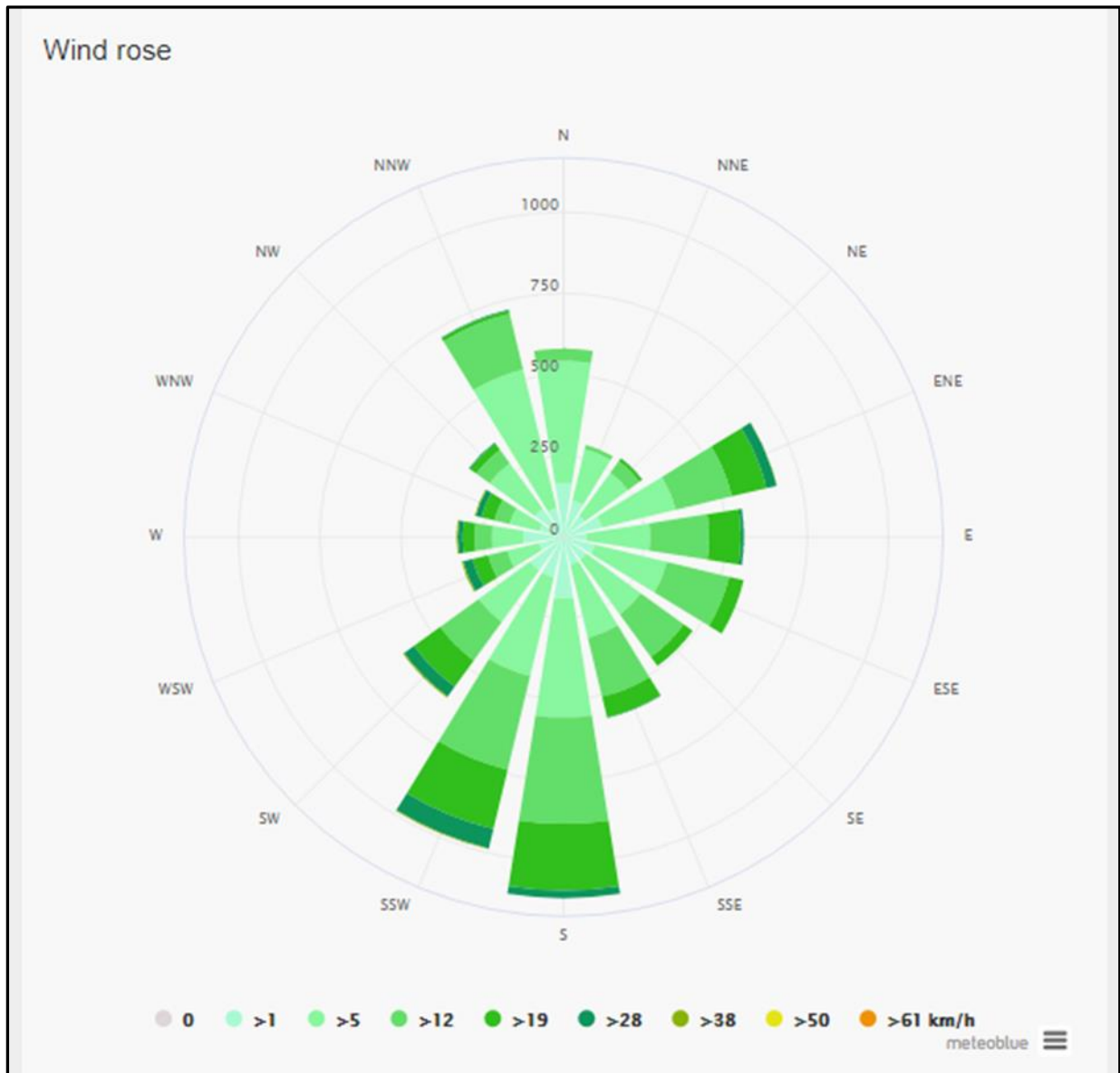


Figure 5: Coega Wind Rose

3.1.2 Implications

An Air Quality Impact Assessment will be conducted wherein more detailed weather data will be provided and the impact of the development on air quality will be investigated. The meteorological dataset, which was compiled by LAQS from on-site measurements within the IDZ, will be requested from the Coega Development Corporation (CDC).

3.2 Topography

3.2.1 Overview

The entire Zone 7, including the proposed development site is relatively flat with an average elevation of ~65 mamsl. In Zone 10, situated immediately south of Zone 7, from coastline, at sea level, the elevation

rises mildly for the first ~250 m inland. Thereafter, the gradient increases rapidly within a relatively short distance, creating a series of steep dunes. It then flattens out at a height of ~60 mamsl.

3.2.2 Implications

The proposed development will result in minor changes to the topography of the site. Mitigation measures to ensure management of erosion will be included in the EMPr.

3.3 Geology and Soils

3.3.1 Overview

The geology around Port Elizabeth is characterised by the Peninsula Formation sandstones of the Table Mountain Group. This formation consists of coarse-grained super-mature quartzitic sandstone and is relatively erosion resistant. This formation forms the bedrock of Algoa Bay and emerges as outcrops in the bay as the islands of St Croix, Jahleel, Bird and Brenton, and on land as the Coega Kop. The areas between the islands are filled with recent marine deposits of the Alexandria Formation, which directly overlie the mudstones of the Kirkwood Formation. The geology of the Coega IDZ is characterised by coastal limestone, overlaid by calcareous sands blown onshore. The Alexandria Formation is approximately 1`5 m thick and consist of calcretes, shelly sands, gravels, silts and clays and is directly underlain by the Kirkwood and Sundays River Formations. These formations comprise low permeability mudstone that weather to clay. These formations also range in thickness from approximately 10 m near Coega Kop to > 1000m towards the centre of the Algoa Basin to the south. The rocks of the Alexandria Formation have low permeability and therefore the groundwater remains in contact with the host rock for some time, increasing g the potential for leaching of salts from the formation into the groundwater. As a result, the rocks yield limited volumes and relatively poor-quality groundwater. The Coega fault extends from west of the Groendal dam eastwards towards the coast, dipping at between 30 and 60 degrees for approximately 120 km. It is a normal tensional fault with a vertical southward throw of 500 m to 100 m. This geological feature needs to be considered during the design of large structures, by means of conducting geotechnical studies within the area (SRK Consulting, 2006).

3.3.2 Implications

A Geotechnical Study will be undertaken and will be included in the EIA Report. The EMPr will also include measures to mitigate against erosion.

3.4 Air Quality

3.4.1 Overview

SRK Consulting Engineers (2006) indicated in their Final Scoping Report for the rezoning of the remainder of the Coega IDZ that the air quality in Port Elizabeth, at that stage was relatively good, which allowed for

the establishment of an industrial area, and the opportunity to manage emissions in a way that strives to maintain the good air quality standard.

Coega has an air quality monitoring network, consisting of three monitoring stations; at the salt works, Amsterdamplein and one in Motherwell. Data at the monitoring stations is recorded as 5-minute averages. The monitoring stations at Amsterdamplein and the salt works measure total suspended particulates (TSP), nitrous oxides (NO_x) and sulphur dioxide (SO₂) as well as temperature, relative humidity, wind speed and wind direction. In addition, the station at the salt works measures wind speed in the vertical plane, atmospheric pressure, solar radiation and rainfall. The monitoring station at Motherwell measures NO_x and SO₂ and Ozone and particulate matter less than 10 microns (PM10) in size, in addition to the standard meteorological variables.

3.4.2 Implications

Lethabo Air Quality Specialists CC (LAQS) was appointed by CDC in 2014 to conduct all cumulative air quality impact assessments for new industrial developments in the IDZ. This entailed, *inter alia*, the compilation of an extensive emission database for the area. LAQS was also contracted by the CDC to carry out a cumulative air quality impact assessment of emissions from all sources within the boundaries of the IDZ for the Aquaculture Development Zone (Zone 10) EIA. The impact assessment focused on those air pollutants common to most industries and for which official ambient air quality standards have been published by the Department of Environmental Affairs. These are particulates smaller than 10 micrometre (PM10), sulphur dioxide (SO₂), nitrogen dioxide (NO₂) and carbon monoxide. In view of the above, LAQS will be appointed to conduct the air quality impact assessment for the proposed development, due to their extensive background and experience of the area.

3.5 Land Use and Land Capability

3.5.1 Overview

The properties are zoned as “Special Purposes” and is located within the Petrochemical and Chemical Cluster, Zone 7 of the Coega IDZ. The site is currently vacant land, with no development or disturbance occurring, and consists of natural vegetation. The existing and planned land uses around the site is mixed and includes the following uses:

- A designated Aquaculture Development Zone in Zone 10 of the Coega IDZ to the south of the study area;
- A biodiesel fuel plant to the north of the study area;
- The Cerebos retail salt plant to the north of the study area;
- The planned Transnet Tank Farm to the north-west of the study area;
- An electrical sub-station to the north-east of the study area; and
- Open space and electrical servitude to the west.

3.5.2 Implications

The proposed development is situated in Zone 7 of the Coega IDZ, which is designated for petrochemical and chemical industries and is located close to the Port of Ngqura and therefore, in line with the planning guidelines of the Coega Development Corporation for the Coega IDZ.

3.6 Availability of Services

3.6.1 Overview

CDC obtained approval for the installation of ancillary infrastructure, including service roads, stormwater drainage systems, water supply, sewerage systems, electrical and telecommunication infrastructure associated with the establishment of an IDZ as indicated in the 2006 EIA.

Availability of services will be confirmed in the EIA Phase by the CDC and the NMBM. The municipal water supply and sewer connections will be on the southern boundary of the development site as indicated on the Draft Site Development Plan.

Electrical services are currently in the process of being confirmed. As such, more information will be provided in the EIA Report.

3.6.2 Implications

An Outline Scheme Report will be compiled which will include information on the required services for the development. Confirmation of availability of services will also be provided by the CDC and the NMBM and included in the EIA Report.

3.7 Roads

3.7.1 Overview

The N2 Highway runs through the Coega IDZ approximately 1,6 km north of the development site. Access to the site will be obtained from the existing road running north to south from the N2 on the eastern boundary of the site. The 2006 EIA also covered the 'zone splitter road' and the main access roads from the N2 highway to the proposed Zone 10 and Zone 7, as indicated in the EIA. The Development Framework Plan was also amended in 2006.

3.7.2 Implications

A Traffic Impact Assessment will be undertaken and will be included in the EIA Report to determine that the impact of increased traffic on existing and planned roads and to ensure that the proposed development does not result in unacceptable levels of traffic in the area. Recommendations made by the Traffic Engineer will be included in the EIA Report.

3.8 Noise

3.8.1 Overview

There are no existing noise factors currently emanating from the proposed site. The surrounding areas are not yet developed, but several developments are planned to commence in 2018 to 2019. The following standards and bylaw need to be implemented by all IDZ investors:

- SANS10103:2008; and
- Nelson Mandela Bay Municipality Noise bylaw.

3.8.2 Implications

The proposed development may result in increased noise levels from construction and operational activities on the site. This potential impact will be assessed during EIA Phase and relevant mitigation measures (as necessary) will be included in the EMP. It should be noted that the proposed development is located in an area designated for the proposed land use type and, therefore no significant impact is expected.

3.9 Socio-Economic Environment

3.9.1 Overview

The following information was obtained from the Fourth Edition of the Eastern Cape Socio-Economic Analysis and Forecast (EC SEAF), 2016, published by the CDC.

The Eastern Cape (EC) is the third most populous province in SA, with its population estimated at 6.9 million in 2015. Despite the province being the second largest in the country, with a land area of 168 966 square kilometres, its population has been one of the slowest growing out of all the provinces. Over the years, the province saw a gradual decline in the percentage share of the country's total population. This has been linked to the increase in migration of its inhabitants to other provinces with better economic opportunities such as Gauteng (GP), the Western Cape (WC) and KwaZulu-Natal (KZN). Some of the key challenges facing the EC include consistently low economic growth and one of the highest unemployment rates in the country. The unemployment rate in the EC is currently the fourth highest (28.6 percent in 2Q2016) in SA after the Free State (FS), GP and Mpumalanga (MP).

In recent years, the EC economy has shown lower economic growth compared to the country. The province's economy grew by only 1 percent in 2014, a decline of 0.2 percentage point from the previous year. Its economic structure is characterised by a concentration of economic activities in urban areas and is dominated by the tertiary sector (79 percent) and the secondary sector (19 percent). Despite the EC being predominately rural, more than half of its economic output comes from the Nelson Mandela Bay Metro (31 percent) and Buffalo City (21 percent).

Strong interventions for economic growth, particularly in the labour-intensive sectors are vital for the EC's economic development. The levels of unemployment and poverty in rural areas remain major challenges

in the province. With the least absorption rate (32.6 percent) compared to other provinces, the youth remain the most vulnerable in the labour market as they lack skills and the work experiences needed to find employment and are the most vulnerable to HIV infection. Although, the EC has made some significant progress to enhance delivery of basic services, the province is still far behind compared to other provinces for the delivery of services such as water, energy and sanitation. Greater efforts are needed for effective service delivery for the province, particularly in the rural areas to improve the socio-economic standards of the EC population.

The EC population has been one of the slowest growing in the country with an annual average of less than 1 percent. Over the past 21 years, the province's population has increased by 1.1 million to reach 6.9 million in 2015. The EC population is dominated by the African/Black group which comprises 87.9 percent of the total population. The Indian/Asian and Coloured population groups have grown the most in the past 10 years. During this period, the White population group has experienced the highest migration with a negative annual average growth of 0.4 percent.

This province is divided into six district municipalities (Alfred Nzo, Amathole, Chris Hani, Joe Gqabi, O.R Tambo and Sarah Baartman) and two metros (Nelson Mandela Bay and Buffalo City).

The spatial distribution of the EC's population across its district municipalities has slightly changed over the years, with the municipalities maintaining their respective proportions. However, between 1995 and 2015, the population share of the district municipalities such as Amathole and Sarah Baartman declined by 2.5 percentage points and 1.2 percentage points, respectively. Despite being the largest district municipality in the province, Sarah Baartman has remained the second least populated region with 6.7 percent of total population of the EC in 2015. O.R Tambo district has been the most populated region (20.9 percent) followed by Nelson Mandela Bay Metro (17.3 percent) and Amathole district (13.6 percent).

Employment numbers in most of the provinces in SA continue to rise but by not enough to curb the high level of unemployment, as the absorption rate has not recovered since 2008 financial crisis. The EC's employment in 2015 has seen a positive annual growth of 5.7 percent. This improved performance can be attributed to different policies and strategies implemented by the provincial leadership and development agencies. EC employment is dominated by the Community, Social and other Personal Services (CSPS) industry, taking up to 29 percent of the total employed in 4Q2014 which decreased by 2 percentage points to reach 27 percent of the total employed people in 4Q2015. Unemployment is regarded as one of the major challenges facing SA and the EC Province. The EC's labour force comprises skilled, semi-skilled and unskilled labour, while its economic structure is dominated by the tertiary sector which requires highly skilled labour. To reduce the rate of unemployment, the development of strategic sectors such as agriculture, livestock farming and tourism is needed for the province. The EC is the second largest province after the Northern Cape, occupying approximately 14 percent of the total area in SA.

Up to date socio-economic baseline data relevant to the development of the Coega ADZ will be included in the EIA report.

3.9.2 Implications

The proposed development will result in numerous job opportunities and a boost to the economy.

3.10 Biodiversity

3.10.1 Overview

3.10.1.1 Terrestrial Ecosystem

According to Mucina and Rutherford (2006) the study area falls within the Coega Bontveld Vegetation Type and borders on the Algoa Dune Strandveld Vegetation Type (refer to Figure 6). Particulars of the vegetation type are provided in Table 5.

Table 5: Coega Bontveld Vegetation Type

Name of vegetation type	Coega Bontveld
Code as used in the Book - contains space	AT7
Conservation Target (percent of area) from NSBA	19%
Protected (percent of area) from NSBA	10.2% (+3.8%)
Remaining (percent of area) from NSBA	93.5%
Description of conservation status from NSBA	Least threatened
Description of the Protection Status from NSBA	Poorly protected
Area (sqkm) of the full extent of the Vegetation Type	246.22
Name of the Biome	Albany Thicket Biome
Name of Group (only differs from Bioregion in Fynbos)	Albany Thicket
Name of Bioregion (only differs from Group in Fynbos)	Albany Thicket

Distribution

Eastern Cape Province: North-east of Port Elizabeth just inland of Algoa Bay; mainly around Coega, but also in small patches in Addo (Zuurkop; Pentzhorn & Olivier 1974). Altitude 0–400 m.

Conservation

Target 19%. A total of 10% of this vegetation unit is protected in the Greater Addo Elephant National Park and almost 4% in the private Grassridge Nature Reserve. Some 4% of Coega Bontveld has been altered by cultivation and 2% by urbanisation. The recent building of the traffic infrastructure around the new harbour near Port Elizabeth has encroached heavily into the area of the Coega Bontveld and the construction of an Industrial Development Zone in the area constitutes a serious threat to this vegetation type.

It is for this reason that the CDC's Open Space Management Plan was developed, which protects Mesic Succulent Thicket and Bontveld, amongst other vegetation types. Erosion is moderate to low. The selected

site falls within the approved development areas identified for Coega IDZ. It will not impact on the open space areas identified in terms of the approved OSMP (2014 rev1).

3.10.1.2 Eastern Cape Biodiversity Conservation Plan (ECBCP)

The main purpose of the ECBCP is to serve as the primary decision support tool for the biodiversity component of the Environmental Impact Assessment (EIA) process, to inform protected area expansion and biodiversity stewardship programmes in the province and to serve as a basis for development of Bioregional Plans in municipalities within the province.

According to the ECBCP part of the proposed site falls within a terrestrial Critical Biodiversity Area Zone 2. Please refer to Figure 7.

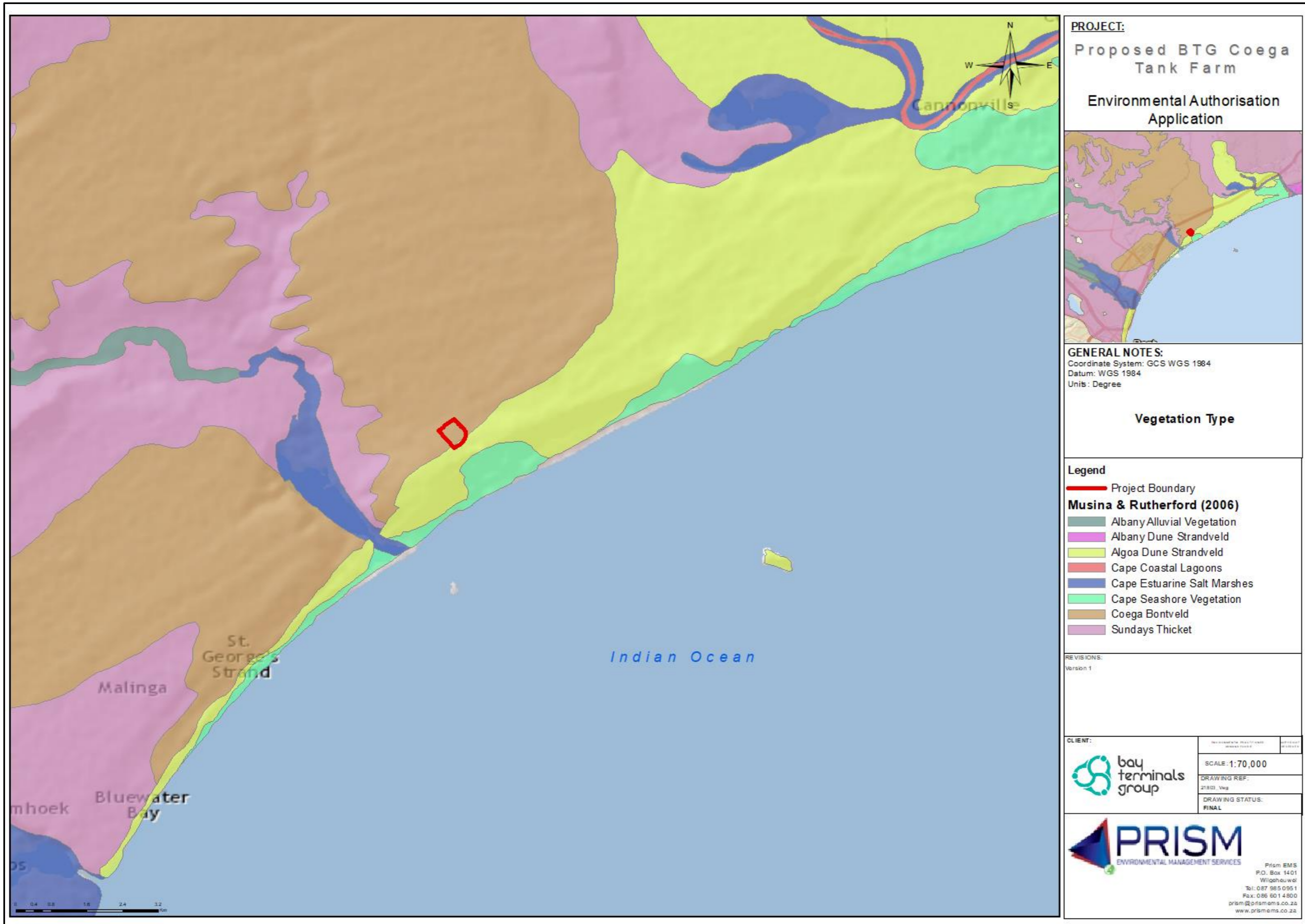


Figure 6: Vegetation Type (Mucina & Rutherford, 2006)

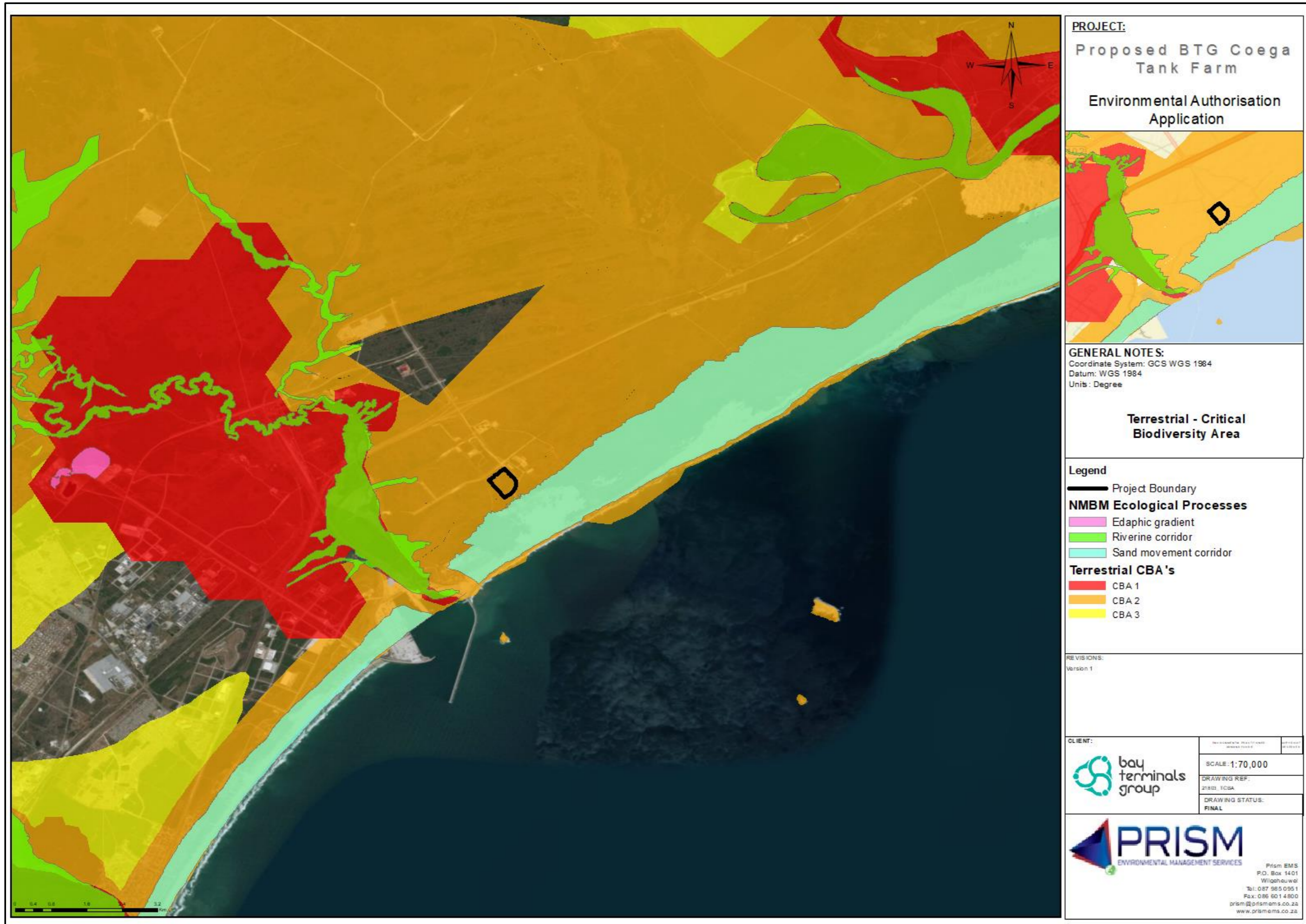


Figure 7: Eastern Cape Biodiversity Conservation Plan

3.10.1.3 The Nelson Mandela Bay Municipality Bioregional Plan

The vegetation type for the area where the development is proposed is Grassridge Bontveld in terms of the NMBM Bioregional Plan. The Bioregional Plan lists this vegetation type with an ecosystem threat status of Vulnerable. The threatened status of a habitat is based on the number of threatened species within the municipal area. The Ecosystem Threat Status of the vegetation types within the municipality was assessed using biodiversity targets and differs from the National List of Threatened Ecosystems in Notice 1002 of 2011. The difference is because of the fine-scale spatial mapping of the vegetation types within the NMBM area as opposed to a broader level of mapping that informed the national listing. According to the Bioregional Plan, the proposed development site does not fall within a Critical Biodiversity Area, but is listed as 'other natural areas', where there are no biodiversity targets. The CBA network within the Coega IDZ and the Ngqura Port was designed based on the target requirements for the various components of biodiversity within this area and the Coega Development Corporation's Open Space Management Plan, 2014 (OSMP) Revision 1 (as approved by DEA) (refer to Figure 8).

No significant features in terms of the Open Space Management Plan is located on the study area, other than 'natural vegetation' (refer to Figure 9).

3.10.1.4 Important Bird Areas

The proposed development does not occur within any Important Bird Area (IBA). The closest IBA is the Algoa Bay Islands: Addo Elephant National Park, within the Algoa Bay, south of the study area (refer to Figure 10).

3.10.1.5 Protected Areas

The proposed development does not fall within a protected area. The closest protected areas include the Addo Elephant National Park (statutory reserve). Other non-statutory reserves in proximity to the Coega IDZ include the Swartkops Valley Local Authority Nature Reserve, the Grassridge Private Nature Reserve, the Tregathlyn Game Farm and the Penhurst Rly State Reserve (refer to Figure 11).

3.10.2 Implications

An Ecological Specialist Study will be undertaken to determine the impacts of the proposed development on biodiversity at the site.

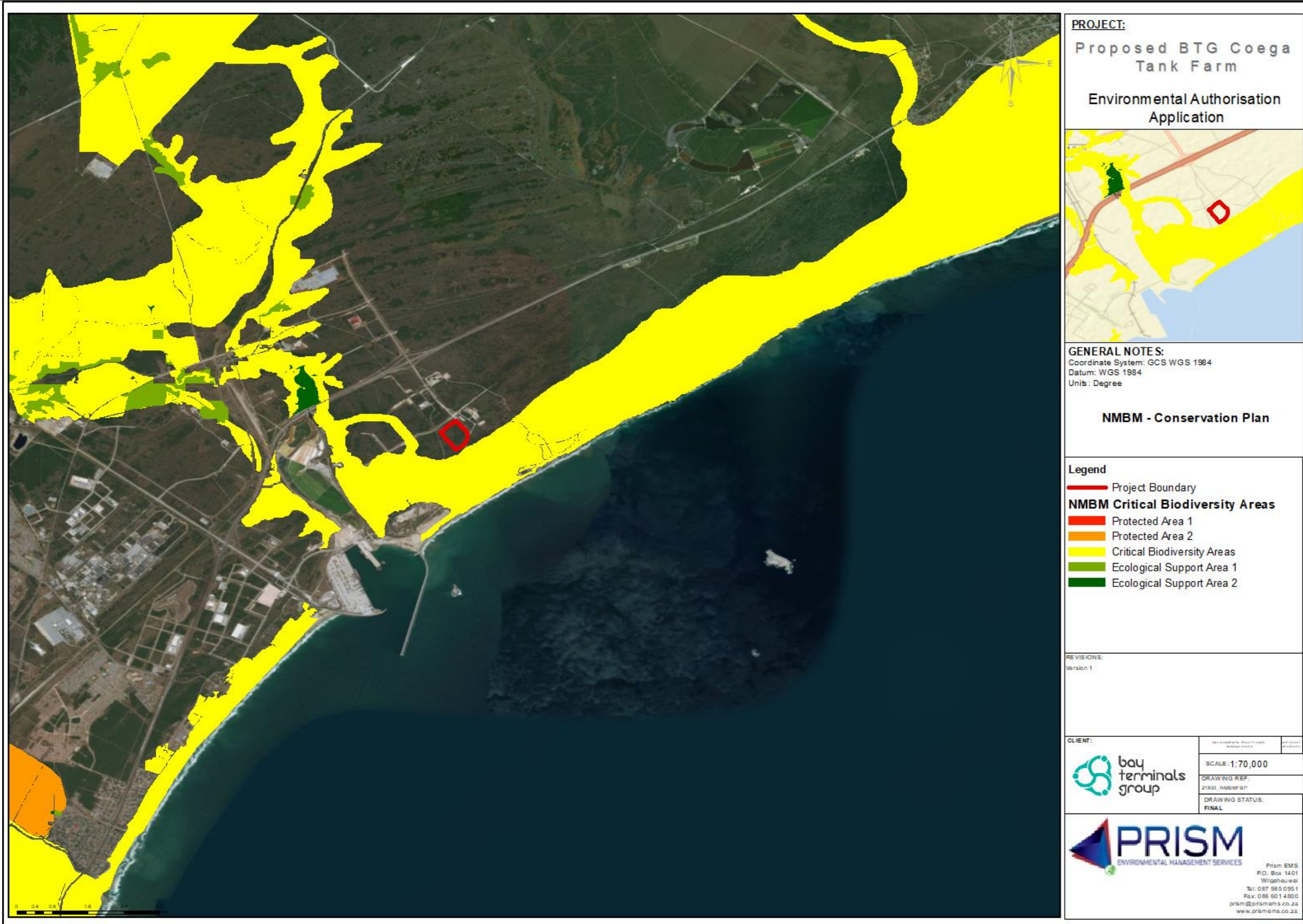


Figure 8: Nelson Mandela Bay Municipality Bioregional Plan

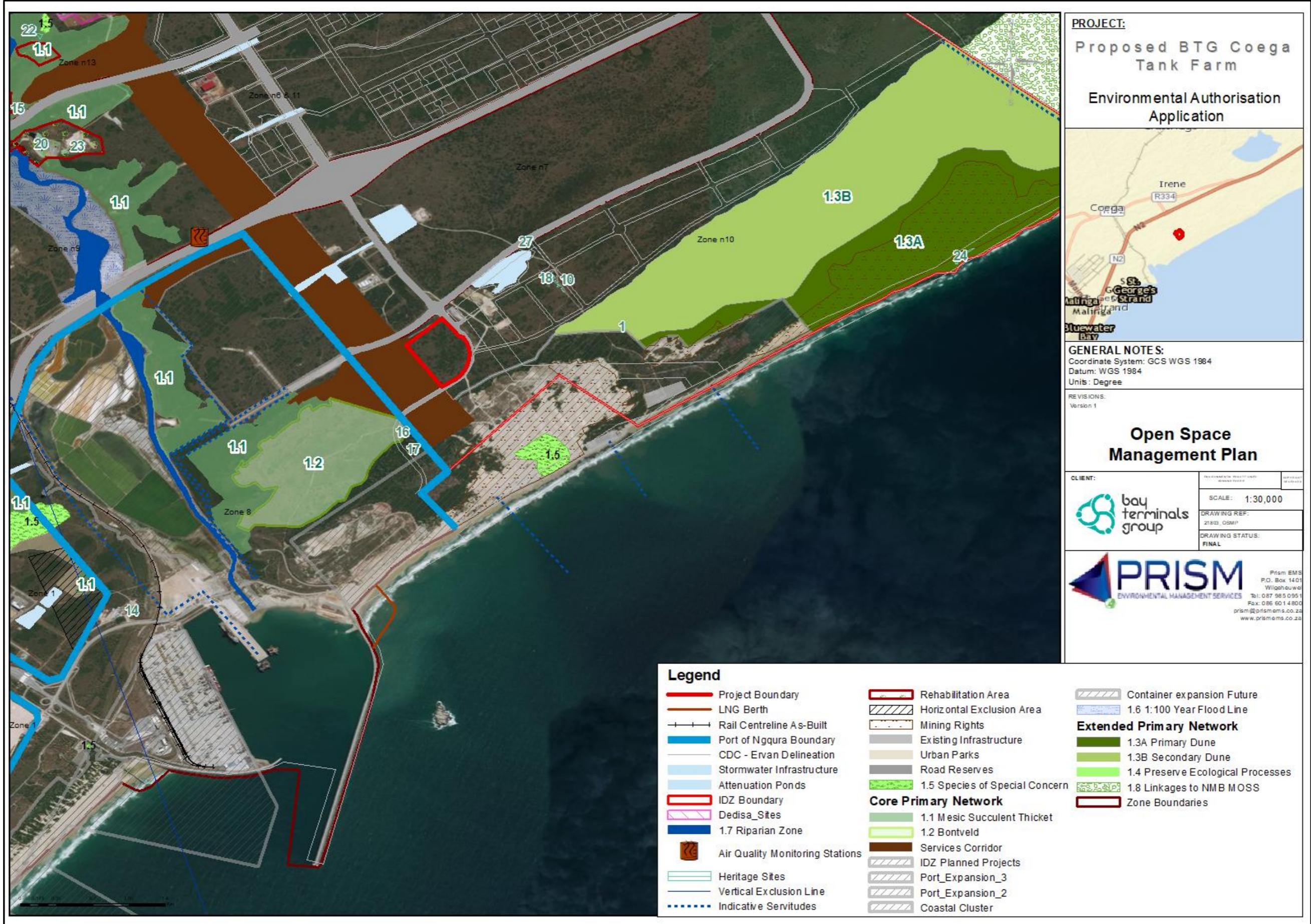


Figure 9: Coega IDZ Open Space Management Plan (2014)

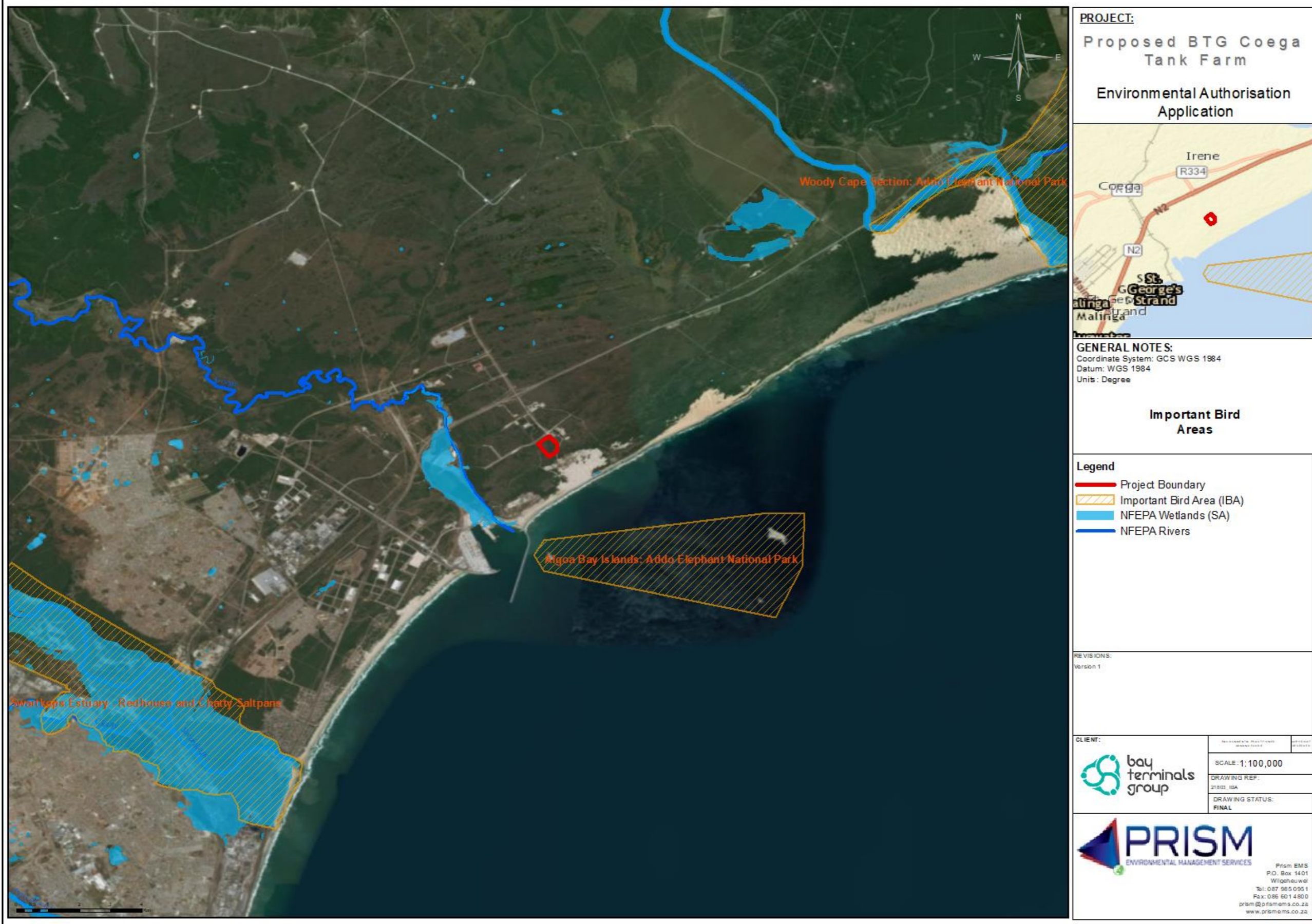


Figure 10: Important Bird Areas

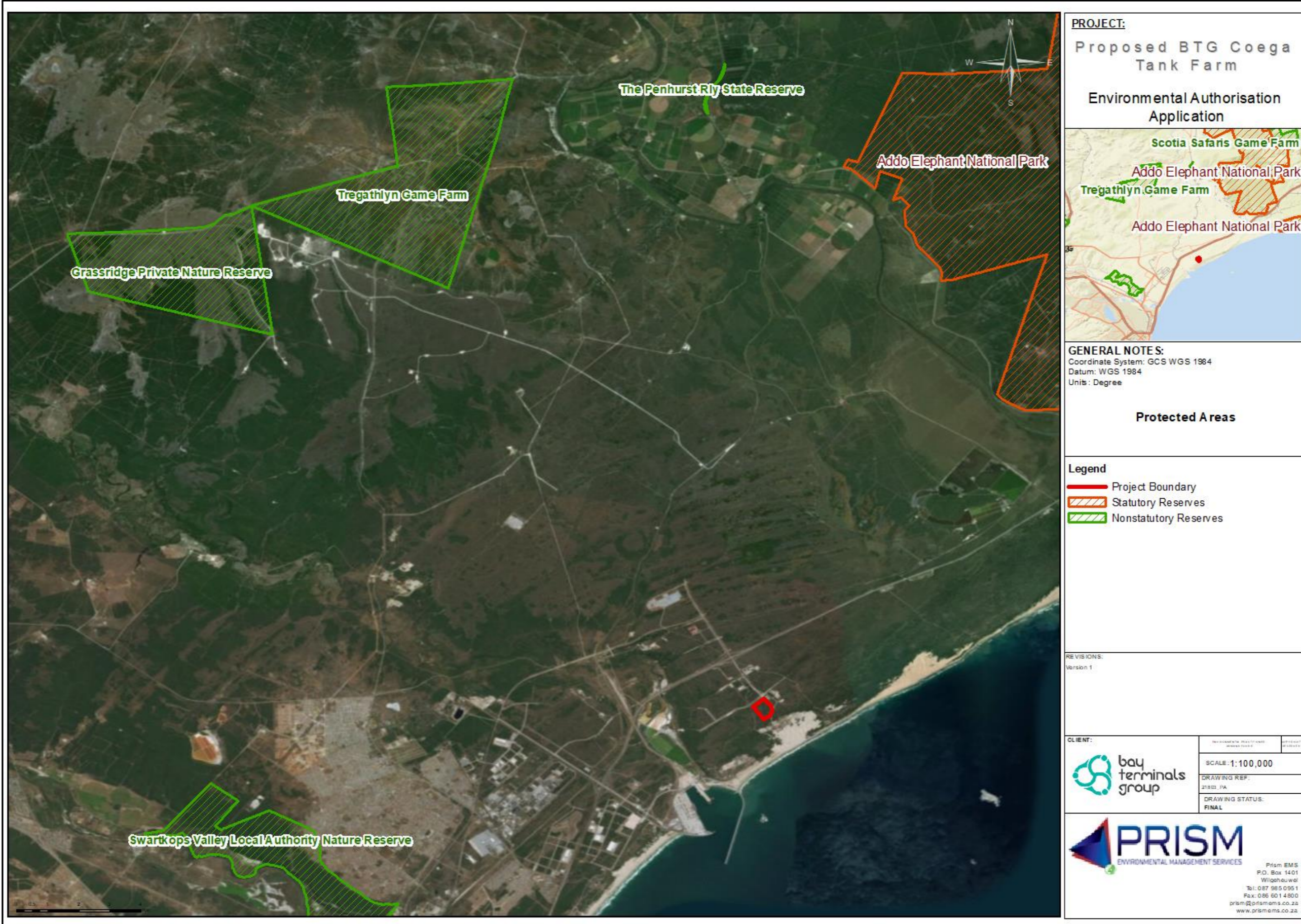


Figure 11: Protected Areas

3.11 Surface Water

3.11.1 Overview

The site falls within Quaternary catchment area M30B and is part of the new Mzimvubu-Tsitsikamma Water Management Area (WMA). No watercourses are located on or on the area surrounding the proposed development site (refer to Figure 12Figure 12).

The Coega Catchment Area is approximately 45 km in length, 15 km in width and has a total area of approximately 550 km². The Coega River is the most prominent surface water feature within the Coega IDZ. (SRK, 2006). No surface water features occur on the site itself and the Coega River is located to the west of the proposed development site. The Sundays River is located further to the East of the Coega IDZ.

3.11.2 Implications

A detailed stormwater management plan will be developed for the development and provided with the EIA Report as a mitigation and management measure to prevent and control stormwater and run-off from the study area to prevent contamination of the environment. No further aquatic ecological assessments are envisaged to be required as part of the EIA phase for the proposed development.

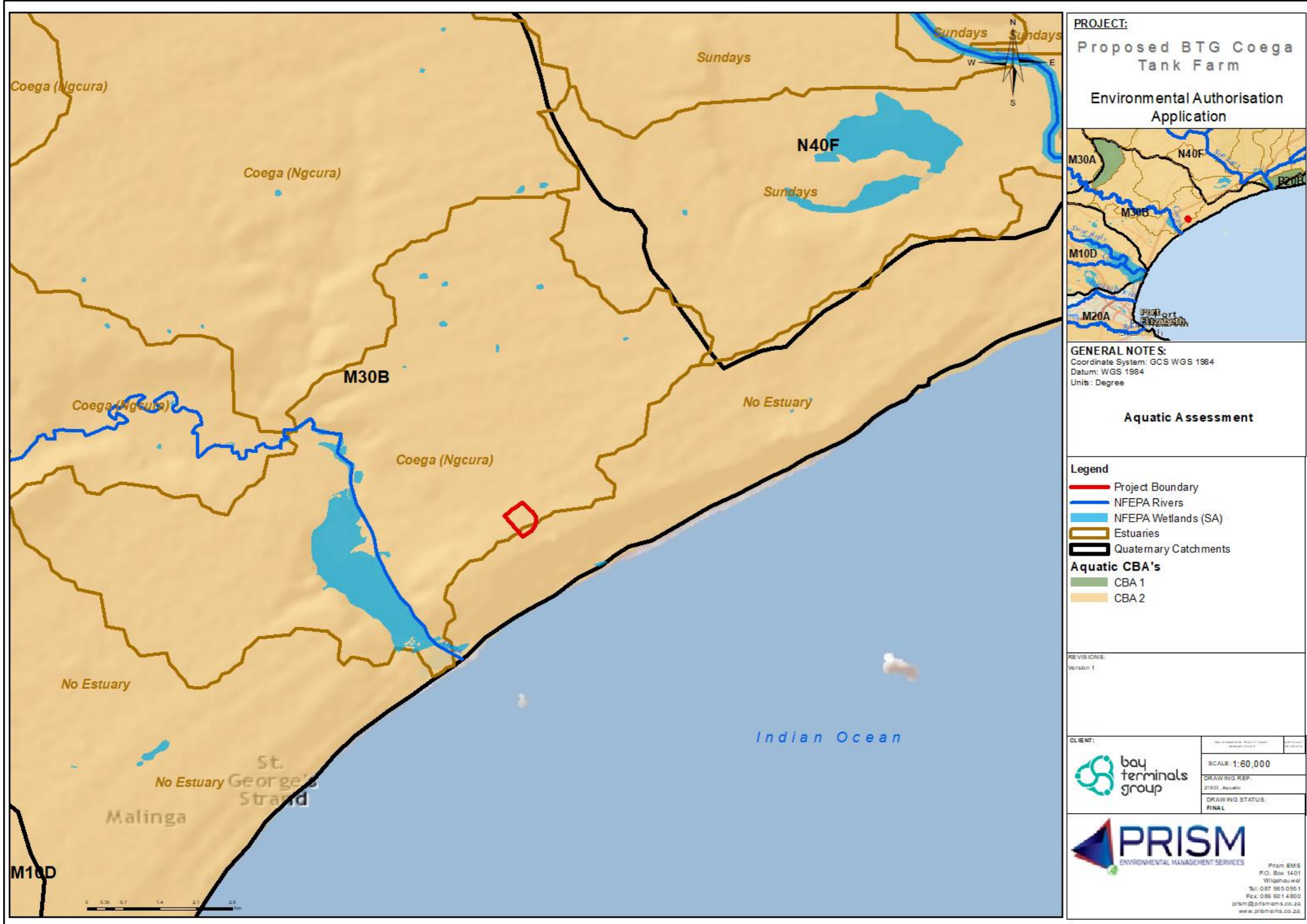


Figure 12: Aquatic Map

3.12 Groundwater

3.12.1 Overview

The southern part of the Coega IDZ is underlain at depth by an artesian aquifer formed by the anstones and quartzites of the Table Mountain Group. Confining this aquifer is a succession of eastward-thickening Cretaceous formations of the Uitenhage Group, which is up to 1 200 thick near the coast. It is one of the few artesian systems in southern Africa and the only one of practical importance in the country (SRK, 2006). Overexploitation of the aquifer has led to several periods where artesian yields have dropped. Groundwater quality in the Coega Ridge Aquifer does not deteriorate significantly along the low pat from west to east. The water is generally mildly acidic due to oxidation of pyrite in the Table Mountain Group. Groundwater is currently not utilised extensively in the Coega IDZ and it is also not the intention in future. The general use of groundwater is for agricultural purposes. The potential for contamination of the aquifer is not significant due to the regional flow direction of the groundwater being towards the coast and the aquifer is protected by an aquiclude and is an artesian system. The potential to impact on neighbouring properties is also low, due to groundwater flow direction (SRK, 2006).

Groundwater levels at Coega vary approximately between 3 and 5 m below ground level, which is just above the contact between the permeable sands and the underlying impermeable clay. The shallow groundwater is generally characterised by a high natural salinity and total dissolved solids content (SRK, 2006).

3.12.2 Implications

Due to the nature of the proposed development, it has the potential to contaminate the groundwater resources in the area, although the potential is low, this aspect will further be investigated during the EIA phase. Leakage abatement will also be part of the design of the pipelines as required by the Competent Authorities.

3.13 Archaeology and Cultural Heritage

3.13.1 Overview

Historical, archaeological and palaeontological assessments have been conducted for the Coega IDZ, Zones 1 to 14, excluding the area allocated to the Port of Ngqura in Zone 8. The information in this section has been derived from the existing studies as received from the CDC.

- **Historical Heritage**

No culturally sensitive pre-18th century structures were observed in the designated zones although oral history might show a variety of cultural groups (such as Early, Middle and Stone Age man, San, Khoekhoen and Black Xhosa speaking peoples) passing through the territory. The Trekboer, Dutch, and British 1820 Settlers, who also inhabited the area, left some remnants of their cultures in the form of buildings and demarcated grave sites.

According to the OSMP, 2014, which were informed by the heritage assessments, indicate that no historical features occur on the proposed development site (refer to Figure 9).

- **Palaeontological Heritage**

The Coega IDZ, situated inland of Algoa Bay about 20km to the northeast of Port Elizabeth (Eastern Cape Province) is underlain by sedimentary rocks that range in age from c. 470 million years ago to the present. These sediments are assigned to ten rock successions within the Palaeozoic Table Mountain Group, the Mesozoic Uitenhage Group and the Caenozoic Algoa Group plus unnamed alluvial deposits of Tertiary / Quaternary age. Most of these rock units contain fossil heritage of some sort but in most cases, this is very limited. The notable exceptions are three marine successions – the Sundays River Formation of Early Cretaceous age (c. 136 Ma = million years old), the Alexandria Formation of Miocene / Pliocene age (c. 7-5 Ma), and the Salnova Formation of Mid Pleistocene to Holocene age (< 1 Ma). Important but rare fossils of dinosaurs and plants are also known from the Early Cretaceous Kirkwood Formation, but so far only outside the Coega IDZ. Levels of bedrock exposure within the Coega IDZ are generally very low due to extensive cover by superficial drift (e.g. Soil, alluvium, in situ weathering products) as well as by surface calcrete (pedogenic limestone) and dense vegetation. Man-made excavations such as road and railway cuttings, stormwater drainage channels, reservoirs and quarries, of which there are a considerable number within the Coega IDZ, often provide the best opportunities to examine and sample fresh, potentially fossiliferous bedrock.

- **Archaeological Heritage of the Coega IDZ**

Early Stone Age (approximately 250 000 - 1,5 million years old) stone tools are found throughout the area. Large handaxes were reported from Coega Kop and were also collected from the banks and gravels of the Coega River and between the N2 national road and the salt works (Albany Museum collections). One of South Africa's most important Earlier Stone Age finds and excavations (Deacon 1970) was conducted a few kilometres west of the surveyed area, at Amanzi Springs. In a series of spring deposits, a large number of stone tools were found in situ to a depth of 3-4 metres. Remarkably wood and seed material preserved in the spring deposits, possibly dating to between 250 000 to 800 000 years old, were found.

Middle Stone Age (250 000 - 30 000 years ago) and Later Stone Age (20 000 years ago to historical times) stone tools are also found in the gravels and along the banks of the Coega River. These stone artefacts, like the Earlier Stone Age handaxes are in secondary context with no other associated archaeological material.

Occurrences of fossil bone remains, and Middle Stone Age stone tools were also reported south of Coega Kop (Gess 1969). During excavations the remains were found in the surface limestone, but the bulk of the bone remains were found some 1-1,5 metres below the surface. The excavations exposed a large number and variety of bones, teeth and horn cores. The bone remains included warthog, leopard, hyena, rhinoceros and ten different antelope species. A radiocarbon date of older than 37 000 years was obtained for the surveyed area. The most common archaeological sites found in the area are shell middens. They are relatively large piles of marine shell and represent the campsites of San hunter-gatherers (dating from as

old as 6 000 years ago), Khoekhoen pastoralists and KhoeSan (dating from the past 1 800 in the region) peoples who lived along the immediate coast and collected marine foods on a daily basis. The Khoekhoen people were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa as early as 2 000 years ago.

In general, these shell middens date from the past 6 000 years. They are found mainly opposite rocky coasts, but also occur along sandy beaches if there was a large enough source of white mussel. Shell middens are usually within 300m of the high-water mark but can be found up to 5 km inland (Binneman 2001, 2005). Mixed with the shell and other marine food waste, are other terrestrial food remains, cultural material and often human remains are found buried in the middens. Also associated with middens are large stone floors which were probably used as cooking platforms.

Shell middens and the remains of at least 12 clay pots were reported by Rudner (1968) west of the Coega River Mouth. Many shell middens were also situated east of Coega River Mouth. Several of the middens were sampled and excavated just before the harbour was constructed. Many middens, ceramic pot sherds (from Later Stone Age Khoekoen pastoralist origin - last 2 000 years) and other archaeological material, are situated between the Coega and Sunday's River Mouths. These remains date mainly of Holocene Later Stone Age (last 10 000 years). Human remains have also been found in the dunes along the coast.

3.13.2 Implications

Although no known heritage resources occur at the proposed site, the recommendations of these studies will be incorporated into the Environmental Management Programme for the project. The Provincial Heritage Resources Agency and SAHRA are notified and a copy of the Scoping Report was uploaded to the South African Heritage Information System (SAHRIS). Proof of this will be appended in Section 10.2.7 in the Final Scoping Report.

4 SCOPE OF PROPOSED PROJECT

4.1 Environmental Authorisation

An “Environmental Authorisation” means an authorisation granted by the competent authority of a listed activity in terms of Section 24 of the National Environmental Management Amendment Act, (Act No. 107 of 1998).

An application for Environmental Authorisation (EA) will be submitted to EC DEDEAT.

As activities under Listing Notice 2 and 3 of the 2014 EIA Regulations are triggered, a Scoping and EIA process is being conducted. The process being followed is detailed in Figure 13.

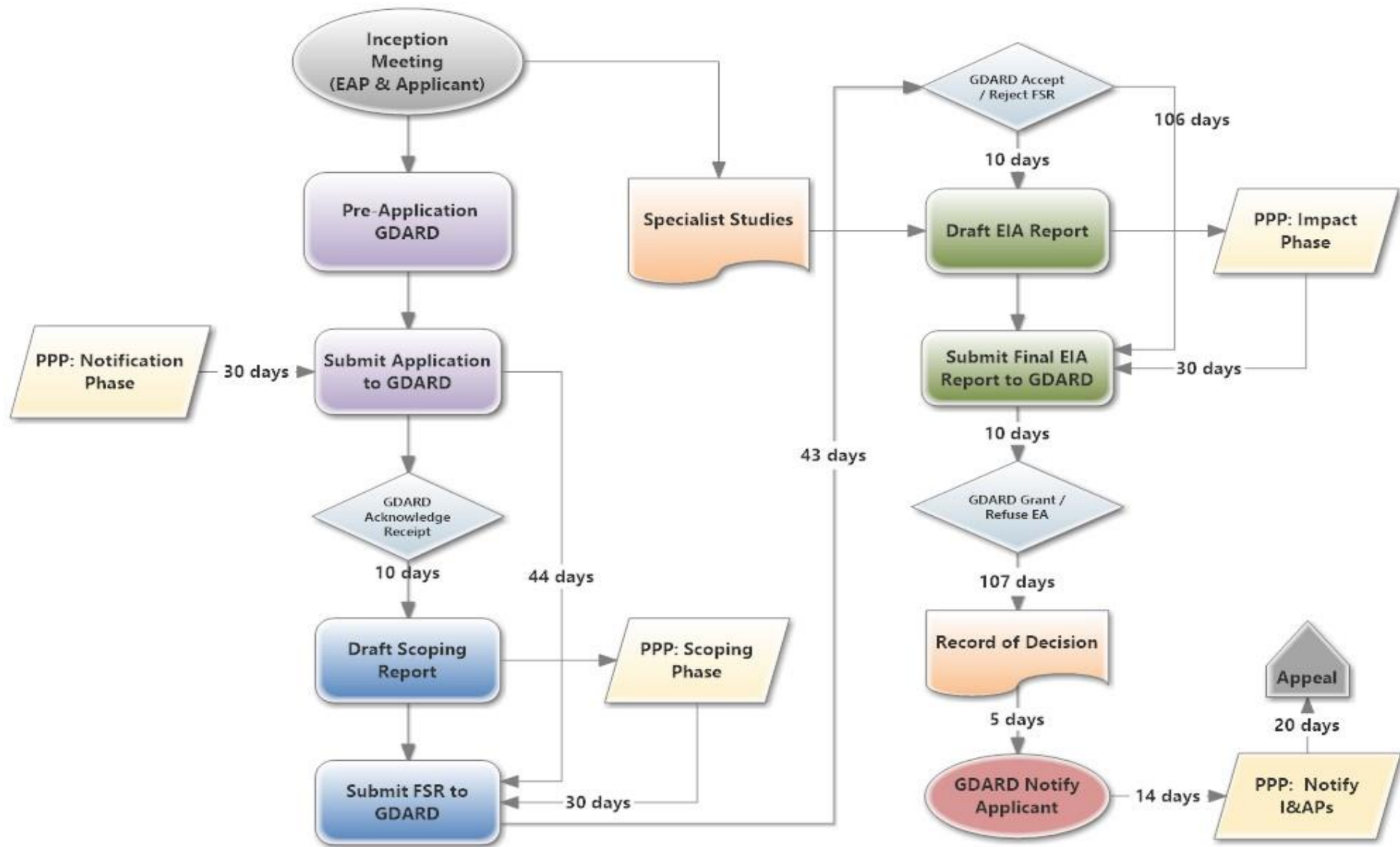


Figure 13: Proposed environmental authorisation process.

4.2 Listed Activities

In terms of the EIA Regulations and Listed Activities 2014 (introduced in Section 2.2.1) the activities that are triggered under the Listing Notices for this proposed development are provided in Table 6. Refer to Section 2 for a description and overview of the applicable legislative framework.

Table 6: Description of the Listed Activities Triggered under NEMA

Listing Notice	Activity	Description of Listed Activity	Interpretation
<i>NEMA: Listing Notice 2 (require Scoping and EIR)</i>			
GN R 984 4 December 2014 [as amended]	4	<i>The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres</i>	The applicant proposed to develop and operate facilities and infrastructure for the storage and handling of several dangerous goods including Diesel, ULP, LPG, HFO, Jet fuel and Paraffin, in containers with a combined capacity of more than 500 cubic metres.
	6	<i>The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent.</i>	The proposed activity requires a licence in terms of NEMAQA for permanent immobile liquid storage facilities at a single site with a combined storage capacity of greater-than 1000m ² .
	15	<i>The clearance of an area of 20 hectares or more of indigenous vegetation.</i>	The area to be cleared of indigenous vegetation is approximately 24 hectares.
<i>NEMA: Listing Notice 3 (require Basic Assessment)</i>			
GN R 985 4 December 2014 [as amended]	4	<i>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</i>	Internal roads wider than 4 metres will be developed.
		<i>The clearance of an area of 300m² or more of indigenous vegetation except where such clearance of indigenous vegetation is required for</i>	The area to be cleared of indigenous vegetation is approximately 24 hectares in extent. Part of the site falls within a Critical Biodiversity Area.

Listing Notice	Activity	Description of Listed Activity	Interpretation
		<p><i>maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p><u>(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West, and Western Cape provinces.</u></p> <p><i>i. Within any critically endangered or endangered ecosystem listed in terms of Section 52 of NEMBA or prior to the publication of such list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment, 2004.</i></p> <p><u>ii. Within critical biodiversity areas identified in bioregional management plan. plans;</u></p> <p><i>iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or</i></p> <p><i>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</i></p>	

The activities trigger both a basic assessment **and** scoping and impact assessment reporting processes, therefore a consolidated assessment process is required to be undertaken where the more detailed/thorough impact assessment process is to be followed i.e. **Scoping and EIR**.

In addition, the proposed development also triggers a listed activity in terms of NEMAQA and Listed Activities 2015 (introduced in Section 2.2.1), requiring an Air Emissions License. The Competent Authority for the Air Emissions License Application is the Nelson Mandela Bay Metropolitan Municipality. The listed activity is described in

Table 7: Description of the Listed Activities Triggered under NEMAQA

Category	Sub-Category	Listed Activity	Interpretation
4 Petroleum Industry, the production of gaseous and liquid fuels as well as petrochemicals from crude oil, coal, gas or biomass	<i>2.4 Storage and Handling of Petroleum Products</i>	All permanent immobile liquid storage facilities at a single site with a combined storage capacity of greater-than 1000 m ² .	The proposed activity requires a licence in terms of NEMAQA for permanent immobile liquid storage facilities at a single site with a combined storage capacity of greater-than 1000m ² . The applicant proposed to develop and operate facilities and infrastructure for the storage and handling of several dangerous goods including Diesel, ULP, LPG, HFO, Jet fuel and Paraffin.

Refer to Section 2 for a description and overview of the applicable legislative framework.

4.3 Description of Project Activities

The following section was derived from the draft process and project description by Nako Group Engineers (2018).

This process description was prepared at the preliminary engineering design stage with a view to inform the EIA specialists for the necessary Environmental studies and the Engineers to inform the preliminary cost estimate. It must be read in conjunction with the Process Flow Diagram [PFD] (refer to Figure 14).

The following section describes the processes and equipment for a new bulk petrochemical fuel store with ship to shore offloading, transfer piping, custody metering and numerous tanks and road tanker loading at a new facility in the Coega Industrial Development Zone 7. The Berth is in the Port of Ngqura and the bulk tank facility site planned for use is within 5 km of the berth. The materials are liquids and flammable hazardous chemicals.

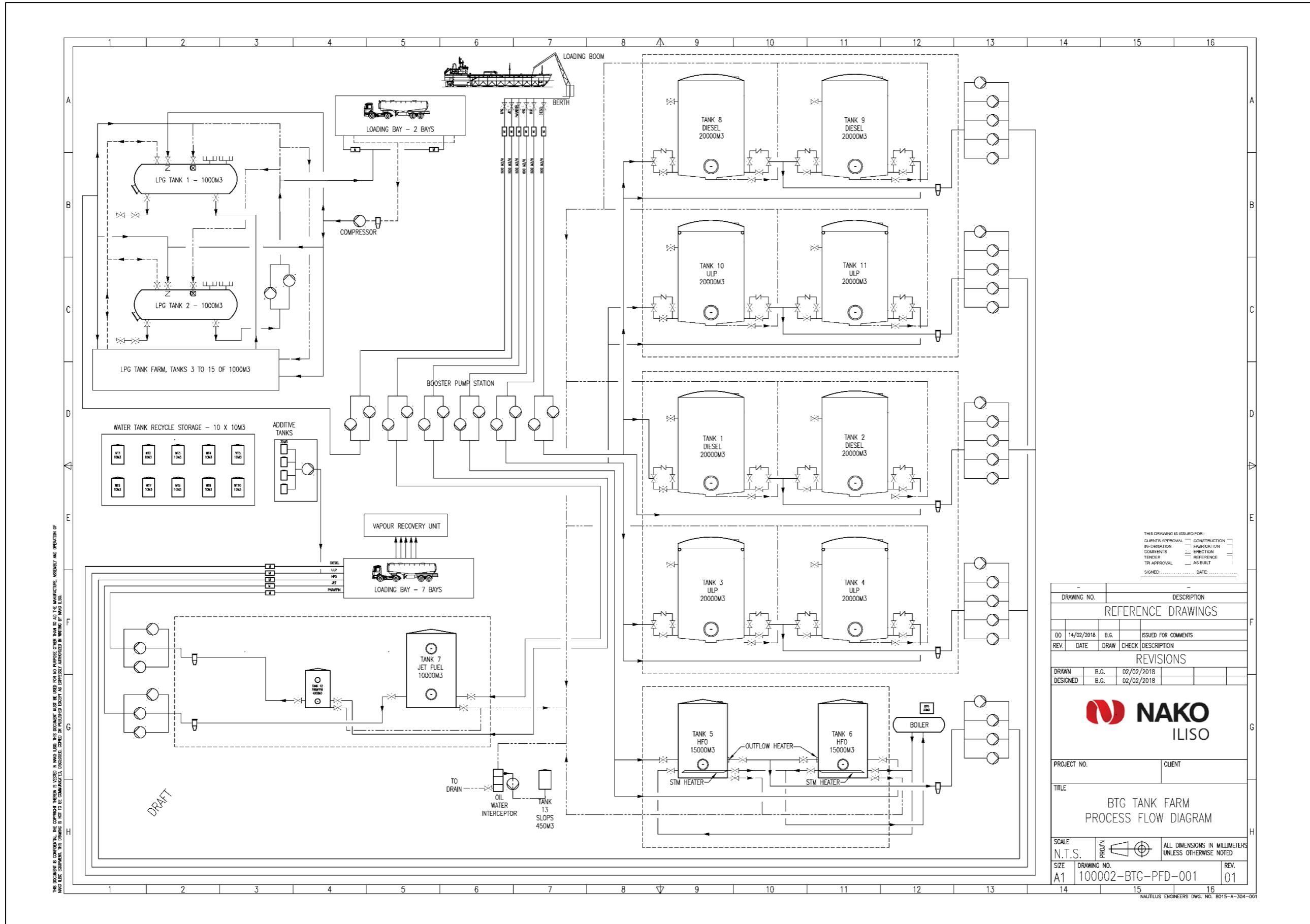


Figure 14: Proposed Coega Tank Farm Draft Process Flow Diagram

The facilities must be designed and installed in accordance with the relevant Engineering design codes for national and international standards to handle the listed fuels. To this end this draft description for the preliminary design and cost estimate refers to several codes but may not include all applicable codes at this preliminary stage.

4.3.1 Main Components

4.3.1.1 Ship offloading facility

Ship offloading will be done at the berth via ship-to-shore offloading booms mounted on the berth structure. Each parcel of fuel is transferred via a pipeline to the Terminal, using the ship's on-board pumps. (Investigate requirement of stationary pumps on the jetty). The actual rate of delivery depends on the capacity of the respective ship's pumps, but the berth will have a total transfer capacity of 1600 m³/h for liquids, limited by the nominal bore of the transfer pipeline (300NB). The LP Gas transfer capacity will be 600 m³/h.

The maximum proposed transfer parcel is 50 000 m³ to be discharged in 36 hours (32 hours pumping and 4 hours set-up and dismantling). The ship's pumps should have sufficient head rating (+/-12 bar) to transfer the product to the Bulk Fuel Tanks. Each respective petroleum product will be pumped from the ship directly to their respective tank(s) at the storage facility.

For safety reasons, a specified feed rate per pipeline must not be exceeded and for this reason, the unloading process is controlled with valves and flowmeters.

Insulating flanges will be utilised at the loading arms, to prevent against electrical arcing due to possible differences in potential between the ship's piping and terminal pipework to avoid static discharges and associated fire hazard.

A pigging station is provided for pipelines with shared products. An outflow heater will be considered for HFO pumping.

The necessary Environmental Management Systems [EMS] will be provided for drip containments, spill control, fire safety, and transfer control communications to the site. All piping, hoses and valves must be fire safe, cast steel, and carbon steel to recognised codes. [Typical for all Petrochemical systems].

A fire-fighting system will comply with the Requirements of the Transnet Ports Authority.

4.3.1.2 Transfer Pipelines

- **Product Transfer**

The conveyance of ULP; JET; Paraffin; HFO; Diesel and LPG from the Berth jetty to dedicated storage tanks will be carried out via a respective above-ground 300 NB pipeline (refer to Figure 15 for the proposed route of the pipeline), which will meet the requirements of ASME B31.8. The pipelines will cover a distance of approximately 4 800 m starting from the berth header and ending at the inlet header at the tank farm.

The pipelines will traverse up a grade of nearly 50 m. The pipelines will be designed for a maximum pressure of 16 bar and have a maximum flowrate of 1600 m³/h. (HFO flowrate will be around 600 m³/h).

- **List of products & respective flow rates:**

A total of 4 pipelines will be provided – 2 lines will be dedicated to LPG and HFO, and the other two pipelines will be shared amongst the other products. The pipelines will mostly be above ground, except at road crossings where they will be buried. The SA-106 Grade B piping will run on concrete pipe supports and will be trace heated and insulated in the case of HFO. There will be provision for flow-meters and bypasses, in addition to pressure transmitters with alarms and pump shutdowns.

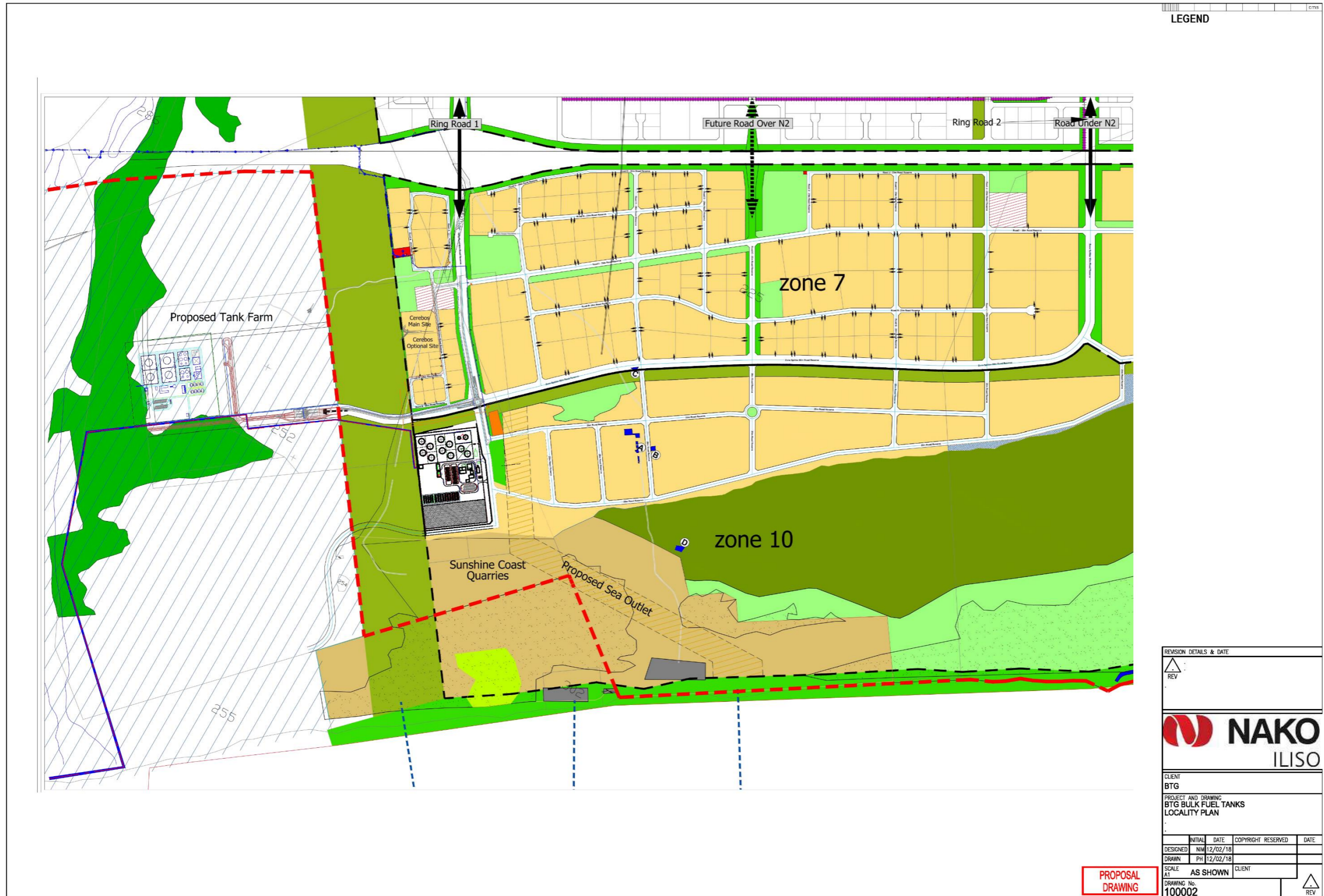
- **Pipeline Pigging**

Provision will be made for pipeline pigging in the common lines following a product change. There will be pig launching and receiving stations at the jetty and at the tank farm, as well as at strategic locations along the pipeline as required. The pig will be operated by compressed air linked to the launchers.

- **Pipeline Route**

The routing of the pipelines will follow an already proclaimed servitude up to the proposed Oil tanking Grindrod Calulo (Pty) Ltd (OTGC) Tank Farm. From the OTGC Tank Farm (indicated as Proposed Tank Farm on Figure 15), the pipelines will follow the route as indicated in Figure 15 to the proposed development site.

The routing of the pipelines will have defined safety distances, security and access control, as well as a service vehicle side road.



REVISION DETAILS & DATE

REV			
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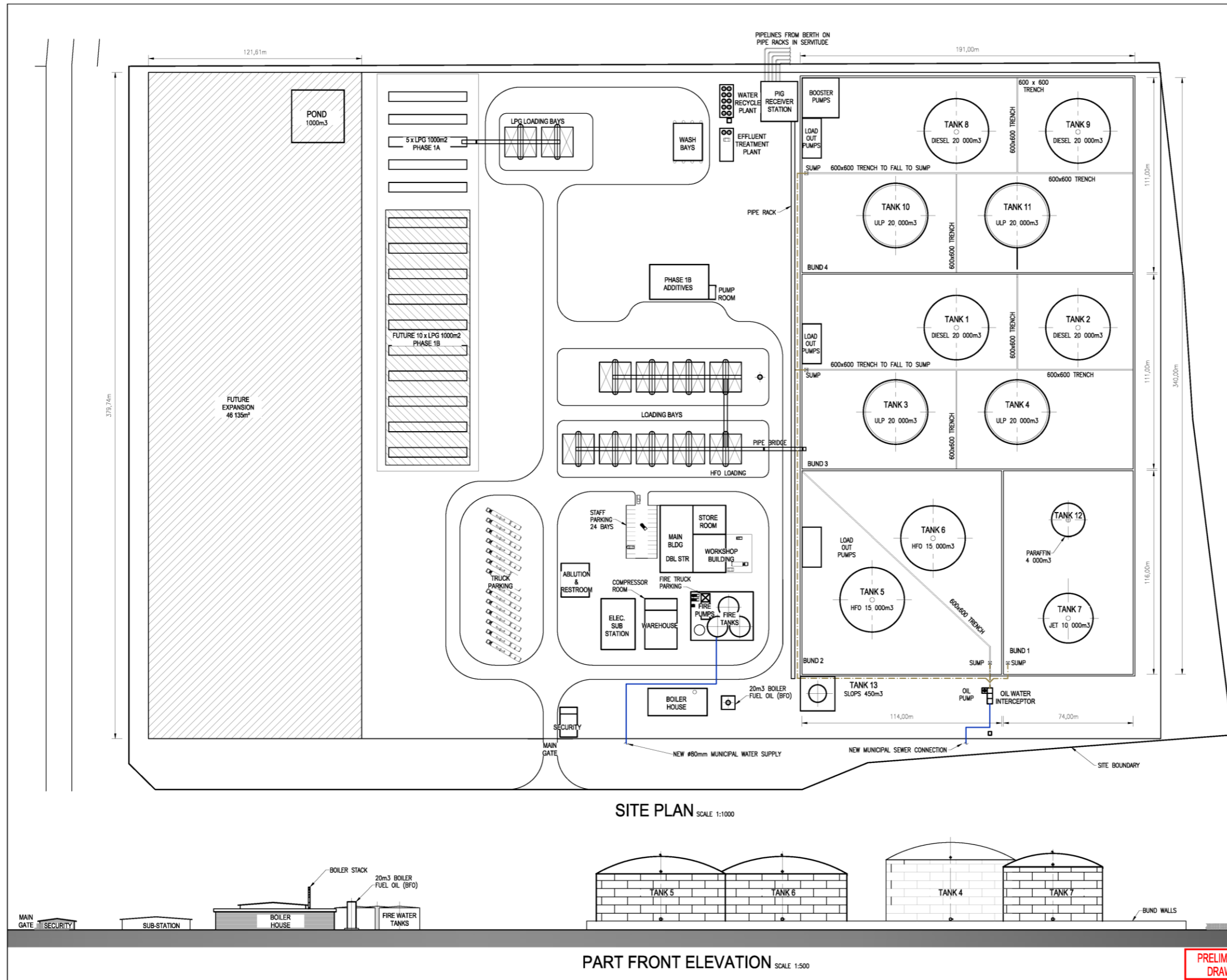
CLIENT
BTG

PROJECT AND DRAWING
BTG BULK FUEL TANKS
LOCALITY PLAN

DESIGNED	NM	12/02/18	
DRAWN	PH	12/02/18	
SCALE	A1	AS SHOWN	CLIENT

DRAWING No. 100002

Figure 15: Proposed pipeline route



SCHEDULE OF AREAS		
USAGE	STRUCTURE	FLOOR AREA
SITE AREA		246 627m ²
MAIN BUILDING	DBL STORY	2500m ²
ABLUTION & RESTROOM		309m ²
ELEC. SUB STATION		563m ²
WAREHOUSE		528m ²
FIRE SERVICES		985m ²
BOILER HOUSE		526m ²
SECURITY		167m ²
WASH BAYS		350m ²
WATER RECYCLE TANKS		140m ²
EFFLUENT TREATMENT		140m ²
PHASE B1 ADDITIVES/PUMP ROOM		702m ²
STAFF PARKING		530m ²
TRUCK PARKING		4615m ²
LOADING BAY 1 - LPG		663m ²
LOADING BAY 2 - DIESEL/ULP		1377m ²
LOADING BAY 3 - ULP/HFO/JET		1734m ²
TOTAL AREA BUILDINGS		282 456m ²

BUND SCHEDULE				
NO.	BUND GROSS AREA	NET BUND AREA	MAXIMUM VOLUME LARGEST TANK	WALL HEIGHT
1	8584m ²	7872m ²	11317m ³	1.7m
2	13224m ²	11098m ²	17009m ³	1.7m
3	20868m ²	18616m ²	21262m ³	1.7m
4	20868m ²	18616m ²	21262m ³	1.7m

NO. BUND VOLUME			
NO.	BUND VOLUME	MAXIMUM VOLUME	WALL HEIGHT
1	13042m ³		
2	18666m ³		
3	23388m ³		
4	23388m ³		

TANK SCHEDULE			
NO.	PRODUCT	MAXIMUM DIAMETER	WORKING CAPACITY
1	DIESEL	36.8m	20000m ³
2	DIESEL	36.8m	20000m ³
3	ULP	36.8m	20000m ³
4	ULP	36.8m	20000m ³
5	HFO	36.8m	15000m ³
6	HFO	36.8m	15000m ³
7	JET	28.3m	10000m ³
8	DIESEL	36.8m	20000m ³
9	DIESEL	36.8m	20000m ³
10	ULP	36.8m	20000m ³
11	ULP	36.8m	20000m ³
12	PARAFFIN	19m	4000m ³
13	SLOPS	8m	450m ³

REVISION DETAILS & DATE	
REV	



CLIENT	BTG
PROJECT AND DRAWING	SITE DEVELOPMENT PLAN
DESIGNED	NIM 13/12/17
DRAWN	PH 13/12/17
SCALE	AS SHOWN
DRAWING No.	100002-BTG-SDP-001

PRELIMINARY
DRAWING

Figure 16: Proposed Draft Site Development Plan

4.3.2 Site Overview

The ship-to-shore pipelines end after the pigging station at the inlet header, at the perimeter of the facility. Fuel forwarding pumps are provided to boost the fuel from the tie-in point to the storage tanks via the custody transfer meters.

LPG liquid lines connect to tanks and to loading out in a separate loading bay. Refer to the safety distances per the relevant South African National Standard. LPG shall be transferred to 15 LPG storage tanks in 1000m³ pressure vessels. All transfer equipment to be rated accordingly.

The Site Development Plan (Figure 16) shows the proposed tank farm layout, which has the following infrastructure components:

- 2,4m high security fence complete with truck entry / exit gates and emergency exits;
- Associated lighting and closed-circuit television (CCTV)
- Pigging Station
- Import manifold
- Booster Pump Station
- Five off bunded storage areas containing:
 - 4 off Diesel tanks, combined working capacity 80 000 m³;
 - 4 off ULP tanks, combined working capacity 80 000 m³;
 - 2 off HFO tanks, combined working capacity 30 000 m³;
 - 1 off JET tank working capacity 10 000 m³; and 1 off Paraffin tank working capacity 4 000 m³;
 - 15 off LPG vessel vessels, with a combined working capacity of 15 000 m³.
- Road Tanker loading pump bays as follows:
 - Diesel – 4 off 2000 l/m pumps (3 operating, 1 standby)
 - ULP – 4 off 2000 l/m pumps (3 operating, 1 standby)
 - HFO – 3 off 2000 l/m pumps (2 operating, 1 standby)
 - Jet – 2 off 2000 l/m pumps (1 operating, 1 standby)
 - Paraffin – 2 off 2000 l/m pumps (1 operating, 1 standby)
- Fire Water Tank with Fire / Foam pump Station;
- Vapour Recovery Unit (VRU);
- Necessary Buildings:
 - Admin Building 684m²;
 - Ablution and Rest Room 293 m²;
 - Store Room 293 m²;
 - Workshop 382 m²;
 - Warehouse 302 m²;
 - Electrical Sub Station 302 m²;
 - Security Building 130 m²;

- Small laboratory for critical testing of the final product.
- Loading Gantries
 - 10 bays for liquid fuels (Diesel 3; ULP 3; HFO 2; JRT 1; Paraffin 1)
 - 8 bays for LPG
- Additive Bay
- Pump Bays
- Compressor Bay
- Generator Bay
- Boiler Room with Steam Reticulation System and dedicated Boiler Fuel Oil tank
- Tanker Wash Bay
- Effluent Handling
 - Drainage channels
 - Effluent Containment
 - Interceptor Oil-water Separator
- Slops Handling System:
 - 450m³ Slops Tank
- Pipe Racks, Pipe Bridges and inter connecting pipes
- Parking.

4.3.3 Storage Tanks

4.3.3.1 Tank Schedule

All tanks will be aboveground, vertical, steel, field erected storage tanks complying with API 650.

LPG pressure vessels will meet the requirements of RSA/OHSA/CI-8.1 (ASME VII, Div 1).

The storage tanks will be located within bunded areas in line with the requirements of SANS 10089-1.

The tanks are designated and may be grouped by product class and viscosities. The proposed facility is expected to have a total working tank capacity of 204 000 m³ liquid fuels and 15 000 m³ LPG. Tank grouping and details are currently as follows:

Bund 4 &3

ULP: Class I. 4 off 20 000 m³ tanks, 36m diameter x 20m high, fixed dome roof with internal floating roof.

DIESEL: Class II. 4 off 20 000 m³ tanks, 36m diameter x 20m high, fixed dome roof with facility of nitrogen inerting for vapour space.

Bund 2

HFO Class III. 2 off 15 000 m³ tanks, 36m diameter x 20m high, fixed dome roof.

Bund 1: Jet/Paraffin Class II. 1 off 10 000 m³ Jet tank, 36m diameter x 20m high. 1 off 4 000 m³ Paraffin tank, 36m diameter x 20m high. Fixed dome roof with facility of nitrogen inerting for vapour space.

Bund 5: LPG Class 0. 15 off 1000 m³ "bullets".

4.3.3.2 Tank Structure

Tank bottoms shall be cone down sloped with a central sump for water / contaminants drain off. The bottoms will have annular ring plates and overlapping floor plates. The shell will be fabricated in 2 m strakes of calculated thicknesses and shall have primary and secondary wing girders as required. Shell openings, nozzle connections and clean out doors shall all be as per code requirements. All Tanks shall have fixed roofs either supported cone roofs or geodesic dome roofs. The ULP and JET tanks will have an internal floating roof (IFR). Each tank will have a spiral stairway leading to a roof platform, all with handrailing. Where practical, groups of tanks will be connected via walkways.

4.3.3.3 Tank Accessories

Each tank will comprise the following fittings:

- Shell nozzles for inlet and outlet
- Other shell and roof nozzles as required by the owner
- Free vents and breather valves with flame arrestors
- Dip hatch
- Instrumentation including electronic radar gauging devices, level indication and high and low-level alarm and trip switches
- Two manholes, one at ground level and one on top of the roof
- Drainage – water draw from centre sump.
- Pressure relief return
- Earthing bosses
- Lightning arrestors
- Holding down bolts
- Sampling valves
- Water spray system
- Foam connection
- Fire protection for floating roofs
- Two spare valve connections of each nominal bore used.
- Tank Heating coil (HFO) – steam heated on tank floor;
- Outflow heater (HFO) – Steam heated [STM].

4.3.3.4 Spacing and Bunding

The site storage and utilities systems and buildings must be planned to SANS 10089-1 and safety distances applied for inter tanks, bund, boundary and public road distances required. The bunds were designed to

contain 110 percent of the nominal capacity of the largest tank contained within the bund. To achieve this, bund walls are 1,7 m high. The banded containment areas shall be connected to the oily water sewer system and will be provided with isolation valves which will remain closed during normal operation. Spillages will either be cleaned out by specialist contactors or sent to the oily water sewer and then to the oil-water separator.

4.3.3.5 Tank Foundations

The foundations of the tanks will be based upon the API 650 code. The foundation will be either:

- Compacted earth foundation with crushed stone ring wall
- A reinforced concrete ring beam placed directly under the tank walls, with consolidated / compacted inner area
- A Reinforced concrete slab with piling

Depending on the size of the tank, and ground conditions from Geotech survey.

4.3.3.6 Earthing and Lightning Protection of Tanks

To achieve a minimum resistance to earth of 10 ohms, the tanks will be earthed. Provision of lightning protection will be catered for in accordance with API RP 545: Recommended Practice for Lightning Protection of Aboveground Storage Tanks for Flammable or Combustible Liquids.

4.3.3.7 HFO Heating

HFO must be heated before it is pumped, The HFO tanks will be equipped with an internal heating coil to maintain the HFO at a temperature of 40°C. The coil must remain submerged during normal operation, and as such, the coil and nozzle will be situated below the fuel outflow line. During pumping the HFO is further heated to 50°C by means of an external shell and tube heat exchanger. The coil and heat exchanger will be heated using MP steam from the boiler.

4.3.4 Boiler

The boiler will be an HFO fired shell type (firetube) package boiler, of capacity around 4,5MW to supply steam for HFO heating (internal coils and external heat exchangers), traced pipelines and for clean-out purposes.

4.3.5 Piping Systems

All piping within the perimeter of the facility will comply with the requirements of ASME B31.3 – Process Piping.

4.3.6 LPG Vessels

API Standard 2510 - Design and Construction of LP Gas Installation at Marine and Pipeline

Terminals, Natural Gas Processing Plants, Refineries, Petrochemical Plants and Tank Farms.

4.3.7 Road Tanker Loading Facility

The facility has a common gantry serving all 10 loading bays. Additives are added by injection into loading lines from dosing pumps at controlled rates at the loading facility. Tankers are loaded from the relevant tanks, via a calibrated and temperature-compensating measuring system, using pumps located in the pump bays adjacent to the bunded areas. Road tankers are filled from above (top loading) using articulated loading arms. The system allows for gas returns to the vapour recovery plant. Filling rates will be up to 2200 l/min.

Two loading bays will be dedicated to HFO, and one loading bay each dedicated to JET and Paraffin. The remaining 6 bays may be provided with 2 loading arms per bay for Diesel and ULP.

The facility provides a control and data logging system that allows the operator to actuate all functions on his own, eliminating operating errors or manipulation. The system is provided with overfill protection and forced grounding to prevent static discharges for fire safety.

The road tanker loading area is paved and provided with drainage channels leading to the oily water sewer system, in case of spillages Tanker Loading flow rates will be at a maximum rate of 360 m³/h.

4.3.8 Infrastructure

4.3.8.1 Offices and Amenities

The main building will accommodate the control room, management offices for administration and operations management facilities.

The control room will be equipped with computers and field device data logging systems on a SCADA which provides the operation managers with process control, data acquisition and site monitoring functions.

4.3.8.2 Access stairways and walkways

Access stairways and walkways will be provided into bunded areas and between bunded areas.

4.3.8.3 Security & Access Control

4.3.8.4 Wastewater Disposal

Process wastewater (oily water) will consist mainly of tank bottom draining, and contaminated storm water runoff, including water from tank leaks and spills that collect in the containment sump. Other sources include contaminated water from tanker washing, and wastewater from the vapour recovery process. Oily water will be channelled via the oily water sewer to the oil-water INTERCEPTOR separator. Recovered oil will be pumped to the Slops Tank, and water from the separator will be sampled to ensure compliance with the

legislated requirements for water quality (National Water Act and Nelson Mandela Bay Municipality standards) prior to release to the storm water system.

Wastewater generated from the toilet facilities, ablutions and domestic use will be disposed of into the municipal sewer system

4.3.8.5 Storm Water

Clean paved areas not subject to process spillages shall be contoured to ensure run-off is directed away from potentially contaminated areas to the storm water sewer system. Loading areas and wash bays will be covered to reduce the risk to contaminated storm water

4.3.9 Fire Fighting

Key fire protection features include adequate tank spacing; overfill protection; bunded areas for spill control; fixed fire protection systems and water and foam supply. Fire systems will be designed to SANS 10089-1, API 650, NFPA and the relevant referenced codes therein. This shall apply to Main Fire water storage, pumping and reticulation, tank shell cooling, with fire water, foam pouring for bund and tank top & vapor spaces, Bund foam pourers, and foam canons to be mounted at selected points per the Fire plans.

4.3.9.1 Fire Water Storage

An approximately 3400 m³ water tank will be provided which will be capable of supplying 680 m³/h of cooling water and foam for the largest tanks (20 000 m³) for 4 hours. The main fire water supply piping system will be buried pipe in HDPE up to the bunds and points of service and above ground piping will be steel. The system will be designed with a ring main and interconnecting piping.

4.3.9.2 Sprinkler system

Fixed water spray or deluge systems will be installed on all storage tanks and LPG vessels for shell cooling at the minimum of 4.1 l/min/m² shell surface for 1 hour per SANS 10089-1. On the storage tanks sprinklers will be provided on two circumferential locations on the roof, as well as circumferentially around the shell of the tank, below the wind girder.

4.3.9.3 Foam system

Fixed foam equipment, including adequate supply of foam concentrates will be provided at all storage tanks. The amount of foam concentrate provided will be adequate to extinguish a fire on the largest storage tank. The foam system will be designed in accordance with SANS 10089-1 and the foam concentrate mixed into water at 3 to 6% shall expand at a ratio up to 8:1. Foam to fixed roof tanks shall be applied at 6.5 l/min/m² fire area, with a foam stock of 1 hour.

4.3.9.4 Fire hydrants piping network

Fire hydrants of a standard, double outlet design will be provided at strategic locations, within 75m of all buildings, structures or tanks. An adequate amount of hose, nozzles, portable deluge sets, and other equipment will be provided. This equipment will be located on vehicles and in hose enclosures throughout the facility. Fire trucks shall be equipped with a minimum of the mobile equipment to be listed for foam, cannons, hoses, breathing apparatus and handheld equipment. 2 fire trucks shall be proposed with a minimum 1-ton capacity and permanently available on site.

4.3.10 Electrical and Instrumentation

4.3.10.1 General Electrical

The site will run off 400 V 3 phase power supply to most machinery and offices and lighting at 220 V single phase

4.3.10.2 Power Supply

The electrical substation will house transformer and MV/LV machines. Reticulation will be in 400 V or 220 V in buildings.

4.3.10.3 Site Lighting

A mixture of LED and other lighting systems will be employed for economy of consumption. Ex rate equipment will be installed to suit the Hazard Area classification to be done to SANS 10108. Adequate lighting will be provided for areas that will be accessed and operated during night operations, as well as for security purposes. The lighting will be so designed that sufficient light is available for the CCTV system to operate. The perimeter fence will have dedicated lighting.

4.3.10.4 Control & Instrumentation

Automation / instrumentation will be as per the latest Terminal Automation System (TAS) philosophy, which includes the following as applicable:

- Depot Automation System, Tank farm management system. This shall be field device control and data logging systems which provides the operation managers with a SCADA = System process control, and data acquisition and site monitoring functions;
- Field devices and instruments including Radar Gauges, Multi-Point Temperature Sensors, Pressure Transmitters, Overspill detection and audio, visual alarm system etc.;
- Tank Truck loading system including, Mass Flow meters, Batch Controller, DCV etc.;
- Blending and dosing systems;
- Other field equipment such as online density and temperature sensors, Field Automation and Integration of Sub systems, product delivery pumps, firefighting systems;
- Tank Truck Entry system, bay queue display etc.;

- Control Room equipment such as Servers, PLC's, UPS etc. and necessary software for SCADA;
- Position sensors for bund valves etc;
- Safety shutdown system covering Automated Overfill Protection;
- Meters proving and calibration facilities;
- Necessary cabling, control panels, earthing etc;
- Air dryer, air receiver and piping for pneumatic systems;
- Access control, and security zoning systems;
- CCTV system to cover total depot facilities, including perimeter fence;
- Hydrocarbon detectors and flow sensors etc. near all potential leak sources of Class 1 products.

The requirements of API 550 (Manuals of Refinery Instruments and Control Systems) will be generally adhered to.

4.3.11 Vapour Recovery Unit (VRU)

A vapour recovery system will be in place to recover vapours displaced during filling activities at the storage tanks as well as at the road tanker filling facilities. The VRU processes surplus vapours providing both an ecological and economic aspect of recovering products, with an average 1,5 litres/m³ of hydrocarbon vapours.

The vapour recovery system will most probably be a Membrane Technology system, or a Carbon Technology system. The liquified hydrocarbons are then pumped to the Slops Tank.

4.3.12 Additive Tanks

Fuel additives shall be dosed from chemical concentrate tanks with dosing pumps and injection and mixing systems during loading into road tankers.

4.3.13 Slops and Sludge Handling

Slops is hazardous chemical or petrochemical contaminated "oily" water. This must be handled responsibly and treated to correct effluent management policies to be established during the EIA process. These must be written into the EMS for the site. Standard operating procedures –[SOP] must be drafted, with appropriate staff training for the handling and operations around both the effluent discharges and slop oil and sludges. These liquids contain petrochemical traces and out of specification contaminated water to be removed from site for on-processing as required. Where tank cleaning sludge is solid this must be inerted and disposed of responsibly to High Hazard solid waste systems. Solids skips and inerting materials must be used for solid wastes. Spill kits and booms must be available for emergency procedures.

4.3.14 Pond

A pond of 1000m² will be established onsite for test water handling from the tanks drainage condition. Further details will be provided during the EIA phase.

4.3.15 Pump Stations

4.3.15.1 General

Pump stations will be located adjacent to the tank bunded area. Each product will have a separate header.

4.3.15.2 Tank transfer pump berth to tanks – as per PFD and SDP drawings

4.3.15.3 Tank transfer pump station to road tanker – as drawn

4.3.15.4 LPG product to Road tanker pump station (separate loading bay)

4.3.16 Roadways and Parking Areas

Roadways and parking areas will be suitably surfaced and adequately drained. Bi-directional roads will be not less than 6 m wide and single lane roads not less than 4 m wide. A separate parking area is to be provided for road tankers in order that roadways are not used for parking.

4.4 Timeframes

The proposed development will be constructed according to the following preliminary timeframes. Refer to Table 8.

Table 8: Operational hours for construction phases

Period	Open	Close
Weekdays	07:00	18:00
Saturdays	07:00	15:00
Sunday	Only when required	
Public holidays	Only when required	

4.4.1 Ancillary Infrastructure Required for Construction

No major infrastructure is required on site for the construction of the development. The required ancillary infrastructure for the purposes of supporting services is discussed below.

4.4.1.1 Security

A construction camp for housing equipment will be erected on site for the duration of the construction. This camp will be fenced for security purposes. A security guard will also be posted on site during non-operational times. A wall will be erected around the property boundary as part of the development project.

4.4.1.2 Sanitation

During the construction phase of the project, chemical toilets will be placed on site for the duration of the construction phase.

4.4.1.3 Construction Camp and Laydown Areas

Designated areas will be established during the construction phase for construction equipment and vehicles. This area will be outside all sensitive areas (delineated wetlands etc.).

4.5 Project Life-Cycle

To adequately consider the impacts associated with the proposed Coega Tank Farm development, the major activities during each phase of the project life-cycle are listed below:

- Feasibility Studies
 - Technical, economic and environmental screening of alternatives;
 - Development of Engineering Concept Site Development Plan, Process Flow Diagram, Project Description and Concept Designs and Civil Services report;
 - Environmental Authorisation and Air Emissions License Process.
- Pre-construction Phase
 - Detailed layouts and services designs;
 - Procurement process for Contractors;
 - Procurement of other necessary materials.
- Construction Phase
 - Appointments and site camp set up:
 - Appoint Environmental Control Officer;
 - Set up site camp with temporary offices and administrative facilities;
 - Set up ablutions;
 - Set up access control, security; signage and lighting;
 - General materials storage and laydown areas
 - Construction employment;
 - Change-houses, chemical toilets and showering facilities (linked to conservancy tanks – removal of contents by exhauster vehicle and disposal at permitted facility); and
 - Temporary waste storage areas; these shall be established and managed in accordance with EMP requirements to be developed in the EIA phase.
 - Sourcing of construction materials and equipment:

- All bulk materials (aggregate, cement, steel etc.) will be sourced from existing lawful commercial sources; there will be no direct mining, harvesting or extraction of natural resources.
- Excavation and earthworks
 - Removal of existing surfacing material where necessary (concrete, asphalt etc.) which could involve excavation below ground level;
 - Levelling and compaction using heavy machinery / earthmoving equipment.
 - Potential for excavations and trenching to lay of below ground level equipment (cables, pipes, sumps, drainage etc.);
 - Construction work within the existing dams;
 - Potential for excavation dewatering in the event of water-table interception;
 - Use of general mechanical equipment within construction areas (generators, cutting and welding equipment, compressors etc.).
- Operation Phase:
 - Operation of facilities;
 - Maintenance of infrastructure.
- Decommissioning Phase
 - Decommissioning of the Coega Tank Farm and associated services is not envisioned. However, should decommissioning be required the activity will need to comply with the appropriate environmental legislation and best practices at that time.

5 MOTIVATION FOR NEED AND DESIRABILITY

In terms of Section 2 (f) of Appendix 2 of GN 921 of 4 December 2014, this section discusses the need and desirability of the project. The format contained in the Guideline on Need and Desirability (DEA&DP, 2009) has been used in Table 9.

Table 9: Need and Desirability

No.	Question	Response
NEED ('timing')		
1.	Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the IDP).	Yes, the proposed development is in line with the NMBM IDP, the Metropolitan Spatial Development Framework and other provincial and local planning documents including the Coega IDZ Open Space Management Plan (2014), which has been approved by DEA and EC DEDEAT.
2.	Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?	Yes, the proposed development will result in substantial investment in the area which will have economic benefits in the area. It will also provide several employment opportunities which are required in the area.
3.	Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate)	The CDC has been established specifically to develop the Coega IDZ as an industrial area and they have identified specific zones within the IDZ for specific land uses. Zone 7, where the development site is located, is specifically zoned for chemical and petrochemical uses. The CDC is in constant liaison with National and Local Planning and Environmental Authorities to align the needs of the community and area with the objectives of the CDC.
4.	Are the necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	An Outline Scheme Report will be compiled and will inform the proposed development. Where necessary services infrastructure will be put in place and will link to existing municipal services by the Coega Development Corporation. A waste water treatment

No.	Question	Response
		plant will be situated on the study area Letters from the CDC and the NMBM, confirming availability of services will be included in the EIA Report.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services)?	An Outline Scheme Report will be compiled and will inform the proposed development. Where necessary services infrastructure will be put in place and will link to existing municipal services by the Coega Development Corporation. A waste water treatment plant will be situated on the study area Letters from the CDC and the NMBM, confirming availability of services will be included in the EIA Report.
6.	Is this project part of a national programme to address an issue of national concern or importance?	The development is aligned with the National objective of growing the economy of South Africa. The economic benefits of the Coega IDZ as a whole, will be considerable for the greater Nelson Mandela Bay area and for the country as a whole. The multi-billion-rand Coega Project, comprising of the IDZ and the National Ports Authority' deep water Port of Ngqura, has developed into a major role player in the economic revival of the Eastern Cape with a considerable amount of jobs and hundreds of enterprise opportunities have also come with skills development and SMME development programmes.
DESIRABILITY ('placing')		
7.	Is the development the best practicable environmental option (BPEO) for this land/site?	The BPEO will only be determined following a comparative analysis of the feasible alternatives during the EIA Phase. However, the preliminary study of the information available indicates that although the vegetation on the study area is natural, and listed as CBA 2 in the ECBCP, it is not listed in the NMBM Bioregional Plan as a Critical Biodiversity Area. It is however, necessary to address the loss of biodiversity that will result from the removal of natural vegetation on the study area to ensure that the Coega IDZ achieves its biodiversity targets. A Terrestrial Ecological Impact Assessment will be conducted during the EIA phase to address this issue.

No.	Question	Response
8.	Would the approval of this application compromise the integrity of the existing approved municipal IDP and Spatial Development Framework (SDF) as agreed to by the relevant authorities?	No, it is not anticipated that the proposed project will contradict or conflict with the municipal IDPs and SDFs as in both documents, as the proposed site occurs within the industrial development zone and within Zone 7, which is designated for petrochemical and chemical uses.
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	The impacts of the proposed activity will be assessed in the EIA Phase; however, studies have already been conducted for the Coega IDZ and the Open Space Management Plan was approved by DEA. According to the Open Space Management Plan, there is no restriction on the development, provided that an authorisation be obtained and that all impacts can be mitigated to low levels.
10.	Do location factors favour this land use (associated with the activity applied for) at this place? (this relates to the contextualisation of the proposed land use on this site within its broader context).	Yes, the proposed development is easily accessible. It will be situated on the periphery of the urban development. Furthermore, the development is in line with the CDC development plan for the area.
11.	How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	<p>The impact of the proposed activity on sensitive features such as a whole will be assessed in detail in the EIA Phase.</p> <p>For a desktop assessment, see compilation of significant environmental issues associated with the proposed development in Section 8.</p>
12.	How will the development impact on people's health and wellbeing (e.g. i.t.o. noise, odours, visual character and sense of place, etc)?	<p>This will be assessed in more detail during the EIA Phase.</p> <p>For a desktop assessment, see compilation of significant environmental issues associated with the proposed development in Section 8.</p>
13	Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	The impact of the proposed activity will be assessed in detail in the EIA Phase.

No.	Question	Response
		For a desktop assessment, see compilation of significant environmental issues associated with the proposed development in Section 8.
14	Will the proposed land use result in unacceptable cumulative impacts?	Cumulative impacts, as considered in Section 8 will be evaluated in the EIA Phase.

6 PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ACTIVITY, SITE AND LOCATION WITHIN SITE

6.1 Nature of the Activities

The nature of the activities to be undertaken is to permanently transform the property to a tank farm. The development will consist of internal roads, parking, tank farm infrastructure and buildings and services.

6.2 Alternatives

According to the 2014 EIA Regulations, alternatives are defined as:

“Different means of meeting the general purpose and requirements of the activity, which may include alternatives to the-

- (a) property on which or location where the activity is proposed to be undertaken;*
- (b) type of activity to be undertaken;*
- (c) design or layout of the activity;*
- (d) technology to be used in the activity; or*
- (e) operational aspects of the activity;*

and includes the option of not implementing the activity”

In line with the Regulations, a number of alternatives have been assessed for the proposed development. These include:

- Site alternatives;
- Layout alternatives;
- Technology Alternatives; and
- The No -Go Option.

More information on each of these alternatives is provided below.

6.2.1 Site Alternatives

Two sites have been considered as part of the feasibility studies for the proposed development. The proposed site has been found to be the best option, because of its proximity to the Transnet National Ports Authority (TNPA) boundary and pipeline servitude. The cost of building a shorter pipeline will also be more affordable. HFO will also be more easily handled through shorter pipelines. The second alternative is in Zone 11, which is also zoned for chemical and petrochemical uses. This site may require rail to transfer materials due to its location further away from the TNPA boundary and pipeline servitude.

Environmentally, the first option is also favoured due to the shorter pipelines and less infrastructure required for the proposed development. The risk of pollution will be restricted to the shorter section of the pipeline as opposed to the longer section of pipeline or railway. Another aspect that will be further detailed in the EIA report is the relative flat terrain of the preferred site and the benefits thereof in terms of constructing the tank farm and erosion and earthworks management.

6.2.2 Layout Alternatives

Layout alternatives have not been considered as the entire study area is required for development. The habitat on the study area is also relatively homogenous and therefore, it is not expected that any specific sensitive areas will be identified by the terrestrial ecological assessment. The CDC has the necessary permits to cover the removal of plant species of special concern. They apply, on an annual basis, for the renewal of these permits, which cover the proposed development site.

Plant and animal species will be searched and rescued prior to bush clearing. A list of plants that must be rescued prior to bush clearing has been provided by the CDC and the terrestrial ecological assessment will confirm the presence and location of these plants and any other plants that requires permits to be rescued. Several options to reuse the plants will be investigated during the EIA Phase.

No heritage features have been identified through the specialist studies that was conducted for the area which may have influenced the layout of the development.

6.2.3 Technology Alternatives

A waste water treatment plant is required on site to treat waste water to acceptable levels for reuse within the operational area and / or to dispose into the municipal sewer system. More detail regarding alternative treatment plants will be provided in the EIA Phase. A slops handling system is also required, and an oil - water separator will be installed. Technology alternatives for this will also be discussed during the EIA Phase.

6.2.4 No-go Option

As standard practice and to satisfy regulatory requirements, the option of not proceeding with the project is included in the evaluation of the alternatives.

The main implication of the No Go Option is that should the development not proceed, there will be a loss of the economic benefits of the investment in the area. There will also be a loss of the construction and operational phases related employment opportunities and the positive socio-economics effects of these employment opportunities.

6.3 Environmental Attributes and Sensitivity Map

An area of approximately 2 260 ha, spanning the Coega IDZ, has been set aside as open space and is managed in accordance with the CDC's Open Space Management Plan (OSMP), 2014. The OSMP has

not only been designed to ensure the protection of the environmentally sensitive areas within the IDZ, but also to provide for active and passive recreation areas where the public can have freedom of movement.

The open space consists of Critical Biodiversity Areas and Open Space Management Features including heritage features, riparian zones and the 1:50 and 1:100 year floodlines etc. as well as corridors or 'linkages' to the Nelson Mandela Bay Metropolitan Open Space System (NMB MOSS). None of these sensitive areas or features occurs in Zone 7.

A preliminary assessment of the proposed development site was undertaken using the ECBCP, the NMBM Bioregional Plan and the Coega Industrial Development Zone OSMP, as well as rivers, wetlands and vegetation data sources, and is indicated in Figure 6 to Figure 12 of this report. These environmental attributes have been considered in the scoping phase to ascertain areas where further site-specific investigation is required:

- Terrestrial ecological sensitive areas including potential sensitive fauna and flora.

7 PUBLIC PARTICIPATION PROCESS

7.1 Objectives and Purpose of Public Participation

The purpose of the public participation process is to provide information regarding the proposed project to any potentially interested and/or affected person for use and consideration throughout the environmental assessment process. The information usually involves a combination of the technical project scope, environmental attributes and sensitives, cultural and heritage aspects as well as socio-economic factors that may be potentially beneficial or problematic to various role players.

The dissemination of such information is intended to assist the public with understanding how the proposed project and/or development may impact them and the environment in either a positive and/or negative manner, and especially where impacts are determined or perceived as significantly high, how such impacts may be influenced by project changes (layout or design aspects) or management measures may be implemented to reduce or minimise the significance of any identified impacts.

As a registered I&AP, members of the public of any affiliation are awarded the opportunity to remain informed of the steps, actions and decisions made within the environmental impact assessment process and are able to actively participate by reviewing all information provided by the EAP to the I&AP's in a reasonable period in order to provide comments, objections, suggestions or any other information that will assist the project to develop in a favourable for all manner or contribute to the competent authority's knowledge in order to make an informed decision on the application for environmental authorisation.

7.2 Notification Phase of Public Participation

The public participation process commenced with identifying and notifying all potential Interested and Affected Parties (I&APs). The Draft Scoping Report and comment forms are provided as a source of information or notices were viewed and potential interested and/or affected members of the public were invited to register as I&APs for the remainder of the Environmental Impact Reporting phase of the process (refer to Section 7.3 and Section 7.4). All public participation will be conducted in English.

7.2.1 Identified I&AP's

The following potential I&AP's were identified:

- Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) (Competent Authority);
- National Department of Environmental Affairs (DEA): Ocean and Coast: Coastal Pollution Management Division;
- National Department of Environmental Affairs (DEA): Environmental Impact Management;
- The Nelson Mandela Bay Metropolitan Municipality (Commenting and Competent Authority for Air Emissions License Application);
- National Department of Water and Sanitation (DWS);

- The South African Heritage Resources Agency (SAHRA);
- Ward Councillor;
- IDZ Investors;
- Surrounding Landowners / Occupiers:
- Surrounding businesses.
- All Environmental Liaison Committee (ELC) members

Refer to Appendix 2.1 for a detailed list of the interested and/or affected members of the public and Organs of State that is registered as an I&AP.

7.2.2 Newspaper Notice

A notice was published in the following newspaper on the specified dates:

- **Local:** The Herald Live, published on the 23rd of March 2018;
- **Regional:** Die Burger, published on the 23rd of March 2018.

Refer to Appendix 2.2 for proof of the newspaper notices.

7.2.3 Site Notice

The site notice was displayed inside the Coega Development Corporation (CDC) offices situated within the Coega Industrial Development Zone (IDZ), as agreed with the Competent Authorities.

Refer to Appendix 2.3 for proof of the site notice.

7.2.4 Written Notifications

The surrounding landowners and/or occupiers and organs of state (listed in Appendix 2.1) are notified in writing via email and are issued with the Draft Scoping Report to provide further information on the project.

Refer to Appendix 2.4 for proof of the written notices.

7.2.5 Comments Raised by I&AP's during the Initial Notification Period

The comments received, and responses provided thereto during the notification and first draft scoping report review period, was summarised in the Comments and Responses Report and is attached in Appendix 2.7. All communication to and from Interested and Affected Parties is attached in Appendix 2.6.

7.3 Scoping Phase Public Participation

The Scoping Report was made available for comment to all registered interested and affected parties and relevant organs of state for a period of 30 days from **26 March 2018 to 26 April 2018**. Refer to Appendix 2.5 for proof of delivery of the First Draft Scoping Report. The Second Draft Scoping Report was made

available for review from **26 April 2018** to **28 May 2018**, proof will be included in the Final Scoping Report to be submitted to the Competent Authority.

7.3.1 Proof of Notification

All registered I&APs were notified via email of the review period of the first and second Draft Scoping Report. The Draft Scoping Report were forwarded to all registered Interested and Affected Parties.

The following authorities were provided with a copy of the Scoping Report:

- Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT);
- Nelson Mandela Bay Metropolitan Municipality (NMBM) Environmental Manager and Air Pollution and Noise Control;
- Land Owner - Coega Development Corporation (CDC);
- National Department of Environmental Affairs (DEA);
- Department of Water and Sanitation;
- Department of Mineral Resources (ASD: Mineral Regulation);
- South African Heritage Resources Agency (SAHRA);
- South Africa Maritime Safety Authority; and
- Transnet National Ports Authority (TNPA).

Proof of submission of the first draft is provided in Appendix 2.5 and proof of submission of the second draft will be included in the Final Scoping Report to be submitted to the Competent Authority.

7.3.2 Comments Raised by I&AP's during the Review of the Scoping Report

All comments received during the notification and first and second scoping report review period, will be considered in the Final Scoping Report which will be submitted to the Eastern Cape Department of Economic Development and Environmental Affairs (DEDEA) in April 2018.

7.4 EIA Phase Public Participation

Upon acceptance of the scoping report by the EC DEDEAT, the applicant/EAP will proceed and continue with the tasks contained in the plan of study (Section 8 of this report).

Subsequently an impact assessment report will be compiled and made available to all registered interested and affected parties and relevant organs of state for a period of 30 days.

Registered I&APs will be notified of the Department's decision and notified of the review the EIA Report at the same time. All comments received will be included in the EIA Report Comments and Responses Report.

7.5 Final EIA Report and Competent Authority Decision

All comments received during the comment period discussed above will be considered and incorporated into the Final EIA Report and documented in the Comments and Response Report.

The Final EIA Report will then be submitted to EC DEDEAT for decision.

7.6 Outcome of the Decision

Registered I&AP's will be notified in writing of the outcome of the Department's decision within 12 days of the decision. The notification will include details of the process and timeframes in which to appeal the outcome of the decision made by the competent authority, EC DEDEAT.

8 PLAN OF STUDY

The requirements that form part of the plan of study for undertaking the EIA process includes the following:

- A description of the alternatives to be considered and assessed within the preferred site (Section 6.2), including the option of not proceeding with the activity (Section 6.2.4);
- A description of the aspects to be assessed as part of the environmental impact assessment process Table
- Aspects to be assessed by specialists (refer to Section 8.2).
- A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists (refer to Section 8.3);
- A description of the proposed method of assessing duration and significance (Section 8.3); an indication of the stages at which the competent authority will be consulted (Section 8.3);
- Particulars of the public participation process that will be conducted during the environmental impact assessment process (refer to Section 7.3 and Section 7.4);
- A description of the tasks that will be undertaken as part of the environmental impact assessment process (Section 8.5); and
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored (Section 8.4).

The sections that follow aim to determine potential environmental issues that will be further considered during the EIA Phase. The issues raised by I&APs during Scoping Phase will also guide the identification of significant issues.

8.1 Predicting Significant Environmental Issues

In line with the requirements of the Scoping Process in terms of the 2014 EIA Regulations, this section aims to identify potentially significant environmental issues for further consideration and prioritisation during the EIA stage. This focusses the EIA Phase and ensures that potential impacts related to the proposed development are determined through specialist studies where necessary.

Potential impacts associated with the proposed development will be determined by assessing the following:

- Project-related components and infrastructure (see Section 4.3);
- Activities associated with the project life-cycle (i.e. pre-construction, construction, operation and decommissioning) (see Section 4.5);
- Proposed alternatives (see Section 6.2);
- Nature and profile of the receiving environment and potential sensitive environmental features and attributes (see Section 3), which included a desktop evaluation (via literature review, GIS, topographical maps and aerial photography) and site investigations;
- Issues raised by I&APs; and

- Legal and policy context (see Section 2).

8.1.1 Summary of Environmental Issues

Pertinent environmental issues linked to the assessment of the receiving environment are discussed in Table 10. Information on how the impact will be assessed during the EIA phase and/or mitigated is also provided.

Table 10: Potential issues to be assessed during the EIA Phase

Environmental Aspect	Potential Issues / Impacts - Construction	Potential Issues / Impacts - Operation	Studies Required
Local Climate	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • N/A
Topography	<ul style="list-style-type: none"> • Minor changes to topography • Possible erosion 	<ul style="list-style-type: none"> • Very low impacts are envisioned. 	<ul style="list-style-type: none"> • Storm water management plan
Geology and Soils	<ul style="list-style-type: none"> • Erosion of exposed soil • Erosion of stockpiled material (stone, sand and gravel) • Contamination to soil during the mixing of cement • Poor storm water management during construction. 	<ul style="list-style-type: none"> • Contamination of soils through accidental spillage of fuel along the pipelines. 	<ul style="list-style-type: none"> • Geotechnical Study;
Land Use	<ul style="list-style-type: none"> • Change in land use will be required. 	<ul style="list-style-type: none"> • Change in land use will be required. 	<ul style="list-style-type: none"> • Town planning process completed
Agricultural Potential	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • N/A
Existing Services	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • No impacts are envisioned. 	<ul style="list-style-type: none"> • Outline Scheme Report • Wayleaves
Availability of Services	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Services required for the proposed development. 	<ul style="list-style-type: none"> • Outline Scheme Report • Wayleaves

Environmental Aspect	Potential Issues / Impacts - Construction	Potential Issues / Impacts - Operation	Studies Required
			<ul style="list-style-type: none"> Rainwater harvesting and reuse of water to decrease water requirements.
Roads	<ul style="list-style-type: none"> Increased construction related traffic; Decreased visibility along the N2 Highway due to poor dust management on site. 	<ul style="list-style-type: none"> Increase in heavy vehicle traffic due to collection of materials. 	<ul style="list-style-type: none"> Traffic Impact Assessment Road, Infrastructure, Signal and Intersection upgrades.
Noise	<ul style="list-style-type: none"> Increased noise pollution due to construction activities. 	<ul style="list-style-type: none"> Increased noise due to operational activities. 	<ul style="list-style-type: none"> Detailed EMPr.
Socio-Economic Environment	<ul style="list-style-type: none"> Increased employment opportunities (positive); Indirect injection of cash in the community due to investment (positive); Increased economic opportunities in the area (positive); Potential issues regarding security in the area due to construction workers in the area. 	<ul style="list-style-type: none"> Increased employment opportunities (positive); Increased economic opportunities in the area (positive). 	<ul style="list-style-type: none"> N/A

Environmental Aspect	Potential Issues / Impacts - Construction	Potential Issues / Impacts - Operation	Studies Required
Biodiversity	<ul style="list-style-type: none"> • Loss of biodiversity; • Disturbance of natural ecosystems, making them vulnerable to invasion of alien species; • Impact on the Important Bird Area to the south of the study area; • Negative impact due to poor dust management on site. 	<ul style="list-style-type: none"> • Disturbance of birds and fauna in the area; • Impact on the Important Bird Area to the south of the study area. 	<ul style="list-style-type: none"> • Terrestrial Ecological Impact Assessment
Surface Water	<ul style="list-style-type: none"> • Disturbance of natural ecosystems, making them vulnerable to invasion of alien species; • Increased storm water due to increased hard surfaces; • Decreased water quality resulting from contamination of run-off water by leaking construction vehicles. 	<ul style="list-style-type: none"> • Increased storm water • Improper treatment of grey water and effluent resulting in poor water quality • Accidental spillage of hazardous waste. 	<ul style="list-style-type: none"> • Storm water management plan
Archaeology and Cultural Heritage	<ul style="list-style-type: none"> • Potential impacts to heritage resources including loss of 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Existing Heritage Impact Assessment

Environmental Aspect	Potential Issues / Impacts - Construction	Potential Issues / Impacts - Operation	Studies Required
	<p>palaeontological, historical and archaeological features that may be unearthed or exposed during construction.</p>		<p>including historical, archaeological and palaeontological components. No new studies required, as clearance to develop was obtained by the heritage authority with the current studies. All guidelines and measures required will be included in the EMPr.</p>

8.1.2 Summary of Impacts Identified by IAPs

All issues and potential impacts identified by I&APs will be included in the Final Scoping Report for consideration by the Competent Authority.

8.2 Specialist Studies

According to Münster (2005), a ‘trigger’ is “a particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an issue and/or potentially significant impact associated with that proposed development that may require specialist input”.

Further, the 2014 EIA Regulations define a specialist as: “A person that is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports, including due diligence studies and socio-economic studies.”

The specialist studies ‘initially triggered’ by the findings of the Scoping process include the following:

- Terrestrial Ecological Impact Assessment; and
- Air Quality Impact Assessment.

The *Guideline for determining the scope of specialist involvement in EIA processes* (Münster, 2005) was used in compiling the general Terms of Reference for the specialist studies together with the *Guideline for involving biodiversity specialists in EIA processes* (Brownlie, 2005) and the *Gauteng Department of Agriculture and Rural Development (GDARD) Requirements for Biodiversity Specialists*. In line with these guidelines, specialists will be required to do the following:

- Address all triggers for the specialist studies identified by the Scoping Report;
- Address issues raised by IAPs, as contained in the Comments and Response Report;
- Meet the requirements of the relevant environmental authorities.
- Identify and assess all potentially significant impacts (direct, indirect and cumulative) and suggest suitable mitigation measures.
- Assess alternatives (including the No-Go option) and identify the Best Practicable Environmental Option (BPEO) for the proposed development.
- All specialist reports must adhere to Appendix 6 of the 2014 EIA Regulations.

In addition to the above mentioned environmental specialist studies, the following technical studies will also be undertaken and will inform the EIA:

- Outline Scheme Report;
- Engineering Project Description, Masterplan and Designs;
- Traffic Impact Assessment; and
- Geotechnical Assessment.

Table 11 provides an overview of the environmental aspects that will be assessed by specialists.

Table 11: Summary of environmental aspects to be assessed in the EIA Phase

Environmental Aspects	To be assessed by Specialist	Specialist Study
Geology and Soils	Yes	Geotechnical Study
Existing Services	Yes	Outline Scheme Report
Availability of Services	Yes	Outline Scheme Report
Roads	Yes	Traffic Impact Assessment
Noise	No	-
Biodiversity	Yes	Terrestrial Ecological Impact Assessment
Surface Water	Yes	Stormwater Management Plan
Groundwater	No	-
Heritage and Culture	No	Existing specialists studies

8.3 Impact Assessment Methodology

The standard methodology used in the environmental impact assessment to determine the significance rating of the potential impacts are outlined in this section.

8.3.1 Significance

The **significance** of an impact is defined as the combination of the **consequence** of the impact occurring and the **probability** that the impact will occur. The nature and type of impact may be direct or indirect and may also be positive or negative, refer to Table 12 for the specific definitions.

Table 12: Nature and type of impact.

Nature and Type of Impact:			
IMPACT	Direct	Impacts that are caused directly by the activity and generally occur at the same time and place as the activity	✓/✗
	Indirect	Indirect or induced changes that may occur because of the activity. These include all impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity	✓/✗
	Cumulative	Those impacts associated with the activity which add to, or interact synergistically with existing impacts of past or existing activities, and include direct or indirect impacts which accumulate over time and space	✓/✗
	Positive	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will benefit significantly, and includes neutral impacts (those that are not considered to be negative)	✓
	Negative	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes will be comprised	✗

Table 13 presents the defined criteria used to determine the **consequence** of the impact occurring which incorporates the extent, duration and intensity (severity) of the impact.

Table 13: Consequence of the Impact occurring

CONSEQUENCE	Extent of Impact:	
	Site	Impact is limited to the site and immediate surroundings, within the study site boundary or property (immobile impacts)
	Neighbouring	Impact extends across the site boundary to adjacent properties (mobile impacts)
	Local	Impact occurs within a 5km radius of the site
	Regional	Impact occurs within a provincial boundary
	National	Impact occurs across one or more provincial boundaries
	Duration of Impact:	
	Incidental	The impact will cease almost immediately (within weeks) if the activity is stopped, or may occur during isolated or sporadic incidences
	Short-term	The impact is limited to the construction phase, or the impact will cease within 1 - 2 years if the activity is stopped
	Medium-term	The impact will cease within 5 years if the activity is stopped
	Long-term	The impact will cease after the operational life of the activity, either by natural processes or by human intervention
	Permanent	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient
	Intensity or Severity of Impact:	
	Low	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are not affected
	Low-Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are modified insignificantly
	Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are altered
	Medium-High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are severely altered
	High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will permanently cease

The probability of the impact occurring is the likelihood of the impacts actually occurring and is determined based on the classification provided in Table 14Table 14.

Table 14: Probability and confidence of impact prediction.

PROBABILITY	Probability of Potential Impact Occurrence:	
	Improbable	The possibility of the impact materialising is very low either because of design or historic experience
	Possible	The possibility of the impact materialising is low either because of design or historic experience
	Likely	There is a possibility that the impact will occur
	Highly Likely	There is a distinct possibility that the impact will occur
	Definite	The impact will occur regardless of any prevention measures

The **significance** of the impact is determined by considering the consequence and probability without taking into account any mitigation or management measures and is then ranked according to the ratings listed in Table 15. The level of confidence associated with the impact prediction is also considered as low, medium or high and is described in Table 16.

Table 15: Significance rating of the impact.

SIGNIFICANCE	Significance Ratings:	
	Low	Neither environmental nor social and cultural receptors will be adversely affected by the impact. Management measures are usually not provided for low impacts
	Low-Medium	Management measures are usually encouraged to ensure that the impacts remain of Low-Medium significance. Management measures may be proposed to ensure that the significance ranking remains low-medium
	Medium	Natural, cultural and/or social functions and processes are altered by the activities, and management measures must be provided to reduce the significance rating
	Medium-High	Natural, cultural and/or social functions and processes are altered significantly by the activities, although management measures may still be feasible
	High	Natural, cultural, and/or social functions and processes are adversely affected by the activities. The precautionary approach will be adopted for all high significant impacts and all possible measures must be taken to reduce the impact

Table 16: Level of confidence of the impact prediction.

CONFIDENCE	Level of Confidence in the Impact Prediction:	
	Low	Less than 40% sure of impact prediction due to gaps in specialist knowledge and/or availability of information
	Medium	Between 40 and 70% sure of impact prediction due to limited specialist knowledge and/or availability of information
	High	Greater than 70% sure of impact prediction due to outcome of specialist knowledge and/or availability of information

Once significance rating has been determined for each impact, management and mitigation measures must be determined for all impacts that have a significance ranking of Medium and higher in order to attempt to reduce the level of significance that the impact may reflect.

The EIA Regulations, 2014 specifically require a description is provided of the degree to which these impacts:

- can be reversed;
- may cause irreplaceable loss of resources; and

- can be avoided, managed or mitigated.

Based on the proposed mitigation measures the EAP will determine a mitigation efficiency (Table 17) whereby the initial significance is re-evaluated and ranked again to effect a significance that incorporates the mitigation based on its effectiveness. The overall significance is then re-ranked, and a final significance rating is determined.

Table 17: Mitigation efficiency

Mitigation Efficiency			
MITIGATION EFFICIENCY	None	Not applicable	
	Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact. Positive impacts will remain the same	
	Low	Where the significance rating reduces by one level, after mitigation	
	Medium	Where the significance rating reduces by two levels, after mitigation	
	High	Where the significance rating reduces by three levels, after mitigation	
	Very High	Where the significance rating reduces by more than three levels, after mitigation	

The reversibility is directly proportional to the “Loss of Resource” where no loss of resource is experienced, the impact is completely reversible; where a substantial “Loss of resource” is experienced there is a medium degree of reversibility; and an irreversible impact relates to a complete loss of resources, i.e. irreplaceable (Table 18).

Table 18: Degree of reversibility and loss of resources.

Loss of Resources:			
DEGREE REVERSABILITY & LOSS OF RESOURCES	No Loss	No loss of social, cultural and/or ecological resource(s) are experienced. Positive impacts will not experience resource loss	
	Partial	The activity results in an insignificant or partial loss of social, cultural and/or ecological resource(s)	
	Substantial	The activity results in a significant loss of social, cultural and/or ecological resource(s)	
	Irreplaceable	The activity results in the complete and irreplaceable social, cultural and/or ecological loss of resource(s)	
	Reversibility:		
	Irreversible	Impacts on natural, cultural and/or social functions and processes are irreversible to the pre-impacted state in such a way that the application of resources will not cause any degree of reversibility	
	Medium Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if less than 50% resources are applied	
	High Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if more than 50% resources are applied	
Reversible	Impacts on natural, cultural and/or social functions and processes are fully reversible to the pre-impacted state if adequate resources are applied		

8.3.2 Cumulative Impacts

It is important to assess the natural environment using a systems approach that will consider the cumulative impact of various actions. Cumulative impact refers to the impact on the environment, which results from the incremental impact of the actions when added to other past, present and reasonably foreseeable future actions regardless of what agencies or persons undertake such actions. Cumulative impacts can result from individually minor, but collectively significant actions or activities taking place over a period. Cumulative effects can take place frequently and over a period that the effects cannot be assimilated by the environment.

8.4 Mitigation

An EMPr will be developed based on the findings of the impact assessment of the EIA. The EMPr will be compiled as a site-specific mitigation measure for all medium to high (significant) impacts. The mitigation and management measures will include a combination of the following:

- Physical environmental management structures.
- Monitoring and compliance of pollution and regulatory requirements.

8.5 Environmental Impact Assessment Phase

The next steps in the EIA phase which will be undertaken upon completion of the scoping phase (i.e. after the submission and acceptance of this Scoping Report by EC DEDEAT). During the EIA phase, specialist studies will be conducted to inform the impact assessment. Concerns raised by I&AP's pertaining to the proposed development and their potential impacts on the physical, biological aspects of the proposed site will also be assessed at an appropriate level of detail.

The findings, recommendations and statements compiled by the specialists will be integrated with the other environmental aspects and compiled into an EIA Report, and provided to the relevant organs of state and registered I&AP's for review and comment for a minimum period of 30 days, refer to Table 19 for an indication of key dates. All comments received from any authority, I&AP and specialist will be considered and incorporated in the EIA Report for final submission to EC DEDEAT for an evaluation and assessment to provide a decision on whether to grant or refuse the environmental authorisation.

Table 19: Proposed timeframes for the EIA process

Responsible Role Player	Milestone Tasks	Required Time Period	Proposed Timeframes	Status
Application Phase				
PPP	Written, Newspaper & Site Notices	30 days	23 March 2018 – 22 April 2018	✓
EAP	Submit Application for EA	N/A	24 April 2018	✓
EC DEDEA	Accept/Acknowledge Application for EA	10 days	04 May 2018	✗
Scoping Phase				
EAP	Compile SR	N/A	February 2018 – March 2018	✓
PPP	I&AP Comment Period on First Draft SR	30 days	23 March 2018 – 23 April 2018	✓
EAP	Review / Incorporate Comments	1 day	24 April 2018	✓
PPP	I&AP Comment Period on Second Draft SR	30 days	26 April 2018 – 28 May 2018	Current
EAP	Review / Incorporate Comments	2 days	29 May–30 May 2018	✗
EC DEDEA	Review SR	43 days	June 2018 – July 2018	✗
Impact Assessment Phase				
Specialists	Terrestrial ecology, Air Quality Impact Assessment, Traffic Impact Assessment, Geotechnical Assessment,	N/A	April 2018 - June 2018	Current
EAP	Compile EIA Report	N/A	18 May – July 2018	✗
PPP	I&AP Comment on EIA Report	30 days	August 2018	✗
EAP	Review / Incorporate Comments	2 days	September 2018	✗
EC DEDEA	Review EIA Report and Provide Decision	106 days	September 2018 – January 2019	✗
PPP	Notification of Decision / Appeal		January 2019	✗

