

THE PROPOSED LANDSIDE INFRASTRUCTURE DEVELOPMENT AT BERTH 203 TO 205, PORT OF DURBAN, KWAZULU NATAL

Basic Assessment Report

May 2016

Draft

Prepared for: Transnet





Environmental, Social and OHS Consultants



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Title and Approval Page

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Amendments Page

Date:	Nature of Amendment	Amendment Number:
11/04/2016	Internal Review	00
13/04/2016	Client Review	01
17/05/2016	Amended based on client review	02

Executive Summary

Due to the deepening, lengthening and widening of Berth 203 to 205, Pier 2, Durban Container Terminal (authorised on 21 January 2015), Transnet Port Terminals has recognised the need for new landside infrastructure and facilities to replace facilities that will be demolished on the existing quay walls. The new landside infrastructure proposed by Transnet Port Terminals includes the following:

- A new Central Mess and Ablution Facility at Berth 203;
- A new Satellite facility at Berth 205;
- A new North Substation located at Berth 205;
- A new East Substation located south east of Berth 203; and
- Associated infrastructure such as access roads, mini-substations, sewer, stormwater, high mast lighting, tunnels and Close Circuit Television.

The proposed facilities will require excavation of foundations within 100m of an estuary and as such require authorisation in terms of National Environmental Management Act (No 107 of 1998). Furthermore, the north and east substations will require dewatering for the landside buildings. Based on this, a Coastal Water Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (No 138 of 11 February 2009) is also required.

A Basic Assessment Report in line with GN 982 of 4 December 2014 has been undertaken and includes an assessment of the impacts related to dewatering. As part of the Basic Assessment process, two alternative layouts were assessed. In Layout Alternative 1, the position of the various facilities are on the perimeter of the container stacking areas and have no impact on the flow of straddle carriers and operations. In comparison, with Layout Alternative 2, the building structures are surrounded by container stacking areas and thus pose a risk when entering and leaving the facilities. From an operational perspective, this option breaks up the container stacking areas, which is not ideal. The only advantage of this alternative is that the building structures are on the 100m high water mark and therefore does not require a basic assessment.

The impact of the development, in terms of the nature, type, duration, likelihood and the significance of impact has been assessed (**Appendix F**). Impacts were identified through an assessment of the impacted related to listed activities, those raised by stakeholders and those identified by specialists.

Two specialist studies were undertaken, namely a Marine and Estuarine Impact Assessment and Landside Heritage Impact Assessment (**Appendix D1** and **D2**).

The main impact identified by the Marine and Estuarine specialist was ecological effects due to the reduction in dissolved oxygen concentrations. This would only occur should the nutrient loads of the water be such to result in increased oxygen demand. Piezometer monitoring by ZAA Engineering Projects and Naval Architecture indicate, that the groundwater level at construction site corresponds with the water level within the Port basin and it is thus likely that it has a similar chemical make-up and quality to the water in the Port basin. Provided this is indeed the case, impacts on the receiving water quality will be negligible. In order to ensure that this is, once the groundwater has been exposed at the

construction site, a sample must be sent for testing prior to discharge into the Port. This will ensure that the water discharged into the bay is of a similar quality to the existing Bay. Based on this mitigation measure, the impact is seen to be of a low significance. Should it occur, it would have a low consequence and a short term impact.

The Heritage Impact Assessment did not identify any heritage resources on site however the study did note that heritage resources may be uncovered during construction and has therefore provided a number of mitigation measures for inclusion in the Environmental Management Programme.

In addition, a Geotechnical Assessment was also undertaken and found that the conditions at Berth 203 and 204 are a medium dense fine to medium-grained sand (Hydraulic fill) with shell fragments. The relative density of the sand is expected to be uniform across the sites and generally increase with depth. Some soft gravelly sandy clay however was observed. At Berth 205, the likely soil conditions are a medium dense fine to medium-grained sand (Hydraulic fill) with pebbles and shell fragments.

Birdlife Port Natal raised concerns regarding the impact to avifauna. This was assessed in the impact assessment and it was found that the main impact to avifauna is *disturbance* by construction and possibly by the operation of activities associated with the berths themselves (i.e. shipping). Mitigation of these impacts will be best achieved by minimising noise impacts during construction. As the footprint of the development does not infringe on the Central Sandbank area, no other activities will disturb bird species. Furthermore, the proposed site is an existing Port operational area and as such already contributes to noise and light disturbance. The proposed development will not increase these existing disturbances during operation. The significance of this impact is therefore assessed as low and whilst it is likely to occur, it will be for the short term only.

In terms of positive impacts, the main positive impact was related to the provision of facilities allowing for the proper utilisation of the extended berths. This would result in a highly significant and long-term positive impact. In addition, an increase in jobs caused during construction would also result in a positive short term impact.

With the selection of the Best Practicable Environmental Option for the layout alternatives (Layout Alternative 1) the adoption of the mitigation measures included in the Basic Assessment Report and the dedicated implementation of the environmental management programme, it is believed that the significant environmental aspects and impact associated with this project can be suitably mitigated. With the aforementioned in mind, it can be concluded that there are no fatal flaws associated with the project and that authorisation can be issued, based on the findings of the specialists and the impact assessment, through the compliance with the identified environmental management provisions.

The following pertinent conditions for inclusion in the Environmental Authorisation are recommended:

- Appointment of an Environmental Control Officer to monitor compliance with the Environmental Authorisation and the approved Environmental Management Programme
- All mitigation measures provided in the Specialist reports, Impact Assessment and Environmental Management Programme of the Basic Assessment Report are to be adhered to. Specifically, the following:
 - Once the groundwater has been exposed at the construction site, a sample must be sent for testing prior to discharge into the Port;

- The Recommended General and Special effluent limits for physico-chemical properties and organic and inorganic constituents of the effluent as described in Anchor, 2016 must be met;
- Diffuse pollution sources to be managed to prevent pollution of the Estuary and all spillages should be cleaned out thoroughly to prevent contamination of surface run off;
- Ablution facilities must be located in such a way that they are accessible to the workforce but do not in any way negatively impact Durban Bay Estuary;
- Ensure proper storage of material (including fuel, paint) that could cause water pollution;
- Ensure proper storage and careful handling of hazardous substances with spill prevention materials at hand;
- Spill management method statements for in situ concrete works to be developed to ensure adequate management of any spills;
- Ensure all water quality and pollution general mitigation measures are adhered to;
- Adequate environmental awareness to ensure construction labourers do not pollute Durban Bay Estuary;
- All significant spillages must be reported to eThekweni Water and Sanitation on 0811313013 immediately;
- The provisions of SANS 10103:2008 will apply to all areas within audible distance of residents or tenants;
- Working hours to be agreed upon with Transnet Construction Manager, so as to minimise disturbance to tenants and land users;
- No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to adjacent land-owners or tenants;
- Construction activities generating output levels of 85 dB or more will be confined to normal working hours unless agreed upon by the Transnet Construction Manager and Environmental Control Officer;
- The Contractor will take preventative measures (e.g. screening, muffling, timing, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools;
- The location of areas for delivery of equipment and materials must take into account the noise generated by vehicle and offloading equipment. This will be assessed by the Environmental Control Officer and Environmental Officer and appropriate recommendations made in consultation with the Transnet Construction Manager;
- Compressors and associated equipment which exhibit continuous noise that could impact adjacent land users should be used during normal work hours (8h00 to 17h00) if possible;
- All equipment to be properly maintained to reduce unnecessary noise and must be kept in proper working order;
- Prior to construction the position and type of lighting will be planned to ensure unnecessary light pollution will be eliminated;
- All lighting installed on site must not lead to unacceptable light pollution to the surrounding community and natural environment (e.g. use of down-lighters);
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities;
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;

- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site;
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1);
- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage;
- Restrict construction activities to footprint area;
- No go' area to be demarcated; and
- Rehabilitation to be undertaken post construction where required.

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

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14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES ✓

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

The details of the specialists as well as the specialist declaration forms are provided in **Appendix I**. Copies of the following specialist studies are included in **Appendix D**.

- Estuarine Assessment Report
- Landside Heritage Assessment Report

Please note that the proposed site is 100% transformed and does not include any vegetation, thus no Ecological Assessment was undertaken.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Due to the deepening, lengthening and widening of Berth 203 to 205, Pier 2, Durban Container Terminal (authorised on 21 January 2015), Transnet Port Terminals (TPT) has recognised the need for new landside infrastructure and facilities to replace facilities that will be demolished on the existing quay walls. The new landside infrastructure proposed by TPT includes the following:

- A new Central Mess and Ablution Facility at Berth 203;
- A new Satellite facility at Berth 205;
- A new North Substation located at Berth 205;
- A new East Substation located south east of Berth 203; and
- Associated infrastructure such as access roads, mini substations, sewer, stormwater, high mast lighting, tunnels and Close Circuit Television (CCTV).

A description of the various components is provided below. Please note that the drawings provided below are for orientation purposes. A3 copies of all design drawings are included in the **Appendix C**.

A locality map is provided in **Figure 1** together with an overview of the location of the various components which is provided in **Figure 2**.

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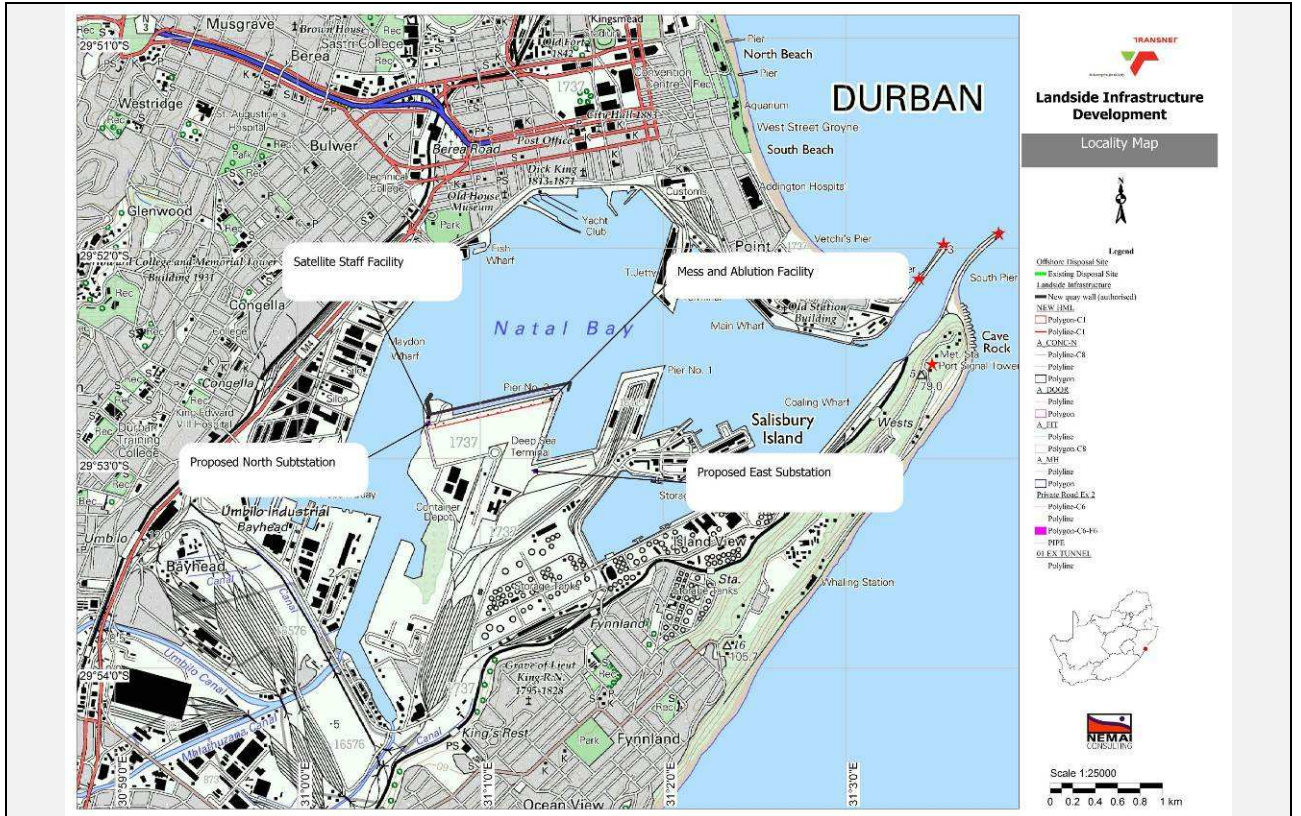


Figure 1: Locality Map

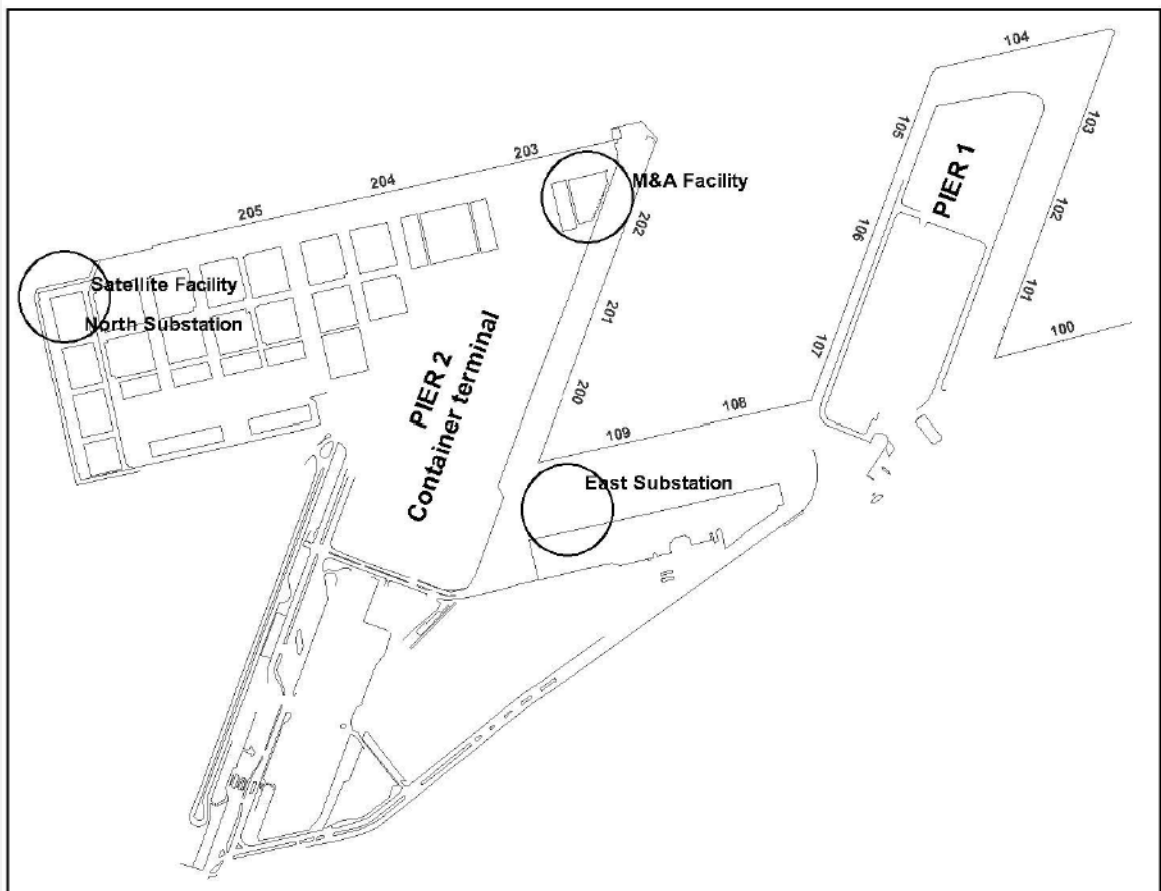


Figure 2: Layout Plan

Central Mess and Ablution Facility

The proposed new Central Mess and Ablution has been designed as a five storey facility due to the limited site space. The ground storey will provide access to the parking area, HVAC plant room, and entrance lobby. The first and second floors will have locker and ablution facilities, separated for males and females. The mess room will be located on the third storey. Offices will be provided on the fourth storey whilst the fifth storey will provide access to the photovoltaic panels on the roof.

Due to the geotechnical conditions and high column loads, the facility will have piled foundations.

In order to ensure the facility is sustainable, a 60 kW Photovoltaic (PV) grid will be installed and will be grid connected. In addition, greywater harvesting will also be implemented (approximately 9000 litres per day).

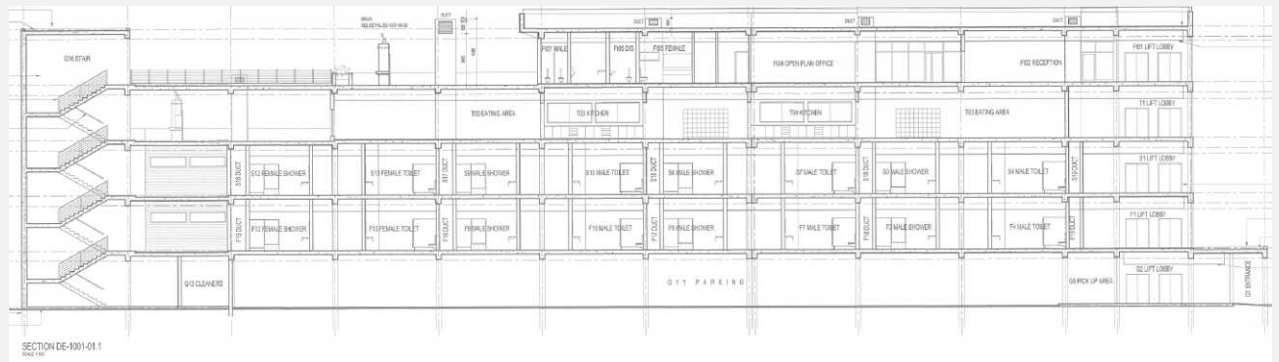


Figure 3: Section - Central Mess and Ablution Facility

Satellite Facility

Due to the limited site space, the proposed building is designed as a two storey facility with male and female ablutions on the ground floor and offices and mess room on the first floor. The facility has been designed as a concrete framed structure incorporating non load bearing brickwork as cladding and partitions. It comprises of a reinforced concrete first floor slab and a roof supported on a concrete ring beam.



Figure 4: Section - Satellite Facility

North Substation and East Substations

The proposed design for the North and East Substations layouts are the same, but mirrored on the sites with the North Substation occurring just south of Berth 205 and the East Substation occurring south east of

Berth 203 (Figure 2 above).

Due to the limited site space, the proposed Substation buildings have been designed as a three storey facility which include transformer rooms, cable rooms and switchgear rooms. The building will be a concrete framed structure with face brick infill and an aluminium sheeted roof. Two 10m x 6m steel roller shutter doors are provided for the transformer to be moved in and out of the transformer room. The transformers are placed on concrete plinths.

Both the proposed new East and North Substations will house 11kV/400V 630kVA transformers which will be used to supply the terminals operational infrastructure in the vicinity of the substations. The substation will be supplied by medium voltage (MV) supply fed from the existing 33/11kV Pier 2 Main Substations' 11kV switchboard. A typical section of the North Substation is provided below.

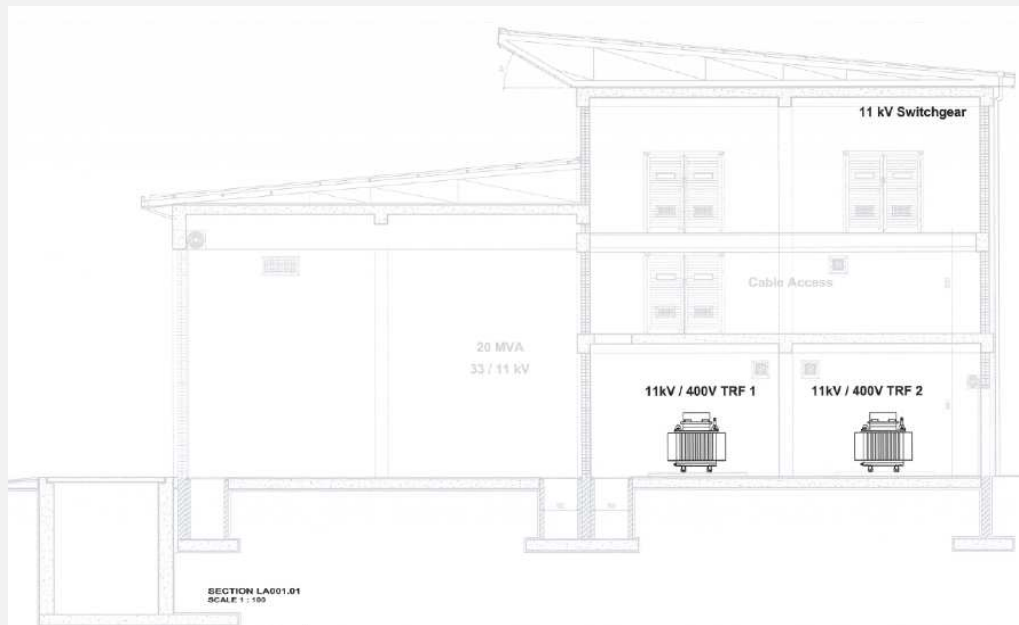


Figure 5: Section – North Substation

Associated Infrastructure

In addition to the above facilities, associated infrastructure will also be put in place and can be summarised as follows:

- **TFR Radio Mast at Berth 203 Staff Facility:** The existing radio equipment on top of the TFR antenna mast pole has been decommissioned. This TFR radio mast pole accommodated an anemometer, decommissioned wireless network equipment and a TPT PTZ camera. This mast pole, with its equipment, shall be taken down and relocated to the new quay wall corner in a similar position to what it is now.
- **New High Mast Lighting System:** New 45m High Mast lights (HML) will be put in place and will receive power through cables installed in tunnels on the cable racks, inside the tunnels and in pipe and chamber from the tunnel to mast foundation. It should be noted that these HMLs will replace the existing HML.
- **Sewer Reticulation:** Full waterborne sanitation was designed in accordance with SANS 10125-2 and the CSIR Guidelines for Human Settlement Planning and Design. All pipe sizes are 160mm diameter uPVC class 34 with a minimum gradient of 1:120. Vents have been provided at all high

points and critical sections. Due to the flat terrain, sewage will drain into the sewer pump station, which will be pumped to municipal sewer connections.

- **Grey water Design:** All water from washing basin and showers will be drained to a Grey Water treatment plant. All treated greywater will have to be pumped from the greywater plant's treated storage tanks to individual header tanks that will be positioned at the facility.
- **Ducts and Chambers:** All electrical reticulation will be via pipe and chamber. New Electrical type E6 manholes are to be constructed with 160 diameter Class 34 pipes connecting to the manholes. Data and Communication reticulation will be via pipe and chamber. New Type T1 manholes are to be constructed with 110 diameter Class 34 pipes connecting to the manholes. All sleeves are required to be 800mm below the road, with less than 800mm to be concrete encased.
- **Potable Hot Water:** For the Central Mess and Ablution Facility, potable hot water is required and thus a system shall be implemented which shall combine Heat recovery and Heat pumps.
- **Changes to Existing CCTV, Security and ICT Systems:** The CCTV system on the north quay between berths 203 to 205 has been reconfigured to accommodate the new layout without the need for additional mast poles for PTZ cameras. Existing CCTV cameras monitoring berths 203 to 205 will relocate forward, as required by the new quay wall. These existing PTZ cameras are PTZ 208, PTZ 305 and PTZ 306 and will be removed with their respective mast poles and relocated to their new locations in sync with the civil works. Their role in the CCTV system remains the same; to provide views of operational movements at the berths.
- **Access Roads:** Selective upgrades of Langeberg Road and Breede Road will be undertaken. These fall below the thresholds indicated in the 2014 EIA Regulations. These upgrades include compacting of the road surface and infill of potholes.

Dewatering

The north and east substations will require dewatering for the landside buildings. The required pumping rate required to dewater the excavations are provided below:

- East Substation – Approximately 515.04 m³/day; and
- North Substation – Approximately 388.6 m³/day.

Based on this, a Coastal Water Discharge Permit (CWDP) in terms of the National Environmental Management: Integrated Coastal Management Act (No 138 of 11 February 2009) as amended in August 2014 is required. The competent authority in regards to the CWDP is the Department of Environmental Affairs (DEA): Oceans and Coasts. Consultation with the Department has taken place telephonically and it has been confirmed that the impacts related to the CWDP must be assessed as part of the Basic Assessment Report. As such, information on the proposed dewatering will also be provided.

It should be noted that ZAA Engineering Projects and Coastal Architecture has provided a statement regarding the likely water quality of the water that will be discharged from the excavations. This is contained **Appendix J1**. It is ZAA's considered opinion that given the proximity of the proposed excavations to the waterline, the water that will be pumped from the excavations during the construction process will be of the same quality as the water within the harbour basin. Piezometer monitoring behind the existing quay wall has indicated that the water table behind the wall corresponds to the water level within the basin, indicating that the water behind the quay wall is sea water that moves into and out of the sand backfill with the tidal movement.

The proposed discharged points are provided in **Figures 6 and 7**.

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Figure 6: Discharge Point 1



Figure 7: Discharge Point 2

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Alternatives

Two layout alternatives have been assessed, namely: Layout Alternative 1 and Layout Alternative 2.

In Layout Alternative 1, the position of the various facilities are on the perimeter of the container stacking areas and have no impact on the flow of straddle carriers and operations. The disadvantage of this alternative from a technical perspective is that the building structures encroach the 100m high water mark (**Figure 8**).

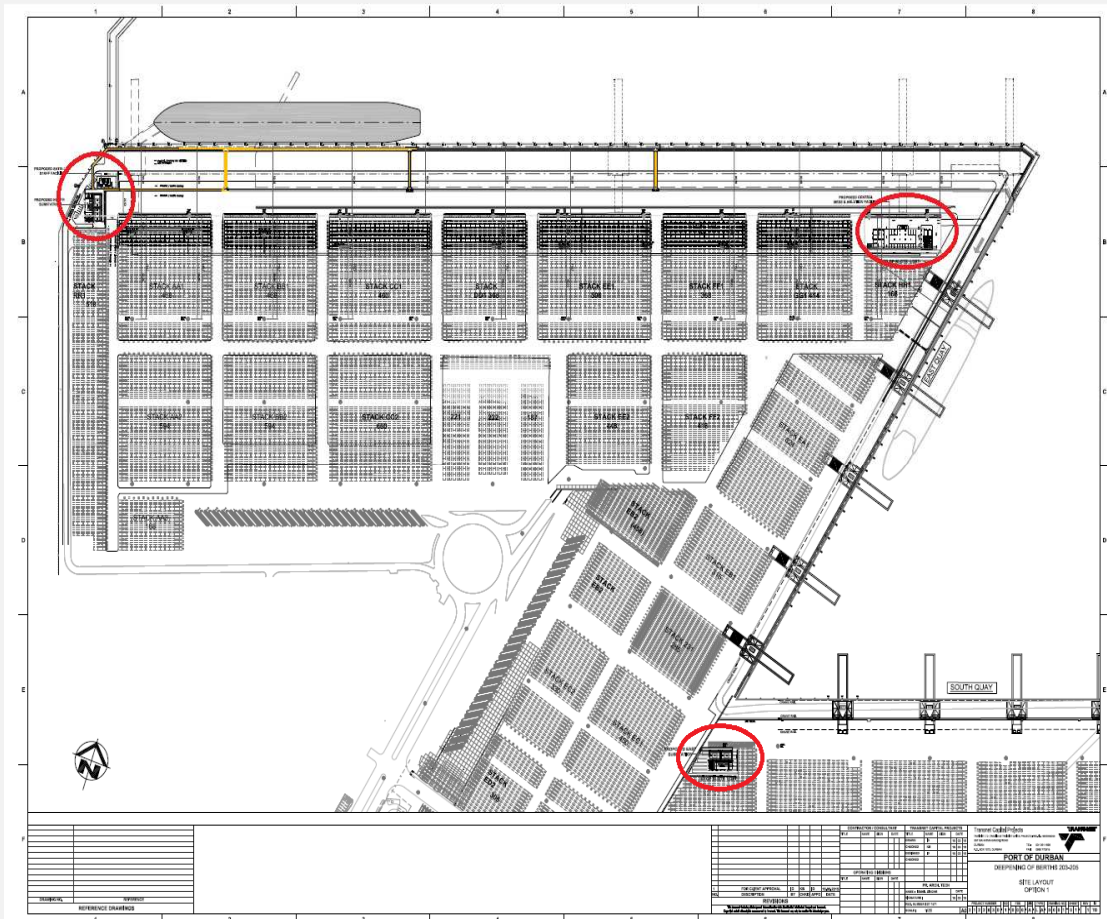


Figure 8: Layout Alternative 1

In Layout Alternative 2, the building structures are surrounded by container stacking areas and thus pose a risk when entering and leaving the facilities. From an operational perspective, this option breaks up the container stacking areas, which is not ideal. The only advantage of this alternative is that the building structures are on the 100m high water mark and therefore do not require a Basic Assessment (**Figure 9**).

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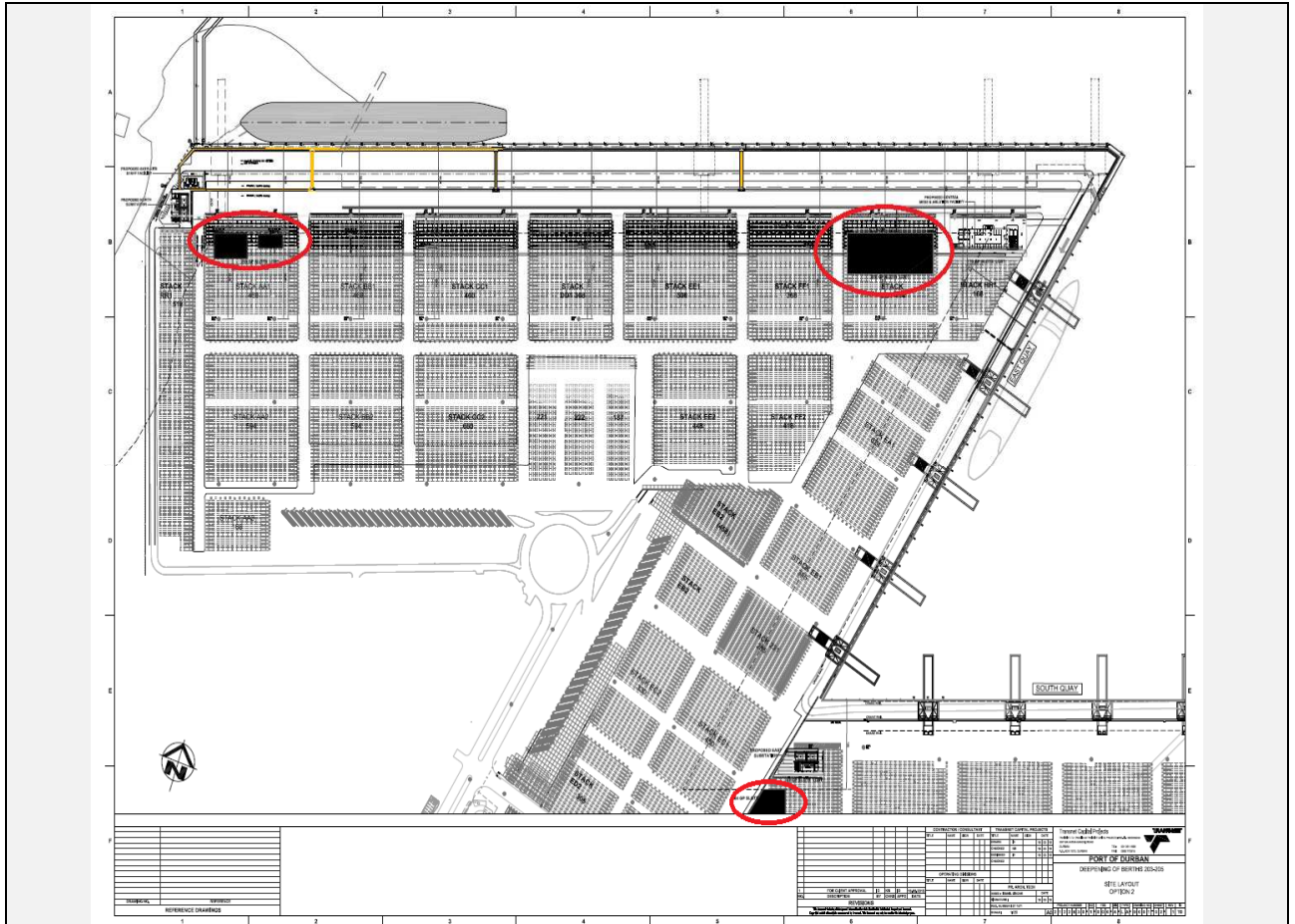


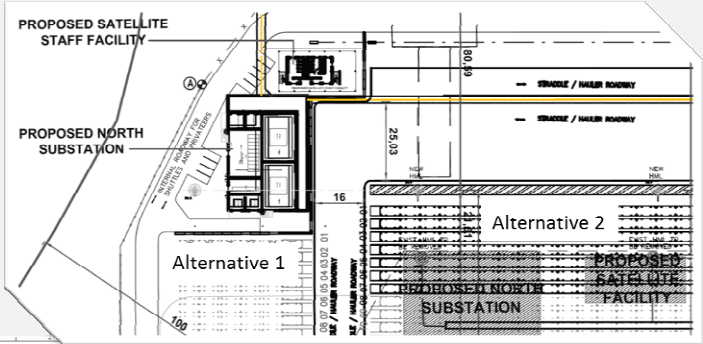
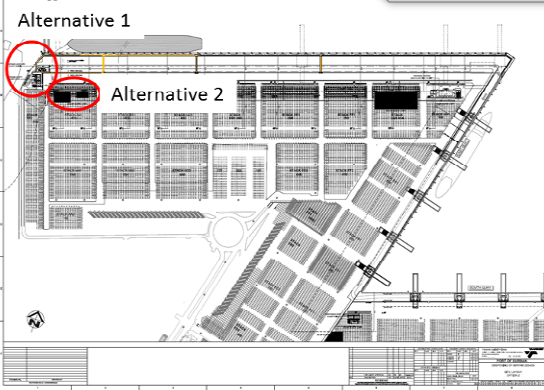
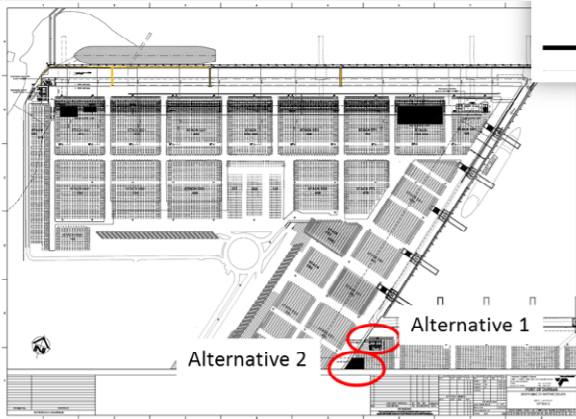
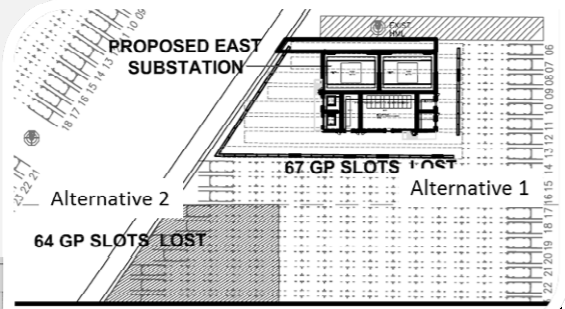
Figure 9: Layout Alternative 2

Table 1 provides a comparison of the alternatives.

Table 1: Comparison of Alternative facility locations

Comparison of Locations of the Various Structures	
Central Mess and Ablution Facility	<div style="text-align: center;"> </div> <div style="text-align: center; margin-top: 20px;"> </div>

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<p>Staff Satellite Facility</p> <p>North Substation</p>	 
<p>East Substation</p>	 

- b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 983, 984 and 985	Description of project activity
<p>Example: GN 983 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p>	<p>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</p>
<p>GNR 983, Activity 19 (iii) The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from-</p> <p>(i) a watercourse; (ii) the seashore; or (iii) <u>the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater</u> but excluding where such infilling, depositing, dredging, excavation, removal or moving-</p> <p>(a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p>	<p>The construction of landside infrastructure including the following:</p> <ul style="list-style-type: none"> • A new Central Mess and Ablution Facility at Berth 203; • A new Satellite facility at Berth 205; • A new North Substation located at Berth 205; • A new East Substation located south east of Berth 203; and • Associated infrastructure such as access roads, mini-substations, sewer, stormwater, high mast lighting, tunnels and Close Circuit Television (CCTV). <p>Will involve the excavation of more than 5 cubic metres of material for foundations and tunnels at the Berth 203 to 205 quay walls, which occurs within 100m of Durban Bay Estuary.</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

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Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Not Applicable – no site alternatives could be assessed as the proposed landside infrastructure is related to the Berth 203 to 205 Expansion and is therefore site specific.

New landside infrastructure is required at Berth 203 to 205 to replace the facilities, which will be decommissioned as part of the Expansion project.

In the case of linear activities:

Not Applicable – whilst some of the associated infrastructure described in Section 1 include linear activities, these activities are below the thresholds indicated Listing Notice 1, 2 and 3 of the 2014 EIA Regulations. As such, no linear alternatives have been assessed.

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

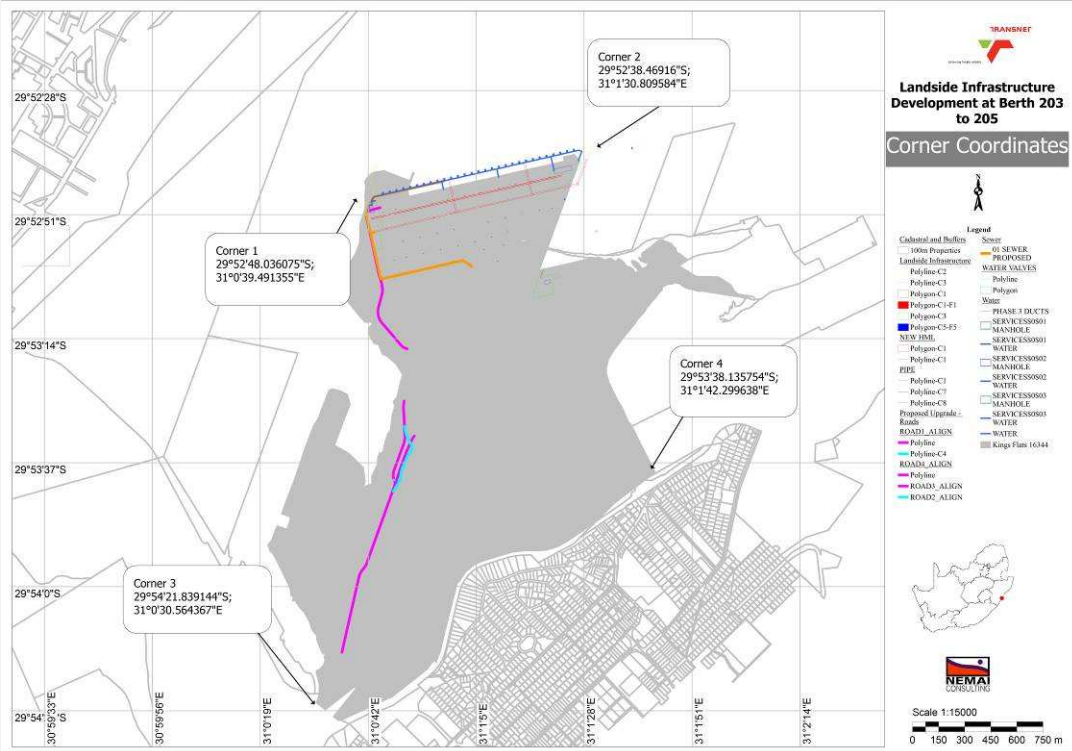
BASIC ASSESSMENT REPORT

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

Not Applicable – not a linear activity.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

The corner coordinates of the site are provided below and in Appendix A.



b) Lay-out alternatives

Two layout alternatives have been assessed, namely: Layout Alternative 1 and Layout Alternative 2.

In Layout Alternative 1, the position of the various facilities are on the perimeter of the container stacking areas and have no impact on the flow of straddle carries and operations.

In Layout Alternative 2, the building structures are surrounded by container stacking areas and thus pose a risk when entering and leaving the facilities. From an operational perspective, this option breaks up the container stacking areas, which is not ideal.

Please note: As both Layout Alternative 1 and 2 occur on the same site, the centroid coordinate for the alternatives are the same.

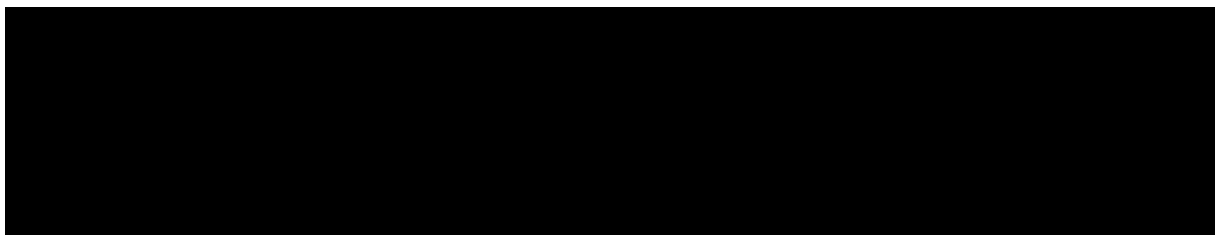
Layout Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Layout Alternative 1	29°53'28.659"S	31°01'02.219"E
Layout Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Layout Alternative 2	29°53'28.659"S	31°01'02.219"E

c) Technology alternatives

Not Applicable.

Alternative 1 (preferred alternative)	
Alternative 2	

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)



e) No-go alternative

The no-go alternative for the proposed development would mean that the facilities and associated infrastructure described in Section 1 **would not be put in place**.

This would jeopardize the functioning of Berth 203 to 205, Pier 2 as there would be no staff facilities available at the berths and staff would be forced to travel to different piers to use the bathrooms, facilities and offices. This would decrease efficiency at the berths. Furthermore, without the new north and east substations, the ship-to-shore cranes could not be used and the container terminal would be negatively affected. This would have a negative economic impact at a regional and national level.

Paragraphs 3 – 13 below should be completed for each alternative.

Please note that the layout alternatives occur on the same site and as such the information provided below applies to both Layout Alternative 1 and 2 and has not been repeated.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Layout Alternative 1¹ (preferred activity alternative)

Layout Alternative 2 (if any)

Alternative A3 (if any)

Size of the activity:

4173.13 m ²
4173.13 m ²

or, for linear activities:

Alternative:

Layout Alternative 1² (preferred activity alternative)

Layout Alternative 2 (if any)

Alternative A3 (if any)

Length of the activity:



b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Layout Alternative 1³ (preferred activity alternative)

Layout Alternative 2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

3.99078 km ²
3.99078 km ²

The physical footprint of both alternatives is the remaining portion of Farm Kings Flats No. 16344 which is 3.99078 km².

4. SITE ACCESS

Does ready access to the site exist?

YES ✓	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

² "Alternative A.." refer to activity, process, technology or other alternatives.

³ "Alternative A.." refer to activity, process, technology or other alternatives.

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Access exists to the site, however as part of the proposed development and the Berth 203 to 205 Expansion, selective upgrades to some roads will be required including Langeberg Road (**Figure 10**). These do not require authorisation in terms of the 2014 EIA Regulations as the Activities 24 and 56 of Listing Notice 1 are not triggered as the road is not wider than 6 metres and occurs within an urban area. Activity 4 of Listing Notice 3 does not trigger as there is an existing road, which is being formalised (involving compacting and infilling of potholes). Some parts of the road will be realigned however the width of the road is less than 4m. Activity 18 of Listing Notice 3 does not trigger as the road is not being widened by more than 4 metres or lengthened by more than 1km.

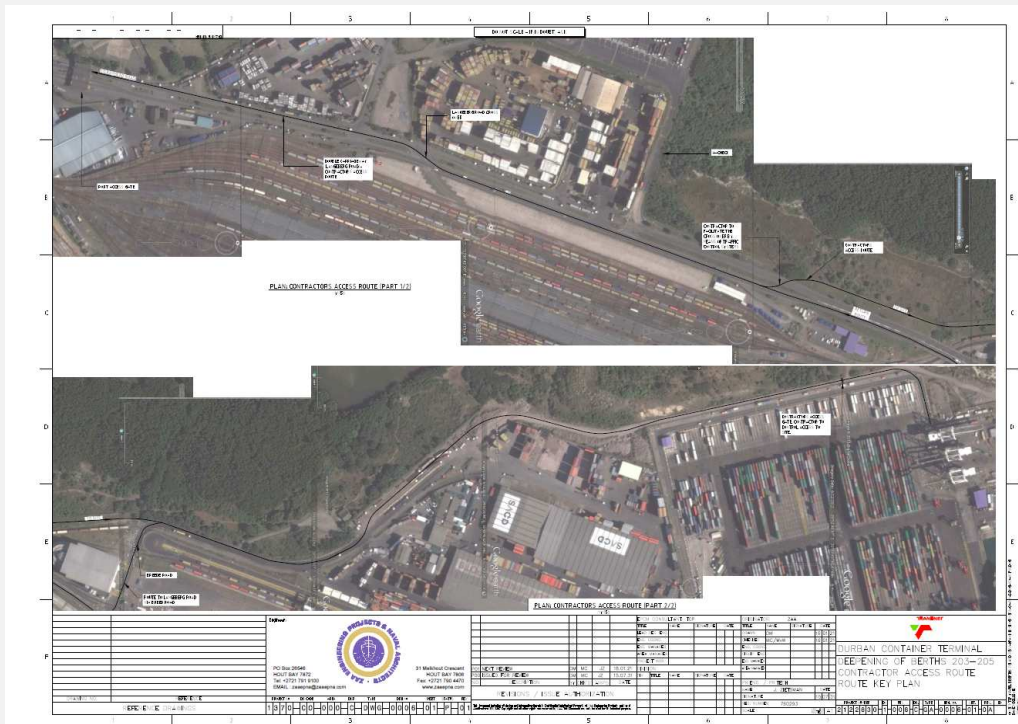


Figure 11: Access to site

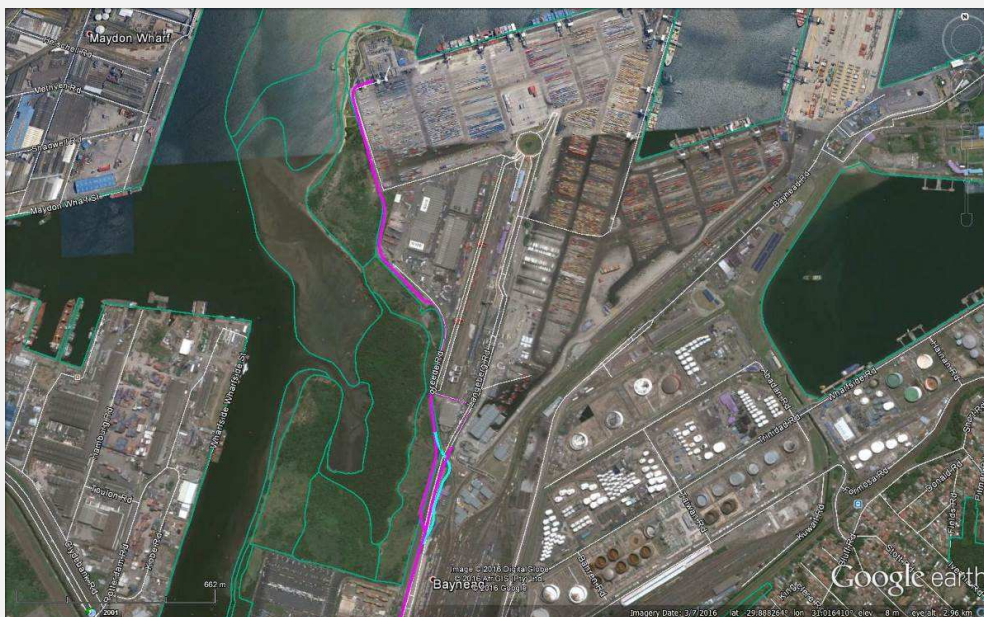


Figure 12: Road upgrade (pink and blue) and DMOSS area (in green)

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

Please refer to **Appendix A1** for the A3 Locality Map.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

Please refer to **Appendix A2** for the Layout Maps. The Site Plan Map is presented in **Appendix A5**.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

Please refer to **Appendix A3** for the Sensitivity Map.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Please refer to **Appendix A4** Site Photographs Location Map. Site Photographs are presented in **Appendix B**.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

Facility illustrations and designs are provided within **Appendix C**

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES ✓	Please Explain
The proposed landside infrastructure development occurs on the existing Berth 203 to 205. The land use of the current Berth 203, 204 and 205 is 'industrial/Port logistics'. The proposed development is in line with this.		

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2. Will the activity be in line with the following?

(a) Provincial Spatial Development Framework (PSDF)

YES
✓

Please explain

Yes, the activity is in line with the 2011 KwaZulu Natal (KZN) Provincial Spatial Development Framework (PSDF) which indicates that the area is an economic value adding area (Figure 13).

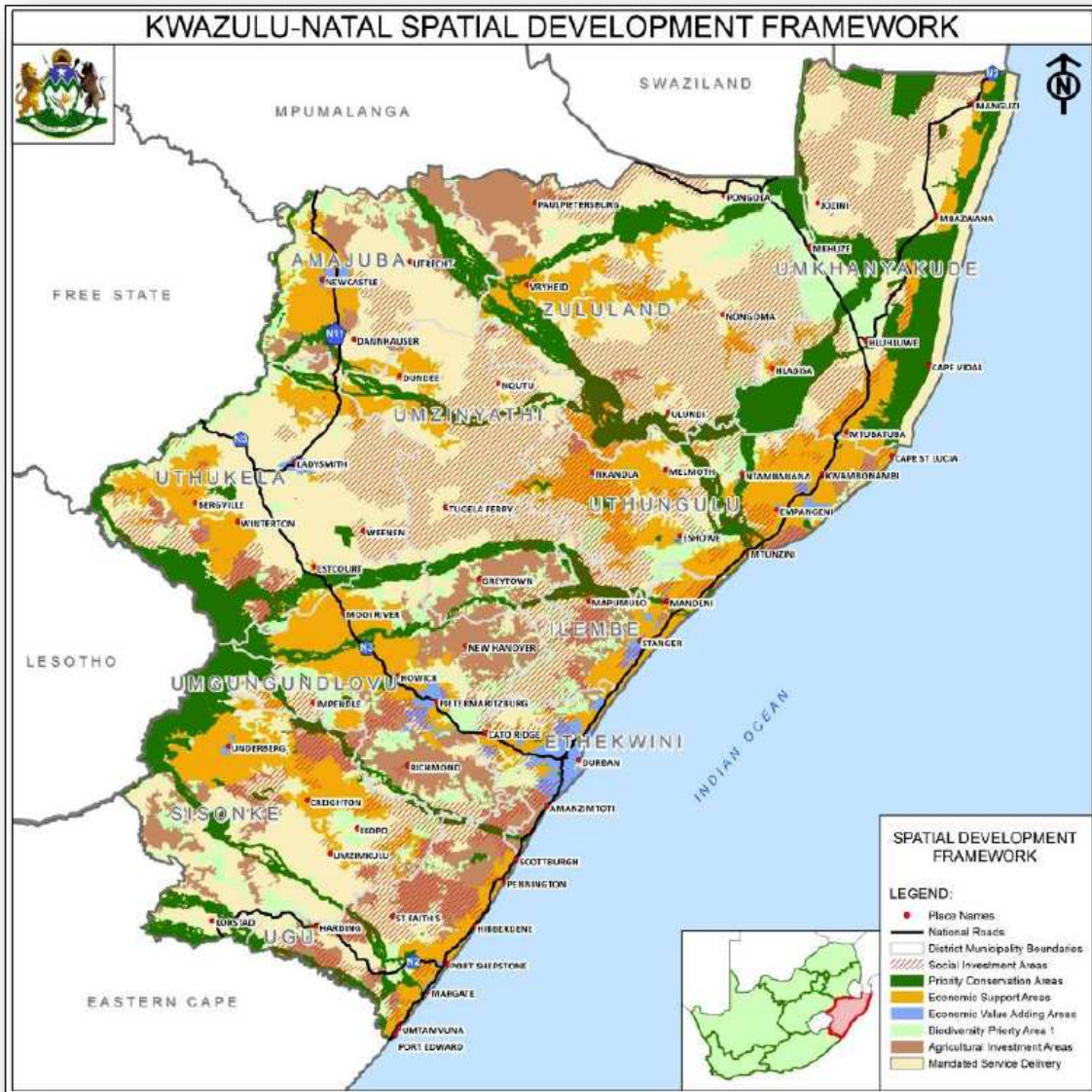


Figure 13: 2011 KZN PSDF

(b) Urban edge / Edge of Built environment for the area

YES
✓

Please Explain

The activity is in line with the Urban Edge (Urban Development Line or UDL) as it falls within the UDL as indicated in the eThekweni SDF, 2015 (Figure 14).

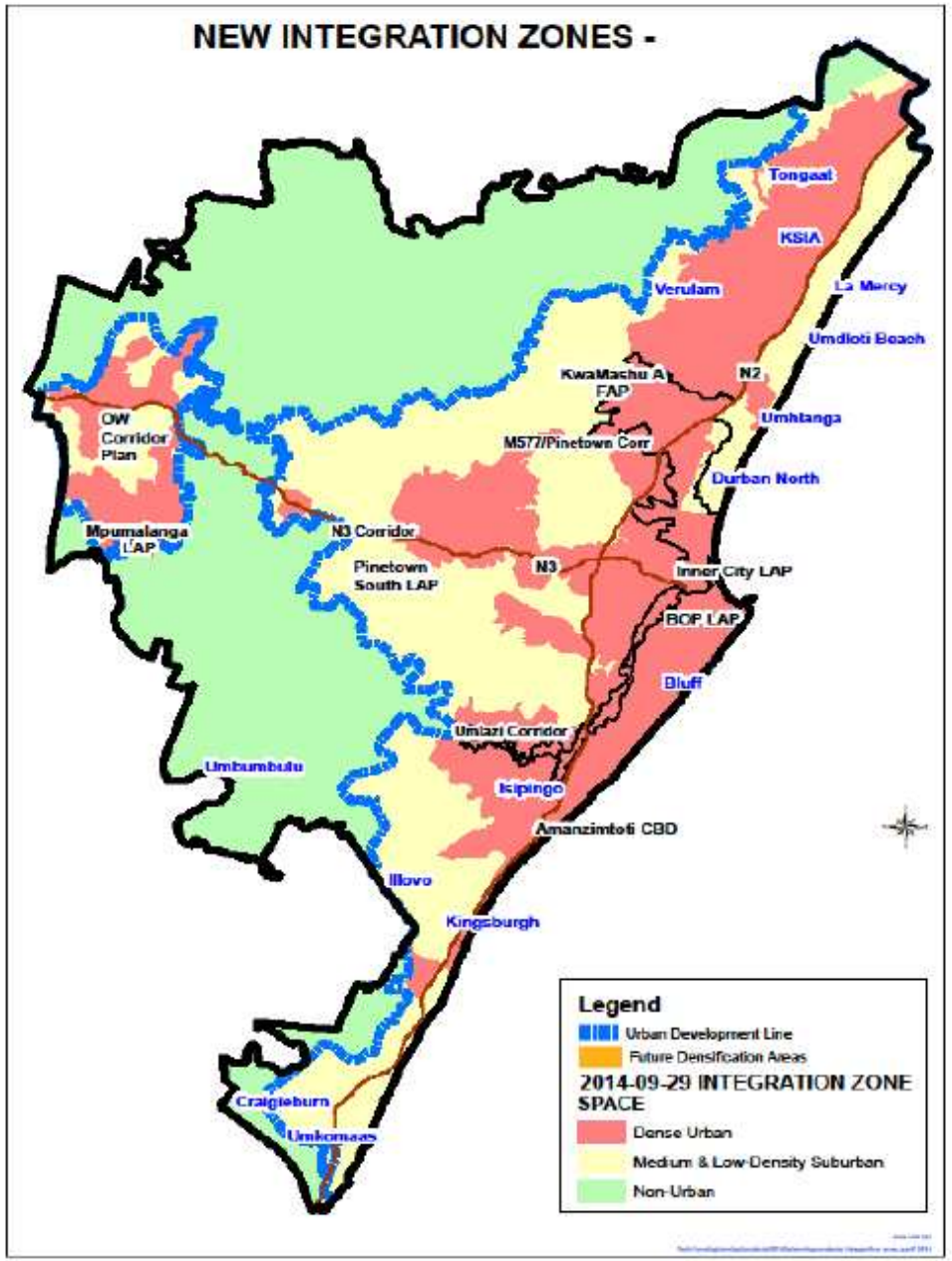


Figure 14: Urban Development Line and Integration Zones

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).

YES
✓

Please explain

The proposed activity is in line with the eThekweni IDP and SDF. The IDP identifies the Port of Durban as a strategic investment areas and the need to improve Port infrastructure to ensure maximisation of Port economic opportunities is noted.

In addition, the recent 2015/2016 eThekweni SDF shows that the proposed landside infrastructure development occurs in an area identified as 'industry' and an economic investment node. The proposed development is therefore in line with PSDF (Figure 15).

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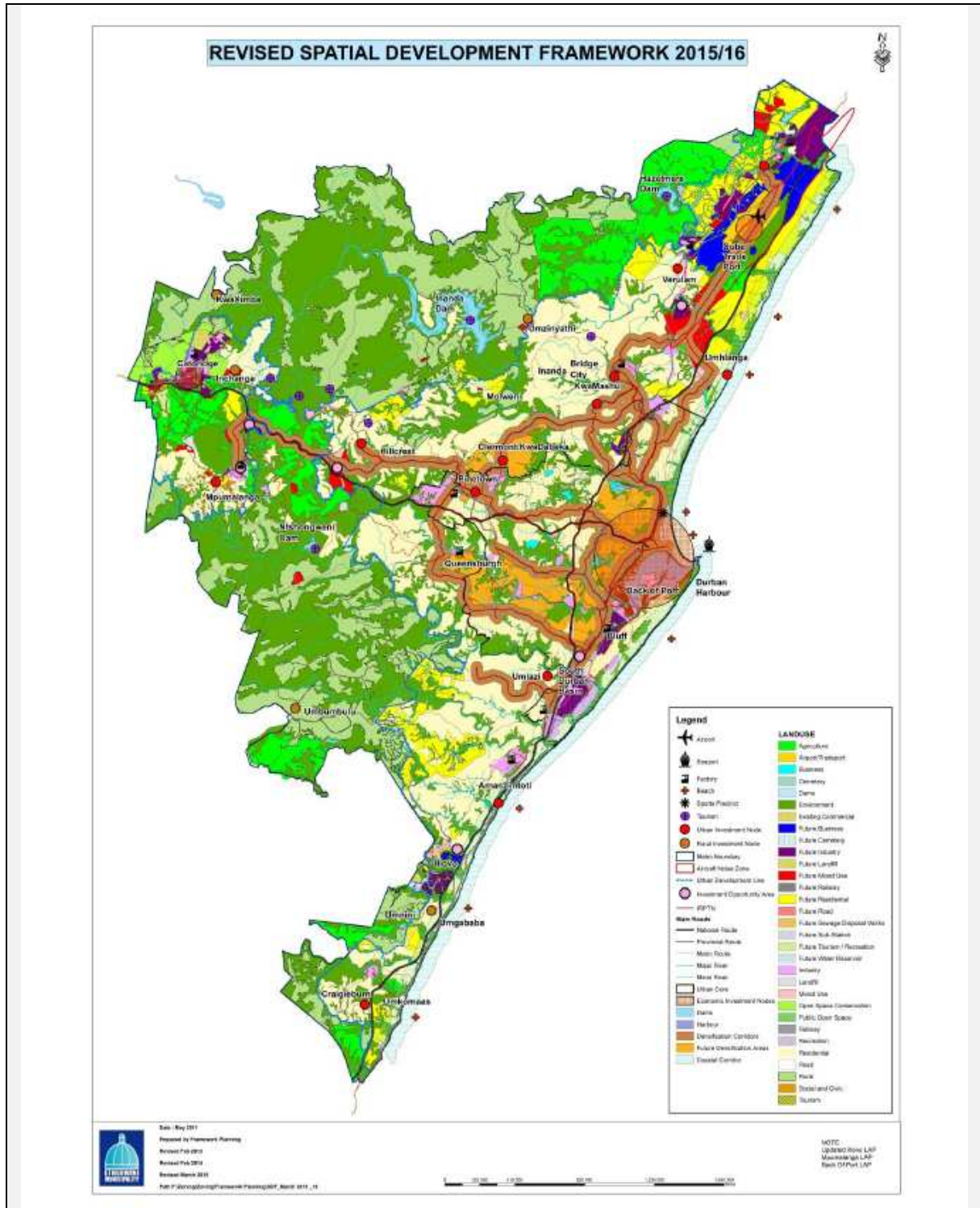


Figure 15: eThekweni 2015/2016 SDF

The approval **would not** compromise the integrity of the existing approved and credible municipal IDP and SDF.

(d) Approved Structure Plan of the Municipality

YES
✓

Please explain

The proposed development is in line with the eThekweni Municipality Planning Scheme for Durban which includes a logistics zone at the Port of Durban. The purpose of this zone is to introduce the

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Port of Durban as the gateway to Africa. This zone is meant to promote all activities related to the logistics sector and that includes opportunities for warehousing, the de-stuffing and “breaking of bulk” and related industrial land-uses. The plan includes a number of development parameters such minimum erf size, height in storage etc. The proposed buildings are in line with these requirements.

The site is within the Port of Durban Precinct and is located within an operational area which has restricted access to the general public. The Port is zoned as ‘harbour zone’ under the eThekweni town planning ordinance and has a height restriction of 25m. The activities in the harbour zone are restricted to Port related activities only. The proposed activity is in line with this.

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES ✓		Please explain
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There is no EMF for eThekweni Metropolitan Municipality however, the proposed project was assessed against the Durban Metropolitan Open Space System (DMOSS) and was found to be in line with DMOSS (see response to question f. below for more detail). Therefore the approval of the application would not compromise the integrity of existing environmental management priorities for the area.

(f) Any other Plans (e.g. Guide Plan)	YES ✓		Please explain
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D'MOSS is a system of open spaces, which includes approximately 74 000 ha of land and water, that incorporates areas of high biodiversity value linked together in a viable network of open spaces.

Examples of areas included in D'MOSS are nature reserves (e.g. Paradise Valley, Burman Bush and Kenneth Stainbank Reserve), large rural landscapes in the upper catchments and riverine and coastal corridors.

D'MOSS is designed to maintain:

- As many functional ecosystems as possible;
- The widest range of open space types (e.g. grassland, forests, wetland);
- Physical links between open spaces to allow for the flow of genetic material, energy, water and nutrients;
- Physical links to and between significant sources of biodiversity (e.g. Pondoland and Maputaland centres of plant diversity) to prevent local species extinctions in the eThekweni Municipal Area; and
- Physical links along the coast, connecting river catchments to marine sources of biodiversity.

The proposed activity does not take place in a DMOSS area. Therefore, the approval of this application **would not** compromise the integrity of the existing environmental management priorities for the area as it occurs within a designated industrial area/Port and not within a DMOSS area.

It should be noted that the activity is adjacent to a DMOSS area and within 100m of the estuary. A number of mitigation measures have been suggested by the Estuarine specialist and included in the Environmental Management Programme (EMPr) in order to mitigate any potential impacts.

<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved 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 credible IDP)?</p>	<p>YES ✓</p>	<p>Please explain</p>
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Yes, the proposed development is in line with the project and programmes identified as priorities within the eThekweni IDP (2015).

Firstly, the IDP notes that Strategic Infrastructure Projects (SIPs) cover social and economic infrastructure – across all 9 provinces (with an emphasis on lagging regions). SIPs cover catalytic projects that can fast track development and growth. The IDP also notes that eThekweni is currently engaging with various government stakeholders and State Owned Entities regarding SIP 2: Durban-Free State-Gauteng logistics and industrial corridor.

The proposed Landside Infrastructure development forms part of the Port Expansion project, which is a SIP 2 project.

Secondly, Chapter 2.25 of the IDP identifies strategic capital projects that have the potential to deliver on the on the strategic objectives of the municipality. These projects also feature as the catalytic projects in the Built Environment Performance Plan (BEPP). The Port Expansion (which includes the Landside Infrastructure project) is included as a catalytic project.

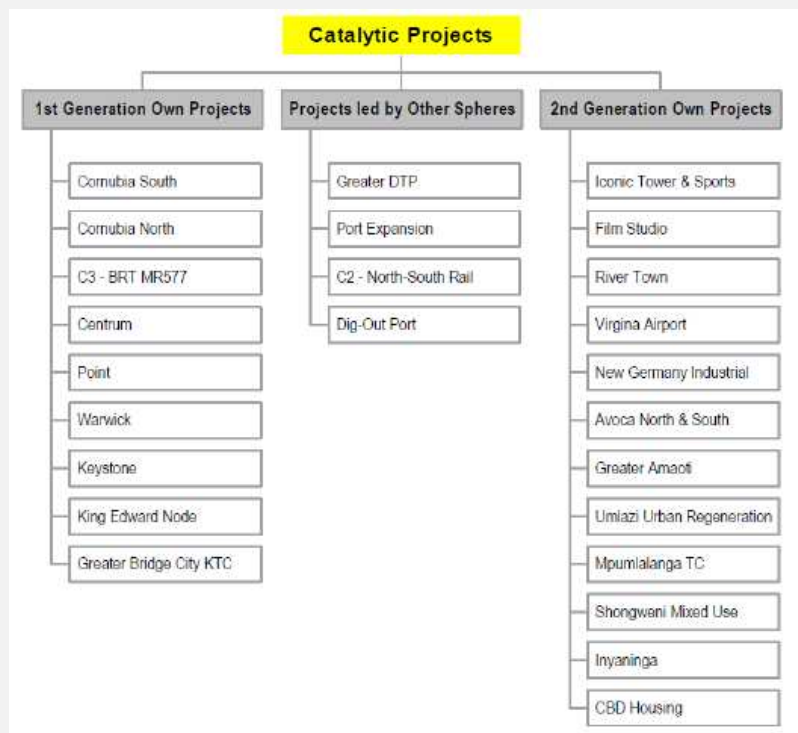


Figure 16: Catalytic Projects

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<p>4. 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.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>Yes, the community/area does require the Landside Infrastructure Development project in order to unlock the economic potential of the Berth 203 to 205 expansion. It is also appropriate to the area as it occurs within an existing Port on the existing Berth 203 to 205.</p> <p>The Port of Durban is identified by the Spatial Development Framework (SDF) as a strategic economic area.</p> <p>TEMPI (joint planning initiative between Transnet and the eThekweni Municipality) undertook to understand the Economic footprint of the Port of Durban. Around 32 000 people are employed directly in the Port. In addition, approximately 7000 people are employed indirectly (circa 2006).</p> <p>The 2015/2016 IDP also notes that the municipality is poised for steady economic growth from several major catalytic projects over the next 20 years creating in excess of a million construction jobs and over 600,000 permanent jobs. The Port expansion projects (which include the Landside infrastructure development) is included as one of these catalytic projects.</p>			
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>The site has bulk potable water, storm water and sewer infrastructure. Within the Port boundary, there is existing civil services that include bulk fire water supply, ICT, electrical, gravitational and pumped sewer infrastructure. The proposed development will link into existing services.</p> <p>An application to the municipality was not necessary because the capacity will not increase. The facilities will replace the existing facilities that will be demolished. Also the new services are designed to conserve energy and water use, therefore the capacity will not increase.</p>			
<p>6. 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 and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES ✓</p>		<p>Please explain</p>
<p>As mentioned above, the site has existing services and the proposed development does not require additional capacity from the municipality. As such, there is no negative implications on the infrastructure planning of the municipality.</p> <p>Comments from eThekweni Metropolitan Municipality were received on the Background Information Document (BID) on 16 March 2016 (See Appendix E). The Electricity Department noted they had no objection but requested that the applicant must consult the eThekweni Electricity main records to</p>			

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confirm the presence of underground electrical services. They also noted that the relocation of MV/LV services should they be required must be carried out at the expense of the applicant.

The eThekweni Water and Sanitation Department noted that potential impacts to the receiving water must be outlined and precautionary measures to prevent impacts to water quality due to spillages etc. must be included. They also noted that Building plans must be submitted to the Department for approval.

7. Is this project part of a national programme to address an issue of national concern or importance?	YES ✓		Please explain
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Yes, the National Development Plan for 2030 makes mention of new plans developed by Transnet to address the capacity issues with the Port of Durban.

In addition, the project is included in SIP 2 as it forms part of the Port of Durban Expansion projects.

8. 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 ✓		Please explain
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Yes, location factors favour this land use as the proposed project does not change the current land use of Berths 203 to 205 (which are currently used for Berthing of Ships and container handling).

Berth 203 to 205 form part of Pier 2 of the Durban Container Terminal. Berth 203 to 205 handle 37% of all container traffic within the Port. Further, Pier 2 is the only container terminal with direct rail access. The development of landside infrastructure at Berth 203 to 205 will assist in unlocking the Berth 203 to 205 expansion.

9. Is the development the best practicable environmental option for this land/site?	YES ✓		Please explain
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The Assessment of Impacts and Alternatives is included in Section D of this report and provides more information on the Best Practicable Environmental Option (BPEO) however in summary, the proposed development is viewed as the BPEO for the site as it does not alter the current land use of the site. The proposed development will assist in unlocking the economic benefits of the Berth 203 to 205 expansion and does not occur within the DMOSS/Estuary area.

In addition, a number of mitigation measures have been included in the EMPr attached to this report. These mitigation measures will assist in mitigating any impacts associated with the development.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES ✓		Please explain
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Yes, the benefits outweigh the impacts. A more detailed assessment of the impacts is included in Section D however in summary, there are no significant negative impacts which cannot be sufficiently mitigated. The proposed development does not infringe on the DMOSS area (estuary) and will occur on existing hard surface. No excavation of estuarine material will take place as the proposed facilities are planned for the existing quay wall's cement surface. In terms of the dewatering, it is expected that the water that will be pumped from the excavations during the construction process will be of the same quality as the water within the harbour basin. Piezometer monitoring behind the existing quay wall has indicated that the water table behind the wall corresponds to the water level within the basin, indicating that the water behind the quay wall is sea water that moves into and out of the sand backfill

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with the tidal movement.		
The assessment of the no-go option showed that should the project not take place, the functioning of Berth 203 to 205, Pier 2 would be jeopardized as there would be no staff facilities available at the berths and staff would be forced to travel to different piers to use the bathrooms, facilities and offices. This would decrease efficiency at the berths. Furthermore, without the new north and east substations, the ship-to-shore cranes could not be used and the container terminal would be negatively affected. This would have a negative economic impact at a regional and national level.		
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	NO ✓	Please explain
The proposed development occurs on existing quay wall and does not change the land use of the area. It therefore does not set any precedent for new activities in the area.		
12. Will any person's rights be negatively affected by the proposed activity/ies?	NO ✓	Please explain
No, the proposed development will not infringe on any person's rights. It occurs within the existing Port of Durban.		
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	NO ✓	Please explain
No, the proposed development occurs within the Urban Development Line (UDL) as set by eThekweni Metropolitan in the SDF (see figure 14 above).		
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES ✓	Please explain
Yes, this project forms part of SIP 2 as it is part of the Port Expansion projects at the Port of Durban. A letter confirming this was included as an annexure in the Application form (Appendix J2).		
15. What will the benefits be to society in general and to the local communities?		Please explain
The main benefits of the proposed development will be economic in nature as the proposed development will unlock the economic potential of the expanded Berth 203 to 205. In addition, the construction of landside infrastructure will result in a number of temporary construction jobs. It will also improve the staff facilities which will have a positive impact. More information is provided in Section D.		
16. Any other need and desirability considerations related to the proposed activity?		Please explain
As mentioned, the proposed development is in line with the eThekweni IDP and SDF. It does not infringe on DMOSS area and has no significant negative impacts that cannot be sufficiently mitigated. Furthermore, it will unlock the economic potential of the berth 203 to 205 expansion. Without the development, the functioning of Berth 203 to 205, Pier 2 would be jeopardized as there would be no staff facilities available at the berths and staff would be forced to travel to different piers to use the bathrooms, facilities and offices. This would decrease efficiency at the berths. Furthermore, without the new north and east substations, the ship-to-shore cranes could not be used and the container terminal would be negatively affected. This would have a negative economic impact at a regional and national level.		

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17. How does the project fit into the National Development Plan for 2030?	Please explain
The National Development Plan for 2030 makes mention of new plans developed by Transnet to address the capacity issues with the Port of Durban. The proposed development forms part of these projects and will have numerous regional and national economic benefits.	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
According to Section 23 of NEMA, 1998, the general objective of integrated environmental management is to promote the integration of the principles of environmental management set out in section 2 as well as to ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them (amongst others).	
The proposed development triggers one activity in terms of Listing Notice 1 of 2014 EIA Regulations and thus requires authorisation from the competent environmental authority, the Department of Environmental Affairs (DEA). The potential impacts associated with this activity are described in Section D. Furthermore, in line with the general objectives of NEMA, there are no significant negative impacts associated with the development. Suitable mitigation measures have been included in the EMPr to ensure sustainable development.	
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.	
Section 2 of NEMA, 1998 notes that development must be socially, environmentally and economically sustainable. The proposed development is in line with this and an impact assessment has been undertaken (See section D) in order to understand the potential impacts of development. A number of specialist studies were undertaken have been taken into account in the Impact Assessment.	
In addition, an EMPr is included in Appendix G which provides a number of mitigation measures to reduce negative impacts.	

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act No. 107 of 1998)	Comply with requirements for environmental authorisation.	National and Provincial	27 November 1998
Constitution of the Republic of South Africa Act (Act No. 108 of 1996)	Comply with the current constitution.	National and Provincial	18 December 1996
Environmental Impact Assessment Regulations, 2014, promulgated in terms	Listed activities applied for environmental authorisation.	National and Provincial	04 December 2014

BASIC ASSESSMENT REPORT

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
of Section 24(5) of NEMA.			
National Water Act (Act No. 36 of 1998)	Comply with requirements for a Water Use License for this development.	National and Provincial	26 August 1998
National Environmental Management: Biodiversity Act, (Act No. 10 of 2004)	Ensuring biodiversity is protected.	National and Provincial	07 June 2004
National Environmental Management: Protected Areas Act, (Act No. 31 of 2004)	Ensure the adequate management of Protected Areas	National and Provincial	11 February 2005
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Ensuring protection of agricultural resources.	National and Provincial	21 April 1983
National Forests Act (Act No. 84 of 1998)	Ensuring that no trees in terms of the act are removed.	National and Provincial	30 October 1998
National Environmental Management Waste Act, (Act No. 59 of 2008)	Ensuring that waste products are managed successfully.	National and Provincial	10 March 2009
National Heritage Resources Act (Act No. 25 of 1999)	Ensuring protection of heritage resources.	National and Provincial	28 April 1999
Occupational Health & Safety Act (Act No. 85 of 1993)	Ensuring that health and safety is practiced during construction of the proposed development.	National and Provincial	23 June 1993
The National Environmental Management: Integrated Coastal Management Act, 2008	Aims to promote the coastal environment as well as to ensure that development and use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable.	National	11 February 2009
The National Ports Act, 2005	The National Ports Act (NPA), 2005 (Act No. 12 of 2005) is the primary piece of legislation regulating the Port sector in South Africa. It specifically deals with the modernisation and efficient operation of South African ports. Transnet National Ports Authority (TNPA) must regulate and control development, in accordance with approved Port development	National	4 August 2005

BASIC ASSESSMENT REPORT

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	frameworks, integrate biophysical, social and economic issues in all forms of decision making and ensure sustainable and transparent planning processes, in consultation with stakeholders.		
The KZN Conservation Management Act, 1997	Provides for the establishment of the KZN Conservation and prescribes its powers, duties and functions which include: Direct Nature conservation management; and Direct Protected areas management.	Provincial	3 December 1997

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT - TRANSNET TO CONFIRM

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES ✓	
Approximately 316 m ³ per month	

If YES, what estimated quantity will be produced per month?

The estimated quantity of waste expected is provided in **Table 2**.

Table 2: Estimated volume of waste

Description	Quantity (m ³)	Planned Date
Demolitions for Berth 205	445.53	Jun-17
Demolitions for Berth 203	501.93	Oct-22
Demolitions for Berth 202	248.41	Oct-22
Demolitions for 205 Substation	194.02	Apr-18
Demolitions for 203 Substation	194.02	Apr-18
Total	1583.91	

How will the construction solid waste be disposed of (describe)?

All waste generated by construction activities will be collected on site and stored in weatherproof and vermin proof containers until it is removed from site and disposed of at a suitable registered landfill site. All construction rubble from construction activities will be placed at a designated storage area until it is disposed of at a registered landfill site. In addition, best practices to manage waste are included in the EMPr in Appendix G.

Where will the construction solid waste be disposed of (describe)?

BASIC ASSESSMENT REPORT

Construction solid waste will be disposed of at a registered/licenced waste disposal facility. The details of the disposal facility will be finalised during the contracting process, prior to the commencement of construction. However, it is expected that general waste will be disposed of at a municipal landfill site. It is expected that hazardous waste will be disposed of at EnviroServ Shongweni Landfill Site, which is located at 1 Shongweni Dam, Shongweni.

Will the activity produce solid waste during its operational phase?

YES

✓

If YES, what estimated quantity will be produced per month?

Estimated 8
tonnes

The existing Port operations at the Durban Container Terminals produces approximately 6.95 tonnes of waste per month which is disposed into the municipal waste stream. The proposed development will result in slight increase in generated waste through the addition of the new Satellite Staff Facility and as such it is estimated that approximately 8 tonnes of general waste will be generated per month during the operational phase.

How will the solid waste be disposed of (describe)?

During the operational phase, it is expected that general waste will be produced by the operational staff stationed at the office building. The general waste produced is expected to consist mainly of cardboard, paper, plastic, food containers, bottles etc. The waste will be stored in appropriately sealed and correctly labelled waste skips/containers at the Central Mess and Ablution Facility and Satellite Staff Facility. The waste will then be collected from the site by municipal services (i.e. Durban Solid Waste) and accordingly disposed of at a registered municipal disposal facility.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

The waste will then be collected from the site by municipal services (i.e. Durban Solid Waste) and accordingly disposed of at a registered municipal disposal facility. In some instances, contracted waste service providers may be used. Waste will then be placed in nearby skips and then collected for disposal at a registered municipal disposal facility.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

It is anticipated that the solid waste will feed into the municipal waste stream, as per the current operations at the existing facility.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

NO ✓

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

NO ✓

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO ✓
--	------

If YES, what estimated quantity will be produced per month?

--	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES ✓	
-------	--

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Grey Water System:

Approximately 2.89 kl/day and 59.93 kl/day of effluent is expected from the Satellite Staff Facility and Central Mess and Ablution Facility respectively. Full waterborne sanitation from these facilities was designed in accordance with SANS 10125-2 and the CSIR Guidelines for Human Settlement Planning and Design and will link into the existing sewer system on site. The existing system feeds into the municipal system.

In addition, as a water saving mechanism, all water from washing basin and showers at the Central Mess and Ablution Facility will be drain to a Grey Water treatment plant. The system shall comprise of two sets of tanks, the first shall be greywater storage tanks and the second set shall be processed water storage tanks and shall be able to process 9000 litres of grey water per day.

Initially the raw greywater shall be treated in a coarse filter to remove all undissolved water contents such as textile fluff or hair. The water shall then be passed through a purification process whereby specific purification bacteria decompose all the biodegradable ingredients in the water, such as shampoo or soap. The water shall then pass through a membrane filter with a pore width of 38nm or smaller to filter out all solid particles, germs and individual absorbed viruses. The greywater system shall provide water to the toilets for flushing as well as to the planter boxes for irrigation purposes only.

The capacity of the grey water treatment system (9000 litres/day or 9m³ per day) is below the threshold indicated in Activity 25 of Listing Notice 1 as such the grey water treatment is not a triggered activity. In addition, GN 921 of 29 November 2013 specifically excludes the treatment of effluent and as such no Waste Management Licence is required.

Dewatering:

The National Environmental Management: Integrated Coastal Management Act (No 24 of 2008 - ICMA) defines effluent as:

“Any liquid discharged into the coastal environment as waste, and includes any substance dissolved or suspended in the liquid; or liquid which is a different temperature from the body of water into which it is being discharged.”

Transnet has noted that the water from the foundations will be disposed of in the sea and thus based on this and the above definition, the water from the foundations would be classified as effluent.

Section 69 of the ICMA, the DEA seeks to regulate the discharge of effluent into the coastal waters from any source on land by requiring that such discharges are authorised under a permit or general authorisation.

69 (3) "Any person who wishes to discharge effluent into coastal waters in circumstances that are not authorised under a general authorisation referred to in subsection (2) must apply to the Department for a coastal waters discharge permit."

69 (6) "A person who discharges effluent into coastal waters -

a) must not waste water;

b) may only do so to the extent that it is not reasonable practicable to return any freshwater in that effluent to the water resource from which it was taken;

c) must discharge the effluent subject to any condition contained in the relevant authorisation;

d) must comply with any applicable waste standards or water management practices prescribed under this Act or in section 29 of the NWA or any Act of Parliament specifically dealing with waste, unless the conditions of the relevant authorisation provide otherwise; and

e) must register the discharge with the department responsible for water affairs."

In addition, in the case of authorising a discharge of effluent into an estuary, consultation with the Department of Water and Sanitation (DWS) is required. This has been undertaken and DWS has indicated that no Water Use Licence Application (WULA) is required (refer to the letter contained in **Appendix J3**).

The groundwater level at north and east substation facilities is about 2.09 metres below surface level. Thus dewatering is required to facilitate a safe, dry and stable working environment.

The required pumping rate required to dewater the excavations are provided below (refer to **Appendix J4** for calculations):

- East Substation – approximately 514.04 m³/day; and
- North Substation – approximately 388.61 m³/day.

ZAA Engineering Projects and Coastal Architecture has indicated that given the proximity of the proposed excavations to the waterline, the water below the surface level (which will be dewatered) will be of the same quality as the water within the harbour basin. Piezometer monitoring behind the existing quay wall has indicated that the water table behind the wall corresponds to the water level within the basin, indicating that the water behind the quay wall is sea water that moves into and out of the sand backfill with the tidal movement (**Appendix J1**).

The marine and estuarine specialist has noted that no transformation or permanent loss of marine-estuarine habitat is expected to occur from proposed development and dewatering activities. However, discharge from dewatering excavations has the potential to cause some change or deterioration in water quality in the receiving environment if the quality or properties of the water from the construction site differ significantly from that in the Port. The specialist has thus recommended through that once the groundwater has been exposed at the construction site that a sample is sent for testing prior to discharge into the Port. If the properties of the groundwater or levels of any of the contaminants listed in the Specialist Report are found to differ by more than the Special limit levels, that dispersion modelling be undertaken to confirm likely impacts on water quality in the Port. This requirement is included in the EMPr in **Appendix G**.

BASIC ASSESSMENT REPORT

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES ✓

If YES, provide the particulars of the facility:

Facility name:	EnviroServ Shongweni Landfill Site		
Contact person:	Not applicable at this stage		
Postal address:	P. O. Box 15005, Westmead		
Postal code:	3608		
Telephone:	031 769 1134	Cell:	Not applicable at this stage
E-mail:	Not applicable at this stage	Fax:	031 769 1171

It is anticipated that the effluent will feed into the municipal waste stream, as per the current operations at the existing facility.

However, during construction, effluent will be disposed of at a registered/licenced waste disposal facility. The details of the disposal facility will be finalised during the contracting process, prior to the commencement of construction. However, it is expected that general waste will be disposed of at a municipal landfill site or the EnviroServ Shongweni Landfill Site. It is expected that hazardous waste will be disposed of at EnviroServ Shongweni Landfill Site, which is located at 1 Shongweni Dam, Shongweni.

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

As mentioned above, a grey water system will be put in place at the Central Mess and Ablution Facility. Water from showers and washing basins will be treated and then used for toilets and planter boxes.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

NO ✓

If YES, is it controlled by any legislation of any sphere of government?

NO ✓

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

Sources of air emissions will include dust generated by construction activities and emissions emanating from construction vehicles and equipment. Best practices to manage emissions are included in the EMPr.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

NO ✓

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

YES ✓	
	NO ✓

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

Construction activities will result in increased noise levels during the construction phase. The significance of the elevated noise levels will vary at certain sections of the alignment. Best practices to manage sources of noise are included in EMPr.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal ✓	
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

	NO ✓
--	------

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

In terms of Section 21 (c) and (i) of the National Water Act (Act No 36 of 1998) any development within 500m of a wetland or within the 1:100 year flood line of a watercourse requires a WULA. An estuary is not included in the definition of a watercourse and thus no WULA is required for Section 21 (c) and (i) uses.

However as described in Section 12, dewatering into the estuary will take place and a CWDP is required. The CWDP permit process requires that DWS be involved where dewatering takes place into an estuary. Transnet met with DWS on 29 September 2015 and described the dewatering activities. DWS has confirmed that no WULA is required (**Appendix J3**).

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Energy efficiency has been taken into account in the design of the Central Mess and Ablution Facility in the following ways:

- A high efficiency chiller is used for air-conditioning which provides economical operation. The chiller includes multiple scroll compressors that permits exact matching of the cooling capacity to the load. The chiller is equipped with variable speed condenser fans and pumps which allow the unit to operate at high part load efficiencies. At 75% load capacity the unit

operates with an efficiency (kW/kW) of 3.28 which increases to 4.26 at 20%. This is important as the facility will not always be full to designed maximum capacity due to the shift changes.

- All pumps are equipped with variable speed drives which allow the pump characteristics to be matched to the load required. This allows for the most efficient usage of energy.
- The ventilation system and the air-conditioning controls are integrated with the Building Management System (BMS). Each occupied space is also equipped with occupancy sensors which allow the BMS to shut off systems that are not needed thereby saving energy. In a facility where people are only utilising certain of the areas after a shift change this is especially important as a lot of energy could be wasted if the systems are run continuously.
- The hot water system utilises the heat from the air-conditioning to pre-heat the water in a heat recovery loop. This is an extremely efficient way to utilise the heat which would otherwise be wasted. The system also uses heat pumps instead of electric water heaters to supplement the heat recovery. Heat pumps are 70% more efficient than electric water heaters and thus save 70% of the energy that would have been consumed by the electric heaters. The heat pumps also utilise multiple parallel scroll compressors which allow the unit to operate with very high part load efficiencies.
- All pipework, fittings and storage tanks for chilled or hot water shall be insulated to prevent losses of energy.
- Passenger lifts are rated A-classification in the Energy Efficiency Classes. This is achieved through utilising regenerative drives which uses approximately 30% less energy than normal motors as well as LED lighting which uses very little energy.
- The electrical lighting design has been catered for the Energy savings light fittings to light up the central mess and ablution.

Energy efficiency has been taken into account in the design of the Satellite Staff Facility in the following ways:

- An inverter in an air conditioner is used to control the speed of the compressor motor to drive variable refrigerant flow in an air conditioning system to control the conditioned-space temperature.
- The benefits of an inverter air conditioning compared with a noninverter air conditioning include:
 - At least 30% - 50% cheaper to run as it consumes less power;
 - Far quicker to achieve desired temperature;
 - The start-up time is reduced by 30%;
 - No temperature fluctuations, maximising comfort level; and
 - No voltage peaks from compressor.

Energy efficiency has been taken into account in the design of the North and East Substations by deciding to use Variable Refrigerant Volume as it is more energy efficient with lower operating costs. In addition, energy savings are accomplished by utilization of Led lighting and occupational sensors.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

In addition to the energy efficiency measures described above, Photovoltaic (PV) renewable energy will also be installed.

A 60kW PV grid connected systems will be put in place. The PV system will be fully grid connected and will only disconnect from grid and supply local LV distribution boards in event of total load loss

“Load shedding”.

PV modules and inverters will be used to meet industry-accepted standards for performance, reliability, safety of grid connected systems. In addition, only monocrystalline PV will be used.

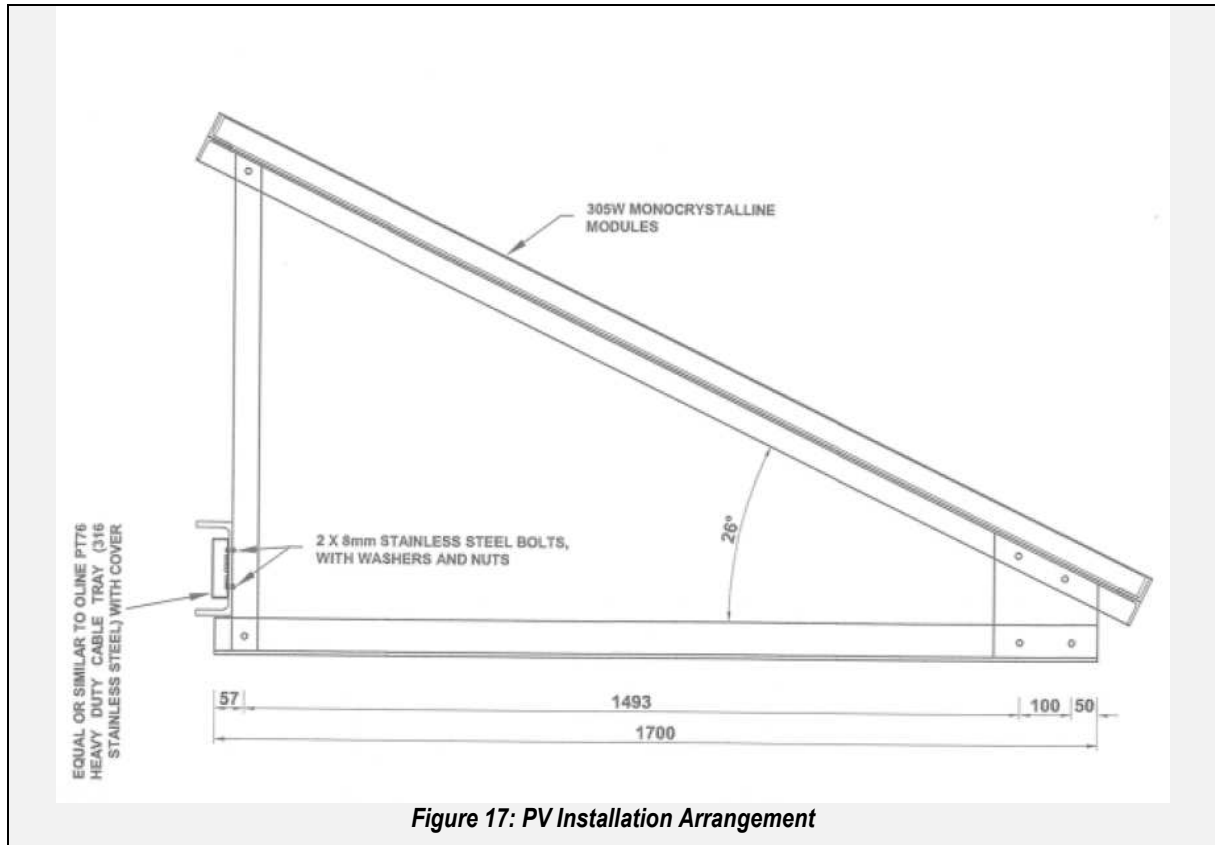
All PV panels shall be oriented facing true north, Due to expected high wind loads, and subsequent potential for damage from flying debris, all PV arrays shall be securely installed to the facility roof with suitably designed brackets. The brackets will promote cooling and maximize the air circulation around the PV arrays.

All metallic module frames, panel/array support structures, metal enclosures, panel boards and the inverter/battery cabinets shall be properly bonded to a common grounding conductor and terminate at a ground mat.

The PV system shall comply with the requirements as laid down in the following standards and specifications: -

- Electrical Codes-National Electrical Code Article 690: Solar Photovoltaic Systems and NFPA 70;
- UL Standard 1701; Flat Plat Photovoltaic Modules and Panels 1.1.4 IEEE 1547, Standards for Interconnecting Distributed Resources with Electric Power Systems;
- UL Standard 1741, Standard for Inverter, converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources;
- IEEE Standard 929-2000, Recommended Practice for Utility Interface of Photovoltaic (PV) Systems;
- IEEE Standard 1262-1995, Recommended Practice for Qualification of Photovoltaic (PV) Modules;
- S.A.N.S. 0142 :Code of Practice for Wiring of Premises;
- S.A.N.S. 62040-1/2/3 : Uninterruptible power systems; and
- Underwriters Laboratories (UL) Standard 1703 Standard for Safety for Flat-Plate Photovoltaic Module.

Figure 17 shows the PV installation arrangement.



SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B has not been repeated as the environment is similar throughout the project area.

Section B Copy No. (e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

Paragraph 6 has not been completed for each alternative as the alternatives in question are layout alternatives, which occur on the same site. The property description and site details are therefore the same for both layout alternative 1 and 2.

3. Has a specialist been consulted to assist with the completion of this section? YES NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Please see specialist reports contained in Appendix D as well as Specialist Declarations of interest which are contained in Appendix I.

BASIC ASSESSMENT REPORT

Property description/physical address:

Province	KwaZulu-Natal	
District Municipality	N/A	
Local Municipality	eThekweni Metropolitan Municipality	
Ward Number(s)	Ward 32	
Farm name and number	Kings Flats No. 16344	
Portion number	Remaining Portion	
SG Code	N0FU0000000163440000	

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Not Applicable.

Current land-use zoning as per local municipality IDP/records:

The site is zoned as "Harbour Zone" under the eThekweni Town Planning Ordinance.

Please see **Appendix A2** for maps relating to the land use and zoning of the proposed development area.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

NO ✓

15. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative Layout 1

Flat ✓

Alternative Layout 2

Flat ✓

16. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain

2.10 At sea

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafont

✓

17. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative Layout 1:	Alternative Layout 2	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	YES ✓	YES ✓	
Dolomite, sinkhole or doline areas		NO ✓	
Seasonally wet soils (often close to water bodies)	YES ✓	YES ✓	
Unstable rocky slopes or steep slopes with loose soil		NO ✓	
Dispersive soils (soils that dissolve in water)		NO ✓	
Soils with high clay content (clay fraction more than 40%)		NO ✓	
Any other unstable soil or geological feature		NO ✓	
An area sensitive to erosion		NO ✓	

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

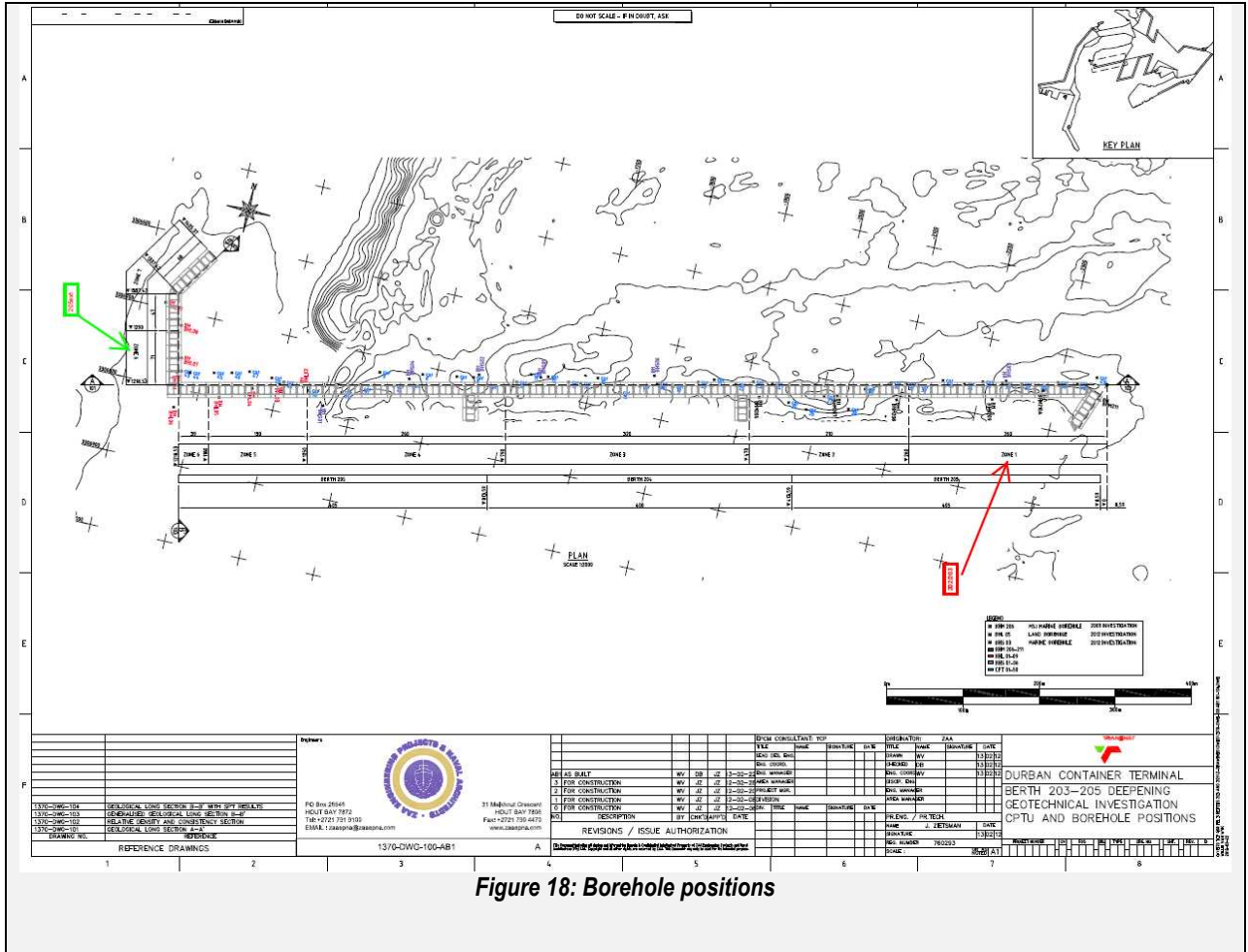
Refer to Desktop Geotechnical Report in **Appendix D3**.

In summary, ZAA found that the likely soil conditions at Berth 203 and 204 are a medium dense fine to medium grained sand (Hydraulic fill) with shell fragments. The relative density of the sand is expected to be uniform across the sites and generally increase with depth. Some soft gravelly sandy clay however was observed in BD-BHL301 from ground level to 1.5 m.

At Berth 205, the likely soil conditions are a medium dense fine to medium grained sand (Hydraulic fill) with pebbles and shell fragments. The relative density of the sand is expected to be uniform across the sites and generally increase with depth.

The DCP result indicated unusually dense conditions due to the presence of gravelly fill near the ground surface. The loose material and gravel near ground level must be removed during the preparation of the new foundations. **Figure 18** provides the positions of boreholes.

BASIC ASSESSMENT REPORT



18. GROUND COVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

	Paved surface ✓	Building or other structure ✓
--	--------------------	----------------------------------

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

The proposed activity occurs on the existing berth 203 to 205 at Pier 2, Port of Durban. As it is an operational area in a working Port, there are no plants and trees on the site

19. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO ✓
Non-Perennial River		NO ✓
Permanent Wetland		NO ✓
Seasonal Wetland		NO ✓
Artificial Wetland		NO ✓
Estuarine / Lagoonal wetland	YES ✓	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Figure 19 shows the extent of the estuary in relation to the project. Please note that the widening and lengthening of the berths was discussed in the Berth 203 to 205 Expansion EIA and was authorised on 21 January 2015.

A Marine and Estuarine Impact Assessment was undertaken and is contained in **Appendix D1**. An extract from the report is provided below.

The proposed development takes place within the Port of Durban which occurs in Durban Bay Estuary. The estuary is considered to be highly transformed, with most of the natural habitat destroyed as a result of dredging operations during the construction of the harbour (Allan *et al.* 1999). Very little of the natural habitat remains, and it is estimated that only 14% of the original tidal flats remain (Allan *et al.* 1999).

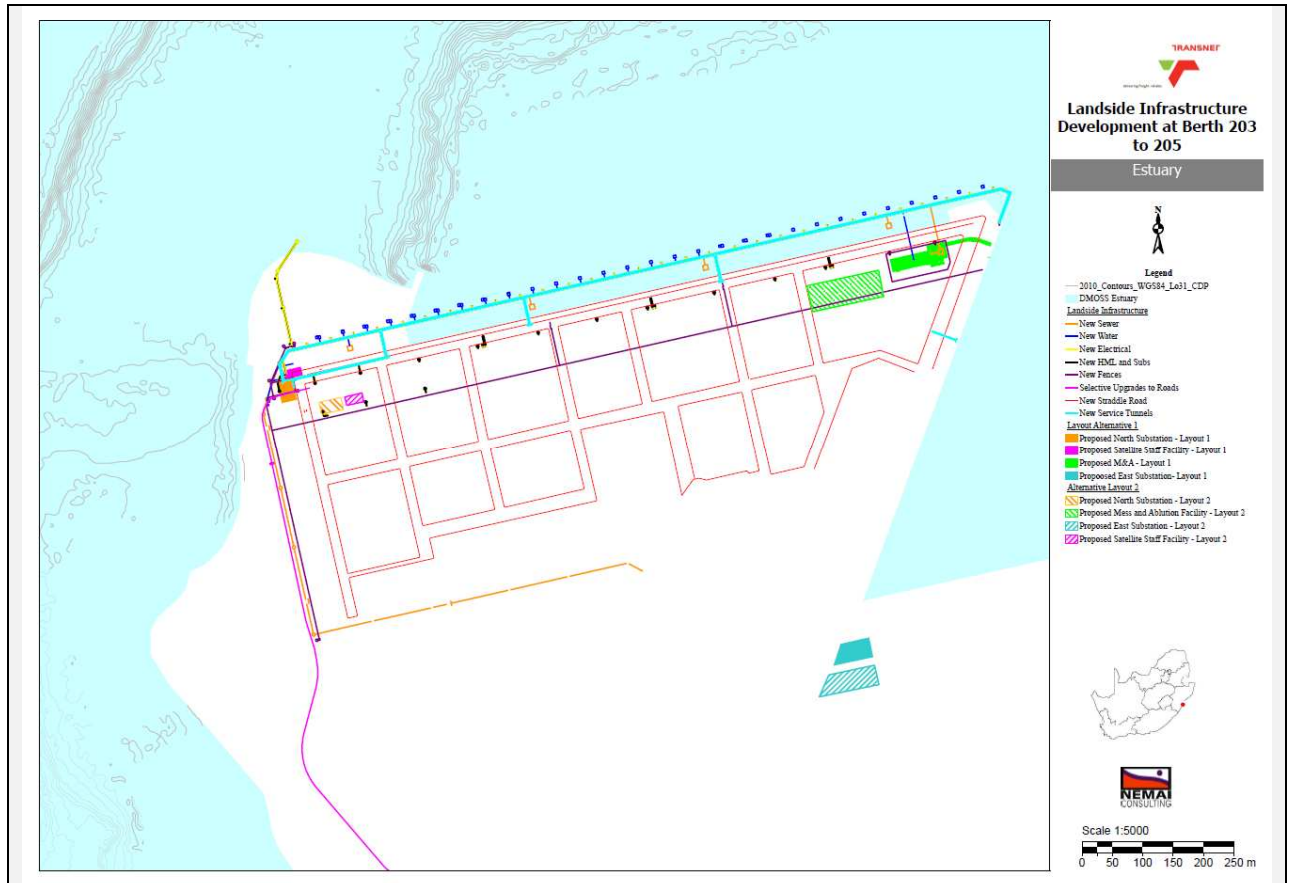


Figure 19: Estuary

Currently, intertidal flats in the harbour constitute an area of 144.5 hectares, while the substratum lying beneath the open waters is the dominant habitat covering an area of 714.6 ha (McInnes *et al.* 2005). This dominant habitat has been artificially created through repeated dredging operations. The Centre Bank, an intertidal sand bank adjacent to the proposed development and the largest of four sand flats in the Port (eThekweni Municipality 2008). The Centre Bank is also the most isolated of the sand flats as most of it is situated within the middle of the harbour and surrounded by water. The mangrove swamp area has also been severely reduced. Durban Harbour had an extensive mangrove forest of approximately 200 ha in extent, but 78% of this was physically removed in 1979 when construction of the harbour began (Ward & Steinke, 1982). These habitats have been replaced with open water areas and concrete Berths to allow for the safe passage and mooring of large vessels. Despite the substantial loss of mangroves and sandbank habitat, as well as growing pressure from industrial development within the Port, Durban Bay still plays an important biological role along the KwaZulu-Natal coastline.

Habitats available to estuarine flora and fauna include intertidal areas, benthic substratum and the overlying water column that are each utilised by a range of organisms, the most important of which include microalgae, phytoplankton, invertebrates, zooplankton, fish and birds. The intertidal sand bank habitats in the Port have been identified as extremely important to its ecological functioning (Newman *et al.* 2008, Weerts 2010). They have significant ecological importance as they contribute to the various ecosystem goods and services provided by the Port. Sand banks in the Port become exposed at low tide and play an important role in the recycling of terrestrial and marine derived nutrients and organic matter. The sandbank habitats are important from a conservation perspective as they help maintain biodiversity in the Port (Allan *et al.* 2005), and has accordingly been identified for conservation by the Bay of Natal Estuary Management Plan (MER/ERM 2012).

A number of studies have been completed in recent years focusing on the estuarine biota of the Port of Durban (see for example Allan *et al.* 1999, Pillay 2002, Blackler *et al.* 2004, Forbes & Demetriades 2006, Angel and Clark 2008, Newman *et al.* 2008, Weerts 2010, MER/ERM 2012, Clark *et al.* 2016). Key sand bank habitats in the Port include the Centre Bank, Little Lagoon, Northern Banks and the Mangrove area.

Centre Bank is the largest intertidal and subtidal sand flat in the Port. It has an intertidal area of approximately 83 hectares and a steep subtidal section that forms the slopes of the sand flat, which falls away quickly to the Port operational depth (Weerts 2010). Overall, the sand bank habitats are rich in invertebrate fauna including many species of polychaetes, amphipods, tanaeids, isopods, mysids, brachyurans and echinoderms. Densities of organisms lie between 500 and 2 000 individuals per m², although densities of greater than 10 000 indiv./m² have been recorded at some areas during certain times of the year (Forbes and Demetriades 2003). The sand bank habitats in the Port also supports high densities of sand prawn *Callichirus kraussi* (Clark *et al.* 2016). These crustaceans play a crucial role as bioturbators by increasing the sediment-water interface, thereby facilitating particle exchange between the sediment and water column. They are also a very important food source for many fish, particularly the recreationally targeted spotted grunter (*Pomadasys commersonnii*). Sand Banks in the Port also provide favourable conditions for growth of benthic microalgae (MER/ERM 2012, Clark *et al.* 2016). Benthic microalgae support a suite of microorganisms that in turn, support many species of macrofauna and juveniles fishes in the Port.

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Recent physico-chemical data have been collected for the Port of Durban by Clark *et al.* (2016). Bottom salinity levels of the harbour waters are homogenous at 35 ppt, despite the input of freshwater at the Bayhead area. Bottom water temperatures show little spatial variation and typically range from 19 to 22°C seasonally. Bottom dissolved oxygen levels are low and approximate 6 mg.L⁻¹ for most of the central area

BASIC ASSESSMENT REPORT

of the harbour but are lower near the Bayhead. Surface turbidity generally ranges between 5 to 15 NTU, however, in the upper regions of the Port, turbidity can increase to over 20 NTU. Fluctuations in turbidity occur as a direct result of ship activity disturbing bottom sediments.

20. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	
Retail commercial & warehousing	
Light industrial	
Medium Industrial	
Heavy Industrial	Railway line ^N
Office/consulting room	
Military or police base/station/compound	Harbour

If any of the boxes marked with an "N" are ticked, how will this impact will / be impacted upon by the proposed activity? Specify and explain:

Table 3 below provides a description of the land use character of the surrounding area. As mentioned, the proposed development occurs within an existing harbour/Port and is in line with the existing land use and zoning.

Table 3: Land Use character descriptions

Land use	Description
Natural Area	<p>The Durban Bay Estuary falls within a 500 m radius of the proposed project area. The impact of the proposed project on the estuary will not be significant as no construction work or dredging will take place below the water mark.</p> <p>The marine and estuarine specialist has noted that no transformation or permanent loss of marine-estuarine habitat is expected to occur from proposed development and dewatering activities. However, discharge from dewatering excavations has the potential to cause some change or deterioration in water quality in the</p>

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	<p>receiving environment if the quality or properties of the water from the construction site differ significantly from that in the Port. The specialist has thus recommended that once the groundwater has been exposed at the construction site that a sample is sent for testing prior to discharge into the Port. If the properties of the groundwater or levels of any of the contaminants listed in the Specialist Report are found to differ by more than the Special limit levels, that dispersion modelling be undertaken to confirm likely impacts on water quality in the Port. This requirement is included in the EMPr in Appendix G.</p> <p>All construction work will occur on the berths. In terms of potential spillages and accidents during the operational phase, stringent spill contingency measures will be adopted.</p>
Retail commercial & warehousing	Warehouses (for freight handling and storage) occur within a 500 m radius of the proposed project area. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Light Industrial	The proposed project is located within the Port of Durban. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Medium Industrial	The proposed project is located within the Port of Durban. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Heavy Industrial	The proposed project is located within the Port of Durban. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Office/Consulting Room	Offices of the surrounding warehouses and industries are located within the 500 m radius. The proposed project is located within the Port of Durban. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Military or police base/station/compound	Maydon Wharf South African Police Station occurs at 61 Johnstone Road, within a 500 m radius of the proposed project area. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Railway line	A number of railway lines occur in close proximity to the Port, most noticeably, the

BASIC ASSESSMENT REPORT

	railways lines in the Bayhead area to the south of Berth 203 to 205. The traffic, visual and noise impacts as a result of the proposed project are considered to be of low significance.
Harbour	The proposed project is located within the Port of Durban.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:



If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:



Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO ✓
Core area of a protected area?		NO ✓
Buffer area of a protected area?		NO ✓
Planned expansion area of an existing protected area?		NO ✓
Existing offset area associated with a previous Environmental Authorisation?		NO ✓
Buffer area of the SKA?		NO ✓

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

In terms of conservation planning, the proposed development is situated in an area designated as the OCO and IGN according to the KwaZulu-Natal Terrestrial Systematic Conservation Plan which indicates that the area is 100% transformed.

This is in line with the Bay of Natal Estuarine Management Plan, which includes a Zonation Plan for the Durban Bay (MER and ERM, 2012). According to the Zonation Plan, as provided in **Figure 20**, the proposed project site is located within an area zoned for "Industrial Use" (MER and ERM, 2012). The land zoned for "Industrial Use" includes the areas for break bulk cargo handling around the Point, Pier 1 and Maydon Wharf, as well as the areas for bulk cargo handling along the Bluff, Island View, Maydon Wharf and Piers 1 and 2 (MER and ERM, 2012). The proposed project site does not fall within the areas zoned as "Conservation" or "Recreation" in terms of the Zonation Plan (MER and ERM, 2012).

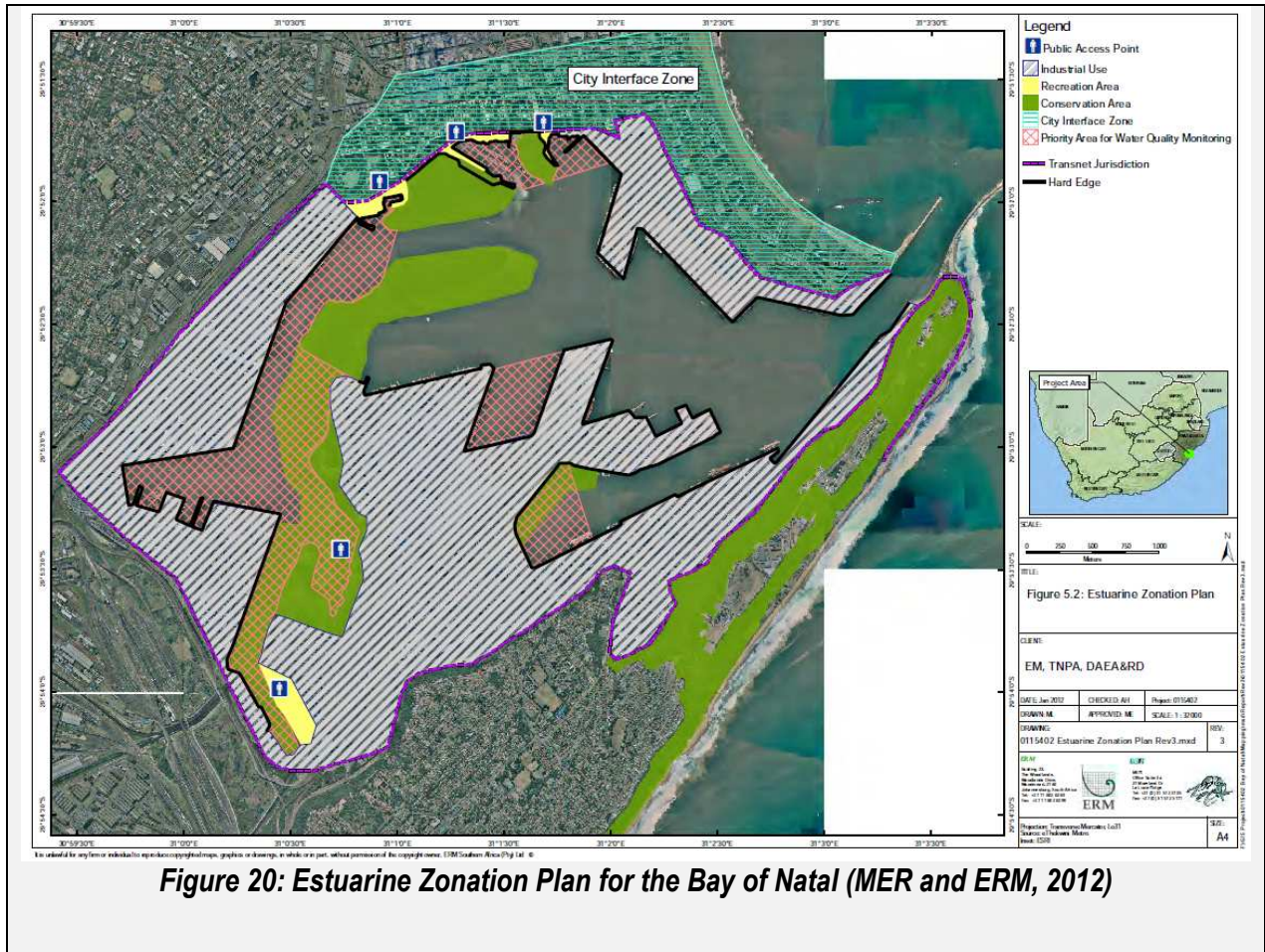


Figure 20: Estuarine Zonation Plan for the Bay of Natal (MER and ERM, 2012)

21. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

NO ✓

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

Please refer to **Appendix D2** for Heritage Impact Assessment.

The landside HIA found that any although there were no overt archaeological sites visible during the limited site survey, there may be an unknown number of archaeological sites, under the overburden, on the land that was previously Salisbury and Farewell Islands. From a heritage point of view, work can continue as long as the mitigation measures are implemented. No impact on heritage sites, features or objects can be allowed without a valid permit from Amafa.

Will any building or structure older than 60 years be affected in any way?

NO ✓

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? NO ✓

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

The Draft BAR and HIA will be submitted to AMAFA for review. In addition, AMAFA was notified of the proposed development during the initial notification.

22. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

eThekweni Metropolitan Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to Stats SA, the unemployment rate in the metro was approximately 43% in 2001 and it has dropped by 12.8 % to 30.2% according to Census 2011. The youth unemployment rate is 39%.

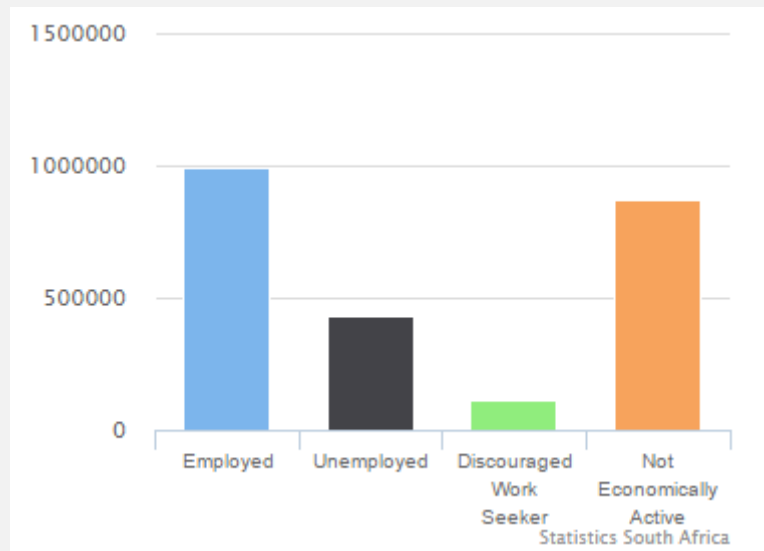


Figure 21: Unemployment for those aged between 15-64

Economic profile of local municipality:

Poverty levels of the community can be assessed by looking at the annual household income. Unskilled communities tend to generate low incomes to the household, which contributes to poverty.

The annual household income levels recorded in the study area for the year 2011 can be seen in the **Figure 22** below.

Approximately 17% of households do not have an income.

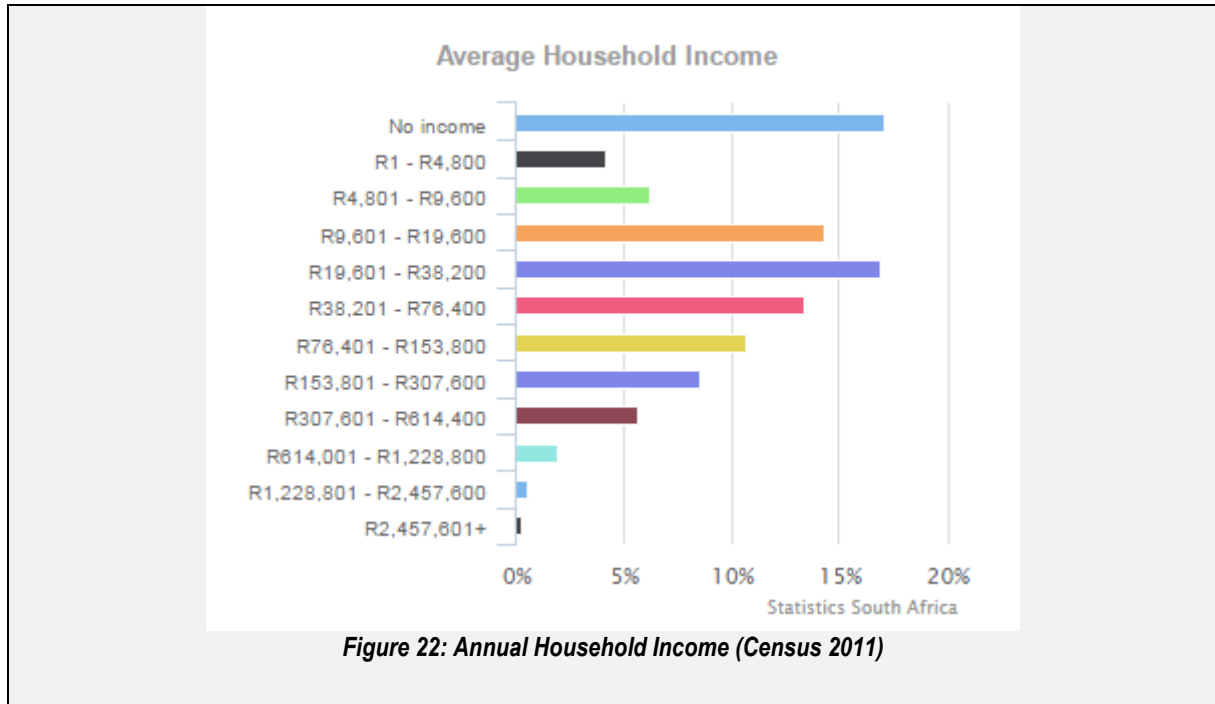


Figure 22: Annual Household Income (Census 2011)

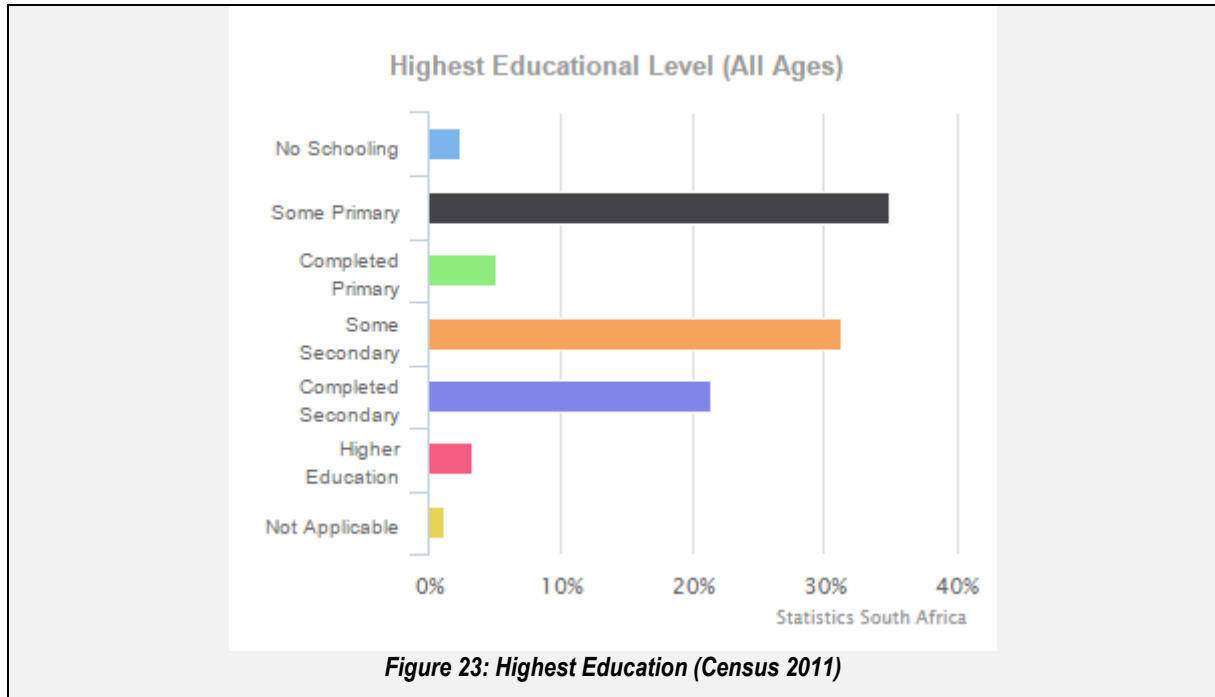
Level of education:

Education levels are evaluated to understand the potential grade or level of employment as well as livelihood of the community. It indicates the functional literacy and skill level of a community. The highest level of education reached by persons over age 20 in the study area in 2011 can be seen in **Figure 23** below.

Approximately 35% have only some primary school education and are considered to be functionally illiterate (acquired skills to read and write that are inadequate to manage daily living and employment tasks that require reading skills beyond a basic level). A person that has obtained up to primary education is classified as functionally illiterate.

Thirty-one percent of the population over the age of 20 have some secondary education while 21% have completed secondary school (matriculated). Coupled with the fact that only three percent of the population having some form higher education, it can be concluded that the population in the study area is not highly skilled.

Low education levels indicate that people in the study area will occupy low skilled jobs and therefore be amongst low income earners.



b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R1 096 867 690
What is the expected yearly income that will be generated by or as a result of the activity?	Negative Net Present Value (NPV) since it is a Facility for Staff convenience.
Will the activity contribute to service infrastructure?	NO ✓
Is the activity a public amenity?	NO ✓
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Approximately 600
What is the expected value of the employment opportunities during the development and construction phase?	R 300 million
What percentage of this will accrue to previously disadvantaged individuals?	This will be established at the tender stage
How many permanent new employment opportunities will be created during the operational phase of the activity?	100
What is the expected current value of the employment opportunities during the first 10 years?	R1,2 billion 1.e. excluding escalation
What percentage of this will accrue to previously disadvantaged individuals?	80%

23. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP’s responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
<div style="background-color: black; width: 100%; height: 100%;"></div> <p style="text-align: center;">No Natural Area Remaining (NNR) ✓</p>	<p>Based on Figure 24, the proposed development occurs within a site that is designated as OCO IGN which indicates the area is 100% transformed.</p>
<p>In the KZN province, the Critical Biodiversity Areas (CBA) is one of the sensitive layers against which several activities are listed, and which would require environmental authorisation in terms of Listing Notice 3 of 2014 EIA Regulations if the project falls within the CBA identified areas.</p> <p>According to Escott <i>et al.</i> 2013, the CBA map has been created as part a strategic planning strategy to ensure biodiversity conservation and persistence in the province of KZN. A means of identifying both key biodiversity ‘hotspots’ and ecosystem service areas, this product has been produced to be used as an informative tool within all other economic sectors’ strategic spatial planning processes thus resulting in better informed and more sustainable development in KZN as a whole. By drawing information from all the Systematic Conservation Planning products from both within KZN and nationally, this product is intended to represent a single holistic picture of the conservation requirements for all biospheres within the province. Table 1 provides a complete list of the coverage’s displayed in the KZN CBA Map.</p> <p>The Terrestrial Status is reflected in terms of the following categories:</p> <ul style="list-style-type: none"> ● <i>CBA Mandatory</i> - are areas required to meet biodiversity targets for both biodiversity pattern and ecological process features, and no other options are available to meet this target. ● <i>CBA Optimal</i> – are areas that are the most optimal to meet the biodiversity conservation targets while avoiding high cost areas as much as possible. ● <i>Ecological Support Area (ESA)</i> - are areas not essential for directly meeting biodiversity targets but play an important role in supporting and sustaining the ecological functioning of the critical biodiversity areas. 	

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Table 4: KZN Terrestrial SCP category descriptions (Legend field definitions) (EKZNW, 2010)

Category	Legend field	Description
Protected Area (PA)	Res	Reserves in the KwaZulu-Natal formal protected area network
Critical Biodiversity Area 1 (CBA 1) Mandatory	R2	CBA 1 units indicate the presence of one (or more) features with a very high irreplaceability score. In practical terms, this means that there are alternate sites within which the targets can be met, but there aren't many.
Critical Biodiversity Area 2 (CBA 2) Mandatory	R1	CBA 2 units are optimal areas identified through systematic conservation planning software which represent the best localities out of a potentially larger selection of available planning units that are optimally located to meet both the conservation target but also the criteria defined within additional decision support layers
Critical Biodiversity Area 3 (CBA 3) Optimal	R0	Units categorised as Biodiversity Areas (BAs) represent the natural and/or near natural environmental areas (<i>i.e.</i> nontransformed areas) not highlighted in the KZN SCP. It is important to note that their lack of selection for one of the CBA categories above should not be misinterpreted as reflecting areas of no biodiversity value. Whilst it is preferred that development be focused within these areas, this still has to be conducted in an informed and sustainable manner
Biodiversity area	OCO	Areas that are 100% transformed according to KwaZulu-Natal landcover 2005
100% transformed	IGN	These are areas which are 100% transformed according to the KwaZulu-Natal landcover 2005 coverage.
Outside province	Out	Outside KwaZulu-Natal

Based on **Figure 24**, the proposed development occurs within a site that is designated as OCO IGN which indicates the area is 100% transformed. As mentioned in Section A, no Ecological Study was undertaken due to this fact. The most sensitive environment in close proximity to the site is the Durban Bay Estuary. In light of this, an Marine and Estuarine Impact Assessment was undertaken.

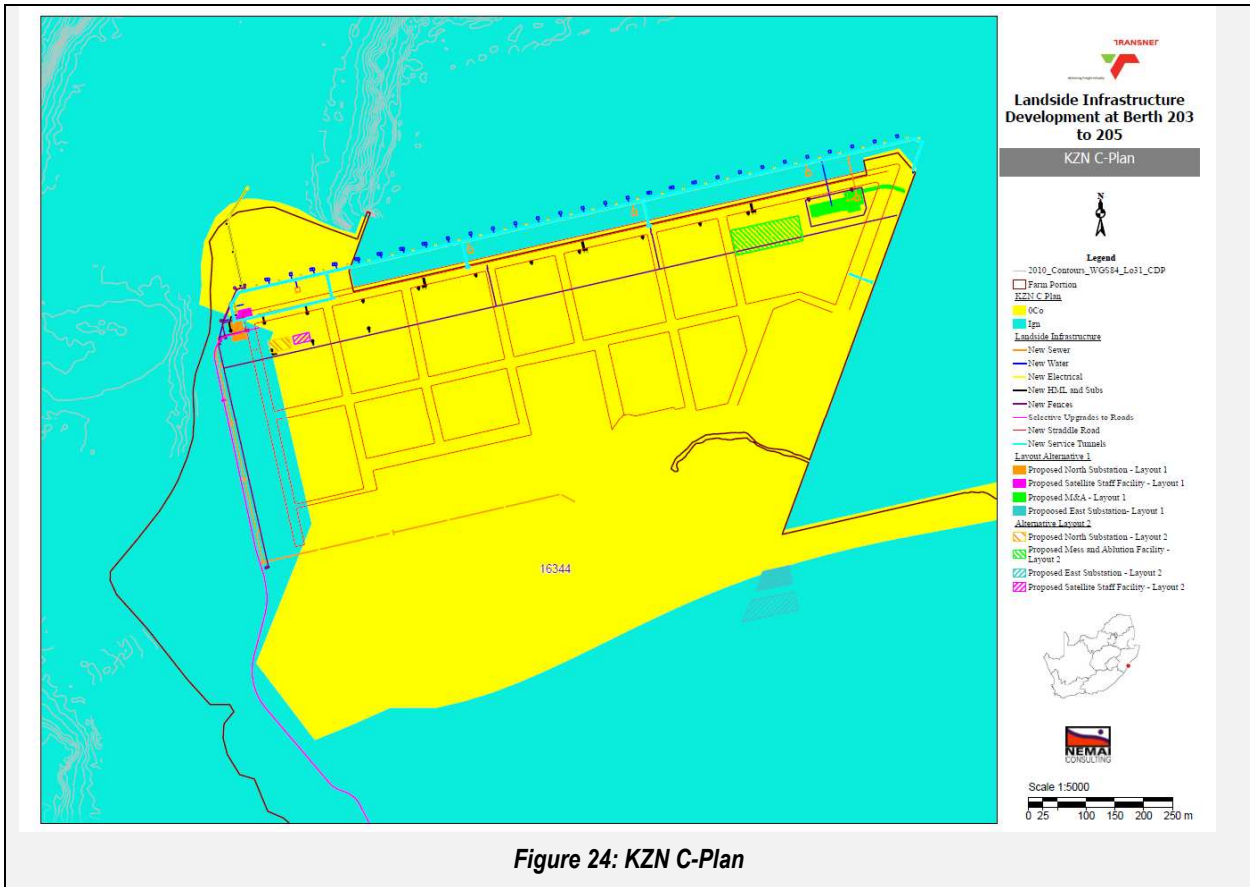


Figure 24: KZN C-Plan

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural		
Near Natural (includes areas with low to moderate level of alien invasive plants)		
Degraded (includes areas heavily invaded by alien plants)		
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	100%	The entire site occurs on the existing berth 203 to 205 at Pier 2, Durban Container Terminal, Port of Durban.

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c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems	Aquatic Ecosystems	
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)		Estuary ✓ YES ✓

No vegetation is present on site as the proposed development occurs on existing hard surface at berth 203 to 205 at Pier 2, Durban Container Terminal.

Whilst, the site is adjacent to the Durban Bay Estuary, the development footprint does not infringe on the estuary. Information on the current status of the estuary was provided in **Section B**. A Marine and Estuarine Impact Assessment is included in **Appendix D1**.

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The proposed development takes place within the Port of Durban which occurs in Durban Bay Estuary. The estuary is considered to be highly transformed, with most of the natural habitat destroyed as a result of dredging operations during the construction of the harbour (Allan *et al.* 1999). Very little of the natural habitat remains, and it is estimated that only 14% of the original tidal flats remain (Allan *et al.* 1999). Currently, intertidal flats in the harbour constitute an area of 144.5 hectares, while the substratum lying beneath the open waters is the dominant habitat covering an area of 714.6 ha (McInnes *et al.* 2005). This dominant habitat has been artificially created through repeated dredging operations. The Centre Bank, an intertidal sand bank adjacent to the proposed development and the largest of four sand flats in the Port (eThekweni Municipality 2008). The Centre Bank is also the most isolated of the sand flats as most of it is situated within the middle of the harbour and surrounded by water. The mangrove swamp area has also been severely reduced. Durban Harbour had an extensive mangrove forest of approximately 200 ha in extent, but 78% of this was physically removed in 1979 when construction of the harbour began (Ward & Steinke, 1982). These habitats have been replaced with open water areas and concrete Berths to allow for the safe passage and mooring of large vessels. Despite the substantial loss of mangroves and sandbank habitat, as well as growing pressure from industrial development within the Port, Durban Bay still plays an important biological role along the KwaZulu-Natal coastline.

Habitats available to estuarine flora and fauna include intertidal areas, benthic substratum and the overlying water column that are each utilised by a range of organisms, the most important of which include microalgae, phytoplankton, invertebrates, zooplankton, fish and birds. The intertidal sand bank habitats in the Port have been identified as extremely important to its ecological functioning (Newman *et al.* 2008, Weerts 2010). They have significant ecological importance as they contribute

to the various ecosystem goods and services provided by the Port. Sand banks in the Port become exposed at low tide and play an important role in the recycling of terrestrial and marine derived nutrients and organic matter. The sandbank habitats are important from a conservation perspective as they help maintain biodiversity in the Port (Allan *et al.* 2005), and has accordingly been identified for conservation by the Bay of Natal Estuary Management Plan (MER/ERM 2012).

A number of studies have been completed in recent years focusing on the estuarine biota of the Port of Durban (see for example Allan *et al.* 1999, Pillay 2002, Blackler *et al.* 2004, Forbes & Demetriades 2006, Angel and Clark 2008, Newman *et al.* 2008, Weerts 2010, MER/ERM 2012, Clark *et al.* 2016). Key sand bank habitats in the Port include the Centre Bank, Little Lagoon, Northern Banks and the Mangrove area.

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Recent physico-chemical data have been collected for the Port of Durban by Clark *et al.* (2016). Bottom salinity levels of the harbour waters are homogenous at 35 ppt, despite the input of freshwater at the Bayhead area. Bottom water temperatures show little spatial variation and typically range from 19 to 22°C seasonally. Bottom dissolved oxygen levels are low and approximate 6 mg.L⁻¹ for most of the central area of the harbour but are lower near the Bayhead. Surface turbidity generally ranges between 5 to 15 NTU, however, in the upper regions of the Port, turbidity can increase to over 20 NTU. Fluctuations in turbidity occur as a direct result of ship activity disturbing bottom sediments.

SECTION C: PUBLIC PARTICIPATION

24. ADVERTISEMENT AND NOTICE

Publication name	Isolezwe	
Date published	26 January 2016	
Site notice position	Latitude	Longitude
Site Notice 01	29°52'6.76"S	31° 2'4.70"E
Site Notice 02	29°52'9.97"S	31° 2'32.40"E
Site Notice 03	29°52'7.75"S	31° 2'41.17"E
Site Notice 04	29°51'43.18"S	31° 1'43.88"E
Site Notice 05	29°51'43.97"S	31° 1'19.20"E
Site Notice 06	29°51'46.75"S	31° 1'13.10"E
Site Notice 07	29°51'59.10"S	31° 0'54.86"E
Site Notice 09	29°54'17.60"S	31° 0'34.41"E
Site Notice 10	29°54'7.58"S	31° 0'36.83"E
Site Notice 11	29°53'46.59"S	31° 0'7.07"E
Date placed	25 January 2016 and 26 January 2016	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

Site notices were placed at 11 different locations on the 25 January 2016 and 26 January 2016. A newspaper advert was published on the 26 January 2016 in the Isolezwe which distributes within the KwaZulu Natal. Proof of the site notices and advert is provided in **Appendix E1**.

25. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Public Participation undertaken for the proposed Landside Infrastructure Development was in line with Section 41 (2) of GN 982 of 4 December 2014.

The landowner of the affected properties is Transnet and thus no landowner notification was required or took place.

An Interested and Affected Party (IAP) database was compiled and included all registered IAPs from the Berth 203 to 205 Expansion EIA and Durban Bay Estuary management (totally approximately 1000 IAPs).

In addition, stakeholders such as the Wildlife and Environment Society of South Africa (WESSA), Coastwatch, South Durban Environmental Community Alliance (SDCEA), Earthwatch and UKZN Civil Society were included.

Departments such as the Department of Mineral Resources, KZN Department of Economic Development, Tourism and Environmental Affairs (EDTEA), Department of Water and Sanitation (DWS), eThekweni Metropolitan Municipality, Ezemvelo KZN Wildlife were also included.

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Background Information Documents (BIDs) were compiled and included a project description and background as well as information of the Environmental Authorisation process. One advert was placed in a local newspaper to notify IAPs of the project and to provide all IAPs with 30 days to register. BIDs were emailed, faxed, or hand delivered to IAPs. In addition, 11 site notices were placed around the Port of Durban.

All registered IAPs will be notified by email, fax or SMS of the public review of the Draft Basic Assessment Report (BAR). The BAR will be available for review for 30 days at the Seafarers Club. A public meeting will also be held to present the findings of the BAR.

Proof of Notification is included in Appendix E however some examples are provided in Figure 25.



Figure 25: Examples of Notification

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Please note that due to the extent of the IAP database (1000 people), not all stakeholders identified and notified in terms of Section 41 (2) (b) are included in the table below. The table below provides the main stakeholders identified. Please see **Appendix E5.1 for the full initial IAP database.**

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Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Ms Arnia van Vuuren	Birdlife Port Natal	99 Worthing Avenue, Bluff; swavv@mweb.co.za
Ms Alice Thompson	Earthlife Africa eThekweni	20 Harrietwood crescent; alicetho@ispace.co.za ; 0845643891
Mr Desmond D'Sa	South Durban Community Environmental Alliance (SDCEA)	John Donne House, 224 Gouritz Crecent, Austervill desmond@sdceango.co.za ; 0839826939
Ms Judy Mann	Ushaka Marine World	1 Reng Shaka Avenue, Point, Durba; jmann@saambr.org.za ; 083 557 2470
Ms Caroyn Schwegman	WESSA/Coastwatch	afromatz@telkomsa.net ; 083 981 4814
Mr Larry Oellermann	The South African Association for Marine Biological Research (SAAAMR)	1 Reng Shaka Avenue, Point, Durban; loellermann@ori.org.za
Ms Brenda Pratt	Bluff Ridge Conservancy	mwbrenp@mweb.co.za
Ms Mary-Jean Thomas-Johnson	Cape Chamber of Commerce and Industry	Mary-Jean@CapeChamber.co.za
Rev Vaubell	Mission to the Seafarers	mtsdbnchap@iafrica.com ; 083 403 5735
Mr Andy West	Pompano Angling Club	awest@toyota.co.za ; 082 568 7330
Mr Hoosen Bobat	Private	hoosen@bobats.co.za
Mr David Watts	South African Association of Freight Forwarders and Vice Chair of the EThekweni Maritime Cluster	dhwatts@mweb.co.za ; dave@saaffkzn.co.za
Mr Robert Kirby	Private	rkirby@vodamail.co.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Please refer to **Appendix E2** for proof of notification.

26. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

IAPs were provided 30 days to register as IAPs between **26 January 2016** and **26 February 2016**. Many of the comments received during this period were IAPs confirming that they would like to be registered as IAPs for the project. Some IAPs provided their details in hopes of being involved during construction phase.

More substantial comments were received from Birdlife Port Natal and eThekweni. These are included in the Comments and Response Report. A summary of the issues raised (not including requests for

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registration) are included below.

Summary of main issues raised by I&APs	Summary of response from EAP
We are very interested in becoming involved with the project.	Thank you for the comment form and email. I have added you to the IAP database
We offer self-catering accommodation and would like to provide accommodation to contractors. Please could you distribute our name.	Thank you for the email. We are currently in the Basic Assessment Process so the aim is to provide information regarding the project to IAPs. We are unable to distribute your name to all other IAPs but have added you to the IAP database as requested.
<p>The Department of Agriculture, Forestry and Fisheries (DAFF) noted that the footprint is mainly within disturbed and developed areas and the site does not compromise indigenous vegetation.</p> <p>Should there be natural forests and/or protected tree species that may be impacted upon, the Department must be consulted prior to any activities.</p>	<p>Noted.</p> <p>The proposed development occurs on existing berths 203 to 205 and does not impact on natural forests and/or protected tree species.</p>
The Directorate Biodiversity Conservation noted that the BID had been received but will only provide comments on the draft BAR.	Noted.
<p>Birdlife Port Natal raised the following concerns:</p> <p>1. We find it disturbing that these additional impacts, requiring environmental authorisation no less, were not included in the original EIA Reports. Could we please get clarification why this additional infrastructure requiring separate environmental impact assessment was not foreseen and included in the original application?</p>	<p>1. The Transnet Project Team noted at the time of the Berth Deepening EA application that no operational changes / rationalisation were mooted by TPT (ie from straddle carrier to RMG options). Hence the assets that would form part of this EA application could not be clearly articulated because TPT plans were still at an infancy stage. The services of an international Terminal Simulation specialist was procured to assist TPT in June 2013 to develop an operational solution for RMG and Straddle operations. The report was only submitted to TPT by end September 2013. Transnet had the EA Public Meeting on the 31 October 2013. The assumption that Transnet did not have substantial information available in regards to electricity demand and operational changes was therefore justified and could not be included in the Berth deepening application.</p>

<p>2. We are concerned about the impact on birds, especially migrant species, of moving existing masts, adding masts and additional three storey buildings in what has so far been flat, reasonably open space.</p> <p>3. How many 45m High Mast Lights will be installed? Will these masts require stabilizing wires / lines that might pose a threat to birds in flight?</p> <p>4. We assume these lights will be operational at night. Will they be on all night? How strong will the lights be? What will the impact be on birds roosting and feeding on the nearby Central Sandbank? We note that on the maps in the BID the Central Sandbank has not been indicated.</p>	<p>TCP could not undertake any work in regards to the development of proposals for the M&A and electrical upgrade except for the tandem STS cranes required for the Berth Deepening Project. By June 2014, the EIR was already at DEA, hence TCP and TPT could not confirm the position of the proposed North & East substations and the new M&A facility. Finalisation on the substations and type of Mess and Ablution facility required was obtained in September 2014. The EA was already in the final stages of approval by this time.</p> <p>2. A Marine and Estuarine Impact Assessment has been undertaken. The main impact identified was the impact of dewatering on water quality. No impacts related to avifauna were identified as the proposed development is limited to the existing berths. As the proposed development is in line with the existing activities on site, it is not expected that there will be any significant negative impacts to avifauna.</p> <p>3. Fifteen (15) High Mast Lights will be put in place. No stabilising lines/wires will be required. It should be noted that the existing berths include a number of High Mast Lights. Therefore, it is unlikely that the proposed development will have any changed impact on birds as it occurs within an existing Port.</p> <p>4. The High Mast Lighting for the Berth Deepening project has been designed taking the following into consideration:</p> <ul style="list-style-type: none"> • OHS Act 85 of 1993 as Amended. • SANS 10389-1:2003 Part 1: Artificial Lighting of Exterior Areas for Work and Safety. • SANS 10389-2:2007 Part 2: Exterior Security Lighting. • SANS 10389-3:2004 Part 3: Guide on the Limitation of the Effect
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<p>5. We would like to point out the proximity of the proposed new buildings, masts and lights to the Central Sandbank which is of major importance to resident and migrant bird species.</p>	<p>of Obtrusive Light from Outdoor Lighting Installations.</p> <ul style="list-style-type: none"> • National Environmental Management Act 107 of 1998. (NEMA) <p>In addition, the installation of 45m masts (at significant cost) aims to minimise the environmental impact. The rationale behind this is that the higher you mount luminaires, the easier it is to direct the light where you want it without creating “spill light” or “obtrusive light”, provided that the masts do not become over-conspicuous. In the case of the skyline at the Berth at Pier 2, the Ship to Shore (STS) cranes tower approximately 70m above ground level when in operation, and even higher when parked. So the 45m HML’s become very inconspicuous in comparison.</p> <p>The lights will be on during hours of darkness, as is the case with all current lighting at the terminal. With respect to the “strength” of the light, the lighting has been designed for an Illuminance of 50 lux, as is the status quo with the rest of the terminal operational areas.</p> <p>It should also be noted, that not all of these high masts are new as in most cases the lights proposed are replacing old masts of 30m that have been removed. With respect to the completely new masts positions, light will only be directed to where it is required. There is no intention of directing any light anywhere, other than the operational areas where it is required. To direct light in any other direction is considered non-compliant with the above standards and regulations, and inefficient and wasteful in terms of design.</p> <p>5. Noted. The EMPr provides additional mitigation measures to reduce impacts to the Central Sandbank. However, it should be noted that the Estuarine Impact Assessment found that the project site (Island View) is not important for</p>
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<p>6. From the BID it is unclear what will happen to the greywater after treatment. Will it be discharged into the Bay? To what level will it be treated before discharge?</p> <p>7. We would like more information on what the dewatering will involve not only in terms of volume but also in terms of the processes that will be used and possible contaminants and pollutants in the water. Could the dewatering impact on benthic species? What impact will it have on the Central Sandbank?</p>	<p>birds as no birds were recorded at this site.</p> <p>6. The greywater will be recycled and used for flushing of toilets and water for the pot plants. Thereafter it will enter the municipal sewerage system. It will not be discharged into the estuary.</p> <p>7. A Method statement for dewatering is included in Appendix D5. The Marine and Estuarine Impact Assessment assessed the potential impact of dewatering and found that the impact was insignificant. Mitigation measures however were recommended and have been included in the EMPr. Impacts to the Central Sandbank have also been assessed and are discussed in Section D below, however in summary no significant impacts have been identified.</p>
<p>eThekwini electricity made the following comments regarding the proposed development;</p> <ol style="list-style-type: none"> 1. The applicant must consult eThekwini Electricity's main records to confirm whether any electrical services will be impacted upon. 2. The relocation of MV/LV services will be carried out at the expense of the applicant. 	<p>Noted.</p>
<p>The eThekwini Planning and Climate Protection Department will provide comments when more details on the proposed development are available.</p>	<p>Noted.</p>
<p>The eThekwini Land Use Management Branch noted that the area is demarcated as 'harbour zone'. The intended uses are clearly in support of the harbour function and therefore is supported.</p>	<p>Noted.</p>
<p>The eThekwini Strategic Spatial Planning Branch noted that in terms of the SDF and CSDF, the area in question is designated existing Port logistics. No concerns were raised as the proposal is in keeping with Port related activity.</p>	<p>Noted.</p>
<p>The eThekwini Parks, Leisure and Cemeteries Department requested that the applicant submit a detailed plan depicting the current boundaries of the container and terminal areas in relation to</p>	<p>Noted.</p> <p>Facility drawings are provided in Appendix C. In addition, a number of site maps are provided in</p>

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the current expansion of the container berths and central sandbank area and a detailed impact assessment dealing with the potential impacts on the little lagoon and central sandbank.	Appendix A. These show that the proposed activity occurs within the current footprint of Berth 203 to 205. Impacts on the Central Sandbank and Little Lagoon are assessed in Section D however in summary no significant impacts have been identified.
The eThekweni Geotechnical Engineering Branch noted that they had no geotechnical objections at this stage.	Noted.
The eThekweni Transport Authority noted that they had no objections.	Noted.
The eThekweni Health Department noted they had no objection to the above mentioned proposal but requested that a number of mitigation measures be taken into account.	Noted. The mitigation measures requested have been included in the EMPr.
The eThekweni Water and Sanitation Department requested that potential impacts to receiving water be outlines and that precautionary measures be taken to prevent any effects to the water quality due to spillages or leaks. They also requested that building plans be submitted to the Department for approval.	Noted. The mitigation measures requested have been included in the EMPr
Durban Solid Waste requested that the design pays attention to suitable refuse storage areas especially as there will be a central mess generating kitchen waste.	Provision has been made on the ground storey for a refuse storage.

27. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

A Comments and Response Report is provided in **Appendix E3**.

IAPs were provided an opportunity to register and to provide initial comments and all comments have been included. All registered IAPs will be notified of the review of the Draft BAR and all further comments received will be included in the Final BAR which will be submitted to DEA.

28. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Please See **Appendix E5.1** for the details of all authorities that were notified of the proposed development.

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Organisation	Contact person	Address	Email	Contact Number
Department of Agriculture, Forestry and Fisheries (DAFF) - Acting DDG: Fisheries	Desmond Stevens	7 th Floor, Foretrust Building	DDGFisheries@daff.gov.za	
DAFF - Marine Resource Management	Dennis Fredericks	3rd Floor, Foretrust Building	DennisF@daff.gov.za	
DAFF -Offshore & High Seas Fisheries	S Pheeha	Private Bag x9087, Cape Town, 8000	SaasaP@daff.gov.za	
DAFF	Phindile Bhungane		PhindileB@daff.gov.za	
DAFF	S Modise		ScokwangM@daff.gov.za	
DAFF	T Dungwana		ThembileD@daff.gov.za	
Department of Environmental Affairs (DEA): Integrated Environmental Authorisations	Wayne Hector	Environment House (Cnr Steve Biko & Soutpansberg Road);	WHector@environment.gov.za	
DEA: Oceans and Coasts	Alan Boyd	East Pier Road, East Pier Building, Victoira and Alfred Waterfront, Cape Town	Ajboyd@environment.gov.za	
DEA: Integrated Environmental Authorisations	Constance Musemburi	Environment House (Cnr Steve Biko & Soutpansberg Road);	cmusemburi@environment.gov.za	
DEA: Integrated Environmental Authorisations	L Mokwoena	Environment House (Cnr Steve Biko & Soutpansberg Road);	lmokoena@environment.gov.za	
DEA	Mactavish Makwarela	Environment House (Cnr Steve Biko & Soutpansberg Road);	MAMakwarela@environment.gov.za	
DEA: Integrated Environmental Authorisations	Millicent Solomons	Environment House (Cnr Steve Biko & Soutpansberg Road);	MSolomons@environment.gov.za	
DEA	N Sukwana	Environment House (Cnr Steve Biko &	nsukwana@environment.gov.za	

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Organisation	Contact person	Address	Email	Contact Number
		Soutpansberg Road);		
DEA: Oceans and Coasts	Ulric Van Bloemestein	Environment House (Cnr Steve Biko & Soutpansberg Road);	uvbloem@environment.gov.za	
DEA	V Khavhagali	Environment House (Cnr Steve Biko & Soutpansberg Road);	VKhavhagali@environment.gov.za	
DEA Biodiversity Unit	T Mashamba	Environment House (Cnr Steve Biko & Soutpansberg Road);	tmashamba@environment.gov.za	
DEA Biodiversity Unit	Wilma Lutsch	Environment House (Cnr Steve Biko & Soutpansberg Road);	Wlutsch@environment.gov.za	
DEA: Intergrated Coastal Management	P Khati	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	phkhati@environment.gov.za	
DEA: Oceans and Coasts	D Malan	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	dmalan@environment.gov.za	
DEA: Oceans and Coasts	F Ditini	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	FDitini@environment.gov.za	
DEA: Oceans and Coasts	L Madau	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	Lmudau2@environment.gov.za	
DEA: Oceans and Coasts	P Khanti	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	pkhanti@environment.gov.za	
DEA: Oceans and Coasts - CWDP	Reuben Molale	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	rmolale@environment.gov.za	

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Organisation	Contact person	Address	Email	Contact Number
DEA - Biodiversity and Conservation:	Fundisile Mketeni	Cnr Steve Biko and Soutpansberg Road, Pretoria	fmketeni@environment.gov.za	
DEA Director General: Legal Authorisations, Compliance and Enforcement	Ishaam Abader	Environment House (Cnr Steve Biko & Soutpansberg Road);	iabader@environment.gov.za	
DEA: Biodiversity Unit	Seoka Lekota	Environment House (Cnr Steve Biko & Soutpansberg Road);	slekota@environment.gov.za	(012) 399 9573
DEA: Oceans and Coasts	Ayanda Matoti	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	amatoti@environment.gov.za	
DEA: Oceans and Coasts (Integrated Coastal Management)	Andre Share	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	ashare@environment.gov.za	
DEA: Oceans and Coasts (Oceans and Coastal Research)	Ashley Naidoo	East Pier Road, East Pier Building, Victoria and Alfred Waterfront, Cape Town	anaidoo@environment.gov.za	
Department of Mineral Resources (DMR)	Karoon Moodley		Karoon.Moodley@dmr.gov.za	
Department of Transport	J Reddy	172 Burger Street, Pietersmaritzburg, 3201	Judy.Reddy@Kzntransport.gov.za	0333550569
Department of Water and Sanitation (DWS) - KZN	Norman Ward	P O Box 1018 DURBAN 4000	wardN@dwa.gov.za	
DWS	Valerie Du Plessis	Schoeman Street, Sedibeng Building Room 437, PTA, 0001	duplessisv@dwa.gov.za	082 809 2155
DWS	N Leburu	P O Box 1018 DURBAN 4000	leburun@dwa.gov.za	
DWS	KP Methula	P O Box 1018 DURBAN	methulak@dwa.gov.za	

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Organisation	Contact person	Address	Email	Contact Number
		4000		
DWS	Ntombi Madibe	P O Box 1018 DURBAN 4000	mngoma-madibej@dws.gov.za	829 414 342
DWS	NPS Mdlalose	P O Box 1018 DURBAN 4000	mdlalosen2@dwa.gov.za	0313059915
DWS - KZN Provincial Head	Angela Masefield	P O Box 1018 DURBAN 4000	MasefieldA@dwa.gov.za	
Economic Planning Programme KZN Department of Economic Development, Tourism & Environmental Affairs	Nomalungelo Ndlovu		NdlovuNOM@kznded.gov.za	
KZN Department of Agriculture and Economic Development, Tourism and Environmental Affairs (EDTEA) - Environmental Services	Yugeshnie Govender	Private Bag X54321, Durban 4000	yugeshni.govender@kzndae.gov.za	
EDTEA	Omar Parak		Omar.Parak@kzndae.gov.za	
EDTEA	Vanessa Maclou	CC-ED by Omar Paruk	VANESSA.MACLOU@kzndae.gov.za	
EDTEA	Viloshnee Naidoo		viloshnee.naidoo@kzndae.gov.za	
EDTEA	B Sithole		bonisiwa.sithole@kzndae.gov.za	
Ezemvelo KZN wildlife (EKZNW)	Felicity Elliot	Queen Elizabeth Park, 1 Peter Brown Drive, Cascades	elliottf@kznwildlife.com	
EKZNW	Jenny Longmore	Queen Elizabeth Park, 1 Peter Brown Drive, Cascades	longmorj@kznwildlife.com	

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Organisation	Contact person	Address	Email	Contact Number
EKZNW	Santosh Bachoo	Private Bag X3, Congella, Durban, 4013	santosh.bachoo@kznwildlife.com	
EKZNW	Darren Berriman	Queen Elizabeth Park, 1 Peter Brown Drive, Cascades	berrimd@kznwildlife.com	
EKZNW	Dominic Wieners	Queen Elizabeth Park, 1 Peter Brown Drive, Cascades	dominic.wieners@kznwildlife.com	
Ethekwini Metropolitan Municipality	Diane Van Rensburg	166 KE Masinga road, Durban, 4001	diane.vanrensborg@durban.gov.za	
Ethekwini Metropolitan Municipality	Eric Parker	166 KE Masinga road, Durban, 4001	eric.parker@durban.gov.za	
Ethekwini Metropolitan Municipality	Marcus Govender	166 KE Masinga road, Durban, 4001	marcus.govender@durban.gov.za	
Ethekwini Metropolitan Municipality	Peter Roberts	166 KE Masinga road, Durban, 4001	peter.roberts@durban.gov.za	
Ethekwini Metropolitan Municipality	Geoff Tooley	166 KE Masinga road, Durban, 4001	tooleyg@durban.gov.za	
Ethekwini Metropolitan Municipality	Andrew Mather	166 KE Masinga road, Durban, 4001	andrew.mather@durban.gov.za	0833090233
Ethekwini Metropolitan Municipality	Geoff Pullan	166 KE Masinga road, Durban, 4001	geoffpullan@iafrica.com	083 695 9190
Ethekwini Metropolitan Municipality	Chumisa Thengwa	166 KE Masinga road, Durban, 4001	chumisa.thengwa@durban.gov.za	071 8503414
Ethekwini Biodiversity Impact Assessment	Sabelo Nkosi	166 KE Masinga road, Durban, 4001	nkosis@durban.gov.za	
Ethekwini Coastal Stormwater and catchment management-engineering unit	Randeer Kasserchun	166 KE Masinga road, Durban, 4001	kasserchunr@durban.gov.za	083 259 1198
eThekwini Environmental Health Unit	Peter Roberts	166 KE Masinga road, Durban, 4001	RobertsPG@durban.gov.za	083 737 6303

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Organisation	Contact person	Address	Email	Contact Number
Ethekwini Metropolitan Municipality	Lee D'Eathe	166 KE Masinga road, Durban, 4001	deathel@durban.gov.za	0834615964
eThekwini Metropolitan Municipality - Development Planning, Environmental and Management Unit	Cameron McLean	166 KE Masinga road, Durban, 4001	Cameron.McLean@durban.gov.za	
eThekwini Metropolitan Municipality - Durban Natural Science Museum	David Allan	Research Centre: 151 KE Masinga Road, Durban, 4001	alland@durban.gov.za	
eThekwini Metropolitan Ward Councillor - Ward 32	Sebenzile William Zenzile		William.Zenzile@durban.gov.za ; william.zenzile@gmail.com	073 200 3984
KZN Department of Transport	Robert Lindsay		Robert.Lindsay@kzntransport.gov.za	033 355 0555
KZN Department of Transport	Michele Schmid		michele.schmid@Kzntransport.gov.za	
SAHRA-Maritime Archaeology	Jonathan Sharfman	Block C, Castle of Good Hope, Cape Town, 8000	jsharfman@wc.sahra.org.za	
SAHRA-Maritime Archaeology	Lisa la Grange	Block C, Castle of Good Hope, Cape Town, 8000	llagrange@sahra.org.za	
The South African Association for Marine Biological Research (SAAAMR)	Larry Oellermann	1 Reng Shaka Avenue, Point, Durban	loellermann@ori.org.za	

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Organisation	Contact person	Address	Email	Contact Number
Transnet National Port Authority	Moshe Motlohi	PO Box 1027, Durban	Moshe.Motlohi@transnet.net	083 288 8908
Transnet Port Terminals	Raymond Van Rooyen	South Tower Kingsmead Office Park, Stalwart Simelane Street, Durban, 4001	raymond.vanrooyen@transnet.net	835003986

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

The proof of written notification to all Authorities and Organs of State is included in **Appendix E4**. Proof of delivery of the Draft BAR will only be included in the Final BAR. Hard copies will only be provided to commenting authorities that have jurisdiction over the Port including the following:

- DEA: Integrated Environmental Authorisation;
- DEA: Oceans and Coasts;
- DWS;
- EDTEA;
- Ward Councillor;
- eThekweni Metropolitan Municipality;
- EKZNW;
- KZN Provincial Department of Transport; and
- DMR.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

Not Applicable as this is not a renewable project.

29. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

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Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

Public participation has been undertaken as per the requirements of the 2014 EIA Regulations. No deviations have occurred.

A list of registered I&APs must be included as appendix E5.

The list of IAPs that were initially notified of the project is included in **Appendix E5.1**.

The list of registered IAPs are included in **Appendix E5.2**.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

A public meeting will be scheduled by the EAP during the review period of BAR. All comments will be recorded and included within the Final BAR in **Appendix E6** as stipulated.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

30. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

Please note that the full Impact Assessment is included in Appendix F. The assessment below provides a summary only.

Activity	Impact summary	Significance	Proposed mitigation
Layout Alternative 1 (preferred alternative)			
Dewatering	Direct impacts: Negative impacts on water quality due to dewatering	Low	1.1. Once the groundwater has been exposed at the construction site, a sample must be sent for testing prior to discharge into the Port. 1.2. The Recommended General and Special effluent limits for physico-chemical properties and organic and inorganic constituents of the effluent as described in Anchor, 2016 must be met.
	Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to dewatering	Low	
	Cumulative impacts: Decreased water quality in Durban Bay Estuary	Low	
Construction - general	Direct impacts: Negative impacts on water quality due to poor construction practices	Low	1.1. Diffuse pollution sources to be managed to prevent pollution of the Estuary and all spillages should be cleaned out thoroughly to prevent contamination of surface run off. 1.2. Ablution facilities must be located in such a way that they are accessible to the workforce but do not in any way negatively impact Durban Bay Estuary. 1.3. Ensure proper storage of material
	Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to poor construction practices which negatively impact water	Low	

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Activity	Impact summary	Significance	Proposed mitigation
	<p>quality.</p> <p>Cumulative impacts: Decreased water quality in Durban Bay Estuary due to poor construction practices which negatively impact water quality.</p>	Low	<p>(including fuel, paint) that could cause water pollution.</p> <p>1.4. Ensure proper storage and careful handling of hazardous substances with spill prevention materials at hand.</p> <p>1.5. Spill management method statements for in situ concrete works to be developed) to ensure adequate management of any spills.</p> <p>1.6. Ensure all water quality and pollution general mitigation measures are adhered to.</p> <p>1.7. Adequate environmental awareness to ensure construction labourers do not pollute Durban Bay Estuary.</p> <p>1.8. Significant spillages must be reported to eThekweni Water and Sanitation on 0811313013 immediately.</p>
Grey water system - operation	<p>Direct impacts: Negative impacts on water quality due to grey water system</p> <p>Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to grey water system negatively impacting water quality.</p> <p>Cumulative impacts: Decreased water quality in Durban Bay Estuary due to grey water system.</p>	Low	<p>1.1. All measures must be taken to prevent any contamination which could impact on soil, surface and groundwater during leaks and ruptures.</p> <p>1.2. The grey water system should include fail-safes to divert grey water to municipal system should the system fail due to a malfunction.</p> <p>1.3. During commissioning, the grey water system should be tested to any and all requirements of SANS 10252 and SANS 10400 with reference to waste water piping and storage.</p>
Construction and Operation - general	<p>Direct impacts: Noise and light pollution</p> <p>Indirect impacts: Disturbance of avifauna</p> <p>Cumulative impacts: Disturbance of avifauna</p>	Low	<p>1.1. The provisions of SANS 10103:2008 will apply to all areas within audible distance of residents or tenants.</p> <p>1.2. Working hours to be agreed upon with Transnet Construction Manager, so as to minimise disturbance to tenants and land users</p> <p>1.3. No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to adjacent land-owners or tenants.</p> <p>1.4. Construction activities generating output levels of 85 dB or more will be confined to normal working hours</p>

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Activity	Impact summary	Significance	Proposed mitigation
			<p>unless agreed upon by the Transnet Construction Manager and ECO.</p> <p>1.5. The Contractor will take preventative measures (e.g. screening, muffling, timing, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools.</p> <p>1.6. The location of areas for delivery of equipment and materials must take into account the noise generated by vehicle and offloading equipment. This will be assessed by the ECO and EO and appropriate recommendations made in consultation with the Transnet Construction Manager.</p> <p>1.7. Compressors and associated equipment which exhibit continuous noise that could impact adjacent land users should be used during normal work hours (8h00 to 17h00) if possible.</p> <p>1.8. All equipment to be properly maintained to reduce unnecessary noise and must be kept in proper working order.</p> <p>1.9. Prior to construction the position and type of lighting will be planned to ensure unnecessary light pollution will be eliminated.</p> <p>1.10. All lighting installed on site must not lead to unacceptable light pollution to the surrounding community and natural environment (e.g. use of down-lighters).</p>
Construction and operation	<p>Direct impacts: Positive Impact - Job provision</p>	High	1.1. Use of local firms/labour during construction and the inclusion of a “hire local” share of labour would ensure greater local capture of these benefits.
	<p>Indirect impacts: Positive Impact - Improved local economy (<i>Greater employment will result in more disposable income which results in a positive multiplier effect on the economy</i>).</p>	Low	
	<p>Cumulative impacts: Positive Impact - Decreased unemployment rate</p>	Low	
Construction	<p>Direct impacts: Positive impact related to the</p>	High	None

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Activity	Impact summary	Significance	Proposed mitigation
	provision of facilities allowing for the proper utilisation of the extended berths		
	Indirect impacts: Positive Impact - Improved local economy due to more efficient Port	High	
	Cumulative impacts: None		
Operation	Direct impacts: Positive impact - Increased stack space due to layout of facilities	High	None possible
	Indirect impacts: Positive impact due to increased Port efficiency	High	
	Cumulative impacts: N/A		
Activity	Impact summary	Significance	Proposed mitigation
Layout Alternative 2			
Dewatering	Direct impacts: Negative impacts on water quality due to dewatering	Low	1.1. Once the groundwater has been exposed at the construction site, a sample must be sent for testing prior to discharge into the Port. 1.2. The Recommended General and Special effluent limits for physico-chemical properties and organic and inorganic constituents of the effluent as described in Anchor, 2016 must be met.
	Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to dewatering	Low	
	Cumulative impacts: Decreased water quality in Durban Bay Estuary	Low	
Construction - general	Direct impacts: Negative impacts on water quality due to poor construction practices	Low	1.1. Diffuse pollution sources to be managed to prevent pollution of the Estuary and all spillages should be cleaned out thoroughly to prevent contamination of surface run off. 1.2. Ablution facilities must be located in such a way that they are accessible to the workforce but do not in any way negatively impact Durban Bay Estuary. 1.3. Ensure proper storage of material (including fuel, paint) that could cause water pollution. 1.4. Ensure proper storage and careful handling of hazardous substances with spill prevention materials at hand. 1.5. Spill management method statements for in situ concrete works to ensure adequate management of any spills. 1.6. Ensure all water quality and pollution
	Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to poor construction practices which negatively impact water quality.	Low	
	Cumulative impacts: Decreased water quality in Durban Bay Estuary due to poor construction practices which negatively impact water quality.	Low	

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Activity	Impact summary	Significance	Proposed mitigation
			<p>general mitigation measures are adhered to.</p> <p>1.7. Adequate environmental awareness to ensure construction labourers do not pollute Durban Bay Estuary.</p> <p>1.8. Significant spillages must be reported to eThekweni Water and Sanitation on 0811313013 immediately.</p>
Grey water system - operation	<p>Direct impacts: Negative impacts on water quality due to grey water system</p>	Low	<p>1.1. All measures must be taken to prevent any contamination which could impact on soil, surface and groundwater during leaks and ruptures.</p> <p>1.2. The grey water system should include fail-safes to divert grey water to municipal system should the system fail due to a malfunction.</p> <p>1.3. During commissioning, the grey water system should be tested to any and all requirements of SANS 10252 and SANS 10400 with reference to waste water piping and storage.</p>
	<p>Indirect impacts: Impacts to sensitive areas such as Central Sandbank, Mangroves, Little Lagoon due to grey water system negatively impacting water quality.</p>	Low	
	<p>Cumulative impacts: Decreased water quality in Durban Bay Estuary due to grey water system.</p>	Low	
Construction and Operation - general	<p>Direct impacts: Noise and light pollution</p>	Low	<p>1.1. The provisions of SANS 10103:2008 will apply to all areas within audible distance of residents or tenants.</p> <p>1.2. Working hours to be agreed upon with Transnet Construction Manager, so as to minimise disturbance to tenants and land users</p> <p>1.3. No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to adjacent land-owners or tenants.</p> <p>1.4. Construction activities generating output levels of 85 dB or more will be confined to normal working hours unless agreed upon by the Transnet Construction Manager and ECO.</p> <p>1.5. The Contractor will take preventative measures (e.g. screening, muffling, timing, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools.</p> <p>1.6. The location of areas for delivery of equipment and materials must take into</p>
	<p>Indirect impacts: Disturbance of avifauna</p>	Low	
	<p>Cumulative impacts: Disturbance of avifauna</p>	Low	

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Activity	Impact summary	Significance	Proposed mitigation
			<p>account the noise generated by vehicle and offloading equipment. This will be assessed by the ECO and EO and appropriate recommendations made in consultation with the Transnet Construction Manager.</p> <p>1.7. Compressors and associated equipment which exhibit continuous noise that could impact adjacent land users should be used during normal work hours (8h00 to 17h00) if possible.</p> <p>1.8. All equipment to be properly maintained to reduce unnecessary noise and must be kept in proper working order.</p> <p>1.9. Prior to construction the position and type of lighting will be planned to ensure unnecessary light pollution will be eliminated.</p> <p>1.10. All lighting installed on site must not lead to unacceptable light pollution to the surrounding community and natural environment (e.g. use of down-lighters).</p>
Construction and operation	<p>Direct impacts: Positive Impact - Job provision</p>	High	1.2. Use of local firms/labour during construction and the inclusion of a "hire local" share of labour would ensure greater local capture of these benefits.
	<p>Indirect impacts: Positive Impact - Improved local economy (<i>Greater employment will result in more disposable income which results in a positive multiplier effect on the economy</i>).</p>	Low	
	<p>Cumulative impacts: Positive Impact - Decreased unemployment rate</p>	Low	
Construction	<p>Direct impacts: Positive impact related to the provision of facilities allowing for the proper utilisation of the extended berths</p>	High	None
	<p>Indirect impacts: Positive Impact - Improved local economy due to more efficient Port</p>	High	
	<p>Cumulative impacts: None</p>		
Operation	<p>Direct impacts: Decreased stack space due to</p>	High	None possible

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Activity	Impact summary	Significance	Proposed mitigation
	layout of facilities		
	Indirect impacts: Decreased Port efficiency	High	
	Cumulative impacts: N/A		
Operation	Direct impacts: Increased health and safety risk as building are within stack area	High	None possible
	Indirect impacts: N/A		
	Cumulative impacts: N/A		
Construction and operation	Direct impacts: Lack of required services and facilities at extended berth 203 to 205	High	None
	Indirect impacts: Decreased Port efficiency	High	
	Cumulative impacts: Decreased in economic output	High	

31. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative 1 – Layout Alternative 1

Due to the deepening, lengthening and widening of Berth 203 to 205, Pier 2, Durban Container Terminal (authorised on 21 January 2015), Transnet Port Terminals has recognised the need for new landside infrastructure and facilities to replace facilities that will be demolished on the existing quay walls. The new landside infrastructure proposed by TPT includes the following:

- A new Central Mess and Ablution Facility at Berth 203;
- A new Satellite facility at Berth 205;
- A new North Substation located at Berth 205;
- A new East Substation located south east of Berth 203; and
- Associated infrastructure such as access roads, sewer, stormwater, high mast lighting, tunnels and Close Circuit Television.

The north and east substations will require dewatering for the landside buildings. The required pumping rate required to dewater the excavations are provided below:

- East Substation - approximately 514. 04m³/day; and

- North Substation – approximately 388.60 m³/day.

Based on this, a Coastal Water Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (No 138 of 11 February 2009) is also required.

A Basic Assessment Report in line with GN 982 of 4 December 2014 has been undertaken. As part of this, two alternative layout were assessed.

In Layout Alternative 1, the position of the various facilities are on the perimeter of the container stacking areas and have no impact on the flow of straddle carries and operations. In comparison, with Layout Alternative 2, the building structures are surrounded by container stacking areas and thus pose a risk when entering and leaving the facilities. From an operational perspective, this option breaks up the container stacking areas, which is not ideal. The only advantage of this alternative is that the building structures are on the 100m high water mark and therefore do not require a basic assessment.

The impact of Layout Alternative 1, in terms of nature, types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts have been assessed (**Appendix F**) and based on this, it is evident that the proposed development will have minimal impacts on the receiving environment.

The main impact identified by the Marine and Estuarine specialist was ecological effects due to the reduction in dissolved oxygen concentrations. However, piezometer monitoring by ZAA Engineering Projects and Naval Architecture indicate, however, that the groundwater level at construction site corresponds with the water level within the Port basin and it is thus likely that it has a similar chemical make-up and quality to the water in the Port basin. Provided this is indeed the case, impacts on the receiving water quality will be negligible. Once the groundwater has been exposed at the construction site, a sample must be sent for testing prior to discharge into the Port. This will ensure that the water discharged into the bay is of a similar quality to the existing Bay. Based on this mitigation measure, the impact is seen to be of a low significance. Should it occur, it would have a low consequence and a short term impact.

Birdlife Port Natal also raised concerns regarding the impact to avifauna. This was assessed in the impact assessment and it was found that the main impact to avifauna is *disturbance* by construction and possibly by the operation of activities associated with the berths themselves (i.e. shipping).

Mitigation of these impacts will be best achieved by minimising noise impacts during construction. As the footprint of the development does not infringe on the Central Sandbank area, no other activities will disturb bird species. Furthermore, the proposed site is an existing Port operational area and as such already contributes to noise and light disturbance. The proposed development will not increase these existing disturbances during operation. The significance of this impact is therefore assessed as low and whilst it is likely to occur, it will be for the short term only.

In terms of positive impacts, the main positive impact was related to the provision of facilities allowing for the proper utilisation of the extended berths. This would result in a highly significant and long-term positive impact. In addition, an increase in jobs caused during construction would also result in a positive short term impact.

The advantages and disadvantages of each alternative have been assessed in term of Biophysical, Social and Economic Factors.

Biophysical:

Advantages	Disadvantages
➤ None	➤ Within 100m of the estuary.

Social:

Advantages	Disadvantages
➤ Buildings are not surrounded by stacks and therefore less of a safety risk.	➤ None

Economic:

Advantages	Disadvantages
➤ Increased stack space allows for improved efficiency at the Berths.	➤ None

With the selection of the BPEO for the layout alternatives (**Layout Alternative 1**) the adoption of the mitigation measures included in the BAR and the dedicated implementation of the EMP, it is believed that the significant environmental aspects and impact associated with this project can be suitably mitigated. With the aforementioned in mind, it can be concluded that there are no fatal flaws associated with the project and that authorisation can be issued, based on the findings of the specialists and the impact assessment, through the compliance with the identified environmental management provisions.

Alternative 2 – Layout Alternative 2

In Layout Alternative 2, the building structures are surrounded by container stacking areas and thus pose a risk when entering and leaving the facilities. From an operational perspective, this option breaks up the container stacking areas, which is not ideal. The only advantage of this alternative is that the building structures are on the 100m high water mark and therefore do not require a basic assessment.

The impact of this alternative, in terms of nature, types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts have been assessed (**Appendix F**) and based on this, it is evident that the proposed development will have minimal impacts on the receiving environment.

The main impact identified by the Marine and Estuarine specialist was ecological effects due to the reduction in dissolved oxygen concentrations. This impact is the same for both alternatives. In addition, based on the suggested mitigation measure, the impact is seen to be of a low significance. Should it occur, it would have a low consequence and a short term impact.

Birdlife Port Natal also raised concerns regarding the impact to avifauna. This was assessed in the impact assessment and it was found that the main impact to avifauna is *disturbance* by construction and possibly by the operation of activities associated with the berths themselves (i.e. shipping). As layout alternative 2 is further away from the edge of the estuary, the disturbance impacts related to the development may be lower however it is unlikely this would result in a significant improvement in the noise disturbance as the berthing and unberthing of ships would still occur at the water's edge and provides a greater disturbance.

It is felt mitigation of the disturbance of avifauna will be best achieved by minimising noise impacts during construction. As the footprint of the development does not infringe on the Central Sandbank area, no other activities will directly disturb bird species. Furthermore, the proposed site is an existing Port operational area and as such already contributes to noise and light disturbance. The proposed development will not increase these existing disturbances during operation. The significance of this impact is therefore assessed as low and whilst it is likely to occur, it will be for the short term only.

In terms of positive impacts, the main positive impact was related to the provision of facilities allowing for the

proper utilisation of the extended berths. This would result in a highly significant and long-term positive impact. In addition, an increase in jobs caused during construction would also result in a positive short term impact. This positive impact is somewhat diminished in Layout Alternative 2 as it would result in a decrease in stacking space. It would also result in a greater health and safety risk as the buildings would be surrounded by stacks.

The advantages and disadvantages of each alternative have been assessed in term of Biophysical, Social and Economic Factors.

Biophysical:

Advantages	Disadvantages
➤ More than 100m away from the estuary.	➤ None

Social:

Advantages	Disadvantages
➤ None	➤ Health and safety risks related to the fact that the facilities are surrounded by the stacking areas.

Economic:

Advantages	Disadvantages
➤ Increased stack space allows for improved efficiency at the Berths.	➤ None

Based on the above, Alternative Layout 2 is **not preferred**.

No-go alternative (compulsory)

The no-go alternative for the proposed development would mean that the facilities and associated infrastructure described in Section 1 **would not be put in place**.

This would jeopardize the functioning of Berth 203 to 205, Pier 2 as there would be no staff facilities available at the berths and staff would be forced to travel to different piers to use the bathrooms, facilities and offices. This would decrease efficiency at the berths. Furthermore, without the new north and east substations, the ship-to-shore cranes could not be used and the container terminal would be negatively affected. This would have a negative economic impact at a regional and national level as the Port of Durban can be seen as the premier gateway Port in South Africa.

As the South African economy grows, so does the need for a greater capacity to cater for growing freight volumes at the Port. In the past 10 years, the growth in containerised traffic through the Port of Durban has been three times the national GDP growth rate. It was previously forecast that the existing transportation infrastructure will reach its limit by 2019 and unless significant expansion takes place, South African economic growth will be constrained. In addition, the Port provides numerous local jobs and contributes to the economic wellbeing of eThekweni Metropolitan. This has resulted in the need to upgrade the existing berth 203 to 205, which was authorised in 2015.

The planned berth 203 to 205 expansion (authorised in 2015) has resulted in the need to construct new facilities at the berths which will allow for the optimal use of the expanded berth 203 to 205. It will also provide a number of temporary employment opportunities during construction.

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The advantages and disadvantages of the no-go alternative are tabulated below in terms of biophysical, social and economic factors.

Biophysical:

Advantages	Disadvantages
<ul style="list-style-type: none"> ➤ No dewatering into the estuary. ➤ No disturbance of avifauna during construction of the facilities. 	<ul style="list-style-type: none"> ➤ None

Social:

Advantages	Disadvantages
<ul style="list-style-type: none"> ➤ None 	<ul style="list-style-type: none"> ➤ No staff facilities available at the berths and staff would be forced to travel to different piers to use the bathrooms, facilities and office. ➤ No temporary construction jobs created during construction of facilities. ➤ Energy and water saving designs will not be implemented.

Economic:

Advantages	Disadvantages
<ul style="list-style-type: none"> ➤ None. 	<ul style="list-style-type: none"> ➤ Without the new north and east substations, the ship-to-shore cranes could not be used and the container terminal would be negatively affected. ➤ The new extended Berth 203 to 205 would not be used optimally. This could have an indirect negative impact on the economy.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES ✓	
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Please refer to the EMPr in **Appendix G**. Based on the information contained in this report, and taking into account the outcome of the impact assessment, opinions and recommendations included in the specialist studies as well as all supporting documentation, it is the recommendation of the practitioner that Environmental Authorisation be granted by the Department of Environmental Affairs (DEA) for the **Layout Alternative 1**.

The following pertinent conditions for inclusion in the Environmental Authorisation are recommended:

- Appointment of an Environmental Control Officer to monitor compliance with the Environmental Authorisation and the approved EMPr;
- All mitigation measures provided in the Specialist reports, Impact Assessment and EMPr of the BAR are to be adhered to. Specifically, the following:
 - Once the groundwater has been exposed at the construction site, a sample must be sent for testing prior to discharge into the Port;
 - The Recommended General and Special effluent limits for physico-chemical properties and organic and inorganic constituents of the effluent as described in Anchor, 2016 must be met;
 - Diffuse pollution sources to be managed to prevent pollution of the Estuary and all spillages should be cleaned out thoroughly to prevent contamination of surface run off;
 - Ablution facilities must be located in such a way that they are accessible to the workforce but do not in any way negatively impact Durban Bay Estuary;
 - Ensure proper storage of material (including fuel, paint) that could cause water pollution;
 - Ensure proper storage and careful handling of hazardous substances with spill prevention materials at hand;
 - Spill management method statements for in situ concrete works to be developed) to ensure adequate management of any spills;
 - Ensure all water quality and pollution general mitigation measures are adhered to;
 - Adequate environmental awareness to ensure construction labourers do not pollute Durban Bay Estuary;
 - Significant spillages must be reported to eThekweni Water and Sanitation on 0811313013 immediately.
 - The provisions of SANS 10103:2008 will apply to all areas within audible distance of residents or tenants;
 - Working hours to be agreed upon with Transnet Construction Manager, so as to minimise disturbance to tenants and land users;
 - No amplified music will be allowed on the site. The use of radios, tape recorders, compact

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disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to adjacent land-owners or tenants;

- Construction activities generating output levels of 85 dB or more will be confined to normal working hours unless agreed upon by the Transnet Construction Manager and ECO;
- The Contractor will take preventative measures (e.g. screening, muffling, timing, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools;
- The location of areas for delivery of equipment and materials must take into account the noise generated by vehicle and offloading equipment. This will be assessed by the ECO and EO and appropriate recommendations made in consultation with the Transnet Construction Manager;
- Compressors and associated equipment which exhibit continuous noise that could impact adjacent land users should be used during normal work hours (8h00 to 17h00) if possible;
- All equipment to be properly maintained to reduce unnecessary noise and must be kept in proper working order;
- Prior to construction the position and type of lighting will be planned to ensure unnecessary light pollution will be eliminated;
- All lighting installed on site must not lead to unacceptable light pollution to the surrounding community and natural environment (e.g. use of down-lighters);
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities;
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site;
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1);
- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage;
- Restrict construction activities to footprint area;
- No go' area to be demarcated; and
- Rehabilitation to be undertaken post construction where required.

If the above recommendations and the EMPr are strictly enforced to mitigate the identified possible impacts associated to it, then construction disruptions should have minimal lasting effect on the ecosystems of the proposed development

Is an EMPr attached?

YES ✓

The EMPr must be attached as Appendix G.

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The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Vanessa Stippel
NAME OF EAP



SIGNATURE OF EAP

17 May 2016
DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information