APPENDIX N: SITE SENSITIVITY VERIFICATION REPORT

CEN INTEGRATED ENVIRONMENTAL MANAGEMENT UNIT

Environmental and Rural Development Specialist

ENVIRONMENTAL SITE SENSITIVITY VERIFICATION REPORT

BAYHEAD AND LANGEBERG ROAD UPGRADES, PORT OF DURBAN, ETHEKWINI METROPOLITAN MUNICIPALITY, KWAZULU NATAL

20 MARCH 2026

Project Title: Environmental Screening Report: Bayhead and Langeberg Road Upgrades, Port of Durban, eThekwini Metropolitan Municipality, KwaZulu Natal

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Version 1	Site Sensitivity Verification Report	9 February 2026
Version 2	Comments addressed from Transnet	20 March 2026

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LIST OF ABBREVIATIONS

Abbreviation	Definition
CBAs	Critical Biodiversity Areas
D'MOSS	Durban Metropolitan Open Space System
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
EFZ	Estuarine Functional Zone
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
KZN	KwaZulu Natal
LCAs	Landscape Character Areas

Abbreviation	Definition
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act
NPAES	National Protected Areas Expansion Strategy
NWA	National Water Act
SACAP	South African Council for the Architectural Profession
SACNASP	South African Council for Natural Scientific Professions
SAHRIS	South African Heritage Resources Information System
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SEI	Site Ecological Importance
TNPA	Transnet National Ports Authority

1 INTRODUCTION

CEN Integrated Environmental Management Unit (CEN IEM Unit) was appointed by LA Consulting Engineers to undertake a Basic Assessment process to ensure compliance with regulations contained in the National Environmental Management Act (NEMA Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations (2014, as amended), for the proposed Bayhead and Langeberg Road Upgrades in the Port of Durban, within the eThekwini Metropolitan Municipality, KwaZulu Natal.

In terms of Regulation 16(1)(b)(v) of the EIA Regulations (GNR 982), promulgated under the NEMA (Act 107 of 1998), it requires that an application for Environmental Authorisation be accompanied by a Screening Report generated by the national web-based environmental screening tool for the relevant site and activity. The Screening Report identifies preliminary development incentives, restrictions, exclusions, or prohibitions applicable to the proposed development, as well as the site's most environmentally sensitive features based on the site sensitivity screening.

Based on the sensitivities identified, the Screening Report also provides a preliminary list of specialist studies to be considered during the Impact Assessment process. Prior to undertaking any specialist assessment identified in the Screening Report, the current land use and environmental sensitivity of the site must be confirmed through a site sensitivity verification.

The Site Sensitivity and Verification Report documents the outcomes of the site sensitivity verification and demonstrates compliance with the procedures for assessment and the minimum reporting criteria for identified environmental themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA. This process entails assessing a range of environmental factors in alignment with the findings of the environmental screening tool report. As a result, key environmental sensitivities are identified, and the need for any specialist studies is determined.

2 PROJECT LOCALITY & DESCRIPTION

2.1 Locality

The Bayhead and Langeberg Roads are located in the Port of Durban, within Ward 32 of the eThekwini Metropolitan Municipality, KwaZulu Natal. Refer to **Figure 1** for the locality map.

2.2 Project Details

Transnet SOC Limited (Transnet) is proposing to upgrade the Bayhead and Langeberg Roads located within the Port of Durban, Ward 32 of the eThekwini Metropolitan Municipality, KwaZulu Natal. The roads are currently experiencing slow moving traffic and congestion of vehicles.

The Bayhead Road is approximately 3.1 kilometres (km) in length and accommodates two (2) lanes inbound and two (2) lanes outbound. The Bayhead Road forms part of the Road Over Rail Bridge (Bridge 2-5) at the intersection of Bayhead and South Coast Roads and falls outside of the Port of Durban's port limits (approximately 115 metres). In the vicinity of the Amanzimnyama Canal Bridge (Bridge 5-8), approximately 115 metres (m) of the proposed widening of the Bayhead Road will fall outside of the port limits but still within Transnet land. The remainder of the Bayhead Road is located within the port limits; and approximately 890m of the Bayhead Road is located adjacent to the port limits.

The Langeberg Road is approximately 1.75km in length and consists of 4 lanes, two (2) outbound and two (2) inbound. The entire road is located within the port limits.

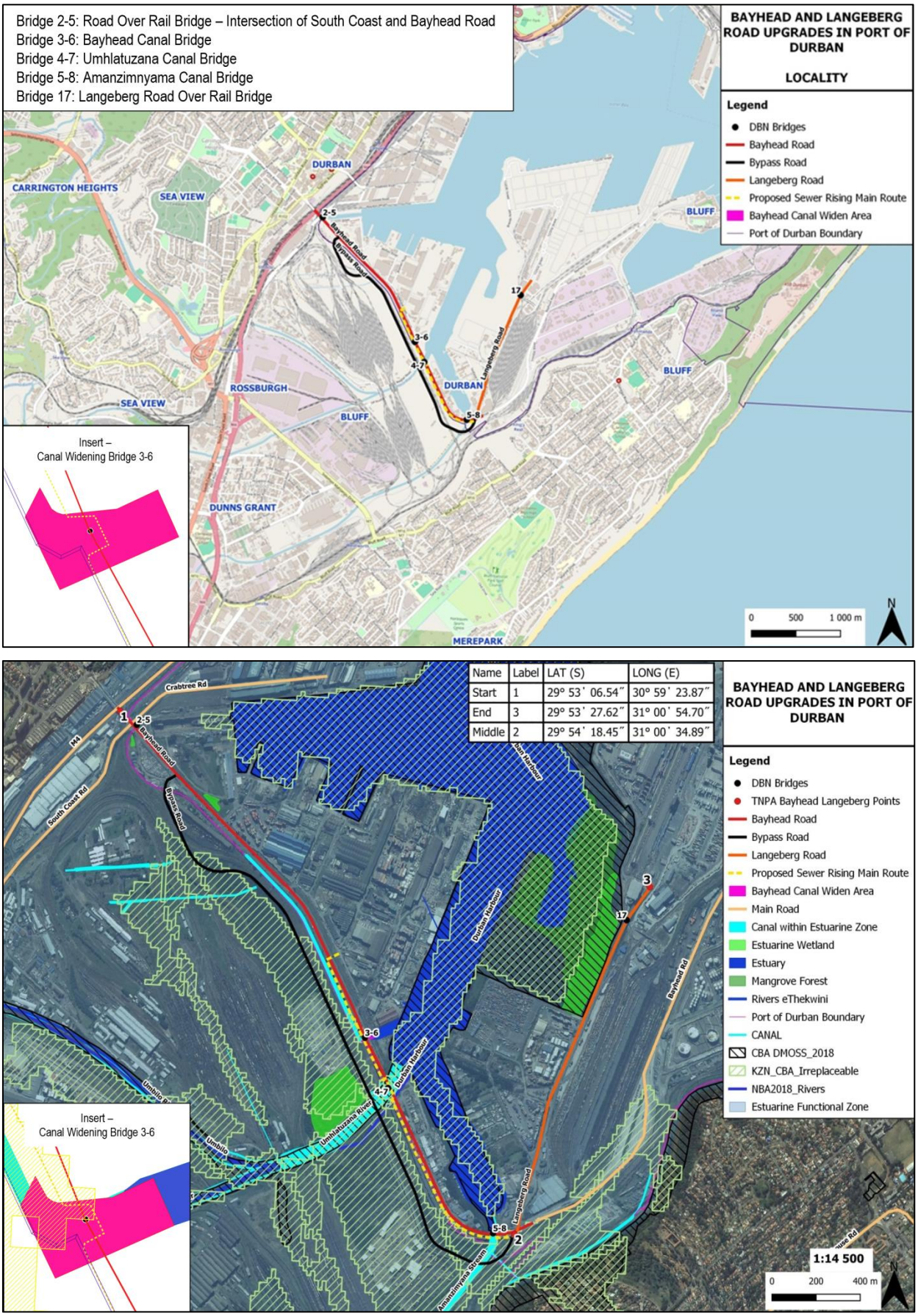


Figure 1: Locality Map

The proposed project involves the following:

Classification of Roads: The Bayhead and Langeberg Roads are classified as private roads and are managed by the Port of Durban under Transnet National Ports Authority (TNPA). The roads are not open to unrestricted public use but serve port operations and controlled traffic.

Proposed Upgrades: The project involves the upgrade and widening of Bayhead and Langeberg Roads to improve the accommodation of port vehicle traffic, as follows:

- Widening existing carriageways by one lane in each direction. The following is being considered for the road widening:
    - to widen both sides of the roads by a minimum of 4m either side, or
    - use the centre median, or
    - a combination of centre median usage and widening to obtain the necessary traffic layout configuration.
- Modification to five bridges (rail and canals) for lane extension and structural integrity. The anticipated bridge modifications may entail widening or widening and raising of the canal bridges.
- Stormwater management enhancements, including improved drainage systems and designated discharge points.
    - Stormwater pipe size will be 375mm diameter.
    - Upgrade of discharge stormwater pipe into Bayhead Canal (450mm / 525mm diameter).
    - Additional stormwater pipes may be included to service the widening sections.
- Modification and expansion of Bayhead Canal at the Bayhead Canal Bridge (Bridge 3-6):
    - Potential modification of the existing canal upstream of Bayhead Canal Bridge (Bridge 3-6), to splay the abutments and repair to erosion.
    - Expansion of the existing culvert with an additional 3.4m x 7m culvert and associated widening of upstream and downstream of canal.

For the above proposed works, it is anticipated that bridge support structures would be required in the canal bed and along the banks/embankments/curbs of the canals; which would result in the removal of sections of the concrete canal bed, embankments/curbs and potentially the removal of the underlying soils and then refilling thereof. Additional stormwater pipes may require additional stormwater discharge points or expansion of stormwater structures along the embankments/curbs of the canals. Details on the width of the widenings and height to be raised of the bridges and stormwater enhancements are unknown at present and will only be determined during the detailed design stages.

Relocation of Sewer Rising Main: The route of the existing sewer rising main (0.45m diameter) along Bayhead Road would be relocated to the outgoing road verge over a length of approximately 1,655m. The proposed sewer rising main would remain at a 0.45m diameter pipeline.

3 METHODOLOGY

3.1 Literature Review

A desktop analysis included the generation of the web-based Department of Forestry, Fisheries and the Environment (DFFE) screening tool report and satellite imagery obtained from Google Earth.

Information has been extracted from the DFFE screening tool report and specialist studies, after which were incorporated into the present site sensitivity verification report.

Relevant information from guideline documents and related GIS information, which included:

- National Biodiversity Assessment (2018)
- National Threatened Ecosystems Section 52 National Environmental Management: Biodiversity Act (NEMBA) (2022)
- National Vegetation Map Project (VEGMAP, 2018)
- National Wetland Map (2018)
- National Freshwater Ecosystem Priority Areas (NFEPA)
- Protected Areas Database: Quarter 2, 2024
- National Protected Areas Expansion Strategy (NPAES, 2018)
- Ezemvelo KwaZulu Natal (KZN) Wildlife Biodiversity Sector Plan (2016)
- Durban Metropolitan Open Space System (D'MOSS, 2018)
- eThekwini Open GIS Data (2022)
- South African 1:50 000 Topographical Map
- DFFE Durban Bay Estuarine Management Plan (2016)

3.2 Site Inspection

A site inspection was conducted on the 21 November 2024. Refer to Appendix 1 for site photographs.

3.3 Specialist Studies

The following specialists form part of the project team (**Table 1**):

Table 1: Specialist Team

Specialist Study	Company	Specialist	Registration
Terrestrial Biodiversity including Plant & Animal Species	Verdant Environmental	Ryan Edwards	SACNASP Pr. Sci. Nat. No. 400089/13
		David Styles	SACNASP Pr. Sci. Nat. No. 120066
		James Harvey	SACNASP Pr. Sci. Nat. No. 118661/17
		Juliette Lagesse	SACNASP Cand. Sci. Nat. No. 122969
Aquatic Biodiversity	Verdant Environmental	Ryan Edwards	SACNASP Pr. Sci. Nat. No. 400089/13
		Juliette Lagesse	SACNASP Cand. Sci. Nat. No. 122969
		Darrin McIntyre	N/A
Heritage, Archaeology &	CTS Heritage	Mabeth Crafford Jenna Lavin	ASAPA N/A

Specialist Study	Company	Specialist	Registration
Palaeontology	Architectural Heritage Consultant	Kirk White	SACAP Pr. 5687
Traffic	Fulcrum Development Consultants	Mohammed Kajee	N/A
Landscape / Visual	Afzelia Environmental Consultants & Environmental Planning and Design	Jonathan Marshall	SACLAP
Noise	Acoustech Consulting (Pty) Ltd	Oliver Knoppersen Duduzile Skhosana	AMIOA N/A
Geotechnical	Drennan Maud (Pty) Ltd	K. Gordon	SACNASP Pr. Sci. Nat. No. 401430/83
Socio-economic	Social Risk Research (Pty) Ltd	Eugene de Beer	ESSA / SAPI

3.4 Gaps and Assumptions

LA Engineering Consultants are responsible for coordinating and managing the specialist team. The accuracy and completeness of specialist outputs are dependent on the information provided to them. It is assumed that the layout drawings, design details and mapping data distributed to the specialists for the preparation of their respective reports are accurate, up to date and reflective of the proposed upgrades.

Accordingly, this assessment does not include an independent verification or validation of the drawings, design information, or mapping data supplied. Any inaccuracies, omissions, or subsequent revisions to the provided information may impact the findings, conclusions, and recommendations contained within the site sensitivity verification report and related specialist reports.

4 THEMES & SPECIALIST STUDIES IDENTIFIED IN SCREENING TOOL REPORT

4.1 Agriculture

The DFFE Screening Tool Report assigned a High sensitivity rating for the agricultural theme. The DFFE Screening Tool indicated that the Land Capability rating ranges from Moderate-High to Low-Moderate. Refer to **Figure 2**.

The Bayhead and Langeberg Roads are located within a transformed and an urban area, refer to **Figure 3**. The Bayhead and Langeberg Roads are classified as private roads and are managed by the Port of Durban under Transnet. The roads are not open to unrestricted public use but serve port operations and controlled traffic.

No agricultural land falls within the site boundaries for the proposed upgrading of Bayhead and Langeberg Roads.

The Agricultural Sensitivity is deemed to be of Low Sensitivity.

As a result of the area being transformed and that no agriculture is taking place, no agricultural specialist assessment / compliance statement is deemed to be needed.

Figure 2: DFFE Map of Relative Agriculture Sensitivity

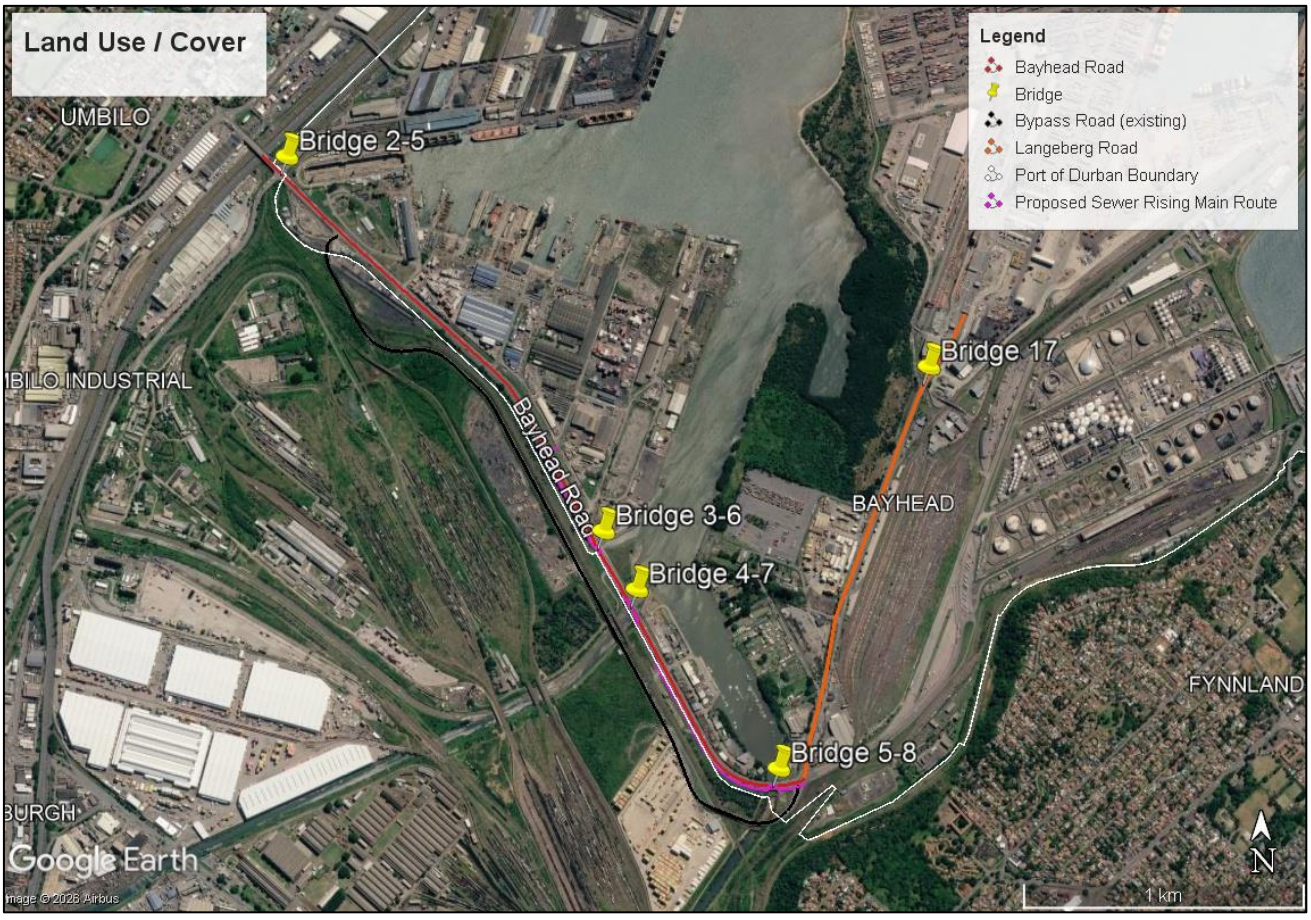


Figure 3: Land Use / Cover

4.2 Animal Species

The Animal Species Theme is assigned a High sensitivity rating by the DFFE Screening Tool. The high sensitivity rating is due to 19 listed species of concern, including 9 avifauna species of which 8 have a high sensitivity and 1 medium sensitivity, the following have a rating of medium sensitivity: 5 invertebrate species, 1 amphibian species, 1 mammal species , 1 reptile species and Sensitive

Species 8. Lastly, a species subject to confirmation was identified with a low sensitivity. **Figure 4** presents the map of relative animal species in the DFFE Screening Tool and shows areas of high and medium sensitivity.

The Bayhead and Langeberg Roads do not fall within or near to an Important Bird Area.

None of these species listed in the DFFE Screening Tool are expected to be present within or in close proximity to the proposed development footprint. This is primarily due to the transformed and highly disturbed nature of the study area, and lack of natural habitats that these species require (Edwards *et al*., 2025).

As per the specialist study, the majority of the footprint falls within existing transformed areas with hardened surfaces, and lawn verges immediately adjacent to existing road infrastructure including localised patches of secondary grassland along the southern end of Bayhead Road (Faunal Habitat 2) and areas of dense alien vegetation (Faunal Habitat 1). A portion of the 32m buffer area extends into the Mangrove Forest area along Langeberg Road and comprises grassland with scattered indigenous trees (Faunal Habitat 3) and there are some localised areas in the southern section of Bayhead Road that comprise thickets of mixed indigenous and alien vegetation (Faunal Habitat 4) (Edwards *et al*., 2025).

The majority of the footprint offers no or very low value to faunal communities, given its transformed or highly disturbed nature. However, Faunal Habitat 3 within the Mangrove Forest area and Faunal Habitat 4 (localised patches of mixed indigenous and alien thicket along the southern end of Bayhead Road) provide valuable habitat for the KwaZulu Dwarf Chameleon (*Bradypodion melanocephalum*). These two faunal habitats, as well as areas of secondary grassland and in some cases dense alien/indigenous thicket that is more degraded provide some value as linkages for the KwaZulu Dwarf Chameleon. These degraded areas of secondary grassland and alien invaded thicket of very low value for most species have been grouped into a fifth faunal habitat to flag their importance as an ecological corridor for this species (Faunal Habitat 5 secondary grassland and mixed indigenous and alien thicket) (Edwards *et al*., 2025).

The vast majority of Species of Conservation Concern (SCC) known from the broader area will not be present within or in close proximity to the proposed development. However, one sensitive species, the KwaZulu Dwarf Chameleon *Bradypodion melanocephalum*, is known to occur in the broader area, and does use these vegetation patches described above, which function both as supporting habitat and as areas of connectivity for the species in the landscape. Given the limited remaining patches of vegetation in the broader area, and the tenuous connectivity they provide for this species, they need to be kept at the greatest extent and quality possible. These areas maintain connectivity between vegetated areas and chameleon subpopulations 1) west of the Bayhead Road, 2) the vegetated areas on the Bluff ridge, and 3) Mangrove Forest area. Although the chameleons will be absent from the majority of the footprint, they will utilise a block of vegetation in the southern portion of the footprint, south-west of the Bayhead-Langeberg Road intersection. They will also utilise grassy areas immediately adjacent to the proposed footprint in the southern third of the Bayhead Road section (Edwards *et al*., 2025).

In terms of the Animal Species Theme although much of the site has been disturbed and transformed in the past, Faunal Habitats 3, 4 and 5 are still of value as habitat for the KwaZulu Dwarf Chameleon, and therefore these faunal habitats are considered to be of ‘Medium’ Site Ecological Importance (SEI) with remaining two faunal habitats (Faunal Habitat 1 & 2) considered to be of ‘Very Low’ SEI.

Based on the findings outlined above, the specialist disputes the DFFE high sensitivity rating and considers a medium sensitivity rating to be more appropriate.

As a result of the medium sensitivity rating a compliance statement is deemed to be required.

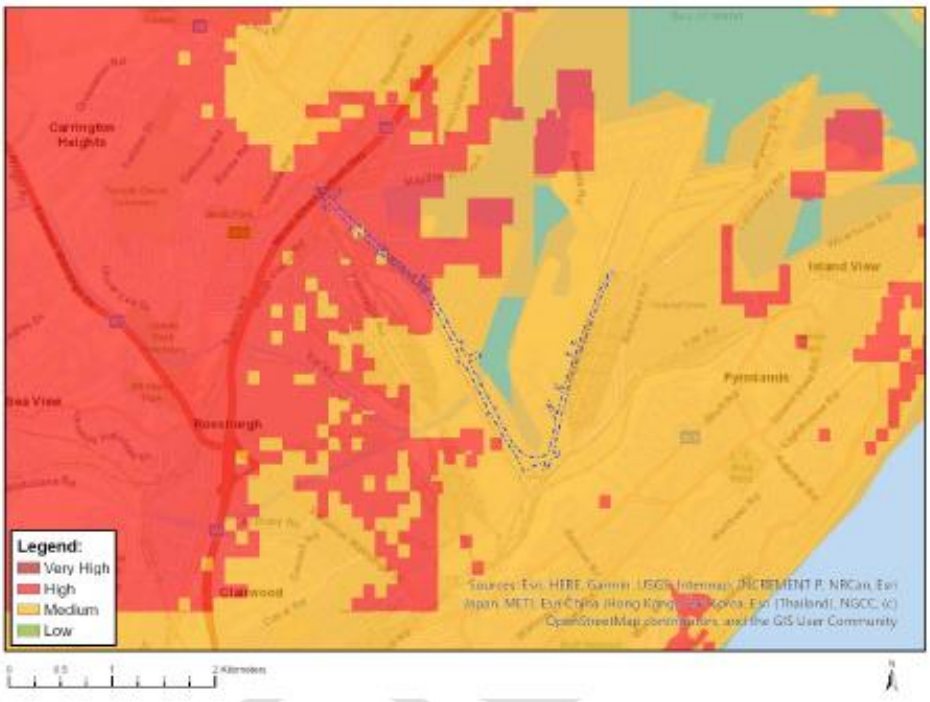


Figure 4: DFFE Map of Relative Animal Species Sensitivity.

4.3 Aquatic Biodiversity

The DFFE Screening Tool Report assigned a Very High Sensitivity rating to the Aquatic Biodiversity Theme due to the Durban Bay Estuary, rivers and estuary. Refer to **Figure 5**.

The project activities fall within the Estuarine Functional Zone (EFZ) of the Durban Bay Estuary. The Durban Bay Estuary is currently classified as Severely to Critically Modified (Present Ecological State: Class E/F). Historically covering about 35 km², the estuary has been reduced to 13.5 km² due to extensive development and modification. Major changes include dredging, mouth widening, and the loss of key estuarine habitats like wetlands, reedbeds, mudflats, and mangroves—with only 15 ha of the original 440 ha of mangroves remaining. Sediment distribution has been significantly altered, especially in upper channels that now trap sediment from upstream. There has also been complete loss of seagrass beds and important habitats for juvenile species. Additionally, persistent water quality issues from upstream waste and port activities continue to harm the estuary's ecological health (Edwards *et al*., 2025).

The Durban Bay Estuary is currently considered to be of High Ecological Importance & Sensitivity (EIS). However, although falling within the Durban Bay EFZ, the modified and transformed ecosystems along the roads are assessed as having the following EIS (Edwards *et al*., 2025):

•Modified dryland on fill material – Low EIS
•Modified estuarine wetlands on fill material – Moderate EIS
•Major canals – Moderate EIS
•Minor canals – Low EIS

The specialist agrees that the “Very High sensitivity” rating for the site is appropriate. As a result, an impact assessment will be required.

Figure 5: Map of Relative Aquatic Biodiversity Theme Sensitivity.

4.4 Heritage Resources

The Archaeological and Cultural Heritage theme is assigned a Very High Sensitivity rating by the DFFE Screening Tool due to the northern portion of Bayhead Road being within 2 kilometres of a Grade II Heritage site. Refer to **Figure 6**.

The DFFE Screening Tool assigned a sensitivity rating of Medium to the Palaeontology theme. **Figure 7** presents the map of relative palaeontology sensitivity in the DFFE Screening Tool Report and shows the majority of the roads located within areas of low sensitivity and the northernmost section of Bayhead Road within an area of medium sensitivity.

Archaeological sites spanning the Earlier, Middle and Later Stone Age have been found in the region despite the extensive agricultural and industrial transformation of the area. The two roads are majorly underlain by areas that historically consisted of Mangrove Swamps and have since then been reclaimed to form part of the Durban Port. The chances of significant archaeological sites being impacted is highly unlikely, as the industrialisation development would most likely have disturbed all existing in-situ sites. No significant archaeological resources are anticipated (Lavin, 2025).

Most of the nearby South African Heritage Resources Information System (SAHRIS) sites represent built environment resources, except a prehistoric artefact scatter identified by Schoute-Vanneck in 1958 in their research paper documenting coastal pottery and associated Iron Age Sites on the Durban Bluff. This site was identified in a road cutting and located further southwest of the proposed road upgrades. None of these SAHRIS sites were given a heritage grading on SAHRIS. Due to the limited nature and scope of the proposed road upgrades and as the proposed road upgrades are likely to stay within the current road reserve, no impact to any heritage resources is expected, as all of these resources are located more than 100m from the road (Lavin, 2025).

Majority of the Bayhead and Langeberg Roads were constructed in the 1960s and 1970's, bridge 2-5 (Road Over Rail Bridge – Intersection of South Coast and Bayhead Road) was constructed in 1952, and widened in 2000. As such, there is likely to be fabric older than 60 years existing within the bridge structure. In terms of Section 34 of the National Heritage Resources Act (NHRA) and Section 37 of the Amafa Institute Act, a permit is required for alterations to a structure older than 60 years. However, based on the findings of this assessment, the roads and bridges proposed for

upgrade are unlikely to have any cultural value that would require further assessment in an Heritage Impact Assessment (Lavin, 2025).

According to the SAHRIS Palaeosensitivity Map, the development sites are underlain by geological units of low fossil sensitivity. According to the extract from the Council of GeoScience Map 2930 Durban Geology Map, the development area is underlain by Qs: Quaternary Beach Sand (Lavin, 2025).

No impact to significant palaeontology is therefore expected and no further assessment of impacts to palaeontological heritage is recommended (Lavin, 2025).

Based on the Heritage Significance Report regarding the Road Over Rail Bridge (Bridge 2-5), the railway line and associated rail infrastructure at Maydon Wharf are regarded as having low heritage significance however, these structures do warrant protection during the implementation of the proposed project (White, 2025).

The Railway Tunnel, constructed in 1952 to standard South African Railways reinforced concrete specifications with an off-shutter finish, is representative of a common bridge typology widely constructed across South Africa during the mid-20th century. Owing to the high quality of workmanship and materials, the structure has weathered well and is recommended for consideration for protection under Section 37 of the NHRA (White, 2025).

Based on the findings outlined above, the specialist disputes the DFFE Very High sensitivity rating for Archaeological & Cultural Heritage and Medium for Palaeontology and considers a low sensitivity rating to be more appropriate for both themes. As a result, no heritage impact assessment will be required.

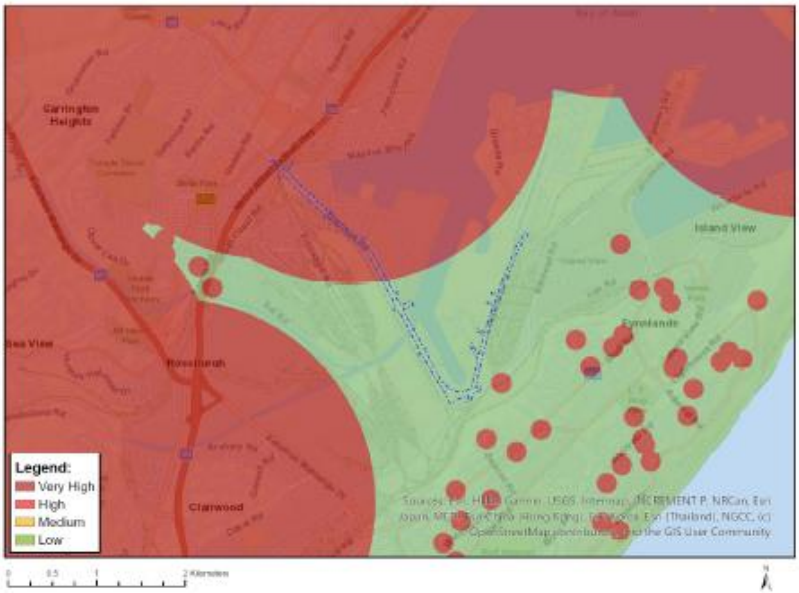


Figure 6: DFFE Map of Archaeological and Cultural Heritage Sensitivity.

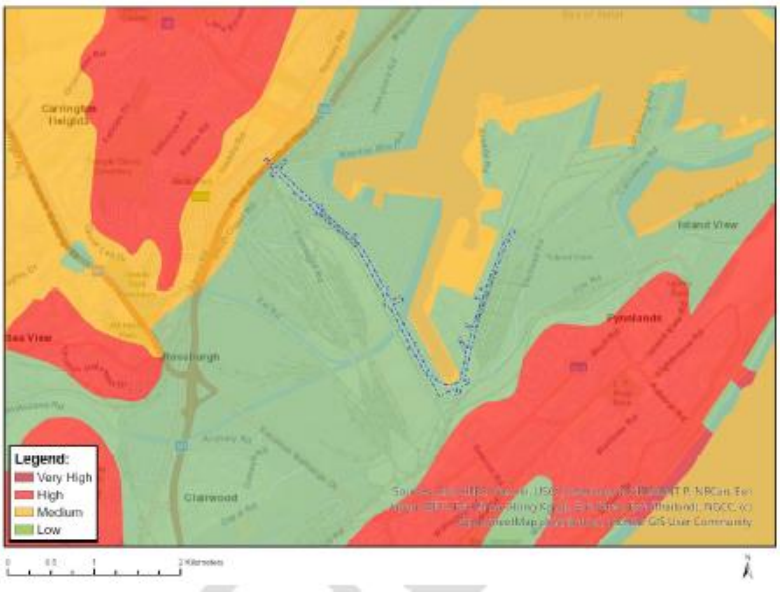


Figure 7: DFFE Map of Palaeontology Sensitivity.

4.5 Civil Aviation and Defence

A sensitivity rating of High is assigned to the Civil Aviation theme by the DFFE Screening Tool due to the Bayhead and Langeberg Roads being within 15 km of a civil aviation radar. Refer to **Figure 8.**

A sensitivity rating of Very High is assigned to the Defence theme by the DFFE Screening Tool due to the southern portion of Bayhead Road and the intersection with Langeberg Road being near a military and defence site. Refer to **Figure 9**.

The sites are rather considered to be of a Low sensitivity as the Bayhead and Langeberg Roads are existing road infrastructure that will not impact on civil aviation, defence installations or radar equipment. As a result, no assessments are considered applicable for the Civil Aviation and Defence themes.

Figure 8: DFFE Map of Relative Civil Aviation Sensitivity.

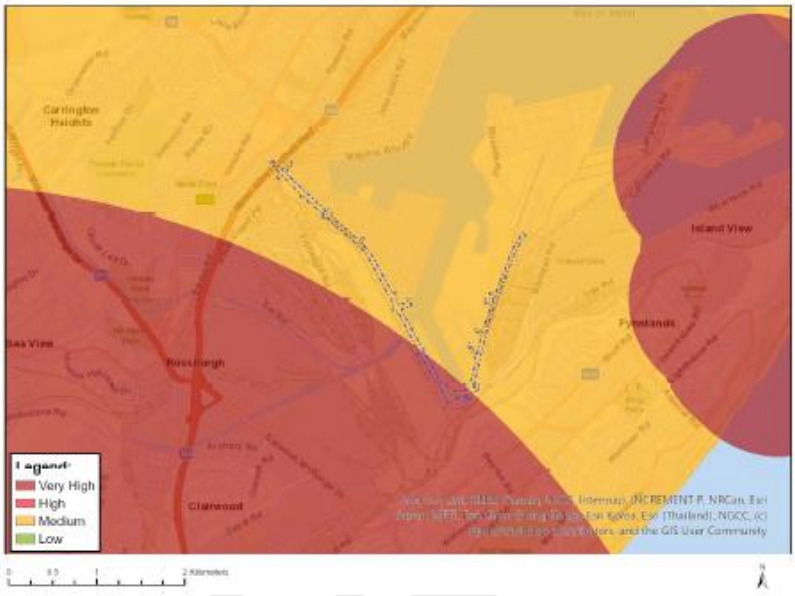


Figure 9: DFFE Map of Relative Defence Sensitivity.

4.6 Plant Species

A High Sensitivity rating is assigned to the Plant Species Theme in the DFFE Screening Tool. One flora species, *Zeuxine Africana* (orchid species), is provided with both a high and medium sensitivity rating. The remaining 23 flora species listed are rated as medium sensitivity including one with a low sensitivity. **Figure 10** presents the map of relative plant species in the DFFE Screening Tool Report.

None of these species identified in the DFFE Screening Tool were found on site and such an occurrence is not expected given the disturbed and transformed nature of the vegetation close to impact areas, or mismatch with known habitat (Edwards *et al*., 2025).

As per the specialist study, the vegetation communities encountered on site are as follows and take into account the disturbance history on site (Edwards *et al*., 2025):

Community 1: Alien dominated woodland/shrubland - This community occurs along the old railway line and in areas not maintained as part of the road verges or road servitude within the study area and is primarily dominated by almost monotypic dense stands of *Tecoma stans* in some areas with the margins of these dense stands adjoining maintained road verges comprising more of a mixture of other alien invasive species including *Ricinus communis*, *Lantana camara*, *Tithonia diversifolia*, *Chromolaena odorata*, *Solanum mauritianum*, *Tagetes minuta*, *Bidens pilosa*, *Ipomoea purpurea* and *Cascabela thevetia*.

Community 2: Road Verges with scattered trees and mowed lawn - These areas primarily comprised shortly cropped grass cover with a mixture of ruderal grasses including *Sporobolus africanus, Digitaria eriantha, Sporobolus pyramidalis*, *Panicum maximum*, *Digitaria eriantha*, *Imperata cylindrica* (in localised patches along Langeberg Road) and *Cynodon dactylon* with low scattered cover of *Senecio madagascariensis* as well as *Plantago lanceolata*, *Heliotropium amplexicaule*, *Conyza sp*, *Tagetes minuta* and *Bidens pilosa* in some areas. Scattered clumps of trees which include a mixture of indigenous and planted exotic trees and shrubs are interspersed between more open areas of shortly cropped grass. Vegetation within these tree clumps include various indigenous *Ficus* species, *Brachylaena discolour*, *Strelitzia nicolai*, *Phoenix reclinata*, *Erythrina lysistemon* and *Vachellia xanthophloea* and exotic species including *Casuarina equisetifolia*, *Plumeria sp*, and *Acalypha wilkesiana* with *Ipomoea purpurea* growing over this exotic hedge. More shaded areas underneath mature trees were dominated by *Asystasia gangetica*. Low

scattered cover of alien shrubs such as *Ricinus communis*, *Solanum mauritianum* and *Chromolaena odorata* were also noted in some areas. It was noted during the rapid site visit that cement barriers had been installed along the proposed alignment already and that construction rubble had been piled along the road verge in one instance it is unclear if this is for an unrelated project already underway or if preparation for construction works associated with this project are being implemented.

Community 3: Hygrophilous Grassland and Scattered Indigenous Trees - This vegetation community adjoins the road verge along Langeberg Road and occurs within the fenced off Mangrove Forest area. Along the fenceline looking through the other side, the vegetation comprised a hygrophilous grassland dominated by *Imperata cylindrica* with *Digitaria eriantha* also prevalent in some areas. Scattered tree cover along the fenceline but within the reserve included clumps of *Brachylaena discolour*, mixed with *Stelitzia nicolai, Phoenix reclinate* and *Clerodendrum glabrum*.

Community 4: Mixed alien and indigenous woodland - A small patch on the south-easternmost end of Bayhead Road adjoining the Amanzimyana Stream (which has been canalised), appeared to exhibit a higher cover and diversity of indigenous species with alien invasives also represented but not as extensively as in Community 1. Indigenous species represented within this patch of woodland/shrubland included moderate cover of *Trema orientalis*, moderate cover of *Clerodendrum glabrum*, high cover of *Brachylaena discolour* and *Strelitzia nicolai* low cover of *Apodytes dimidiata* and *Searsia chirindensis.* This was interspersed with invasive shrubs such as *Chromolaena odorata, Ricinus communis* and *Lantana camara*, Poinsettia (*Euphorbia heterophylla*), *Tagetes minuta*, with the understorey characterised by a mixture of *Asystasia gangetica*, *Senecio tamoides*, *Rivina humilis* low cover of *Smilax anceps* intertwined amongst other vegetation and low cover of *Morus alba* and *Tecoma stans*. Along the canal vegetation comprised a mixture of *Strelitzia nicolai*, *Brachylaena discolour* and *Chrysanthemoides monilifera* mixed with *Tecom stans*, *Lantana camara* and *Chromolaena odorata* primarily.

Communities 1 and 2 are considered of ‘Very Low’ SEI due to the moderate to high cover of alien plant invasion observed, their high level of fragmentation and edge impacts that have resulted in a deterioration of both their biodiversity and their level of functioning. Community 4 is considered of ‘Low’ SEI, as although this community has also been highly impacted by direct loss and fragmentation it still comprises some diversity of indigenous vegetation and is considered in better condition in comparison to Community 1 and Community 2. Community 3 is considered of ‘Medium’ SEI as this community occurs within the Mangrove Forest Area with indigenous vegetation comprising most of the cover, with low alien plant invasion observed. However, this community is also isolated and fragmented due to historical development in the area and therefore although it has a ‘High’ conservation importance rating (driven by the Critically Endangered threat status of the reference vegetation type at the provincial scale) its functional integrity has been compromised and has been rated as ‘Medium’ resulting in a ‘Medium’ biodiversity importance rating (Edwards *et al*., 2025).

The terrestrial vegetation types within the study area, i.e. Northern Coastal Forest, Mangrove Forest and KwaZulu-Natal Coastal Belt Grassland are currently listed as Least Concern, Least Concern and Endangered at the national level respectively in the latest National Biodiversity Assessment from the South African National Biodiversity Institute (SANBI, 2018). The terrestrial vegetation types at the provincial level namely KwaZulu-Natal Coastal Forests: Southern Moist Coastal Lowlands Forest, Mangrove Forest and KwaZulu-Natal Coastal Belt Grassland are all currently listed as Critically Endangered (Jewitt, 2018) (Edwards *et al*., 2025).

No Red Listed, Orange Category or protected tree and plant species were encountered on site (Edwards *et al*., 2025).

Based on the findings outlined above, the specialist disputes the DFFE high sensitivity rating and considers a medium sensitivity rating to be more appropriate.

As a result of the medium sensitivity rating a compliance statement is deemed to be required.

Figure 10: DFFE Map of Relative Plant Species Theme Sensitivity.

4.7 Terrestrial Biodiversity

The Terrestrial Biodiversity theme is assigned a sensitivity rating of Very High in the DFFE Screening Tool. The Very High rating is due to the presence of a CBA 1, an endangered ecosystem (KZN Coastal Belt Grassland), indigenous forest - Mangrove Forest, and National Protected Area Expansion Strategy (NPAES). **Figure 11** presents the map of relative terrestrial biodiversity in the DFFE Screening Tool Report and shows areas as very high or low sensitivity.

Threatened Ecosystems: In terms of the 2021 Revised National Threatened Ecosystems assessment (SANBI, 2021) the following ecosystems occur in the larger area (Edwards *et al*., 2025): KwaZulu-Natal Coastal Belt Grassland (Endangered), Northern Coastal Forest (Least Concern), Mangrove Forest (Least Concern). The Bayhead and Langeberg Roads are not located within any remnant sections associated with these ecosystems (Edwards *et al*., 2025).

Critical Biodiversity Areas KwaZulu-Natal Terrestrial Systematic Conservation Plan: Portions of the footprint and adjacent areas along Bayhead Road are classified as falling within the edge of areas classified as Critical Biodiversity Areas (CBAs): Irreplaceable (EKZNW, 2016) which extend beyond the footprint to the north, south and east (**Figure 12**).

Critical Biodiversity Areas D'MOSS: The Mangrove Forest along Langeberg Road and the canals that pass underneath Bayhead Road are flagged as part of D'MOSS (2018) CBAs. The Mangrove Forest is located outside of the Langeberg Road footprint area. Bayhead Road will traverse over the canals that form part of the D'MOSS CBAs. Refer to **Figure 13**.

Community 3 is also isolated and fragmented due to historical development in the area and therefore although it has a 'High' conservation importance rating (driven by the Critically

Endangered threat status of the reference vegetation type at the provincial scale) its functional integrity has been compromised and has been rated as 'Medium' resulting in a 'Medium' biodiversity importance rating (Edwards *et al*., 2025).

The specialist disputes the DFFE very high sensitivity rating and considers a medium sensitivity rating to be more appropriate.

As a result of the medium sensitivity rating a compliance statement is deemed to be required.

Figure 11: DFFE Map of Relative Terrestrial Biodiversity Theme Sensitivity.

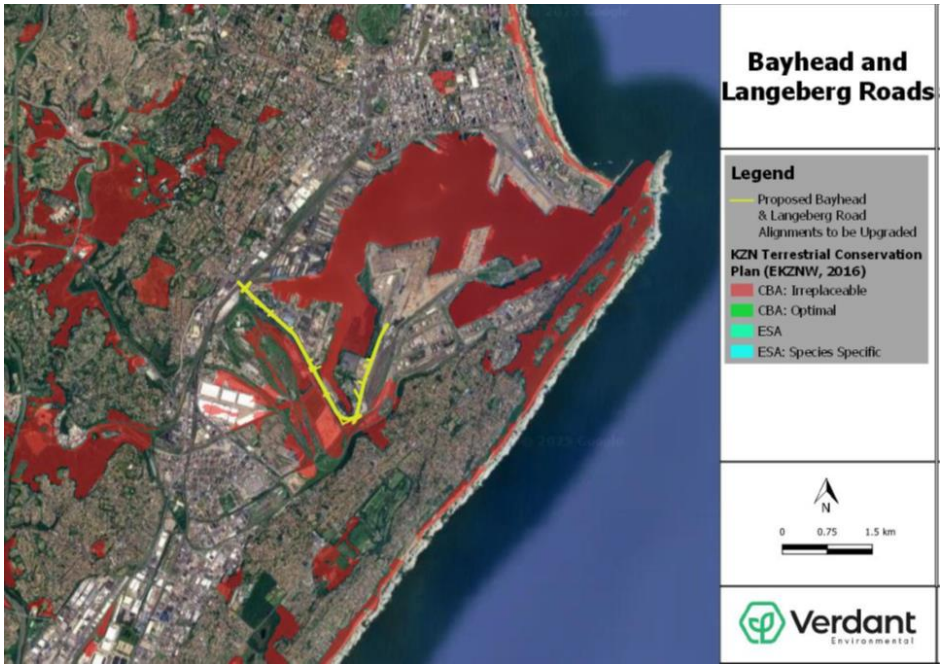


Figure 12: Study area in relation to Critical Biodiversity Areas and Ecological Support Areas (EKZNW, 2016, Edwards 2025).

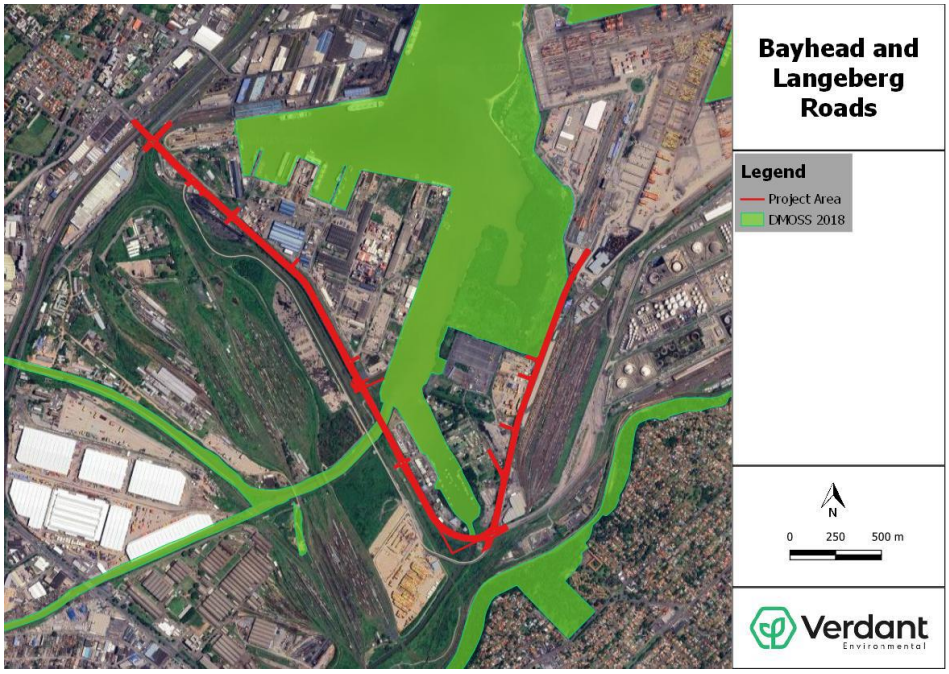


Figure 13: Extent of D'MOSS coverage across the development footprint (Edwards 2025).

4.8 Landscape/ Visual Environment

The affected landscape can generally be divided into the following Landscape Character Areas (LCAs) (Marshall, 2025):

- The Industrial Transport Corridor LCA. This area is comprised of the Bayhead Road, Langeberg Road and immediately surrounding areas. It is a heavily used and degraded landscape. Views of the entire development area are visible as the motorist drives down the road. This corridor is used largely by logistics companies delivering and collecting containers from the port. A limited number of vehicles that use the road are also accessing social use areas along Seafarer's Road;

- The Bluff Headland LCA. This area is comprised of the largely residential area on the upper slopes of the Bluff Headland and natural vegetation areas on the lower slopes. When inside this area views over the proposed upgrade site are largely screened by existing development, however, a limited number of properties do overlook and have clear views of the proposed upgrade sites;

- The Industrial LCA which includes light industry as well as port related industry that is located immediately adjacent to the eastern edge of Bayhead Road. It is comprised of flat land much of which has direct access to the waterfront and is a mix of industrial warehousing, workshops and container storage. As with all roads in the area, solid preventative measures are in place to prevent the parking of trucks. Once inside this area, views of the proposed upgrade area are only possible from the internal road junctions with Bayhead road;

- The Social Use Area LCA which includes Bluff Yacht Club, the Sea Cadets site, the Seafarers Mission and the Ski Boat Site. These uses are historic and enable public access to the water. However, access to and through this area has been badly affected by trucks that access a truck parking area at the end of the Seafarer Road. They appear to block access along the road and to the social use sites for long periods. Once inside any one of these social areas, views of the proposed upgrade area are not possible due to the extent of

existing boundary and internal vegetation. Views of the proposed road upgrade sites are likely to be possible from the waterfronts of these social use sites.

Area receptors are places that cannot be defined by a point or a line. They might include settlements or protected areas. Possible Area Receptors include:

- The **Bluff Residential Area** overlooking the proposed site to the south; and
- Visitors and users of the **Social Facilities along Seafarer's Road**.

Linear receptors generally include routes through the area, these include:

- Motorists and Truck drivers on Bayhead Road, Langeberg Road and Seafarer's Road. These routes are primarily used for access to the port however, a small number of vehicles are likely to use the roads for access to the social uses on Seafarers Road.

The sensitivity of landscape areas and receptors to likely landscape changes is partly subjective. However, in order to provide clarity for the assessment, **Table 2** indicates the manner in which sensitivities will be considered in the assessment.

The landscape quality in all identified LCAs is degraded and largely dominated by the prime logistics use of the area (Marshall, 2025).

Table 2: Landscape and Receptor Sensitivity

SENSITIVITY	LCA	RECEPTORS
Low	Landscape value is not recognised or the landscape is very tolerant of change. These areas include: • Industrial Transport Corridor LCA; and • The Industrial LCA	Small number or low sensitivity of viewers assumed. Viewers' attention not focused on landscape. These include: • Truck drivers using the routes for access to the Port and adjacent industrial areas.
Medium	Landscape value is recognised locally, but is not protected; the landscape is relatively intact, with a distinctive character; and the landscape is reasonably tolerant of change. • The Social Use Area LCA; and • The Bluff Headland LCA	Viewer's attention may be generally focused on the landscape. These include: • Residents of residential areas on the Bluff; and • Motorists using the routes for access to the Social Use Area LCA.
High	Landscape value recognised by existing or proposed national or regional designation. Sense of tranquillity or remoteness specifically noted in Landscape Character Assessment. High sensitivity to disturbance. The qualities for which the landscape is valued are in a good condition, with a clearly apparent distinctive character. This distinctive character is susceptible to relatively small changes. • There are no Highly Sensitive LCAs.	Viewer's attention very likely to be focused on the landscape. e.g. users of public rights of way and access land, strategic recreational footpaths; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas. Large number of viewers and/or location in highly valued landscape could elevate viewer sensitivity to highest level. • There are no Highly Sensitive Receptors.

4.9 Noise Environment

From an acoustics perspective, the project site occurs within an already high-activity industrial–logistics environment, where existing noise levels are influenced primarily by road freight, port operations, and associated industrial activity. Baseline measurements confirm that the current acoustic climate is elevated but typical for a heavy logistics zone, with residential receptors located at varying distances from Bayhead Road and Langeberg Road (Skhosana, 2025).

4.10 DFFE Screening Tool Specialist Studies

The National Web Based Environmental Screening Tool mapping resources (DFFE), indicated that the following specialist studies are identified based on the classification category for Infrastructure – Transport Services – Roads – Private and indicates the applicability of the specialist study (**Table 3**):

Table 3: DFFE Screening Tool – Specialist Studies

Identified Specialist Study & Protocol per Screening Tool	**Applicability**
Agricultural Impact Assessment General Agriculture Assessment Protocol	No Agricultural assessment or statement is considered to be required.
Landscape / Visual Impact Assessment General Requirement Assessment Protocol	A specialist impact assessment has been undertaken.
Archaeological and Cultural Heritage Impact Assessment Palaeontology Impact Assessment General Requirement Assessment Protocol	A heritage screener was undertaken. It is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required.
Terrestrial Biodiversity Impact Assessment Terrestrial Biodiversity Assessment Protocol	A specialist compliance statement has been undertaken.
Aquatic Biodiversity Impact Assessment Aquatic Biodiversity Assessment Protocols	A specialist impact assessment has been undertaken.
Noise Impact Assessment Noise Impact Assessment Protocol	A specialist impact assessment has been undertaken.
Geotechnical Assessment General Requirement Assessment Protocol	A layerworks investigation was undertaken.
Plant Species Assessment Plant Species Assessment Protocol	A specialist compliance statement has been undertaken.
Animal Species Assessment Animal Species Assessment Protocol	A specialist compliance statement has been undertaken.

5 CONCLUSION

Environmental Theme / Attribute	Theme Site Sensitivity per Screening Tool	Site Findings	Site Verification Outcome: Sensitivity Rating Specialist Study Requirements
Agriculture	High	No agricultural land falls within the site boundaries for the proposed upgrading of Bayhead and Langeberg Roads.	Low As a result of the area being transformed and that no agriculture is taking place, no agricultural specialist assessment / compliance statement is deemed to be needed.
Animal Species	High	The majority of the footprint offers no or very low value to faunal communities, given its transformed or highly disturbed nature. The vast majority of SCC known from the broader area will not be present within or in close proximity to the proposed development. However, one sensitive species, the KwaZulu Dwarf Chameleon *Bradypodion melanocephalum*, is known to occur in the area. They will utilise a block of vegetation in the southern portion of the footprint, south-west of the Bayhead-Langeberg Road intersection. They will also utilise grassy areas immediately adjacent to the proposed footprint in the southern third of the Bayhead Road section (Edwards *et al*., 2025).	Medium A compliance statement has been undertaken.
Aquatic Biodiversity	Very High	The Durban Bay Estuary is currently considered to be of High EIS. However, although falling within the Durban Bay EFZ, the modified and transformed ecosystems along the roads are assessed as having the following EIS (Edwards *et al*., 2025): •Modified dryland on fill material – Low EIS •Modified estuarine wetlands on fill material – Moderate EIS •Major canals – Moderate EIS •Minor canals – Low EIS	Very High An impact assessment has been undertaken.

Environmental Theme / Attribute	Theme Site Sensitivity per Screening Tool	Site Findings	Site Verification Outcome: Sensitivity Rating Specialist Study Requirements
Heritage - Archaeological and Cultural Heritage	Very High	No significant archaeological resources are anticipated. Bridge 2-5 (Road Over Rail Bridge – Intersection of South Coast and Bayhead Road) was constructed in 1952, and widened in 2000. As such, there is likely to be fabric older than 60 years existing within the bridge structure. It is unlikely that the proposed development will impact on significant heritage resources.	Low A heritage screener was undertaken and no Heritage Impact Assessment is required.
Heritage - Palaeontology	Medium	The development sites are underlain by geological units of low fossil sensitivity.	Low A heritage screener was undertaken and no Palaeontology Impact Assessment is required.
Civil Aviation	High	The Bayhead and Langeberg Roads are existing road infrastructure that will not impact on civil aviation or radar equipment	Low No assessment / compliance statement is required.
Defence	Very High	The Bayhead and Langeberg Roads are existing road infrastructure that will not impact on defence installations or radar equipment.	Low No assessment / compliance statement is required.
Plant Species	High	The vegetation communities encountered on site were as follows and take into account the disturbance history on site (Edwards *et al*., 2025): 1. Alien dominated woodland/ shrubland 2. Road verges with scattered trees and mowed lawn 3. Hygrophilous grassland and scattered indigenous trees 4. Mixed alien and indigenous woodland Communities 1 and 2, are considered of 'Very Low' SEI due to the moderate to high cover of alien plant invasion observed, their high level of fragmentation and edge impacts that have resulted in a deterioration of both their biodiversity and their level of functioning. Community 4 is considered of 'Low' SEI, as although	Medium A compliance statement has been undertaken.

Environmental Theme / Attribute	Theme Site Sensitivity per Screening Tool	Site Findings	Site Verification Outcome: Sensitivity Rating Specialist Study Requirements
		this community has also been highly impacted by direct loss and fragmentation it still comprises some diversity of indigenous vegetation and is considered in better condition in comparison to Community 1 and Community 2. Community 3 is considered of 'Medium' SEI as this community occurs within the Mangrove Forest Area with indigenous vegetation comprising most of the cover, with low alien plant invasion observed. None of the species identified in the DFFE Screening Tool were found on site and such an occurrence is not expected given the disturbed and transformed nature of the vegetation close to impact areas, or mismatch with known habitat (Edwards et al., 2025). No Red Listed, Orange Category or protected tree and plant species were encountered on site (Edwards *et al*., 2025).	
Terrestrial Biodiversity	Very High	The Bayhead and Langeberg Roads are not located within any remnant sections associated with the KZN Coastal Belt Grassland (Endangered) ecosystem (Edwards *et al*., 2025). Portions of the footprint and adjacent areas along Bayhead Road are classified as falling within the edge of areas classified as CBAs: Irreplaceable (EKZNW, 2016) which extend beyond the footprint to the north, south and east (Edwards *et al*., 2025). Mangrove Forest area along Langeberg Road and the canals that pass underneath Bayhead Road are flagged as part of D'MOSS (2018) (Edwards *et al*., 2025). The Mangrove Forest is located outside of the Langeberg Road footprint area. Bayhead Road will traverse over the canals that form part of the D'MOSS CBAs. Community 3 is also isolated and fragmented due to historical development in the area and therefore although it has a 'High' conservation importance rating	Medium A compliance statement has been undertaken.

Environmental Theme / Attribute	Theme Site Sensitivity per Screening Tool	Site Findings	Site Verification Outcome: Sensitivity Rating Specialist Study Requirements
		(driven by the Critically Endangered threat status of the reference vegetation type at the provincial scale) its functional integrity has been compromised and has been rated as 'Medium' resulting in a 'Medium' biodiversity importance rating (Edwards *et al*., 2025).	
Landscape/ Visual	N/A	The landscape quality in all identified LCAs is degraded and largely dominated by the prime logistics use of the area (Marshall, 2025).	Low A specialist assessment has been undertaken
Noise	N/A	The project site occurs within an already high-activity industrial–logistics environment, where existing noise levels are influenced primarily by road freight, port operations, and associated industrial activity. Baseline measurements confirm that the current acoustic climate is elevated but typical for a heavy logistics zone, with residential receptors located at varying distances from Bayhead Road and Langeberg Road.	Low A specialist assessment has been undertaken

6 APPENDIX 1 – SITE PHOTOGRAPHS

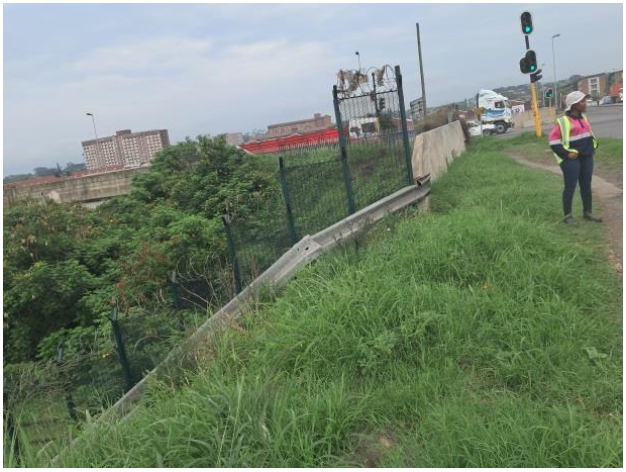
LANGEBERG ROAD – INBOUND LANE

LANGEBERG ROAD – OUTBOUND LANE

BAYHEAD ROAD – SECTION AT BRIDGE 5-8 & LANGEBERG INTERSECTION

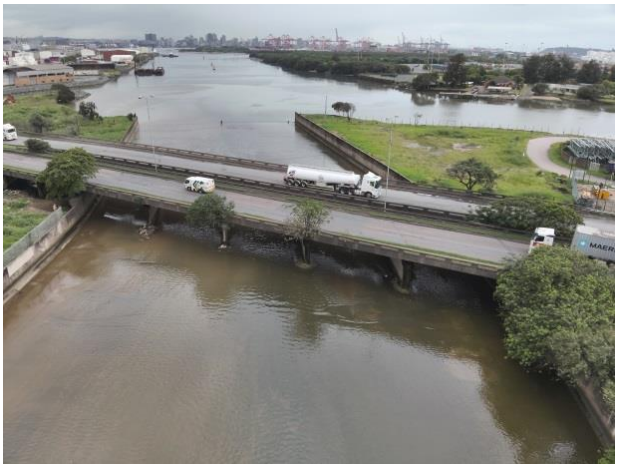
BAYHEAD ROAD – SECTION AT BRIDGE 3-6 TO BRIDGE 4-7

BAYHEAD ROAD – BRIDGE 2-5 AT SOUTHCOAST / CRABTREE INTERSECTION

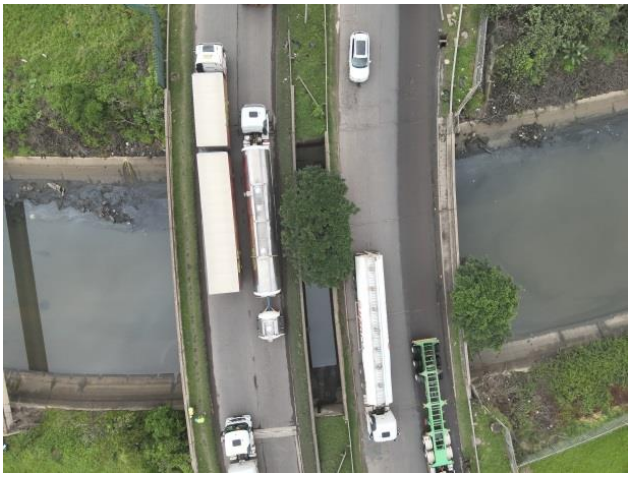


BRIDGE 3-6

BRIDGE 4-7



BRIDGE 5-8



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