

**PROPOSED 2AFRICA (EAST) SUBMARINE FIBRE OPTIC CABLE
SYSTEM TO BE LANDED AT DUYNEFONTEIN, CITY OF CAPE
TOWN, WESTERN CAPE, SOUTH AFRICA**

MOBILE TELEPHONE NETWORK (PTY) LTD (LANDING PARTNER)

FINAL SCOPING REPORT

EIA REFERENCE: 14/12/16/3/3/2/2046

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Compiled for

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Date: 15 February 2021	Date: 16 February 2021	Date: 23 February 2021

DRAFT SCOPING REPORT DISTRIBUTION

The Draft Scoping Report was distributed for public review to key stakeholders at the following public venues in the project area for a period of 30 days.

Venue	Street	Contact Person and Number
Koeberg Public Library	Merchant Walk, Duynefontein, 7441	Ms. Roelda Brown 021 553 2514
Melkbosstrand Ratepayers' Association	25 Jacobus Crescent, Duynefontein, 7441	Mrs. Smokie La Grange 073 357 6359

The Draft Scoping Report was also made available on ACER's web site (www.acerafrica.co.za) under the 'Current Projects' link.

The following authorities were sent copies of the Draft Scoping Report:

1. Department of Environment, Forestry and Fisheries:
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PREFACE

The proposed 2AFRICA/GERA (East) Cable System Landing at Duynfontein requires Environmental Authorisation (EA) from the Department of Environment, Forestry and Fisheries (DEFF) in terms of the 2014 Environmental Impact Assessment Regulations published under the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA). In this context, ACER (Africa) Environmental Consultants (ACER) is applying on behalf of Mobile Telephone Network (Pty) Ltd (MTN) for environmental authorisation for the project.

This Final Scoping Report has been compiled in accordance with the requirements of NEMA, in particular, Government Notice Regulation 982, published on 4 December 2014 (as amended in April 2017), which outlines the requirements of Scoping for purposes of an Environmental Impact Assessment (EIA) undertaken to apply for environmental authorisation for activities listed in Government Notice Regulation R 983, 984 and 985 of 4 December 2014 (as amended in April 2017) under Section 24(5) read with Sections 24, 24D and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

EXECUTIVE SUMMARY

Introduction

Submarine telecommunication cables are important for international telecommunication networks as they transport almost 100% of the transoceanic Internet traffic throughout the world. It is widely recognised that access to affordable international bandwidth is key to economic development in every country. As such, the improvement in Africa's information technology infrastructure via telecommunication cables will remove one of the current key inhibitors to development in Africa and support economic growth and opportunities on the continent.

Alcatel Submarine Networks (ASN) has been contracted to supply and install the proposed 2AFRICA/GERA (East) Cable System with one South African landing at Dufnefontein, located on the west coast within the City of Cape Town Metropolitan Municipality. This is to be operated by Mobile Telephone Network (Pty) Ltd (MTN) as the South African landing partner (Project Applicant). In support to this initiative, ASN has appointed ACER (Africa) Environmental Consultants (ACER) as the Environmental Assessment Practitioner (EAP) to take responsibility for the EA requirements, including identifying environmental aspects relevant to the proposed telecommunications infrastructure and construction of the 2AFRICA/GERA (East) Cable System.

Scope of Work

ACER's investigation of the Dufnefontein cable landing deals with the proposed submarine cable from when it enters South Africa's Exclusive Economic Zone (EEZ) (200 nautical miles/370 km from the sea shore) from Mozambique on the east coast through South Africa's territorial waters (12 nautical miles/22 km from the sea shore) until it reaches the Beach Manhole (BMH) on shore at Dufnefontein and then onwards following a terrestrial alignment to the Cable Landing Station (CLS) as further described in this Final Scoping Report.

Project Activities

The proposed 2AFRICA/GERA (East) branch to Dufnefontein will include the installation and operation of the following project components:

- Pre-installation activities including cable route survey, route engineering, route clearance and Pre-Lay Grapnel Run.
- Laying and burial of the cable in the offshore environment within South Africa's EEZ from the border with Mozambique until it reaches the shore.
- Laying of the cable across the beach up to the position of the existing MTN BMH (requiring excavations within the intertidal zone to bury the cable before it will be anchored into the BMH) and installation of a sea earth system (System Earth).
- Installation of the onshore cable between the BMH and the CLS.
- Construction of a BMH on the inland side of the beach (if required as relevant to the Alternative 2 landing point only).

Legal Requirements

There are many legal requirements (National, Provincial and Local Government spheres) to which the project proponent must adhere. A review of this legislation and guidelines applicable to the proposed project are provided in Chapter 3 of this report.

In the case of the proposed 2AFRICA/GERA (East) Cable System landing at Dufnefontein, environmental authorisation will be based on the current Environmental Impact Assessment Regulations, 2014, published in Government Notices R 982, 983, 984 and 985 of 4 December 2014 (as amended) under Section 24(5) read with Sections 24, 24D and 44 of the National Environmental

Management Act, 1998 (Act No. 107 of 1998). A list of all regulated activities potentially triggered by the proposed development is provided in Table 2 of this Final Scoping Report.

As the project involves the installation of an international telecommunications cable, the competent authority for this development is the national Department of Environment, Forestry and Fisheries (DEFF) (in close consultation with the Western Cape Department of Environmental Affairs and Development Planning (DEADP)).

In addition to the environmental authorisation, the following permissions and licences will be or are likely to be required:

- A Water Use Licence will be required from the Department of Human Settlements, Water and Sanitation (DHSWS) as a wetland will be affected by the proposed development.
- Heritage Permit (offshore and onshore heritage resources) from the South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (HWC), respectively.
- Beach Driving Permit from the Department of Environment, Forestry and Fisheries (Oceans and Coasts).
- Permit to construct infrastructure in the coastal public property from the Department of Public Works. The acquisition of this permit is the responsibility of the Landing Partner.
- Municipal approvals and the registration of servitudes may be required by the City of Cape Town prior to construction commencing. These relate to the front haul alignment and registering the relevant front haul servitudes. The acquisition of these approvals and servitudes are the responsibility of the Landing Partner.
- Approval from SAN Parks for the crossing of Marine Protected Areas (MPAs) along the proposed alignment of the 2AFRICA/GERA (East) Cable System.
- Sea Shore Lease Permit from Cape Nature.
- Permits to remove/destroy Protected Plants and Protected Trees from Cape Nature and DEFF (Forestry Section), respectively.
- A Section 53 License from the Department of Mineral Resources to undertake a different land-use on the seafloor (other than prospecting or mining) (relevant to oil and gas concessions). The acquisition of this license is the responsibility of the Landing Partner.
- Risk assessments and emergency evacuation plans will be required as the project takes place within the Precautionary Action Zone (PAZ) of Koeberg Nuclear Power Station owned and operated by ESKOM.

Need and Desirability

Submarine telecommunication cables are essential for international telecommunications as they currently transport almost 100% of transoceanic Internet traffic throughout the world. It is widely recognised that access to affordable international bandwidth is key to unlocking economic development in every country.

Today, Africa relies primarily on satellites with few marine cables to provide its international communications. Improvement in Africa's information technology infrastructure via telecommunication cables will remove one of the current key inhibitors to development in Africa and support economic growth and opportunities on the continent. Following installation of the proposed 2AFRICA/GERA (East) Cable System, MTN will be to facilitate more affordable and effective transport of voice, data, Internet and television services. Furthermore, the cable will support the objectives set out by the New Partnership for Africa's Development (NEPAD), and provide a means of fulfilling the South African Government's requirements in terms of digital television broadcasting for the country.

By supplying increased bandwidth, the proposed 2AFRICA/GERA (East) Cable System landing at Duynfontein will support the following primary NEPAD objectives:

- To eradicate poverty in Africa and to place African countries both individually and collectively on a path of sustainable growth and development to thereby halt the marginalisation of Africa in the globalisation process.

Telecommunications is one of the fastest growing sectors of South Africa's economy which has been driven by rapid growth in the number of mobile phone users and their need for broadband connectivity. South African mobile companies are also making inroads internationally, with MTN now having well over 200 million subscribers in more than 20 countries in Africa, Asia and the Middle East. The proposed 2AFRICA/GERA (East) Cable System will provide an opportunity to facilitate the growth of the telecommunications infrastructure in South Africa and promote sustainable growth and development within South Africa and the African continent as a whole.

Site Alternatives

Alternatives are different means of achieving the purpose and need of a proposed development and include alternative sites, layouts or designs, technologies and the “no development” or “no go” alternative.

The alternatives considered during screening do not include Cable Landing Station (CLS) alternatives or front haul alternatives from the preferred landing point (Alternative 1), as the 2AFRICA landing will make use of the existing Africa Coast to Europe (ACE) BMH, front haul infrastructure and CLS building in Duynefontein owned and operated by MTN. There are two potential shore landing points under consideration for the 2AFRICA/GERA (East) Cable System landing at Duynefontein:

- The Van Riebeeckstrand Beach landing point at the existing ACE Cable System landing point (Alternative 1).
- The Van Riebeeckstrand Beach landing point to the south of the preferred landing point (Alternative 2).

These two beach landing alternatives and cable alignments to the CLS site were selected for further assessment in the environmental authorisation process, and a detailed description of the alternatives is provided in Chapter 5 of this Final Scoping Report.

Technical Description

The section of the 2AFRICA/GERA (East) Cable System which forms part of this EIA includes the section of cable from where it enters South Africa's Exclusive Economic Zone (EEZ) (200 nautical miles from the sea shore) from Mozambique through South Africa's Territorial Waters (TW) (12 nautical miles from the sea shore) and onto land until it reaches the MTN CLS at Duynefontein.

The 2AFRICA/GERA (East) Cable System comprises the following project components from where it enters South Africa's EEZ from Mozambique until it reaches the MTN CLS site in Duynefontein:

- Marine Fibre Optic Cable (marine environment to the BMH).
- Existing BMH located behind the coastal dune cordon near Van Riebeeckstrand.
- Terrestrial Fibre Optic Cable (BMH to the CLS site in Duynefontein).

A detailed description of the various project components and the proposed construction methods to be utilised to implement the proposed development are provided in Chapter 6 of this Final Scoping Report.

Details of the Public Participation Process

The public participation process has been designed to comply with the requirements of the NEMA EIA 2014 Regulations. The process is described in Chapter 7 of this Final Scoping Report. The project was advertised in the public domain on the 2nd and 3rd September 2020. Once the Draft Scoping

Report had been submitted for authority and public review Key Stakeholders were consulted to ensure that their concerns and issues are captured and addressed in this Final Scoping Report, which will be submitted to the Department of Environment, Forestry and Fisheries. Key Stakeholders to be consulted with include:

- SANParks
- City of Cape Town.
- Western Cape Department of Environmental Affairs and Development Planning (DEADP).
- Heritage Western Cape (HWC) and the South African Heritage Resources Agency (SAHRA)
- Department of Environment, Forestry and Fisheries – Oceans and Coasts (DEFF – OC).
- Department of Human Settlements, Water and Sanitation (DHSWS)
- South African Deep-Sea Trawling Industry Association (SADSTIA).
- CapeNature
- Eskom Koeberg

To date, the opportunity to participate in the EIA has been announced as follows:

- Advertisements in local and provincial newspapers:
 - Table View Tygerburger (2 September 2020).
 - Cape Times (3 September 2020).
- A Background Information Document (BID) was compiled and emailed to all key stakeholders on the 2 September 2020. All I&APs who registered following the project announcement adverts were also sent the BID for their records. Hard copies of the BID were posted to all government departments and other relevant commenting authorities.
- Notifications by telephone.
- Placement of an on-site notice board on the 2 September 2020 at the preferred cable landing site (photos of the onsite notice is provided in Appendix 2).

The availability of the Draft Scoping Report for public comment was advertised as follows:

- All registered I&APs were notified in writing of the availability of the Draft Scoping Report for their review and comment.
- The Draft Scoping Report (in electronic format) was made available at the Koeberg Public Library and Melkbosstrand Ratepayers' Association for public review.
- All EIA documents were made available at www.acerafrica.co.za under the "Current Projects" link (2AFRICA/GERA (East) – Duynfontein).

Issues raised by I&APs will be considered and incorporated into the impact assessment (as detailed in the Plan of Study for Impact Assessment). The Comments and Responses Report for comments received to date is provided in Appendix 3.

Description of the Environment

The proposed construction and operation of the 2AFRICA/GERA (East) Cable System takes place within the marine and terrestrial environment, and, as such, a description of both of these environments is provided in Chapter 8 of this Final Scoping Report.

Within the marine environment, impacts on the biophysical environment are considered negligible; however, cognisance must be taken of the impact the proposed development may have on the fishing industry, in particular, the deep-sea trawling fleet. Further investigations into the impacts on the fishing industry will be required during the impact assessment phase of environmental authorisation process.

Much of the terrestrial environment has been transformed from its natural state through urban development at Van Riebeeckstrand and Duynfontein, and the management of storm water within and around these areas.

The proposed development will have an impact on the coastal dune cordon at Van Riebeeckstrand and the dune slack wetland located between the residential areas and the beach. Impacts on these environments are, however, not considered significant given the disturbance and ongoing storm water maintenance activities which have been undertaken in these areas. Vegetation within the study area is subject to ongoing disturbance, primarily through pedestrian traffic moving through the dune slack and frontal dune cordon to access the beach. In addition, the establishment of storm water infrastructure within the dune slack and clearance of vegetation has resulted in ongoing disturbance to the area. Fauna expected to be encountered within the project footprint is limited given the transformed nature of much of the terrestrial project footprint and the proximity of the project to urban areas.

The proposed project site is located entirely within Ward 23 of the City of Cape Town. This ward exhibits higher levels of socio-economic development than the City of Cape Town, the Western Cape Province and South Africa as a whole. The proposed 2AFRICA/GERA (East) Cable System makes landfall within the 5 km Precautionary Action Zone (PAZ) of the Koeberg Nuclear Power Station and, as such, must be compatible with the implementation of the municipality's Nuclear Emergency Plan.

Environmental Issues and Potential Impacts

The issues identified during Scoping have been formulated as eight key questions (See Chapter 9), within which potential impacts are identified and described:

- What are the potential social and socio-economic impacts associated with the construction and operation of the proposed 2AFRICA/GERA (East) Cable System?
- What impact will the construction and operation of the proposed 2AFRICA/GERA (East) Cable System have on the terrestrial environment (flora and fauna)?
- What impact will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the fishing industry?
- What impact will the construction and operation of the 2AFRICA/GERA (East) Cable System have on wetlands within the study area?
- What will the potential impact of the 2AFRICA/GERA (East) Cable System have on the Marine Benthic Environment based on the alignment selected?
- What impact will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the beach and dune cordon at Van Riebeeckstrand?
- What impact will the construction of 2AFRICA/GERA (East) Cable System have on cultural and heritage resources, including any paleontological resources (if any are identified during the study)?
- What cumulative impacts will the construction of the 2AFRICA/GERA (East) Cable System have?

It is important to note that although these aspects have been raised as issues, it is not a given that the potential impacts will actually occur. However, these issues do need to be considered and investigated to inform decision-making and to enable the relevant parties to proactively address any impacts if they do occur. The no-development option will also be considered and assessed as part of these issues.

Plan of Study for Impact Assessment

The Plan of Study for Impact Assessment contained in Chapter 10 outlines how these issues and potential impacts will be taken forward for further investigation.

Much of the previous specialist investigations undertaken during 2016/2017 for the ACE Cable System landing at Duynfontein provide information on the sensitivity of the receiving environment for this Final Scoping Report for the 2AFRICA/GERA (East) Cable System, proposed to land at the same BMH (preferred Alternative 1), now existing and owned by MTN at Duynfontein.

Specialists will be required to interact and discuss aspects in an integrated approach, in order to ensure a comprehensive understanding and assessment of the key issues. The proposed specialist studies are as follows:

- Vegetation and Ecological Specialist Study.
- Fisheries Specialist Study
- Marine Ecology Specialist Study.
- Wetlands Specialist Study.
- Beach and Coastal Dune Specialist Study.
- Heritage Specialist Study.

These specialist studies will be supported by current studies being undertaken on offshore avifauna and marine mammals.

Project Schedule

The current project schedule for this authorisation process is as follows:

#	Activity	Dates
1	Project Announcement	03 Sep 2020
2	Initial Comment Period (30 days)	03 Sep - 05 Oct 2020
3	Submit DSR and Application to DEFF	15 Jan 2021
4	DSR Public Review Period/	15 Jan – 15 Feb 2021
5	Submit Final Scoping Report and Plan of Study for Impact Assessment to DEFF	26 Feb 2021
6	DEFF acknowledgement of receipt	26 Feb 2021
7	Acceptance of Final Scoping Report and Plan of Study for Impact Assessment by DEFF (43 days from submission)	22 Apr 2021
8	Specialist studies and preparation of DEIAR & EMPr	Jan – Apr 2021
9	DEIAR & EMPr Public Review Period (30 days)	21 May – 22 Jun 2021
10	Revision of EIAR and EMPr according to public comment	23 Jun - 14 July 2021
10	Submit FINAL EIAR and EMPr to DEFF	15 Jul 2021
11	DEFF Decision making (107 days) and issue of EA	1 Nov 2021

Concluding Remarks

Potentially negative impacts have been identified and the significance of these impacts and possible mitigation measures need to be further investigated during the Impact Assessment phase (as outlined in the Plan of Study for Impact Assessment).

The EAP is of the opinion that due environmental process has been followed during the undertaking of this scoping process and associated public participation programme. Following the comment period for the Scoping Report, the issues raised by stakeholders, together with those of technical specialists and the regulatory authorities, have been captured in this Final Scoping Report, which will be submitted to the Department of Environment, Forestry and Fisheries. Thereafter, if DEFF accepts the report, the Impact Assessment phase will be undertaken.

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DEFINITIONS

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 –

- i. The property on which or location where it is proposed to undertake the activity;
- ii. The type of activity to be undertaken;
- iii. The design or layout of the activity;
- iv. The technology to be used in the activity, and;
- v. The operational aspects of the activity.

Baseline - Information gathered at the beginning of a study which describes the environment prior to development of a project and against which predicted changes (impacts) are measured.

Benthic - Referring to organisms living in, or on, the sediments of aquatic habitats (lakes, rivers, ponds, etc.).

Biodiversity - The diversity, or variety, of plants, animals and other living things in a particular area or region. It encompasses habitat diversity, species diversity and genetic diversity.

Community - Those people who may be impacted upon by the construction and operation of the project. This includes neighbouring landowners, local communities and other occasional users of the area.

Construction Phase - The stage of project development comprising site preparation as well as all construction activities associated with the development.

Consultation - A process for the exchange of views, concerns and proposals about a project through meaningful discussions and the open sharing of information.

Critical Biodiversity Area - Areas of the landscape that must be conserved in a natural or near-natural state in order for the continued existence and functioning of species and ecosystems and the delivery of ecosystem services.

Cumulative Impacts - Direct and indirect impacts that act together with current or future potential impacts of other activities or proposed activities in the area/region that affect the same resources and/or receptors.

Ecosystem - A community of plants, animals and organisms interacting with each other and with the non-living (physical and chemical) components of their environment.

Environment - The surroundings within which humans exist and that are made up of

- i. The land, water and atmosphere of the earth;
- ii. Micro-organisms, plant and animal life;
- iii. Any Part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Authorisation (EA) – The authorisation by a competent authority of a listed activity.

Environmental Assessment Practitioner (EAP) – The person responsible for planning, management and co-ordination of environmental impact assessment, strategic environmental assessments, environmental management plans or any other appropriate environmental instrument introduced through regulations.

Environmental Impact Assessment (EIA) – In relation to an application to which scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application. This process necessitates the compilation of an Environmental Impact Report, which describes the process of examining the environmental effects of a proposed development, the anticipated impacts and proposed mitigatory measures.

Environmental Impact Report (EIR) - A report assessing the potential significant impacts as identified during the Scoping phase.

Environmental Management Programme (EMPr) - A management programme designed specifically to introduce the mitigation measures proposed in the Reports and contained in the Conditions of Approval in the Environmental Authorisation.

Epifauna¹ - Organisms, which live at or on the sediment surface being either attached (sessile) or capable of movement.

Gross Domestic Product (GDP) by region - represents the value of all goods and services produced within a region, over a period of one year, plus taxes minus subsidies.

Habitat - The place where a population (.e.g., animal, plant, micro-organism) lives and its surroundings, both living and non-living.

Hazardous waste – means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical, or toxicological characteristics of the waste, have a detrimental impact on health and the environment.

Hydrocarbons – Oils used in machinery as lubricants, including diesel and petrol used as fuel.

Impact - A change to the existing environment, either adverse or beneficial, that is directly or indirectly due to the development of the project and its associated activities.

Infauna - Animals of any size living within the marine sediment. They move freely through interstitial spaces between sedimentary particles or they build burrows or tubes.

Interested and Affected Party (I&AP) – Any individual, group, organisation or association which is interested in or affected by an activity as well as any organ of state that may have jurisdiction over any aspect of the activity.

Marine environment - Marine environment includes estuaries, coastal marine and nearshore zones, and open-ocean-deep-sea regions.

Marine Protected Area (MPA) is an area of coastline or ocean that is specially protected for the benefit of people and nature.

Memorandum of Understanding (MOU or MoU) is an agreement between two or more parties outlined in a formal document. It is not legally binding but signals the willingness of the parties to come to an agreement.

Municipality –

(a) Means a metropolitan, district or local municipality established in terms of the Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998); or

¹ Marine Ecology Report (Appendix 5.4)

- (b) In relation to the implementation of a provision of this Act in an area which falls within both a local municipality and a district municipality, means
- (i) The district municipality, or
 - (ii) The local municipality, if the district municipality, by agreement with the local municipality, has assigned the implementation of that provision in that area to the local municipality.

NEMA EIA Regulations - The EIA Regulations means the regulations made under section 24(5) of the National Environmental Management Act (Act 107 of 1998) (Government Notice No. R 982, R 983, R984 and R 985 in the Government Gazette of 4 December 2014 refer as amended by GNR 324, 325, 326 and 327 of 7 April 2017).

No-Go Alternative – The option of not proceeding with the activity, implying a continuation of the current situation / status quo.

Public Participation Process (PPP) - A process in which potential Interested and Affected Parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

Recruitment - The replenishment or addition of individuals of an animal or plant population through reproduction, dispersion and migration.

Registered Interested and Affected Party (I&AP) – All persons who, as a consequence of the Public Participation Process conducted in respect of an application, have submitted written comments or attended a meeting with the applicant or environmental assessment practitioner (EAP); all persons who have requested the applicant or the EAP in writing, for their names to be placed on the register and all organs of state which have jurisdiction in respect of the activity to which the application relates.

Scoping process - A procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined in detail.

Scoping Report - The report describing the issues identified during the scoping process.

Sediment - Unconsolidated mineral and organic particulate material that settles to the bottom of aquatic environment.

Significant impact - Means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Spatial Development Framework (SDF) - A document required by legislation and essential in providing conservation and development guidelines for an urban area, which is situated in an environmentally sensitive area and for which major expansion is expected in the foreseeable future.

Specialist study - A study into a particular aspect of the environment, undertaken by an expert in that discipline.

Species - A group of organisms that resemble each other to a greater degree than members of other groups and that form a reproductively isolated group that will not produce viable offspring if bred with members of another group.

Stakeholders - All parties affected by and/or able to influence a project, often those in a position of authority and/or representing others.

Subtidal - The zone below the low-tide level, *i.e.*, it is never exposed at low tide.

Sustainable development - Sustainable development is generally defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. NEMA defines sustainable development as the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

Surf-zone - Also referred to as the 'breaker zone' where water depths are less than half the wavelength of the incoming waves with the result that the orbital pattern of the waves collapses and breakers are formed.

Turbidity - Measure of the light-scattering properties of a volume of water, usually measured in nephelometric turbidity units.

Visibility - The area from which the project components would actually be visible and depends upon topography, vegetation cover, built structures and distance.

Visual Character - The elements that make up the landscape including geology, vegetation and land-use of the area.

Visual Quality - The experience of the environment with its particular natural and cultural attributes.

Visual Receptors - Individuals, groups or communities who are subject to the visual influence of a particular project.

ABBREVIATIONS AND ACRONYMS

ACER	ACER (Africa) Environmental Consultants
ASN	Alcatel Submarine Networks
BID	Background Information Document
BMH	Beach Manhole
CA	Competent Authority
CLS	Cable Landing Station
CPTs	Cone Penetrometer Tests
CRR	Comments and Responses Report
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department Environmental Affairs (national)
DEADP	Western Cape Department of Environmental Affairs and Development Planning
DEFF	Department of Environment, Forestry and Fisheries
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIAR	Environmental Impact Assessment Report
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
Eskom	Eskom Holdings (SOC) Limited
EEZ	Exclusive Economic Zone
FSR	Final Scoping Report
GPS	Global Positioning System
HDPE	High-density polyethylene
I&APs	Interested and Affected Parties
ICMA	Integrated Coastal Management Act (Act No. 24 of 2008)
LWM	Low Water Mark
MPA	Marine Protected Area
MTN	MTN (Pty) Ltd
MBES	Multi-beam echo sounder
NEMA	National Environmental Management Act
NEPAD	New Partnership for Africa's Development
NHRA	National Heritage Resources Act
NNR	National Nuclear Regulator
Nm	Nautical Miles
NWA	National Water Act, 1998 (Act 36 of 1998)
OC	Department of Environmental Affairs – Oceans and Coasts
PAZ	Precautionary Action Zone
PEB	Public Exclusion Boundary
PES	Present Ecological State
PLGR	Pre-Lay Grapple Run
SAHRA	South African Heritage Resources Association
SAFE	South Africa Far East Cable
SADSTIA	South African Deep Sea Trawling Industry Association
SAHARA	South African Heritage Resources Agency
SAMSA	South African Maritime Safety Authority
SAT-3/WASC	South Atlantic 3/West Africa Submarine Cable
SARCA	Southern African Reptile Conservation Assessment
TNPA	Transnet National Ports Authority
TW	Territorial Waters
UNCLOS	United Nations Convention on the Laws of the Sea
WA	National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
WACS	West Africa Cable System

WD Water Depth

AUTHORS

The authors of this Final Scoping Report are Mr. G Churchill and Dr R-D Heinsohn (ACER (Africa) Environmental Consultants).

Adherence to Regulatory Requirements, Regulation No R. 982 published in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (as amended)

CONTENT OF SCOPING REPORT AS PER THE 2014 EIA REGULATIONS (APPENDIX 2)		RELEVANT SECTION WITHIN THE SCOPING REPORT
(a)	Details of:	-
	(i) the EAP who prepared the report; and	Section 1.2
	(ii) the expertise of the EAP, including a curriculum vitae;	Appendix 5
(b)	The location of the activity, including:	-
	(i) the 21 digit Surveyor General code of each cadastral land parcel;	Appendix 6
	(ii) where available, the physical address and farm name;	Appendix 6
	(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Appendix 6
(c)	A plan which locates the activities applied for at an appropriate scale, or, if it is:	Figure 9 and Appendix 6
	(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Appendix 6
	(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix 6
(d)	A description of the scope of the proposed activity, including:	Chapter 6
	(i) all listed and specified activities triggered;	Table 2
	(ii) a description of the activities to be undertaken, including associated structures and infrastructure;	Chapter 6
(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Chapter 3
(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Chapter 4
(h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including:	Chapter 5
	(i) details of all the alternatives considered;	Chapter 5
	(ii) details of the PPP undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Chapter 7 and Appendix 2
	(iii) a summary of the issues raised by I&APs, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Chapter 7 Section 7.5 and Appendix 3
	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Chapter 8
	(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts: (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and	Chapter 9

	(cc) can be avoided, managed or mitigated;	
	(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Chapter 2,5 and Chapter 10 Section 10.3
	(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Chapter 9 and 10
	(viii) the possible mitigation measures that could be applied and level of residual risk;	Mitigation measures not included in DSR
	(ix) the outcome of the site selection matrix;	Section 4.1
	(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	Not Applicable alternatives were considered
	(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Chapter 5
(h)	A of plan of study for undertaking the environmental impact assessment process, including:	Chapter 10
	(i) A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Chapter 5
	(ii) A description of the aspects to be assessed as part of the EIA process;	Chapter 10
	(iii) Aspects to be assessed by specialists;	Chapter 10 Section 10.1 – 10.5
	(iv) A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Chapter 2 & 10
	(v) A description of the proposed method of assessing duration and significance;	Chapter 10 Section 10.3
	(vi) An indication of the stages at which the competent authority will be consulted;	Figure 2 and Chapter 2
	(vii) Particulars of the PPP that will be conducted during the EIA process;	Chapter 7
	(viii) A description of the tasks that will be undertaken as part of the EIA process;	Chapter 7 & 10
	(ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Not Applicable this will take place during the Impact Assessment phase of the EIA
(i)	An undertaking under oath or affirmation by the EAP in relation to:	-
	(i) the correctness of the information provided in the report;	Appendix 1 and 2
	(ii) the inclusion of comments and inputs from stakeholders and I&APs;	Appendix 2
	(iii) any information provided by the EAP to I&APs and any responses by the EAP to comments or inputs made by I&APs;	Appendix 2

(j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and I&APs on the plan of study for undertaking the EIA;	Appendix 2
(k)	Where applicable, any specific information required by the competent authority; and	Not currently applicable
(l)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	Not currently applicable

RELEVANT SECTIONS OF THE PUBLIC PARTICIPATION PROCESS AS PER THE 2014 EIA REGULATION (CHAPTER 6)		RELEVANT SECTIONS WITHIN THE SCOPING REPORT
41.1	This regulation only applies in instances where adherence to the provisions of this regulation is specifically required	Acknowledged and adhered to within Scoping Report
41.2	The person conducting a PPP must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by:	
a	Fixing a notice board at a place conspicuous to the public at the (i) site and (ii) alternative sites	Appendix 2
b	Giving written notice to (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land; ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; iii) owners and occupiers of land adjacent to the site or alternative sites; iv) the municipal councilor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; v) the municipality which has jurisdiction in the area; vi) organ of state having jurisdiction and vii) any other party as required by the competent authority	Appendix 2
c	Placing an advertisement in (i) one local newspaper or (ii) official gazette that is published for the purpose of providing public notice	Appendix 2
d	Placing an advertisement in at least one provincial newspaper or national newspaper (if the activity impacts extend beyond boundaries of a metro or local municipality)	Appendix 2
e	Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person desires but is unable to participate in the process due to i) illiteracy; (ii) disability; or (iii) any other disadvantage	N/A in this process to date
41.3	A notice, notice board or advertisement referred to above must:	
a	Give details of the application which is subject to PPP	Appendix 2
b	State (i) application has been or is to be submitted to the authority in terms of these Regulations (ii) whether a basic assessment or scoping being applied (iii) nature and location of activity (iv) where further information can be obtained (v) manner in which and person to whom representations can be made	Appendix 2
41.4	A notice board must be (a) 60 cm by 42 cm (b) display the required information in lettering and format determined by authority	Appendix 2
41.7	Person conducting PPP must ensure that (a) information containing all relevant facts in respect of the application is made available to I&APs (b) participation by I&APs is facilitated to provide all with a reasonable opportunity to comment	Appendix 2
42.1	The Applicant or EAP must open and maintain a register with details of:	
a	Persons who have submitted written comment or attended meetings	Appendix 2
b	Persons who have requested to be registered as I&APs	Appendix 2
c	All organs of state which have jurisdiction	Chapter 3 Section 3.3 and Appendix 2

RELEVANT SECTIONS OF THE PUBLIC PARTICIPATION PROCESS AS PER THE 2014 EIA REGULATION (CHAPTER 6)		RELEVANT SECTIONS WITHIN THE SCOPING REPORT
43.1	EAP must give access to the register to any persons who requests this in writing	Appendix 2
44.1	EAP must ensure that comments of I&APs are recorded in reports submitted to the authority (provided that comments may be attached to the report without recording in report itself)	Appendix 2
44.2	Where a person is desiring but unable to access written comments as contemplated in subregulation (1) due to (i) a lack of skills to read or write; (ii) disability; or (iii) any other disadvantage reasonable alternative methods of recording comments must be provided for	N/A in this process to date

1 INTRODUCTION

1.1 Background

Submarine telecommunication cables are important for international telecommunication networks; they transport almost 100% of transoceanic Internet traffic throughout the world (<https://www.iscpc.org/>). It is widely recognised that access to affordable international bandwidth is key to unlocking economic development in every country. Today, Africa still relies primarily on satellites with only few submarine cables to provide its international communications. Communication via submarine telecommunication cables generally allows for lower cost, better performance, and greater capacity (throughput) than that available via satellite. Improvement in Africa’s information technology infrastructure via telecommunication cables will remove one of the current key inhibitors to development in Africa and support economic growth and opportunities on the continent.

The International Cable Protection Committee (ICPC) represents 97% of the world’s subsea telecom cables (<https://www.iscpc.org/>). A report prepared by the environmental advisor of the ICPC, Dr Mike Claire entitled: “Submarine Cable Protection and the Environment: A Bi-Annual Update” (30 September 2020) addresses the role of submarine cables in a post-Covid world, where submarine telecommunications cables are an enabler for changing people’s behaviour away from hydrocarbons and climate impacting sources. Lessons learned from the lockdown will inform how businesses operate in future— leading to an increase in virtual, online meetings compared to those requiring long haul flights, and increased home-working— all of which will help in lowering greenhouse gas emissions. The ICPC estimates that internet traffic increased between 25% and 50% between November 2019 and the early stages of lockdown in April 2020, and this will likely continue as we adapt to the “new-normal” virtual world. Communications revenue for the quarter ending July 31, 2020 saw a 355% increase compared to the previous year. This is just one indication of the increased video conferencing occurring as a result of widespread remote work, remote education, and remote personal video communication.

The proposed submarine cable system known as 2AFRICA/GERA (East) essentially circumnavigates Africa, connecting Africa to Europe and parts of the Middle East (Figure 1). The 2AFRICA (West) component connects South Africa to the United Kingdom and the 2AFRICA/GERA (East) component consists of a repeated trunk connecting over eight East African countries to Europe. The subsea fibre optic cable system, approximately 15,000 km in length, consists of a main trunk running offshore from the shoreline in international waters. Branch cables to the South African landing points will run from the main trunk to the shoreline through South Africa’s Exclusive Economic Zone (EEZ) and territorial waters to the selected landing sites.

ACER (Africa) Environmental Consultants (ACER) has been contracted to undertake an Environmental Impact Assessment for three South African landing points along the 2AFRICA/GERA (East) Cable System, viz. Amanzimtoti, Port Elizabeth and Deynefontein. This Final Scoping Report deals with the 2AFRICA/GERA (East) landing point in Deynefontein on the West Coast of South Africa and incorporates the main Cable System trunk line from where it enters South Africa’s EEZ from Mozambique to Deynefontein. This Final Scoping Report has been compiled in accordance with the requirements of NEMA, in particular, Government Notice Regulation 982, published on 4 December 2014 (as amended), which outlines the requirements of Scoping for purposes of an Environmental Impact Assessment (EIA) undertaken to apply for environmental authorisation for activities listed in Government Notice Regulation R 983, 984 and 985 of 4 December 2014 (as amended) under

Section 24(5) read with Sections 24, 24D and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).



Figure 1 General overview of the proposed 2AFRICA/GERA (East) and (West) Cable Systems (Source: 2africacable.com)

1.2 Qualifications and experience of the Environmental Assessment Practitioner

ACER (Africa) Environmental Consultants (ACER) is a well-established company with wide ranging expertise in environmental management and assessment processes. ACER has twice won the IAIA's National Premium Award for excellence in environmental management and assessment. The qualifications and experience of the primary assessors and report compilers are listed in Table 1 and curriculum vitae are provided in Appendix 5.

Table 1 Qualifications and experience of the Environmental Assessment Practitioner (EAP) Team

EAP	Academic Qualification	Relevant Work Experience
Dr Dieter Heinsohn (EAP and Co-author)	PhD	28 years' experience in environmental management and impact assessments. He is registered with the South African Council for Natural Scientific Professions (SACNASP) in the field of environmental science (Registration No. 400442/04) and the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration No.2019/963)
Mr Giles Churchill (EAP and Co-author)	MSc	13 years' experience in environmental management, impact assessments and the monitoring of compliance with specifications contained in Environmental Management Programmes (EMPr's). He is registered with the SACNASP in the field of environmental science (Registration No 116348) and EAPASA (Registration No.2019/1687)
Jenny Barnard (EAP and Co-author)	MSc	28 years' experience in environmental management, impact assessments and the monitoring of compliance with specifications contained in Environmental Management Programmes (EMPr's). She is registered with the SACNASP as a Professional Natural Scientist (Registration No.400197/09) and EAPASA (Registration No.2020/2492).

1.3 Environmental assessment requirements and process

In terms of the current Environmental Impact Assessment Regulations, 2014, published in Government Notices R 982, 983, 984 and 985 of 4 December 2014 (as amended) under Section 24(5) read with Sections 24, 24D and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), the proposed 2AFRICA/GERA (East) Cable System includes activities that are listed in the current environmental regulations. As such, the project may not commence without environmental authorisation from the relevant competent authority, in this case, the national Department of Environment, Forestry and Fisheries (DEFF)² (in close consultation with the Western Cape Department of Environmental Affairs and Development Planning (DEADP) and SAN Parks). In terms of the current regulations and environmental best practise, the potential impacts of the project on the environment (social, economic and biophysical) must be considered, investigated and assessed prior to implementation.

Given that the project triggers listed activities in these regulations (Table 2), the application for environmental authorisation requires a process of Scoping and Environmental Impact Assessment as outlined in Regulation R982 (as amended). The EIA process is currently in the Scoping Phase. This is the phase during which issues for further investigations are identified

² DEFF is the authorising authority as the project crosses international boundaries and is of national importance.

so that they can be considered for inclusion in the Specialist Studies that will be undertaken during the EIA, viz. the Impact Assessment Phase.

Table 2 Listed activities potentially triggered by the proposed 2AFRICA/GERA (East) Cable System

Activity Numbers	Relevant Listed Activities as set out in Listing Notice 1 (GN No. R. 327) and reasons why they are triggered
<p><u>Activity 15 of Listing Notice 1 (No. R. 327 of 2017)</u></p> <p><u>The development of structures in the coastal public property where the development footprint is bigger than 50 square metres, excluding -</u></p> <ul style="list-style-type: none"> (i) the development of structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (ii) the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (iii) the development of temporary structures within the beach zone where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared; or (iv) activities listed in activity 14 in Listing Notice 2 of 2014, in which case that activity applies. 	<p>The project will entail the landing of a marine telecommunications cable at Van Riebeeckstrand Beach. This will require digging of a trench across the beach (coastal public property) into the intertidal zone and the installation of the telecommunications cable, system earth and associated activities.</p>
<p><u>Activity 17 of Listing Notice 1 (No. R. 327 of 2017)</u></p> <p>Development-</p> <ul style="list-style-type: none"> a. <u>in the sea;</u> b. <u>in an estuary;</u> c. <u>within the littoral active zone;</u> d. <u>in front of a development setback; or</u> e. <u>if no development setback exists, within a distance of 100 metres inland of the high- water mark of the sea or an estuary, whichever is the greater;</u> <p>in respect of-</p> <ul style="list-style-type: none"> i. fixed or floating jetties and slipways; ii. tidal pools; iii. embankments; iv. rock revetments or stabilising structures including stabilising walls; v. buildings of 50 square metres or more; or vi. <u>infrastructure with a development footprint of 50 square metres or more -</u> <p>but excluding-</p> <ul style="list-style-type: none"> (aa) the development of infrastructure and structures within existing ports or harbours that will not increase the development footprint of the port or harbour; 	<p>The project will entail the landing of a marine telecommunications cable at Van Riebeeckstrand Beach. This will require the digging of a trench across the beach into the intertidal zone and the installation of the telecommunications cable, which will be buried to provide additional protection. In shallow waters (less than 1,500 m in depth) the cable will be buried under the seabed to provide extra protection.</p>

<p>(bb) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) the development of temporary infrastructure or structures where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared; or</p> <p>(dd) where such development occurs within an urban area.</p>	
<p><u>Activity 18 of Listing Notice 1 (No. R. 327 of 2017)</u></p> <p><u>The planting of vegetation or placing of any material on dunes or exposed sand surfaces of more than 10 square metres, within the littoral active zone, for the purpose of preventing the free movement of sand, erosion or accretion, excluding where -</u></p> <p>(i) <u>the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation undertaken in accordance with a maintenance management plan;</u> or</p> <p>(ii) (ii) such planting of vegetation or placing of material will occur behind a development setback.</p>	<p>The project will entail the rehabilitation of the primary dune belt along Van Riebeeckstrand Beach where construction activities associated with the laying of the underground telecommunications cable will disturb vegetation on the primary dune. In addition to the above, the project will involve the planting of vegetation and material to aid in dune rehabilitation once construction is complete. As such, this listed activity is triggered.</p>
<p><u>Activity 19A of Listing Notice 1 (No. R. 327 of 2017)</u></p> <p><u>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-</u></p> <p>(i) a watercourse;</p> <p>(ii) <u>the seashore; or</u></p> <p>(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></p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving-</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p>	<p>The project will entail the excavation and deposition of more than 5 m³ of material within 100 m of the high-water mark of the sea when trenching for, and backfilling of, the marine telecommunications cable and system earth takes place. As such, this listed activity is triggered.</p>

Activity Numbers	Relevant Listed Activities as set out in Listing Notice 2 (GN No. R. 325) and reasons why they are triggered
<p><u>Activity 14 of Listing Notice 2 (No. R. 325 of 2017)</u></p> <p>The development and related operation of-</p> <ul style="list-style-type: none"> (i) an island; (ii) <u>anchored</u> platform; or (iii) <u>any other structure or infrastructure on, below or along the sea bed;</u> <p>excluding -</p> <ul style="list-style-type: none"> (a) development of facilities, infrastructure or structures for aquaculture purposes; or (b) the development of temporary structures or infrastructure where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared. 	<p>The proposed 2AFRICA Cable System will be placed on the surface of the seabed in deep waters. In shallow waters (less than 1,500 m in depth) the cable will be buried under the seabed to provide extra protection, where the substrate allows.</p>
<p><u>Activity 26 of Listing Notice 2 (No. R. 325 of 2017)</u></p> <p>Development--</p> <ul style="list-style-type: none"> i. <u>in the sea;</u> ii. in an estuary; iii. <u>within the littoral active zone;</u> iv. in front of a development setback; or v. <u>if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater;</u> <p>in respect of –</p> <ul style="list-style-type: none"> a) facilities associated with the arrival and departure of vessels and the handling of cargo; b) piers; c) <u>inter- and sub-tidal structures for entrapment of sand;</u> d) breakwater structures; e) coastal marinas; f) coastal harbours or ports; g) tunnels; or h) <u>underwater channels;</u> <p>but excluding the development of structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p>	<p>Although unlikely to be triggered this listed activity has been included as the proposed trench for the marine cable may result in the entrapment of sand within the inter- and sub-tidal zones. In addition, the trench created to bury the cable may be construed as an underwater channel.</p>
Activity Numbers	Relevant Listed Activities as set out in Listing Notice 3 (GN No. R. 324) and reasons why they are triggered

<p><u>Activity 12 of Listing Notice 3 (No. R. 324 of 2017)</u></p> <p><u>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</u></p> <p>(i) Western Cape:</p> <p>i. <u>Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA</u></p> <p>iii. <u>Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or</u></p> <p>iv. <u>On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</u></p>	<p>if the Alternative 2 BMH is constructed, the proposed development will require the removal of indigenous primary dune vegetation where the cable system lands at Van Riebeeckstrand. In addition, Cape Flats Dune Strandveld (FS 6) which is listed as an “endangered” ecosystem in NEMBA (2011), will be impacted on by the front haul alignment from the Alternative 2 BMH to the existing ACE BMH which the cable will tie into.</p>
<p><u>Activity 15 of Listing Notice 3 (No. R. 324 of 2017)</u></p> <p><u>The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.</u></p> <p>(c) In Western Cape:</p> <p>i. Outside urban areas, or</p> <p>ii. <u>Inside urban areas in:</u></p> <p>(aa) <u>Areas zoned for conservation use or equivalent zoning, on or after 02 August 2010;</u></p> <p>(bb) A protected area identified in terms of NEMPAA, excluding conservancies; or</p> <p>(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act as adopted by the competent authority.</p>	<p>The proposed development (Alternative 2) will require the trenching of approximately 900 m of trench through areas zoned as public open space and conservation near Van Riebeeckstrand. It is anticipated that servitudes will have to be registered with the City of Cape Town and as such this listed activity is potentially triggered.</p>

Based on the current regulations, the EAP must complete Scoping and the Impact Assessment within 300 days of acceptance of the Application for Authorisation by the National Department of Environment, Forestry and Fisheries (DEFF), which is the Competent Authority (CA). It is also envisaged that a Water Use Licence will be required from the Department of Human Settlements, Water and Sanitation in terms of Chapter 4 of the National Water Act, 1998 (Act No 36 of 1998), in particular, Section 40(4).

It is important to note that timeframes in the 2014 regulations (as amended) are based on calendar days and the following conditions apply:

- 15 December to 5 January are excluded from the calculation.
- No Public Participation between 15 December and 5 January unless justified by exceptional circumstances.
- Organs of State to comment within 30 days from the date on which it was requested to submit comments.
- For both Basic Assessments and Environmental Impact Assessments the Competent Authority (CA) must issue a decision within 107 days.
- Notification of decision by CA within 5 days of date of decision.

The DEFF is the competent authority for the issuing of environmental authorisation for the proposed development due to the fact that the cable extends over international boundaries. As the proposed cable alignment passes through Marine Protected Areas, approval from SAN Parks is also required prior to DEFF issuing environmental authorisation.

ACER will fulfil the role and responsibilities of the Environmental Assessment Practitioner (EAP) to undertake the EIA and the associated public participation process, and to submit the required application and supporting documentation for consideration and decision-making. The main phases of the environmental impact assessment process and legislated time frames are shown in Figure 2.

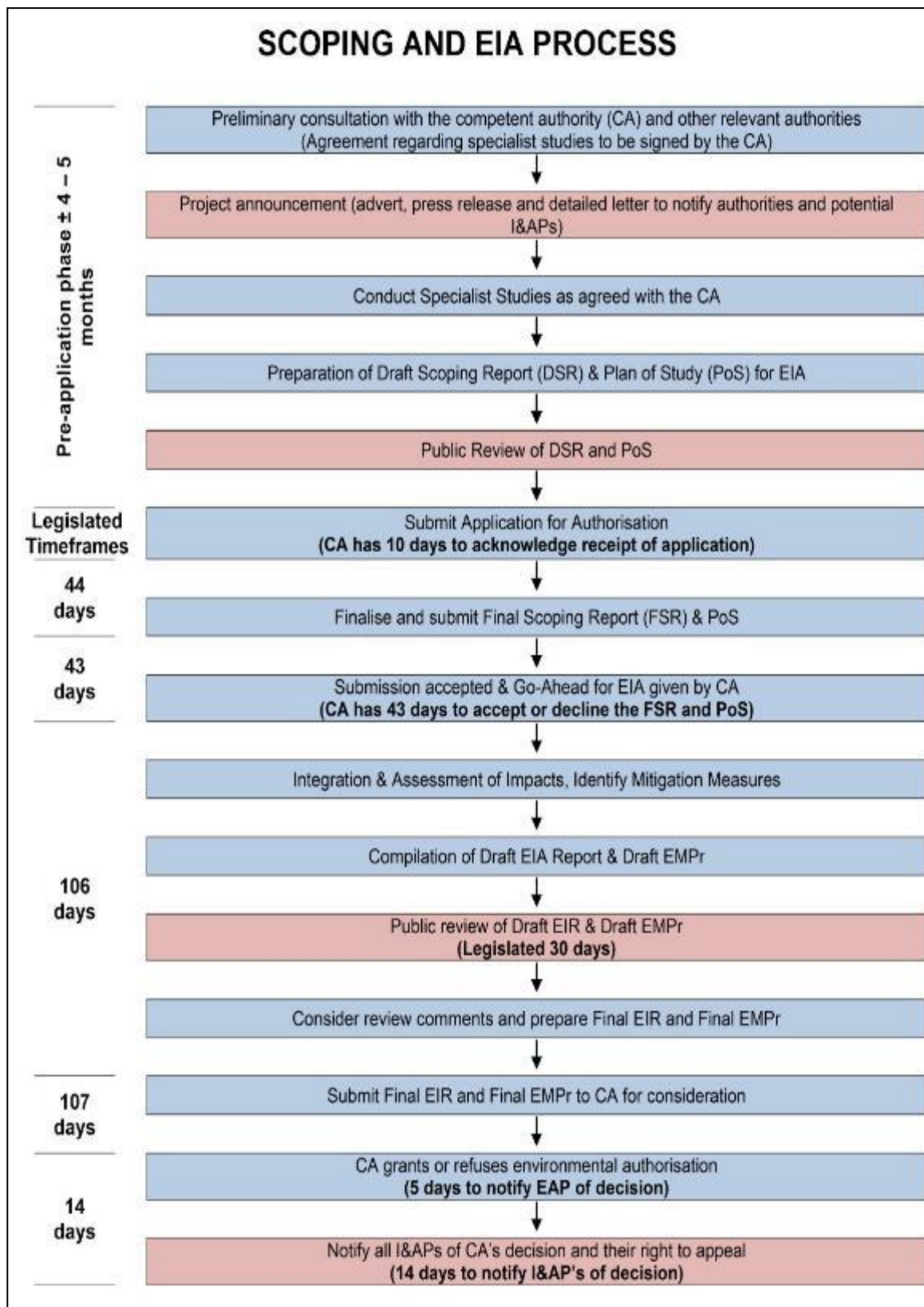


Figure 2 The phases of an environmental impact assessment, including legislated timeframes

2 SCOPING METHODOLOGY

Scoping is a process designed to define the limits of the assessment, to identify and elicit inputs from Interested and Affected Parties (I&APs), and to define an assessment framework with the purpose of focusing the scope of the assessment, thereby ensuring a focus on key issues and associated impacts. The framework (Figure 3) within which environmental aspects arising from or influencing the proposed project (and its alternatives) are considered has been undertaken using the following philosophy:

- The concept of sustainability, which considers the inter-related dimensions of the environment, viz. the social, economic and biophysical dimensions, underpinned by a system of sound governance through the legal/statutory requirements of South Africa (in particular, NEMA).

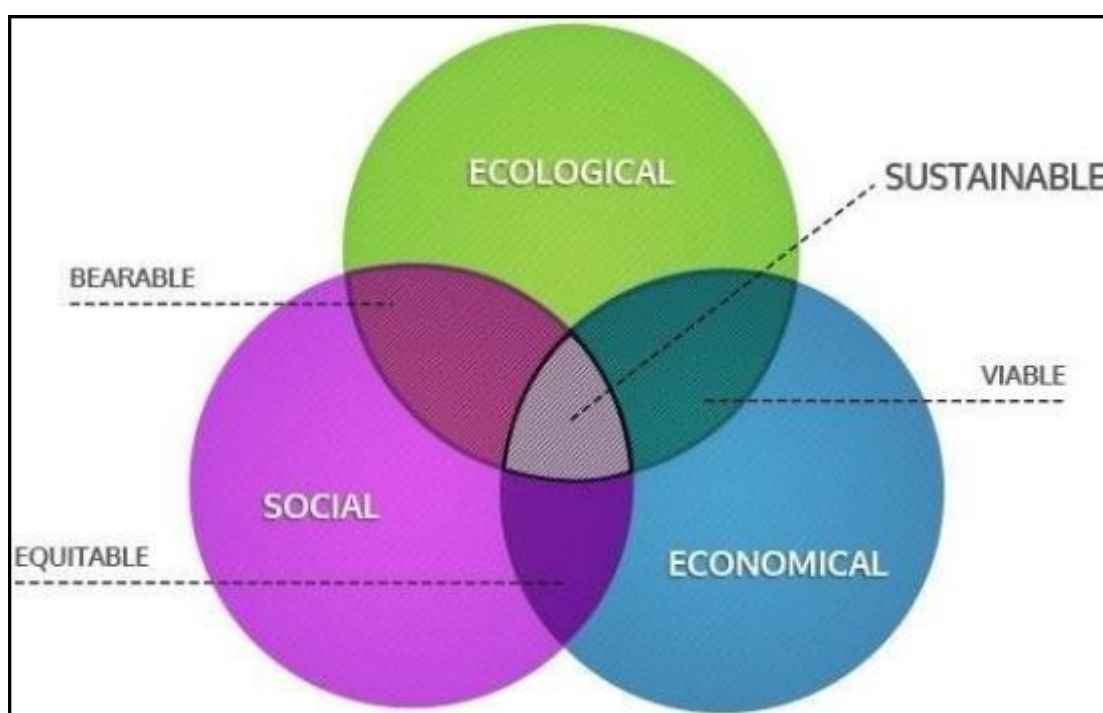


Figure 3 Assessment framework based on the concept of sustainability

Issues and impacts were identified by way of interlinked technical and public participation processes (Chapter 7 details the public participation process). Information gathering focused on gaining an understanding of the interactions between the different dimensions of the environment in order to identify potentially significant issues and impacts. This involved site visits, reference to existing documentation and maps, liaison with the project proponent and technical team, as well as consideration and incorporation of the issues raised during the public participation process. Information was collated, integrated, and evaluated, and potentially significant issues and impacts were identified. This enabled the Environmental Assessment Practitioner (EAP) to focus and tailor the scope of work for specialist studies and further detailed investigations to be taken forward to the Impact Assessment Phase.

The information provided in the Scoping Report complies with the legal requirements of Regulation R982 (as amended) outlined on Page xxii and xxv and has been structured in the following manner:

- A broad perspective of applicable legislation and guidelines.
- A detailed description of the proposed activity, including an understanding of the purpose and need for the proposed project.
- A discussion of the feasible and reasonable alternatives that have been identified and assessed.
- A description of the environment and manner in which it may be affected.
- A description of environmental issues and potential impacts.
- An outline of the proposed methodology and specialist studies to be undertaken during the impact assessment, including details of the public participation process.
- A plan of study for EIA and a description of the assessment methodology that will be used.

The Scoping Report also contains appendices that present the following information:

- Appendix 2: Public Participation Documentation.
- Appendix 3: Issues and Response Report.

The Draft Scoping Report was made available to Interested and Affected Parties (I&APs) (over 30 calendar days) to review and provide comments on the document. Following the period of public review, the Draft Scoping Report was updated and finalised into this Final Scoping Report (this document) which will be submitted to DEFF for decision making.

In addition to the requirement for Scoping and an Environmental Impact Assessment (as outlined in Regulation R982 (as amended by Regulation R326 in 2017) a review of all legislation applicable to the proposed 2AFRICA/GERA (East) Cable System was undertaken in order to establish what other licences and permits will be applicable to the project. Included in this review of legislation were the permit requirements of the Department of Human Settlements, Water and Sanitation (DHSWS) (water use licences), the permit requirements of the Department of Environment, Forestry and Fisheries – Oceans and Coasts (OC) (in terms of the proposed cable laying activities and beach access), permit requirements from the Department of Agriculture (DoA), approvals from SANParks for traversing MPAs and the permit requirements of the Department of Mineral Resources in terms of mining and prospecting rights amongst others. Findings from this review of applicable legislation and the required licence and permits are included in Chapter 3 of this Scoping Report.

2.1 Pre-application meetings and discussions with commenting authorities

Given the tight timeframes as legislated under the current environmental regulations, ACER and MTN approached the following commenting authorities prior to submission of the application for authorisation to DEFF to discuss the proposed development and to identify alternatives which were feasible in terms of implementation to take forward into the EIA process:

- City of Cape Town – Planning and Environmental Department.
- SAN Parks
- Western Cape Department of Environmental Affairs and Development Planning.
- Department of Environment, Forestry and Fisheries Affairs – Oceans and Coasts.

The purpose of the engagements was for ACER to obtain guidance and clarification from DEFF as to their requirements for EIAs for marine telecommunications cables, and the interpretation and implementation of the December 2014 EIA Regulations.

2.2 Environmental screening

ACER was contracted by ASN to undertake a Permits in Principle (PiP) screening exercise for three South Africa landing points along the 2AFRICA/GERA (East) Cable System, viz. Amanzimtoti, Port Elizabeth and Duynefontein. The Environmental Screening Report prepared (dated May 2020) covers the 2AFRICA landing point in Duynefontein on the West Coast of South Africa. The purpose of the screening exercise is to identify the following:

- Environmental constraints and challenges associated with the landing point alternatives considered at Duynefontein.
- Permits required for the landing and installation of the cable at Duynefontein, including the requirements for environmental authorisation from the South African National Department of Environment, Forestry and Fisheries (DEFF) (which underpins the acquisition of most permits).
- Possible project alternatives based on observations during a site visit.

The cable alignment and landing locations were selected following consideration of not only environmental issues, but also those associated with marine engineering (e.g. security of the route against external risks) and commercial aspects (e.g. proximity to national networks and their international access points). During these screening assessments a number of factors were considered, including the following:

- Presence of existing marine telecommunications systems.
- Profile of the beaches and primary dunes.
- Seabed characteristics and ocean currents.
- Distance from the beach landing points to the CLS site at Duynefontein.
- Presence of electrical infrastructure (Eskom transmission and distribution lines).
- Current land use between the proposed landing points and the CLS site.
- Existing servitudes and future development corridors under consideration by the City of Cape Town.

The two landing locations were then assessed in more detail with specific sites within the two locations proposed for further assessment. Findings from the initial screening of these landing alternatives are explained in detail in Chapter 5 of this report.

3 LEGAL ASPECTS

3.1 Applicable legislation

There are a host of legal requirements (national, provincial and local government spheres) to which MTN must adhere for the construction and placement of the proposed 2AFRICA/GERA (East) Cable System and related infrastructure. Fundamentally, MTN is required to include and integrate environmental principles and values into all planning and implementation procedures taken for development purposes.

Underlying the above reasoning is the constitutional right that people have to environmental protection as set out in the Bill of Rights in the Constitution (Section 24). These rights have been interpreted and included into NEMA, which, together with other national and provincial legislation, governs the way environmental principles are incorporated into any form of development.

Some of the key legislation that is applicable to this project is provided hereunder.

3.1.1 *Constitution of the Republic of South Africa Act, 1996 (Act 108 of 1996) (as amended)*

The Constitution is the supreme law of South Africa, against which all other laws are measured. It sets out a number of fundamental environmental rights.

The Environmental Clause

Section 24 of the Constitution outlines the basic framework for all environmental policy and legislation: It states:

“Everyone has the right –

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

Access to Information

Section 32 of the Constitution provides that everyone has the right of access to any information held by the State or another juristic person, which is required for the exercise or protection of any rights.

Fair Administrative Action

Section 33 of the Constitution provides the right to lawful, reasonable and procedurally fair administrative action.

Enforcement of Rights and Administrative Review

Section 38 of the Constitution guarantees the right to approach a court of law and to seek legal relief in the case where any of the rights that are entrenched in the Bill of Rights are infringed or threatened.

3.1.2 *National Environmental Management Act, 1998 (Act 107 of 1998)*

NEMA is South Africa's overarching environmental legislation. It provides the legislative framework for Integrated Environmental Management in South Africa. The Act gives meaning to the right to an environment that is not harmful to health or well-being, entrenched in Section 24 of the Constitution. In addition, NEMA provides for: equitable access to natural resources, environmental protection, and the formulation of environmental management frameworks. The Act is underpinned by the global concept of sustainable development. Section 2 of NEMA provides a set of principles that apply to the actions of all organs of state that may significantly affect the environment.

The interpretation, administration, and application of NEMA are guided by fundamental principles of sustainable development, provided in Chapter 1 of the Act. "Development must be socially, environmentally and economically sustainable" and requires the consideration of all relevant factors, which are guided by eight sub-principles, including:

- The sustainability principle.
- The life-cycle, cradle-to-grave principle.
- The 'polluter pays' principle.
- The precautionary principle.
- The duty of care principle.
- Fair and transparent public consultation.

The concept of sustainability underpinning this assessment considers three inter-related dimensions of the environment, viz. the social, economic, and biophysical dimensions (Figure 3). For an option or project to be sustainable, it needs to demonstrate economic growth, social acceptability and soundness, and ecological integrity within a framework of good governance.

3.1.3 *The Environmental Impact Assessment Regulations, 2014 (as amended)*

The EIA Regulations contained in Government Notices R 982, R 983, R 984 and R 985 of 04 December 2014, published in terms of Section 24 of the NEMA, regulate environmental management in South Africa. Activities that require authorisation from the competent authority prior to their commencement are listed in Government Notices R 983, R 984 and R 985. The procedures dealing with the EIA Regulations are contained in GN R 982.

The Listed Activities applicable to the proposed establishment of 2AFRICA/GERA (East) Cable System are presented in Table 2 above. All potential impacts associated with these Listed Activities will be considered and adequately assessed in this EIA process.

Environmental Authorisation obtained from this application will apply only to listed activities for which the application was made. Therefore, a precautionary approach is followed when identifying listed activities that could potentially be triggered by the development.

3.1.4 *National Water Act, 1998 (Act 36 of 1998)*

The National Water Act, 1998 (Act 36 of 1998) (NWA) has various sections of relevance to the proposed project. The Department of Water and Sanitation (DWS) is the responsible authority with regard to matters affecting water resource management, including water quality. Added to this, certain provincial and local authority powers influence the regulation of water resources, including agriculture, the environment, health services, nature conservation,

pollution control, regional planning and development, soil conservation, and water and sanitation services.

The development or modification of water courses or wetlands in any form are governed by conditions provided in Chapter 4, Part 1 of the Act, which sets out general principles for regulating water use.

In general, a water use must be licensed unless:

- It is listed in Schedule 1 of the Act.
- Is an existing lawful water use.
- It is permissible under a general authorisation.
- A responsible authority waives the need for a licence.

As development or modifications of watercourses or wetlands are not included in Schedule 1, a licence is required to carry out any activity involving modifications to watercourses or wetlands. This is relevant due to the fact that the proposed landing alternatives for the 2AFRICA/GERA (East) Cable System will require the crossing of a dune slack wetland located behind the primary dunes at Van Riebeeckstrand.

3.1.5 *National Heritage Resources Act, 1999 (Act 25 of 1999)*

The National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999) (NHRA) aims to promote an integrated system for the identification, assessment and management of the heritage resources of South Africa. Furthermore, it established the South African Heritage Resources Agency (SAHRA) to implement the Act.

Section 38 (1) of the NHRA lists development activities that would require authorisation by the responsible heritage resources authority. Activities considered applicable to the proposed project include the following:

- (a) *The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length.*
- (c) *Any development or other activity which will change the character of a site; and*
 - (i) *exceeding 5 000 m² in extent.*
- (d) *The re-zoning of a site exceeding 10 000 m² in extent.*

The NHRA requires that a person intending to undertake such an activity must notify the relevant national and provincial heritage authorities at the earliest stages of initiating such a development. The relevant heritage authority would then, in turn, notify the person whether a Heritage Impact Assessment Report should be submitted. It must be noted that SAHRA is the relevant heritage authority for all heritage resources located under the low water mark of the sea up to a distance of 24 Nautical miles seaward from the high-water mark of the sea.

3.1.6 *National Forest Act, 1998 (Act 84 of 1998)*

In terms of the National Forests Act, 1998 (Act 84 of 1998), trees in natural forests or protected tree species (as listed in Government Gazette Notice 908 of 21 November 2014) may not be cut, disturbed, damaged, destroyed and their products may not be possessed, collected, removed, transported, exported, donated, purchased or sold, except under licence granted by the Department of Agriculture, Forestry and Fisheries (DAFF). Each application is evaluated on merit before a decision is taken whether or not to issue a licence (with or without conditions). Such decisions must be in line with national policy and guidelines.

Whether the proposed project will affect natural forests or protected tree species will be determined during the specialist studies commissioned for the impact assessment phase of the EIA.

3.1.7 *Hazardous Substance Act (No 15 of 1973) and Regulations*

The purpose of the Act is:

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

Based on a review of the proposed materials and construction methods to be employed in the construction and installation of the 2AFRICA/GERA (East) Cable System, it is unlikely that the conditions of this Act or its regulations will have any relevance to the proposed development.

3.1.8 *Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)*

The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) states that no degradation of natural land is permitted. The Act requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. The utilisation of marshes, water sponges and watercourses are also addressed.

3.1.9 *National Environmental Management: Waste Act, 2008 (Act 59 of 2008)*

The National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (WA) has various sections of relevance to the proposed 2AFRICA/GERA (East) Cable System. The aims of the Act are to provide laws regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation, and for securing ecologically sustainable development. In fulfilling the rights contained in Section 24 of the Constitution, the State, through the organs of state responsible for implementing this Act, must put in place uniform measures that seek to reduce the amount of waste that is generated and, where waste is generated, to ensure that waste is re-used, recycled and recovered in an environmentally sound manner before being safely treated and disposed. As such, the interpretation and application of the Act must be guided by the national environmental management principles set out in Section 2 of NEMA.

Based on a review of the proposed materials and construction methods to be employed in the construction and installation of the 2AFRICA/GERA (East) Cable System, it is unlikely that the conditions of this Act or its regulations will have any relevance to the proposed development.

3.1.10 *National Environmental Management: Biodiversity Act 10 of 2004*

This Act provides for the management and conservation of South Africa's biodiversity, protects species and ecosystems, ensures sustainable use of indigenous biological resources, ensures fair and equitable sharing of benefits arising from the commercial use of these resources, and to establish a South African National Biodiversity Institute. The Act also covers alien and invasive species and genetically modified organisms that pose a threat to biodiversity. As such, it controls and regulates:

- Certain threatening activities occurring in identified ecosystems.
- Certain activities which may negatively impact on the survival of identified threatened or protected species.
- Certain restricted activities involving alien or listed invasive species.

In accordance with the Biodiversity Act, specialist studies will be commissioned to ensure that sensitive vegetation is not detrimentally affected by the installation and construction activities associated with the terrestrial components of 2AFRICA/GERA (East) Cable System.

3.1.11 *National Environmental Management: Protected Areas Act (Act 57 of 2003)*

The National Environmental Management: Protected Areas Act 57 of 2003 intends:

- To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes.
- For the establishment of a national register of all national, provincial, and local protected areas.
- For the management of those areas in accordance with national norms and standards.
- For intergovernmental co-operation and public consultation in matters concerning protected areas; and
- For matters in connection therewith.

The terrestrial component of the project is located within the Cape West Coast Biosphere Reserve as shown in Figure 4 below. The category of conservation as per the South African Conservation Areas Database (SAPAD) is Western Cape Conservation Category 3 (WCCC 3), which is defined as a conservation area with little or no legislative security in the State of Biodiversity Report (Turner; 2017). Although much of the Biosphere Reserves is comprised of buffer or transition zones which include transformed lands, it nonetheless is still recognised as a mechanism which impedes upon the further hardening or degradation of these areas (Turner; 2017). The basis for the register of protected areas (SAPAD) is a requirement of the NEM: Protected Areas Act, Act 57 of 2003 as listed above.

The marine component of the 2AFRICA/GERA (East) Cable System landing at Duynfontein traverses two declared MPAs namely the Southeast Atlantic Seamount MPA and the Robben Island MPA. As custodians of these MPAs SAN Parks is considered the Management Authority in terms of the Act and permission must be obtained from SAN Parks for the cable to traverse the MPAs prior to DEFF issuing environmental authorisation.

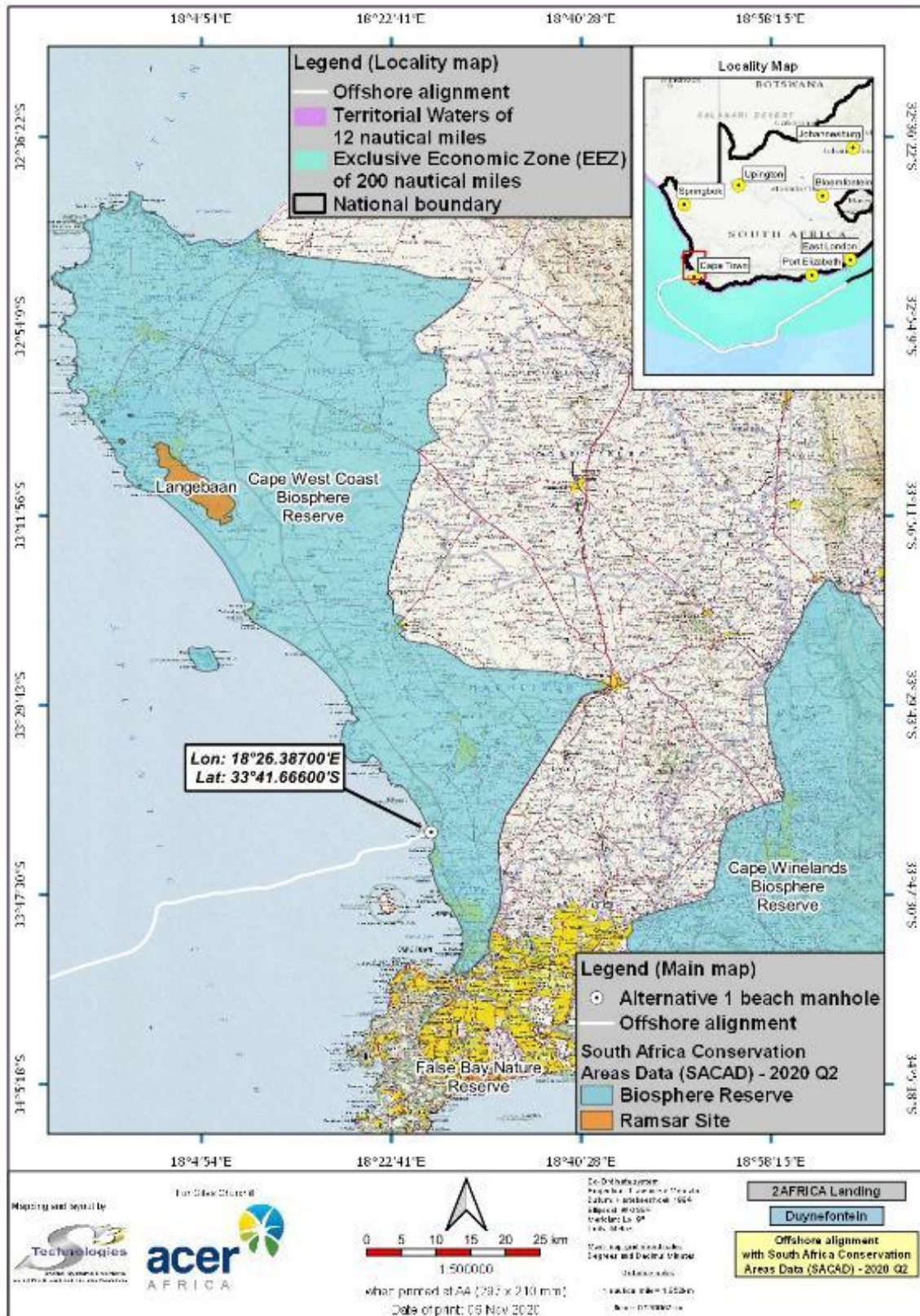


Figure 4 Cape West Coast Biosphere Reserve as per SAPAD.

3.1.12 *Integrated Coastal Management Act (Act No. 24 of 2008) (ICMA)*

In general, ICMA promotes the use of defensible scientific information in conjunction with the principles of cooperative governance in order to achieve sustainable coastal development.

The ICMA is a specific environmental management act under the umbrella of the National Environmental Management Act (NEMA) and due to the broad spectrum of issues covered by the ICMA it necessitates links to other legislation such as the Marine Living Resources Act (Act No. 18 of 1998). As such, the interpretation and understanding of the ICMA must be read in conjunction with other legislation to fully understand the responsibilities, regulations and objectives encompassed in this Act. It is important to note that the ICMA has been amended by the National Environmental Management: Integrated Coastal Management Amendment Act, 2014 (Act No. 36 of 2014).

In terms of the proposed 2AFRICA/GERA (East) Cable System, a number of sections of the ICMA are and will be relevant to the project. The most significant of these deal with the considerations which must be taken into account when authorities are considering whether to grant an environmental authorisation for any activity within the coastal zone and the construction of infrastructure on or in, coastal public property.

3.1.13 *Seashore Act. 1935 (Act 21 of 1935)*

The Seashore Act 21 of 1935 provides that ownership of the seashore (which includes the water and land between the low-water mark and the high-water mark in those estuaries which fall within the definition of tidal lagoons and/or tidal rivers) and the sea vests in the state unless it was in private ownership before the commencement of the Act.

All of the provisions of the Act have been assigned to the four coastal provinces (in terms of Proclamation R27 dated 7 April 1995), excluding those that regulate the seashore and the sea within ports or harbours. The Act provides that the State President or the assigned provinces, as deemed owner, may grant leases over any part of the seashore and the sea, for specific purposes.

The Minister is further entitled to regulate sand-winning and other mining activities as well as the removal of aquatic plants, salt and shells from the sea and seashore owned by the State President. The letting or transfer of the seashore and the sea to local authorities is also regulated.

Different regulations have been passed by provincial and local authorities, that relate to specific areas of the seashore under their control.

3.1.14 *The Marine Living Resources Act (Act No. 18 of 1998)*

This Act provides for the conservation and management of the marine ecosystem, the long-term sustainable utilisation of marine living resources and equitable access to exploitation, utilisation, and protection of certain marine living resources.

In terms of the proposed 2AFRICA/GERA (East) Cable System, this Act is applicable as most of the project occurs within the marine environment.

3.1.15 *Maritime Zones Act No. 15 of 1994*

This Act determines and defines the territorial sea, internal waters, Exclusive Economic Zone (EEZ) and continental shelf of South Africa. In compliance with the UN Law of the Sea, the Act declares the territorial sea of South Africa to be the sea within a distance of 12 nautical miles measured from the low water mark on the shore (baseline). The sea beyond the territorial waters but within 200 Nm of the baseline shall be the EEZ of South Africa. Within the EEZ, South Africa shall have the same rights and powers as it has in its territorial waters, in respect of all natural resources.

The Act also states that all installations, which are defined to include telecommunications lines as defined in section 1 of the Post Office Act, 1958 (Act No. 44 of 1958), situated within internal waters, territorial waters or the EEZ or on or above the continental shelf must be constructed and operated within the current laws of South Africa³.

3.1.16 *Telecommunications Act 103 of 1996*

This Act makes provision for the regulation of telecommunication activities other than broadcasting, and for the control of the radio frequency spectrum; and to establish an independent South African Telecommunications Regulatory Authority and a Universal Service Agency. It provides that no person may offer telecommunications services without a licence authorising them to do so.

In terms of the proposed 2AFRICA/GERA (East) Cable System, Section 36 of the Act applies as MTN is licensed to provide national long distance and international telecommunication services. Additionally, in terms of Section 75, a local authority may install a conduit pipe or other facilities for the installation of underground cables on any premises.

3.1.17 *Marine Traffic Act 2 of 1981*

The function of this Act is to regulate marine traffic in South African waters and matters incidental thereto. It is governed by the South African Maritime Safety Authority (SAMSA) established by Section 2 of the South African Maritime Safety Authority Act 5 of 1998, under the Department of Transport.

Of particular importance to the proposed 2AFRICA/GERA (East) Cable System is the stipulation that no ship may drop or drag anchor or fishing gear (bottom trawl nets) nearer than 0.5 Nm to a pipeline or a telecommunications line.

3.1.18 *Applicable Provincial Environmental Legislation: Western Cape*

The following provincial legislation may also be applicable to the proposed landing of the 2AFRICA/GERA (East) Cable System particularly the Western Cape Nature Conservation Regulations which are enforced by CapeNature:

- Constitution of the Western Cape, 1997.
- Western Cape Nature Conservation Laws Amendment Act 3 of 2000.

3 South Africa is also a signatory to the United Nations Convention on the Laws of the Sea (UNCLOS). Article 79 of UNCLOS, in particular, concerns the installation of "submarine cables and pipelines on the continental shelf" and specifies the following: "Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines. The coastal State may not impede the laying or maintenance of such cables or pipelines".

- Western Cape Nature Conservation Regulations promulgated in terms of Section 82 of the 1974 Ordinance.
- Noise Control Regulations in terms of Section 25 of the Environment Conservation Act of 1989, (Act No. 73 of 1989).

3.2 National, Provincial and Local Policies and Plans

3.2.1 National Development Plan 2030 (NDP)

The National Development Plan (NDP) (2012) offers a long-term perspective. It defines a desired destination and identifies the role different sectors of society need to play in reaching that goal. The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.

Of relevance and identified as an enabling milestone is the making of high-speed broadband internet universally available at competitive prices. The NDP identifies critical actions that include interventions to ensure environmental sustainability and resilience to future shocks.

3.2.2 National Climate Change Adaptation Strategy (NCCAS)

South Africa's National Climate Change Adaptation Strategy (NCCAS)⁴ (DEFF; 2019) supports the country's ability to meeting its obligations in terms of the Paris Agreement on Climate Change. The Strategy defines the country's vulnerabilities, plans to reduce those vulnerabilities and leverage opportunities, outlines the required resources for such action, whilst demonstrating progress on climate change adaptation. The NCCAS outlines a set of objectives, interventions and outcomes to enable the country to give expression to its commitment to the Paris Agreement. The 2015 Paris Agreement elevated the importance of climate change adaptation through the establishment of a global goal on adaptation of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change.

Developed in consultation with all relevant stakeholders and approved by Cabinet on 18 September 2020, it aims to reduce the vulnerability of society, the economy and the environment to the effects of climate change. It gives effect to the National Development Plan's vision of creating a low-carbon, climate resilient economy and a just society. Adaptation to climate change presents South Africa with an opportunity to transform the health of the economy and build resilience, thus strengthening the social and spatial fabric, and enables the country to remain globally competitive. It will ensure that food production is not threatened, infrastructure is resilient and enable continued sustainable economic development.

3.2.3 National Climate Change Response White Paper

This White Paper published by DEA in 2012 presents the South African Government's vision for an effective climate change response and the long-term, just transition to a climate-

⁴ <https://www.gov.za/speeches/environment-forestry-and-fisheries-approval-south-africa%E2%80%99s-national-climate-change>

resilient and lower-carbon economy and society. South Africa's response to climate change has two objectives:

- Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity.
- Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.

In terms of strategic priorities, the White Paper sets out South Africa's climate change response strategy to achieve the National Climate Change Response Objective in a manner consistent with the outlined principles and approach and which is structured around the following strategic priorities: risk reduction and management; mitigation actions with significant outcomes; sectoral responses; policy and regulatory alignment; informed decision making and planning; integrated planning; technology research, development and innovation; facilitated behaviour change; behaviour change through choice; and resource mobilisation.

Of relevance to this project, is the risk reduction and management related to the increase in the frequency of extreme storm surges along the coastline coupled with the predicted rise in sea-level. This risk management relates to the need for ongoing operational management to ensure the protection of the cable from erosion of supporting sediments or rock features where it is landed in the coastal zone.

3.2.4 *Western Cape Provincial Spatial Development Framework (PSDF)*

The PSDF builds on OneCape 2040's vision of "a highly skilled, innovation driven, resource efficient, connected, high opportunity and collaborative society".

The PSDF has been framed to take forward the National Development Plan's spatial agenda of relevance to this project (which are economic infrastructure, environmental sustainability, and transforming the urban space economy); as well as to give effect to the provincial priorities.

The policy framework identifies three spatial themes that contribute to the achievement of the Western Cape strategic goals. Of relevance to the 2AFRICA/GERA (East) Cable System is the Spatial Theme "Opening-Up Opportunities in the Space-Economy" in particular, sub-theme E1, making use of regional economic infrastructure investment to leverage economic growth, including ICT (Information and Communications Technology) and broadband.

In addition, the Resources Spatial theme identifies the sustainable use of provincial assets, such as protecting biodiversity and ecosystem services (sub-theme R1) and safeguarding coastal water resources (sub-theme R2).

3.2.5 *State of the Environment Outlook Report for the Western Cape Province (2018)*

The State of Environment Outlook report (Executive Summary; 2018) provides an update on the province's environmental conditions and records efforts to respond to environmental change, by influencing and guiding policy development and decision making in the Western Cape. Stakeholders are provided with an analysis of trends within the province, and an

indication of the successes or failures of efforts to transition towards a more sustainable and resilient environment.

The aim of the report is to describe the current state of environmental resources and identify environmental trends and priority concerns. It is seen as a critical supportive process for the Western Cape's "OneCape 2040. OneCape 2040's vision is to enhance the sustainability of the regional economy by creating: "...a resilient, inclusive and competitive Western Cape with high rates of employment, growing incomes, greater equality and an improved quality of life for all our citizens and residents that addresses the crisis of joblessness, overcomes our legacy of skills and asset deficits and responds to environmental risk." The vision acknowledges the need for a sustainable balance between economic access, cultural diversity, human activities and, importantly, sustained integrity of the delicate ecology of the Western Cape.

The Oceans and Coasts environmental theme identifies that climate variability and change is one of the biggest threats to South Africa's coastal region. Sea level rise in combination with increasing storm frequencies and intensities, wind velocities and local conditions presents a significant threat to the coastline, posing risks to infrastructure in the coastal zone.

This theme includes marine ecosystem threat status, identifying that critically endangered habitats are distributed predominantly along the West Coast nearshore, Eden and Overberg offshore areas, as well as the continental shelf edge, owing to high levels of multiple pressures in these areas (Sink et al., 2012). Endangered areas are concentrated between Langebaan in the northwest and Cape Agulhas in the southeast.

3.2.6 *State of the Coast Western Cape: A Review of the State of the Coastal Zone in the Western Cape (2018)*

The State of the Coast Report (SoCR) Western Cape: A Review of the State of the Coastal Zone in the Western Cape (2018) describes the condition of the biophysical, socio-economic and institutional environments as they relate to the coastal zone. It achieves this by using reliable information to measure the state of the coast against a predetermined set of indicators. It is a valuable tool for informing policy makers, the public and other stakeholders on the status of coastal natural resources and the sustainability of coastal resource-use patterns. The SoCR describes the current condition as the baseline and uses historical information, where available, to assess changes to the coast over time. The SoCR also describes the impacts of projected climate change manifestations on the coastline.

The Western Cape SoCR (WC SoCR) 2018 is the first SoCR report that specifically focusses on aspects of the coastal environment in the Province. "The Coast" is described in the National Environmental Management: Integrated Coastal Management Act (No. 28 of 2008) (ICMA) as:

- The functional zone of all estuaries; which is delineated by the 5 m contour line;
- In built up areas (urban): 100 metres inland of the high water mark;
- In natural areas (rural): 1000m inland of the high water mark;
- The full extent of Protected Areas located along the coast line;
- Coastal Protection Zones as delineated by the DEA&DP through the CML projects and CoCT for their CML project; and
- All marine and island habitats within 200 nautical miles offshore from the high water mark, also referred to as the Exclusive Economic Zone (EEZ).

The Driver-Pressure-State-Impact-Response (DPSIR) framework was used to report on the state of the coast. It begins with understanding the causes of change (drivers) in the coastal areas, how these changes result in pressure on the coast and the changes to the state of the coasts caused by specific impacts on the coastal environment, and finally the Province's response. Indicators are used to report on the extent or significance of a particular driver, pressure, state, or impact. Knowledge about the current coastal pressures and their associated impacts as well as tracking trends over time, enables us to understand coastal issues and respond by adapting behaviour, modifying our activities and directing our management actions in a more meaningful and effective way, to achieve sustainability. It also assists us with the development of business intelligence in order to enhance natural capital.

The WC SoCR establishes current knowledge through a reporting mechanism designed to indicate where progress is being made and where issues need to be addressed.

The purpose is to

:

- Gain empirical knowledge on the condition of the coast.
- Achieve sustainability through providing business intelligence to enable evidence-led policy.
- Inform strategy and targets by setting goals for management interventions to reduce pressures and mitigate impacts.
- Detect emerging issues.
- Inform and guide the Western Cape Coastal Management Programme in terms of supplying information pertaining to the selected priority areas and providing direction for Coastal Management Objectives and resource prioritisation.

The Western Cape Coastal Management Programme identifies nine priority areas and goals that promote sustainable development:

- Economic development
- Promote institutional innovation for cooperative governance in integrated coastal management.
- Promote coastal access and accessibility that is both equitable and sustainable.
- Promote resilience to the effects of dynamic coastal processes, environmental hazards and natural disasters.
- Minimise the impacts of pollution on the coastal environment.
- Coordinated and integrated estuarine management.
- Public awareness and education for integrated coastal management. and
- Monitor the State of the Coast (SoC) and promote compliance with coastal and other regulations.

The environmental impact assessment process conducted for this submarine cable describes the impacts on the coast (as defined by ICMA detailed above), providing useful information on the emerging issue of international telecommunications that are linked between continents through the marine environment. Submarine cables are not identified as a threat in this SoCR. The threats to marine biodiversity are listed as the commercial fishing industry, offshore oil and gas and the shipping transport industry.

This DSR identifies specialist assessments to assess the impact and provide mitigation measures related to the installation of the proposed 2AFRICA/GERA (East) Cable System, on the marine offshore ecology, fishing industry, coastal zone geomorphology and heritage, as further detailed in Sections 8, 9 and 10 below. In addition, public participation is planned to be

undertaken, and risks associated with climate change are understood and incorporated into the monitoring phase of the EMPr.

3.2.7 City of Cape Town Five-Year Integrated Development Plan (July 2017 – June 2022), as amended for 2020/21

The Integrated Development Plan (IDP) is a five-year plan required in terms of the Municipal Systems Act, Act 32 of 2000. This legislation states that an IDP is the principle strategic planning instrument which guides and informs all planning, development, and decisions in the municipality. The IDP must align with national and provincial strategies. It is operationalised through strategic policies as well as directorate and departmental business plans which focus on implementing the vision, objectives, projects and programmes of the IDP. The IDP is reviewed on an annual basis.

The City has identified eleven priorities that span the five strategic focus areas. Of relevance to the proposed 2AFRICA/GERA (East) Cable System development are the following priorities: positioning Cape Town as a forward-looking globally competitive business city; leveraging technology for progress; economic inclusion; and operational sustainability. The City aims to transform Cape Town into the most digital city in Africa.

Operational sustainability focuses on sustainable service delivery from both an operational and financial perspective. A key consideration in this regard is the use of available resources more efficiently.

3.2.8 Integrated Coastal Management Policy of the City of Cape Town

This Integrated Coastal Management Policy⁵ is central to reducing risk, both to the City and its communities, and is core to retaining and enhancing the many current and future economic, social and environmental opportunities of the City's unique coastline into the future. The principles determined in the Integrated Coastal Management policy also compliment and support the principles defined in the National Integrated Coastal Management Act, to which the City is legislatively bound by.

The following coastal policy principles inform the City of Cape Town's coastal custodianship and will be applied in relation to all City coastal decision-making (referenced from Section 5 of the policy):

- "The coastal environment is a shared asset held in trust for the common good of all. Equitable and ease of public access to coastal areas and associated opportunities for the entire coastline is central to this value. The right of each individual to enjoy the coastline in the way of their choice without impacting on other users' enjoyment must be protected.
- The coast is a shared and common asset vested in the interests of the citizens of South Africa. City decisions relating to coasts that have an impact on coastal communities will be facilitated by broad based stakeholder engagement and public consultation processes.
- Economic and social development opportunities must be optimised to the benefit, and in the interest, of all residents, with on-going active investment in and management of the Cape Town coastline by the City.

⁵ Approved by Council: 25 September 2014 C42/09/14

- ❑ Development of coastal economic and social opportunities must be undertaken in a manner that does not reduce, harm, or degrade our coastal environment or its ability to cope with climate risks in the future. The diversity and healthy functioning of natural coastal ecosystems and processes must be protected, restored, and enhanced for their intrinsic as well as their economic, social, and environmental values.
- ❑ The coastal environment has been inhabited by humans for millennia. Natural heritage resources that represent this history offer unique values that are central to our sense of identity and must be held in trust for future generations.
- ❑ Strategic, proactive, consistent and risk-averse coastal decision-making will be made in the best interests of the broader community of Cape Town, including the implementation of proactive and progressive measures how to reduce coastal risk from climate change, sea level rise and storm surge events. This decision-making process will include public participation.
- ❑ All individuals must be accountable and responsible for their actions and must have due care to avoid creating negative impacts on our coastal environment. Our coastline must be an environment free of crime and where legal rights for sustainable resource consumption are protected while illegal resource consumption is acted against.”

This DSR identifies specialist assessments to assess the impact and provide mitigation measures related to the installation of the proposed 2AFRICA/GERA (East) Cable System, on the marine offshore ecology, fishing industry, coastal zone morphology, and heritage, as further detailed in Sections 8 and 9 below.

3.2.9 Cape Town Municipal Spatial Development Framework

Cape Town’s Municipal Spatial Development Framework (MSDF)⁶ sets out the spatial vision and development priorities to achieve a reconfigured, inclusive spatial form for Cape Town. The document is a spatial interpretation of the City of Cape Town’s Integrated Development Plan and flows from the five-year review of the previous MSDF, which was drafted in 2012.

The MSDF is informed by the requirements of the Spatial Planning and Land Use Management Act, Act 16 of 2014 (SPLUMA) and the City of Cape Town’s Municipal Planning By-law as well as a range of other national, provincial and local policy and law. Key national informants are South Africa’s National Development Plan and the national Integrated Urban Development Framework (IUDF). City policy that has been adopted post-2012 and that has been an important informant of this SDF includes the Transit-Oriented Development Strategic Framework, the Integrated Public Transport Network (IPTN) and the Densification Policy and a range of social, economic and environmental policies.

Informing the review included:

- ❑ Changing local, national and global circumstances.
- ❑ The impact of climate change and other major global events.
- ❑ Population, residential and economic growth trends.
- ❑ New and updated information related to natural resources and infrastructure provision.
- ❑ Loss of biodiversity, loss of aquifer options and ongoing water scarcity.
- ❑ Ongoing heritage auditing, identification and inventories.
- ❑ Performance against approved measurements.

⁶ City of Cape Town Municipal Spatial Development Framework. Version: Council approved. Agenda item: C 09/04/18. Date of Approval: 25 April 2018.

This DEIR assesses the impacts of relevance to the 2AFRICA/GERA (East) Cable System, such as changing circumstances (the need for faster and more efficient telecommunications); impact of climate change; marine and terrestrial biodiversity management; and heritage management.

3.3 International Treaties, Conventions and Protocols

South Africa is signatory to a number of international conventions and agreements relating to marine issues, industry, development and environmental management and energy. In certain cases, these have influenced policy, guidelines and regulations and must be complied with by the planning, construction, and operation of the proposed development. In terms of South African law, international conventions are binding upon individuals when they have been specifically enacted in national laws.

There are International Conventions that have been ratified by South Africa that are related to pollution and/or environmental protection of the sea:

- The National Convention for the Prevention of Pollution by Ships of 1973 and 1978, and the Protocol of 1997, is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The convention covers pollution from ships, whether accidental or from routine operations, by oil, chemicals, harmful substances in packaged form, sewage and garbage.
- South Africa is a signatory of The Convention on the Prevention of Marine Pollution through the Disposal of Waste and Other Matter, 1972 or the London Convention, 1972. This Convention aims to control pollution of the sea and to encourage regional agreements supplementary to the Convention. It identifies the types of substances or materials which may not be disposed of at sea, and those for which a license is required.
- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is the most comprehensive global environmental agreement on hazardous and other wastes. The Convention aims to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes.

South Africa is also a signatory to the United Nations Convention on the Laws of the Sea (UNCLOS). Under this convention South Africa claims rights within a 12 nautical mile (Nm) territorial water and a 200 Nm Exclusive Economic Zone (EEZ).

Article 79 of UNCLOS⁷, in particular, concerns the installation of “submarine cables and pipelines on the continental shelf” and specifies the following:

- All States are entitled to lay submarine cables and pipelines on the continental shelf, in accordance with the provisions of this article as follows:
 - Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines.

7 Source: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf. Article 79 of UNCLOS, in particular, concerns the installation of “submarine cables and pipelines on the continental shelf” and specifies the following: “Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines. The coastal State may not impede the laying or maintenance of such cables or pipelines”

- The coastal State may not impede the laying or maintenance of such cables or pipelines.
- The delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal State.
- Nothing affects the right of the coastal State to establish conditions for cables or pipelines entering its territory or territorial sea, or its jurisdiction over cables and pipelines constructed or used in connection with the exploration of its continental shelf or exploitation of its resources or the operations of artificial islands, installations and structures under its jurisdiction.
- When laying submarine cables or pipelines, due regard shall be taken of cables or pipelines already in position. In particular, possibilities of repairing existing cables or pipelines shall not be prejudiced. UNCLOS is enforced within the South African legal regime through the Marine Traffic Act and Maritime Zones Act (described previously).

3.4 Commenting and Relevant Authorities

Following a review of the legislation applicable to the proposed development, the following key authorities have been identified for consultation during the scoping process and whose comments will be taken into consideration in the FSR and during the impact assessment phase of the EIA.

3.4.1 *Department of Environment, Forestry and Fisheries – Oceans and Coasts*

An integral part of the South African environment is undoubtedly the Oceans and Coasts along South Africa's almost 2,500 km long coastline stretching from the border with Mozambique on the east coast to the border with Namibia on the west coast. The marine and coastal environments provide and sustain a wide range of economic, social, and ecological services that are a foundation for the livelihoods of millions of South Africans. The DEFF directorate, Oceans and Coasts (OC), is primarily focused on marine protection services and ocean governance, which entails the protection of the ocean environment from all illegal activities and promotion of its multiple socio-economic benefits.

Some of the main functions this directorate undertakes include the following:

- ❑ The establishment of management frameworks and mechanisms for the ocean and coastal environment.
- ❑ The strengthening of national science programmes for integrated oceans and coastal management.
- ❑ The development of and contribution to effective knowledge and information management for the sector.
- ❑ The participation and support to international agreements and bodies supportive of SA environmental and sustainable development priorities.

As a directorate of the DEFF, the OC will provide comment and recommendations on all EIA documents submitted which are pertaining to the proposed 2AFRICA/GERA (East) Cable System. As such, OC has been added as a key stakeholder (commenting authority) and has been consulted during the pre-application phase of the EIA to identify issues they feel should be addressed during the impact assessment phase of the EIA.

It should be noted that OC is also directly involved with the Operation Phakisa initiative which includes the sustainable utilisation of the oceans around South Africa to meet government's

development targets. It is estimated that the oceans around South Africa have the potential to contribute up to 177 billion Rand to the gross domestic product (GDP) and create just over one million jobs by 2033 (<http://www.operationphakisa.gov.za>).

Operation Phakisa consists of four critical areas to unlock the potential of our country's vast coastline, namely:

- Marine Transport and Manufacturing.
- Offshore Oil and Gas Exploration.
- Aquaculture.
- Marine Protection Services and Ocean Governance.

Of particular relevance to the proposed 2AFRICA/GERA (East) Cable System are the proposed Marine Protected Areas which are to be implemented as part of the programme in an attempt to ensure the sustainable utilisation of South Africa's marine environments.

3.4.2 *SAN Parks*

SAN Parks is the management authority of the Robben Island and South Atlantic Seamount MPA's and as such approval from SAN Parks is required as stipulated in the NEM: Protected Areas Act, Act 57 of 2003. As such, SAN Parks has been added as a key stakeholder (competent authority) and has been consulted during the pre-application phase of the EIA to identify issues they feel should be addressed during the impact assessment phase of the EIA.

3.4.3 *National Ports Authority*

Transnet National Ports Authority (TNPA) is one of five operating divisions of Transnet SOC Ltd and is responsible for the safe, effective and efficient economic functioning of South Africa's ports (<http://www.transnetnationalportsauthority.net>). TNPA controls the eight commercial seaports in South Africa and operates within a legislative and regulatory environment created by the National Ports Act 2005 (Act No. 12 of 2005). In line with the provisions of the National Ports Act, the core functions of the national ports authority are as follows:

- To plan, provide, maintain and improve port infrastructure.
- To provide or arrange marine-related services.
- To ensure the provision of port services, including the management of port activities and the port regulatory function at all South African ports and to provide aids to navigation and assistance to the manoeuvring of vessels within port limits and along the coast.
- The National Ports Act creates a dual role for the National Ports Authority whereby it is responsible for the port regulatory function at the ports - i.e. controlling the provision of port services through licensing or entering into agreements with port operators to ensure that efficient port services are provided.

As the proposed development involves the placement of a marine telecommunications cable through the coastal waters to the north of Cape Town, the TNPA (Cape Town Port) will be registered as an interested and affected party as information on the position of the 2AFRICA/GERA (East) Cable System is important for commercial fishing and shipping industries operating within the region.

3.4.4 *The South African Maritime Safety Authority (SAMSA)*

The South African Maritime Safety Authority (SAMSA) was established on 1 April 1998 in terms of the South African Maritime Safety Authority Act (Act 5 of 1998) as a juristic person. Accountable to the Minister of Transport, SAMSA is tasked with the following objectives in terms of the Act:

- To ensure safety of life and property at sea.
- To prevent and combat pollution of the marine environment by ships.
- To promote the Republic's maritime interests.

In terms of section 2 of the Act, SAMSA is responsible to administer the following pieces of legislation⁸:

- Merchant Shipping Act, 1951.
- Marine Traffic Act, 1981.
- Marine Pollution (Control and Civil Liability) Act, 1981.
- Carriage of Goods by Sea Act, 1986.
- Marine Pollution (Prevention of Pollution from Ships) Act, 1986.
- Marine Pollution (Intervention) Act, 1987.
- Maritime Zones Act, 1994.
- Wreck and Salvage Act, 1996.
- SAMSA Act, 1998.
- SAMSA Levies Act, 1998.
- Ship Registration Act, 1998.

As the proposed development involves the placement of a marine telecommunications cable through the coastal waters to the north of Cape Town, SAMSA has been registered as an interested and affected party as they are ultimately responsible for the safety of vessels at sea and they are the respondents to any incidents which could occur during the installation and operation of the proposed 2AFRICA/GERA (East) Cable System.

3.5 Permits Required

3.5.1 Beach Driving Permit

Approval from DEFF (Oceans and Coasts) for the driving of vehicles on the beach is required at the landing site (**Note: these permits can be applied for only once Environmental Authorisation has been granted and take approximately three months to be issued**). The application process is the simple completion of an application form; however, details of the drivers and plant to be used on the beach must be provided in the application.

3.5.2 Construction of Infrastructure within the Coastal Public Property

The coastal zone between the high-water mark of the sea and residential areas at Duynfontein is under the administration of the Department of Public Works. A lease agreement between the landing partner and the Department of Public Works will be required for the installation of the cable across this property. Obtaining this lease agreement will be the responsibility of MTN.

⁸ Source: <http://www.samsa.org.za/sites/samsa.org.za/files/SAMSA%20Act%2C%201998.pdf>

3.5.3 *Local Municipal Permits and Approvals*

Although unlikely at the Duynfontein landing site (as the proposed development will make use of the existing ACE land-based infrastructure) municipal approvals and the registration of servitudes may be required by the City of Cape Town prior to construction commencing. From experience on the ACE Cable Landing, the municipal approvals relate to the front haul alignment and registering the relevant front haul servitudes. It must be noted that these approvals and servitudes are not within ACER's scope of work and are the responsibility of the landing partner. However, ACER will engage with the City of Cape Town during the EIA to ascertain their requirements in terms of documentation that the landing partner must submit to the City of Cape Town.

3.5.4 *Sea Shore Lease Permit*

In terms of the Seashore Act, 1935 (Act 21 of 1935), the cable operator requires a seashore lease permit from CapeNature for the construction of structures below the high-water mark of the sea.

The following typical information will be needed by CapeNature to process the Seashore Lease Permit application:

- ❑ Detailed survey report conducted by ASN of the offshore alignment which describes the bathymetry and ocean floor.
- ❑ A copy of the Public Switched Telecommunications Service (PSTS) License issued by the Independent Communications Authority of South Africa (ICASA).
- ❑ A copy of the approval in terms of the Marine Traffic Act No. 2 of 1981.
- ❑ A copy of the approval in terms of the Maritime Zones Act No. 15 of 1994.
- ❑ A copy of the operator's approval in terms of the Electronic Communications Act No. 36 of 2005.

[The above four licenses do not form part of ACER's scope of work and will need to be supplied by the landing partner. It is recommended that the project proponent (MTN) provide ACER with these approvals and permits as early as possible to enable the processing and acquisition of the seashore lease permit].

ACER will schedule a pre-application meeting with CapeNature early on in the Environmental Impact Assessment to facilitate the issuance of this permit as timeously as possible.

3.5.5 *Cultural Heritage Resources*

Drafting the heritage permit application and the submission thereof in terms of National Heritage Resources Act, 1999 (Act 25 of 1999) will take place once the detailed survey report of the offshore alignment has been provided by ASN to ACER and the heritage specialist study has been completed for both the onshore and offshore environments. The heritage assessment will identify whether any permits will be required for destruction of cultural heritage resources. The heritage permit will take approximately two months to be issued from the date of application submission and will be issued before the completion of the EIA process.

3.5.6 *Water Use License*

Given the presence of the dune slack wetland at both alternative landing points, it is likely that a Water Use License (WUL) (General Authorisation) (GA) will be required from the Department of Human Settlements, Water and Sanitation (in terms of the National Water Act, 1998 (Act 36 of 1998) and Regulations thereunder, including the General Authorisation Regulation GN509 of 26 August 2016. This assumption will be confirmed by specialist input during the Environmental Impact Assessment. Should a WUL be required, the following information will be required from the landing partner in support of this application:

- ❑ Applicant details (ID copy/company certification).
- ❑ Property details where the water uses will occur (title deeds, zoning documents, lease agreement and a land claims clearance certificate).
- ❑ Applicable DHSWS water use registration forms (completed and signed).
- ❑ Master Layout Map (showing location of water uses in relation to the project).

- Wetland and Riparian Area Delineation.
- Wetland and Riparian Area Rehabilitation Plan.
- Civil designs for project infrastructure.
- Financial provision letter from applicant.

The WUL-GA must be applied for through an online portal and will take approximately two months to be issued from when the online submission has been completed. It is envisaged that the WUL-GA will be issued before the completion of the EIA process.

3.5.7 *Protected Plant and Tree Permits*

Since the terrestrial portion of the cable landing infrastructure will already be in place (Alternative 1), there will be no clearance of protected plants or trees and, thus, no need to apply for Protected Plant removal from Cape Nature or removal of indigenous trees/protected trees from DEFF (Forestry Section). This assumption will be confirmed by specialist input during the Environmental Impact Assessment process.

If protected plant permits are required from Cape Nature the permits will be issued within two months of the permit applications submission dates. The required protected plant permits will be issued prior to the issuance of the Beach Driving Permit.

3.5.8 *Section 53 License*

In terms of Section 53 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA), any person who intends to use the surface of any land in a manner which may be contrary to the objectives of the MPRDA or is likely to impede such objectives, must apply to the Minister for approval in the prescribed manner.

The Section 53 permit template sets out the specific information that applicants will need to provide as part of a section 53 application. As part of the license the applicant must provide the following information:

- A list of all holders of prospecting, mining, exploration or production rights within a 2-kilometre radius of the development must be identified.
- Proof that no prospecting or mining right holders have objected to the proposed development based on its incompatibility with their interests.

As the landing partner it is recommended that MTN engage with all concession holders at the onset of the Environmental Authorisation process and draft MoUs which can be submitted with the Section 53 permit application.

3.6 **Summary**

In summary, the project proponent has a number of legal obligations in terms of legislation, the pertinent obligations being:

- An obligation to undertake an EIA for activities that fall within the scope of Government Notices R 982, R 983, R 984 and R 985 of 2014 as amended in 2017.
- An obligation to obtain permits in terms of other relevant environmental legislation (for example, heritage, water and biodiversity).
- Adherence to the principles of sustainability and duty of care.

4 NEED AND DESIRABILITY

Submarine telecommunication cables are important for international telecommunication networks as they transport almost 100% of transoceanic Internet traffic throughout the world (www.iscpc.org). It is widely recognised that access to affordable international bandwidth is key to economic development in every country. Today, Africa relies primarily on satellites with few submarine cables to provide its international communications. Communication via submarine telecommunication cables generally allows for lower cost, better performance, and greater capacity (throughput) than that available via satellite.

Improvement in Africa's information technology infrastructure via telecommunication cables will remove one of the current key inhibitors to overall development in Africa and support economic growth and opportunities on the continent. MTN (Pty) Ltd (MTN) proposes installing a submarine telecommunications cable, referred to as the 2AFRICA/GERA (East) Cable System, connecting Africa to Europe and parts of the Middle East. In doing so, the company will facilitate more affordable and effective transport of voice, data, Internet and television services. Furthermore, the cable will support the objectives set out by the New Partnership for Africa's Development (NEPAD), and provide a means of fulfilling the South African Government's requirements in terms of digital television broadcasting for the country.

By supplying increased bandwidths, the proposed 2AFRICA/GERA (East) Cable System will support the following primary NEPAD objectives:

- ❑ To eradicate poverty in Africa and to place African countries both individually and collectively on a path of sustainable growth and development to thereby halt the marginalisation of Africa in the globalisation process.

At the core of the NEPAD process is its African ownership, which must be retained and strongly promoted, to meet the legitimate aspirations of the African people. (http://www.dirco.gov.za/au.nepad/nepad_overview.htm)

Telecommunications is one of the fastest growing sectors of South Africa's economy which has been driven by rapid growth in the number of mobile phone users and their need for broadband connectivity. The proposed 2AFRICA/GERA (East) Cable System will provide an opportunity to facilitate the growth of the telecommunications infrastructure in South Africa and promote sustainable growth and development within South Africa and Africa as a whole.

In the local context, the proposed development is in line with the Cape Town Spatial Development Framework (Key Strategy 1, Policy 2) which includes supporting the rollout of broadband technology and the use thereof.

Table 3 Need and desirability aspects considered for securing ecological sustainable development and use of natural resources

Ref #	Description	Comment
1	How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?	Implementation of the marine component of the cable is expected to have localised impacts on the marine benthic and shallow benthic environment. The terrestrial cable component is expected to have a localised impact on Van Riebeeckstrand beach for the preferred Alternative 1 and no additional impacts inland from the BMH.
1.1	How will the following ecological integrity considerations be taken into account?	
1.1.1	Threatened ecosystems.	<p>The offshore route selection is based on a Marine Cable Route Survey which identifies suitable substates for the cable. A marine ecologist will be appointed to identify any threatened offshore ecosystems that should be avoided as well as assess the impacts associated with the cable when crossing Marine Protected Areas.</p> <p>The alternatives considered during screening do not include CLS alternatives or front haul alternatives from the preferred landing point (Alternative 1), as the 2AFRICA/GERA (East) landing will make use of the existing ACE BMH, front haul infrastructure and CLS building in Duynfontein. The section traversing the threatened ecosystem (dune slack wetland) will follow the existing beach access path in ducts already installed for the ACE cable between the BMH and beach thus limiting impacts on surrounding natural vegetation (Refer to map in Appendix 8).</p>
1.1.2	Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems which require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.	Potential impacts associated with the development have been identified during Screening and Scoping and existing specialist assessments conducted for the ACE cable system will be updated where necessary to inform on/offshore impacts.
1.1.3	Critical Biodiversity Areas and Ecological Support Areas.	<p>The proposed 2AFRICA/GERA (East) Cable System will have an impact on one wetland within the terrestrial environment, namely the dune slack wetland between the beach and residential areas of Van Riebeeckstrand. Although this wetland has been extensively modified and impacted through urban development and the management of storm water, it still provides essential ecological services within the area. A wetland assessment was conducted in 2017, and the findings reported on in the EIA prepared by ACER at the time, for the now existing ACE cable system.</p> <p>A follow-up wetland status quo assessment is proposed to</p>

Ref #	Description	Comment
		<p>be undertaken by the same wetland specialist to assess and investigate the possible impacts the 2AFRICA/GERA (East) Cable System may have on this wetland following the construction of the ACE Cable System along the same alignment that the preferred landing will follow.</p> <p>The coastal dune area where BMH1 and BMH2 are located is classified as “Other Natural Areas” (ONA). This means the area is not currently identified as a priority, but they retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although not prioritised, they are still an important part of the natural ecosystem.</p>
1.1.4	Conservation targets.	Conservation targets will not be impacted on.
1.1.5	Ecological drivers of the ecosystem.	The existing specialist studies will be updated if necessary, to confirm the ecological drivers of the ecosystem.
1.1.6	Environmental Management Frameworks (EMF).	The preferred alternative for the BMH is the existing BMH installed for the ACE cable system. The principles of sustainable development are incorporated into the identification, avoidance and mitigation of impacts.
1.1.7	Spatial Development Frameworks (SDF).	The proposed development is in line with the SDF's objectives of sustainable development, as it is aimed at improving telecommunications that will stimulate local economic growth through data connectivity.
1.1.8	Global and international responsibilities relating to the environment (e.g., RAMSAR sites, climate change, etc).	Climate change is recognised in terms of the cumulative impact of sea-level rise and increased storm events on the beach environment. This includes beach erosion monitoring which will be included in the EMPr to be included in the Draft EIA Report.
2	How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Benthic ecosystems are associated with microorganisms that are essential for ecological functions. Initially, the installation of the marine cable will disturb both shallow and deep benthic ecosystems along its alignment. However, once installed, the cable and its legislated buffer zone and the continuation of this buffer zone will have a positive impact on benthic communities as no trawling or anchoring of ships is permitted in the buffer zone. This will preserve the ecological longevity of these sensitive systems.
3	How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	<p>Potential pollution is confined to the offshore environment for the trenching of the cable to the BMH. Sources of pollution are limited to hydrocarbon spills and light industrial and domestic waste. An Environmental Management Programme (EMPr) will be compiled which will contain specifications for the handling of waste and dealing with incidents.</p> <p>Potential offshore pollution will be isolated and maintained, until disposed at a registered landfill site. Further details will be included in the EMPr.</p>
4	What waste will be generated by this	Waste will be limited to light industrial waste (cable offcuts

Ref #	Description	Comment
	development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	and reclaimed cable from the seabed) in the marine environment and domestic waste in the terrestrial environment. Volumes are anticipated to be small. Waste management specifications will be provided in the EMPr.
5	How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	A Heritage Specialist will be appointed to identify all possible off/onshore impacts on heritage, archaeological and palaeontological resources.
6	How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Electricity is required to power the optical amplifiers to transmit the telecommunications signals over greater distances through the marine cable. It is possible that the generation of this power is from renewable energy sources. The source of energy originating at the start of the cable is outside the scope of this EIA.
7	How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?	Electricity is required to transmit the telecommunication signal through the marine cable. It is possible that the generation of this power is from renewable energy sources. The source of energy originating at the start of the cable is outside the scope of this EIA.
7.1	Does the proposed development exacerbate the increased dependency on increased use of resources to maintain	The development is neutral in terms of resource use, as once the cable has been laid it functions in its purposes of improving international telecommunications without further

Ref #	Description	Comment
	economic growth or does it reduce resource dependency (i.e., dematerialised growth)? (Sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life).	resource investment. Only cable repairs will be required on an ad hoc basis.
7.2	Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and inter-generational equity and are there more important priorities for which the resources should be used (i.e., what are the opportunity costs of using these resources for this proposed development?).	N/A
7.3	Do the proposed location, type and scale of development promote a reduced dependency on resources?	N/A
8	How will a risk-averse and cautious approach be applied in terms of ecological impacts?	Where possible, the alignment of the cable will avoid sensitive offshore environments, as identified and protected in terms of the National Environmental Management: Protection Areas Act (Act 57 of 2003) and supported in terms of Operation Phakisa which promotes the sustainability of on/ offshore environments. Two MPA's are traversed by the proposed cable route and specialists will be appointed to assess the impacts on these MPA's by the proposed cable system.
8.1	What are the limits of current knowledge (the gaps, uncertainties and assumptions must be clearly stated)?	Investigations are required to understand the impacts on: (i) The deep-sea trawling industry. (ii) Marine ecosystems. (iii) Beach and dune dynamics. (iv) Sensitive environments within the study area. (v) Heritage resources
8.2	What is the level of risk associated with the limits of current knowledge?	Given the current knowledge of the project and study area, the risk is considered low. However, short term Isolated impacts are expected onshore (for the landing of the cable and connection of the cable to the BMH and offshore during construction (laying) of the cable).
8.3	Based on the limits of knowledge and the level of risk, how and to what extent will a risk-averse and cautious approach be applied to the development?	Please see Item 8.
9	How will the ecological impacts arising from this development impact on people's environmental rights in terms following:	
9.1	Negative impacts, e.g., access to	If managed and implemented soundly, the project will have

Ref #	Description	Comment
	resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour, etc), health impacts, visual impacts, etc. What measures will be taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	no significant negative impacts. All negative impacts will be isolated within the necessary construction footprint and mitigated through management procedures and monitoring. Some nuisance related impacts are anticipated during cable landing (e.g. restricted access for beach users), but these are highly localised and of short duration (two weeks).
9.2	Positive impacts, e.g., improved access to resources, improved amenity, improved air or water quality, etc. What measures will be taken to enhance positive impacts?	<p>The project is expected to have a significant positive impact on the South African economy through improved telecommunications which, in turn, promotes economic development, job creation and education.</p> <p>This development along the Western Cape Coastline will promote further infrastructure and telecommunications infrastructure development. Numerous short- and long-term employment opportunities will be created via the establishment of this development, and through skills transfer.</p>
10	Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g., on livelihoods, loss of heritage sites, opportunity costs, etc).	No ecological impacts associated with this development are anticipated to result in socio-economic impacts.
11	Based on the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?	Avoidance of negative environmental impacts through specialist identification and mitigation, ensuring a sustainable development.
12	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being projected) will result in the selection of the "best practicable environmental option" in terms of ecological considerations.	<p>The ACE Cable System BMH can accommodate additional cables and, therefore, no new BMH needs to be constructed for the 2AFRICA/GERA (East) cable landing.</p> <p>The project as described is the best practical environmental option as impacts on the environment are substantially less than for other alternatives, e.g. a greenfield development.</p> <p>Furthermore, construction of a new BMH would have a potential ecological and heritage impact.</p>
13	Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area.	Overall, the cable is anticipated to have a positive ecological impact through the provision of a buffer zone along the marine component of the cable alignment. The buffer zone will minimise illegal trawling/ fishing.

Table 4 Need and desirability aspects considered for promoting justifiable economic and social development

Ref #	Description	Comment
1	What is the socio-economic context of the area based on, amongst other considerations, the following?	
1.1	The Integrated Development Plan (IDP) (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks or policies applicable to the area.	The proposed development is in line with the vision of the City of Cape Town and the Western Cape's objectives in terms of improving telecommunications technologies to facilitate investment and stimulate both the regional and national economy.
1.2	Spatial priorities and desired spatial patterns (e.g., need for the integration of segregated communities, need to upgrade informal settlements, need for densification, etc.).	N/A
1.3	Spatial characteristics (e.g., existing land uses, planned land uses, cultural landscapes, etc.)	Existing infrastructure will be accessed, with no impact on spatial characteristics.
1.4	Municipal Economic Development Strategy.	The project conforms to the Local and District Municipality's development strategy in that it will improve the telecommunications infrastructure within the province and in South Africa. This is intended to stimulate the local and international economy and open the gateway to further international trade agreements.
2	Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects) and specifically also on the socio-economic objectives of the area?	The socio-economic impacts associated with the proposed development are anticipated to be positive as telecommunications infrastructure is a key driver for economic development.
2.1	Will the development complement the local socio-economic initiatives (such as local economic development initiatives), or skills development programs?	Improved telecommunications capacity in South Africa is anticipated to positively impact on skills development programs and education.
3	How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	Improved telecommunications, as a key driver for economic development, is expected to benefit all communities within South Africa.
4	Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	The investment in the 2AFRICA/GERA (East) Cable System is substantial and the telecommunications cable is anticipated to stay in operation for 25 years. There is no planned decommissioning date; however, technology will improve, and it is possible that the cable system will be replaced by enhanced technology in years to come.
5	In terms of location, describe how the placement of the proposed development will:	
5.1	Result in the creation of residential and employment opportunities in proximity to or integrated with each other.	Employment opportunities will be created via the appointed contractor through the employment of skilled and unskilled labour.
5.2	Reduce the need for transport of people and goods.	Improved telecommunications could reduce

Ref #	Description	Comment
		the need for people to travel to meetings, etc.
5.3	Result in access to public transport or enable non-motorised and pedestrian transport (e.g., will the development result in densification and the achievement of thresholds in terms of public transport?).	N/A
5.4	Complement other uses in the area.	The improved telecommunications will support all other uses that make use of telecommunications in the area.
5.5	Be in line with the planning for the area.	The proposed development complements the development initiatives at the Local, District, Provincial level, including the rest of South Africa.
5.6	For urban related development, make use of underutilised land available within the urban edge.	N/A
5.7	Optimise the use of existing resources and infrastructure.	The proposed development will make use of the existing ACE BMH, front haul cable sleeves and CLS infrastructure.
5.8	Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g., not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement).	N/A
5.9	Discourage urban sprawl and contribute to compaction/densification.	N/A
5.10	Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs.	N/A
5.11	Encourage environmentally sustainable land development practices and processes.	N/A
5.12	Take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to a port, access to rail, etc.).	<p>The offshore alignment will take sensitive marine ecosystems into account. It must be noted that the offshore alignment has been selected based on suitable seabed conditions, alignments of existing cables and avoidance of fishing grounds.</p> <p>The existing ACE telecommunications infrastructure plays a vital role in the site selection as it provides an existing footprint with capacity to facilitate the 2AFRICA (East) marine cable system.</p>
5.13	The investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential).	N/A
5.14	Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area.	A heritage specialist will assess whether there are any marine or terrestrial resources that require conservation.
5.15	In terms of the nature, scale and location of the development, promote or act as a catalyst to create a	N/A

Ref #	Description	Comment
	more integrated settlement.	
6	How will a risk-averse and cautious approach be applied in terms of socio-economic impacts?	The use of existing infrastructure was selected to reduce socio-economic impacts on the residents.
6.1	What are the limits of current knowledge? (The gaps, uncertainties and assumptions must be clearly stated).	Impacts on the marine environment will be further investigated by the marine ecologist, and other specialist studies will assess the dune and beach geomorphology, and terrestrial biodiversity.
6.2	What is the level of risk? (Related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge).	Nil.
6.3	Based on the limits of knowledge and the level of risk, how and to what extent will a risk-averse and cautious approach be applied to the development?	See Item 6.
7	How will the socio-economic impacts resulting from this development impact on people's environmental right in terms of the following?	
7.1	Negative impacts: e.g., health (e.g., HIV/AIDS), safety, social ills, etc. What measures will be taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	An EMPr will be included in the Draft EIA Report to provide mitigation measures to reduce any negative impacts.
7.2	Positive impacts. What measures will be taken to enhance positive impacts?	The use of existing infrastructure is key to the project design. Measures include local employment opportunities and improved telecommunications with a positive socio-economic impact.
8	Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.).	N/A
9	What measures will be taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	The use of existing infrastructure is key to the project design.
10	What measures will be taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified allow the "best practicable environmental option" to be selected or is there a need for other alternatives to be considered?	N/A
11	What measures will be taken to pursue equitable access to environmental resources, benefits and	N/A

Ref #	Description	Comment
	services to meet basic human needs and ensure human wellbeing, and what special measures will be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	
12	What measures will be taken to ensure that the responsibility for the environmental health and safety consequences of the development have been addressed throughout the development's life cycle?	Project screening was undertaken followed by an assessment of expected impacts associated with the proposed development. Existing specialist studies, to be reviewed where necessary, will inform impacts through the projects life cycle to ensure a sustainable outcome.
13	What measures will be taken to:	
13.1	Ensure the participation of all interested and affected parties.	The project was advertised in local and provincial newspapers. Background Information Documents (BIDs) were sent to all key stakeholders and identified I&APs. An onsite notice was erected, and copies of the BID were placed in local libraries within the project area. ACER has ongoing engagement with provincial government, SAN Parks, commenting authorities and the City of Cape Town to discuss their requirements with regards to the proposed development. Comments submitted by I&APs and Responses thereto are recorded in Appendix 3.
13.2	Provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation.	If the need is indicated, a virtual public open day will be held during the public review period for the DSR. Similarly, one-on-one and focus group meetings will be held if the need is indicated.
13.3	Ensure participation by vulnerable and disadvantaged persons.	Disadvantaged individuals will be involved in the project during the construction phase, via local contractors who employ unskilled, disadvantaged workers as part of their company policies/ BEE principles.
13.4	Promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.	N/A
13.5	Ensure openness and transparency, and access to information in terms of the process.	All I&APs are kept informed of progress through the different stages of the Environmental Authorisation process (all people requesting to be registered as an I&AP are entered onto the project database and automatically receive project information/documentation).
13.6	Ensure that the interests, needs and values of all interested and affected parties will be taken into account, and that adequate recognition is given to all forms of knowledge, including traditional and ordinary knowledge.	This is being undertaken throughout the environmental authorisation process as per the regulations.

Ref #	Description	Comment
13.7	Ensure that the vital role of women and youth in environmental management and development are recognised and their full participation therein is promoted.	This is being undertaken throughout the environmental authorisation process as per the regulations.
14	Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that are consistent with the priority needs of the local area (or that are proportional to the needs of an area).	The improved telecommunication provision will benefit all segments of the community.
15	What measures will be taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	None to date; however, an EMPr will be compiled and environmental awareness training will be provided to staff once cable laying commences. Furthermore, ASN is an internationally acclaimed cable laying company with stringent Health, Safety and Environment protocols.
16	Describe how the development will impact on job creation in terms of, amongst other aspects:	
16.1	The number of temporary versus permanent jobs that will be created.	Job creation during the installation of the 2AFRICA/GERA (East) Cable System will be limited to temporary jobs during cable landing activities. The project is, however, expected to promote economic development within South Africa which could result in significant job opportunities (albeit not directly related to the project).
16.2	Will the labour available in the area be able to take up the job opportunities (i.e., do the required skills match the skills available in the area?).	Specific skills are required for the cable landing activities and, therefore, the use of local labour will be limited.
16.3	The distance from where labourers will have to travel.	N/A
16.4	The location of job opportunities versus the location of impacts (i.e., equitable distribution of costs and benefits).	The project will not result in any additional permanent local job opportunities directly related to the project.
16.5	The opportunity costs in terms of job creation (e.g., a mine might create 100 jobs but impact on 1,000 agricultural jobs, etc.).	It is anticipated that 10-20 temporary jobs will be created during project implementation but not at the expense of job losses in other sectors either directly or indirectly affected by the proposed development.
17	What measures will be taken to ensure:	
17.1	That there is inter-governmental coordination and harmonisation of policies, legislation and actions relating to the environment.	Local, provincial, and national Government departments will be consulted with the purpose of aligning requirements.
17.2	That actual or potential conflicts of interest between organs of state are resolved through conflict resolution procedures.	This is ongoing to achieve alignment between the three spheres of Government.
18	What measures will be taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	The Environmental Authorisation process will be undertaken as per the prescribed environmental legislation and associated regulations. Impacts will be mitigated to ensure the long-term sustainability of the proposed

Ref #	Description	Comment
		development.
19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	It is the EAP's opinion that the proposed mitigation measures will be realistic and achievable. The decommissioning of the marine cable in 25 years' time is likely to require an impact assessment at the time.
20	What measures will be taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	These will be addressed in the EMPr and the conditions of authorisation issued by the competent authority.
21	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), will result in the selection of the best practicable environmental option in terms of socio-economic considerations.	The use of existing infrastructure was selected as the preferred alternative as it limits additional risks and impacts to the environment. It is the EAP's opinion that the best practicable environmental option has been selected for the proposed development.
22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.	The proposed development is anticipated to have a significant positive cumulative impact given that telecommunications is a key driver for economic growth. This project is anticipated to benefit South Africa and southern Africa as a whole.

By supplying increased bandwidths, the proposed 2AFRICA/GERA (East) Cable System will support the NEPAD objective to eradicate poverty in Africa and to place African countries both individually and collectively on a path of sustainable growth and development; thereby halting Africa's marginalisation in the globalisation process.

Telecommunications is one of the fastest growing sectors of South Africa's economy which has been driven by rapid growth in the number of mobile phone users and their need for broadband connectivity. The proposed 2AFRICA/GERA (East) Cable System will provide an opportunity to facilitate the growth of telecommunications infrastructure in South Africa and promote sustainable growth and development within South Africa and Africa as a whole.

5 PROJECT DESCRIPTION

This chapter describes the infrastructure and operational aspects of the 2AFRICA/GERA (East) Cable System. The aim of this chapter is to enable readers to gain a better understanding of how the cable system will be installed and maintained in order to understand the possible impacts the development may have on the receiving environment.

5.1 General description

The main 2AFRICA/GERA (East) cable trunk will be located approximately 200 to 500 km from the shoreline in international waters and will run down the East Coast of Africa as shown in Figure 5 (generally parallel to the coastline) and approach South African coastal waters from the north (i.e. from Mozambican waters) as shown in Figure 5. From the main cable, branches will run through exclusive economic zones and territorial waters to the landing sites in each country. The proposed Duynefontein landing site (Figure 6) in South Africa is the southern-most point of the cable (end station).

The 2AFRICA/GERA (East) Cable System will enter South African Territorial Waters approximately 22 km from the seashore (12 Nm). The exact position of the final section of the cable will be identified based on a combination of engineering, environmental and economic factors and will require offshore and nearshore surveying of the seabed; however, the general alignment for this landing will make landfall near the ACE Cable landing point and will take into consideration existing cable systems within the area (SAT3/WASC/SAFE, ACE and the future Equiano cable system), known seabed conditions and the offshore trawling grounds. The proposed 2AFRICA/GERA (East) landing in Duynefontein will include the installation and operation of the following project components:

- ❑ Pre-installation activities including cable route survey, route engineering, route clearance and Pre-Lay Grapnel Run.
- ❑ Laying and burial of the cable in the offshore environment within South Africa's EEZ from the border with Mozambique until it reaches the shore.
- ❑ Laying of the cable across the beach up to the position of the existing MTN BMH (requiring excavations within the intertidal zone to bury the cable before it will be anchored into the BMH) and installation of a sea earth system (System Earth).
- ❑ Laying and of the cable in the offshore environment, including cable burial up to a water depth of 1,500 m.
- ❑ The laying of the cable within the shallow water environment is likely to involve a direct shore end operation where the shore end of the subsea cable is installed directly from the main subsea cable installation vessel and floated to the beach landing point using buoys and assisted by small boats and divers. It will then be buried in the seabed using the diver jet burial technique. The cable will be buried in sediment wherever possible and the route will be adjusted to avoid obvious visible rock. The aim is to bury the cable to a depth of up to 1 m where possible.
- ❑ Excavations within the intertidal zone are to bury the cable before it is anchored into the existing ACE Cable System anchor block and BMH (already constructed and located directly inland of the beach at the preferred landing point). The BMH is a concrete utility vault where the marine portion of the subsea cable is connected to the terrestrial portion.
- ❑ On the beach, the cable will be buried to a depth of 2 meters, substrate permitting.

Once the 2AFRICA/GERA (East) cable has been installed to the ACE BMH, no further disturbance to the terrestrial environment will occur as the 2AFRICA/GERA (East) cable at Duynfontein will be accommodated within existing cable sleeves from the BMH to the ACE Cable Landing Station (operated by MTN). Importantly, with respect to the preferred landing point at Duynfontein (Alternative 1 - Refer to Section 6) the site does have existing submarine cable landing infrastructure installed for the ACE Cable System. As MTN is the 2AFRICA/GERA (East) landing Partner at Duynfontein, no agreements are needed for the sharing of the ACE cable landing infrastructure operated by MTN including:

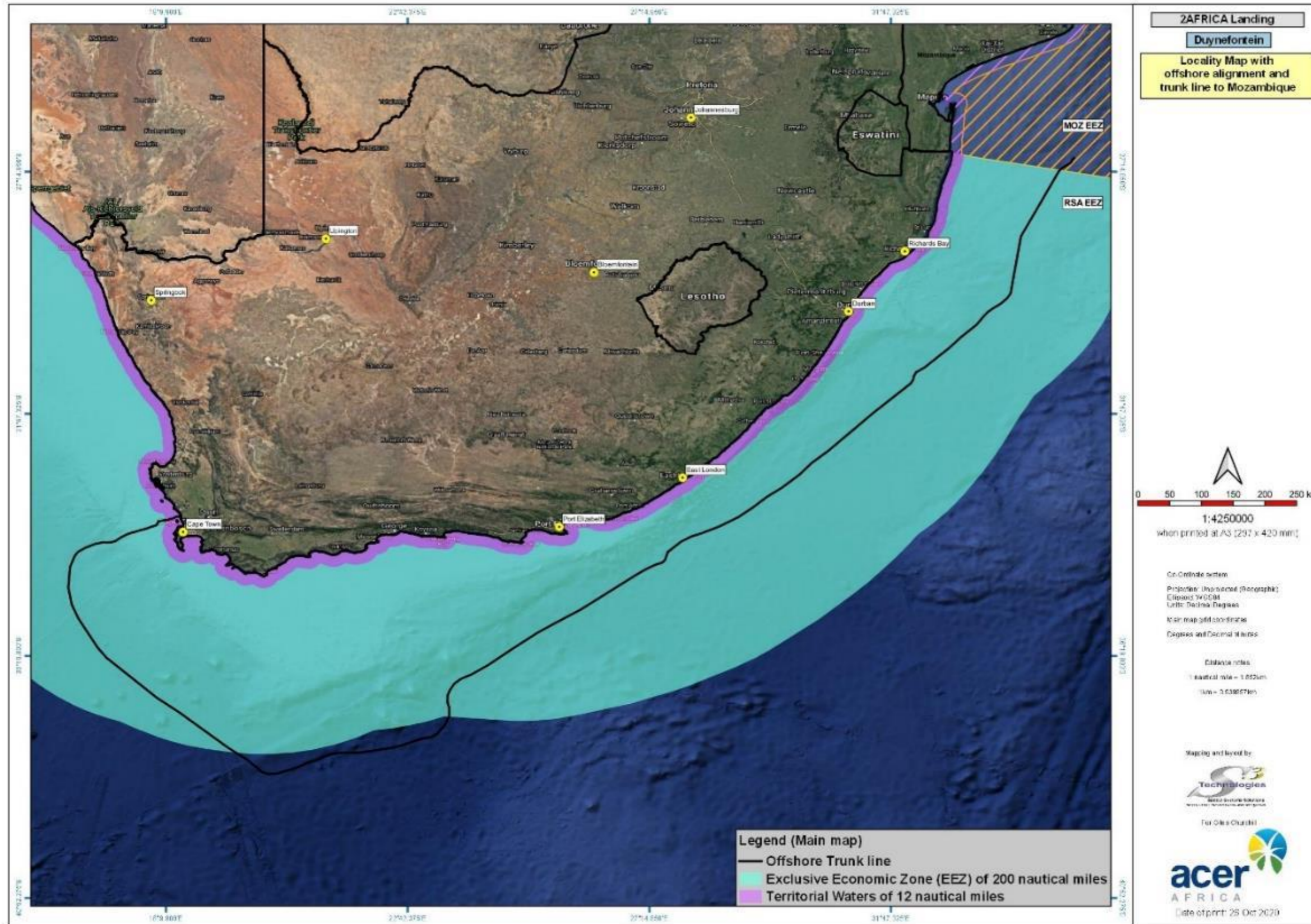


Figure 5 Overview of the 2AFRICA/GERA (East) Marine Cable System Alignment along the east coast of Africa through the EEZ and SA's Territorial Waters

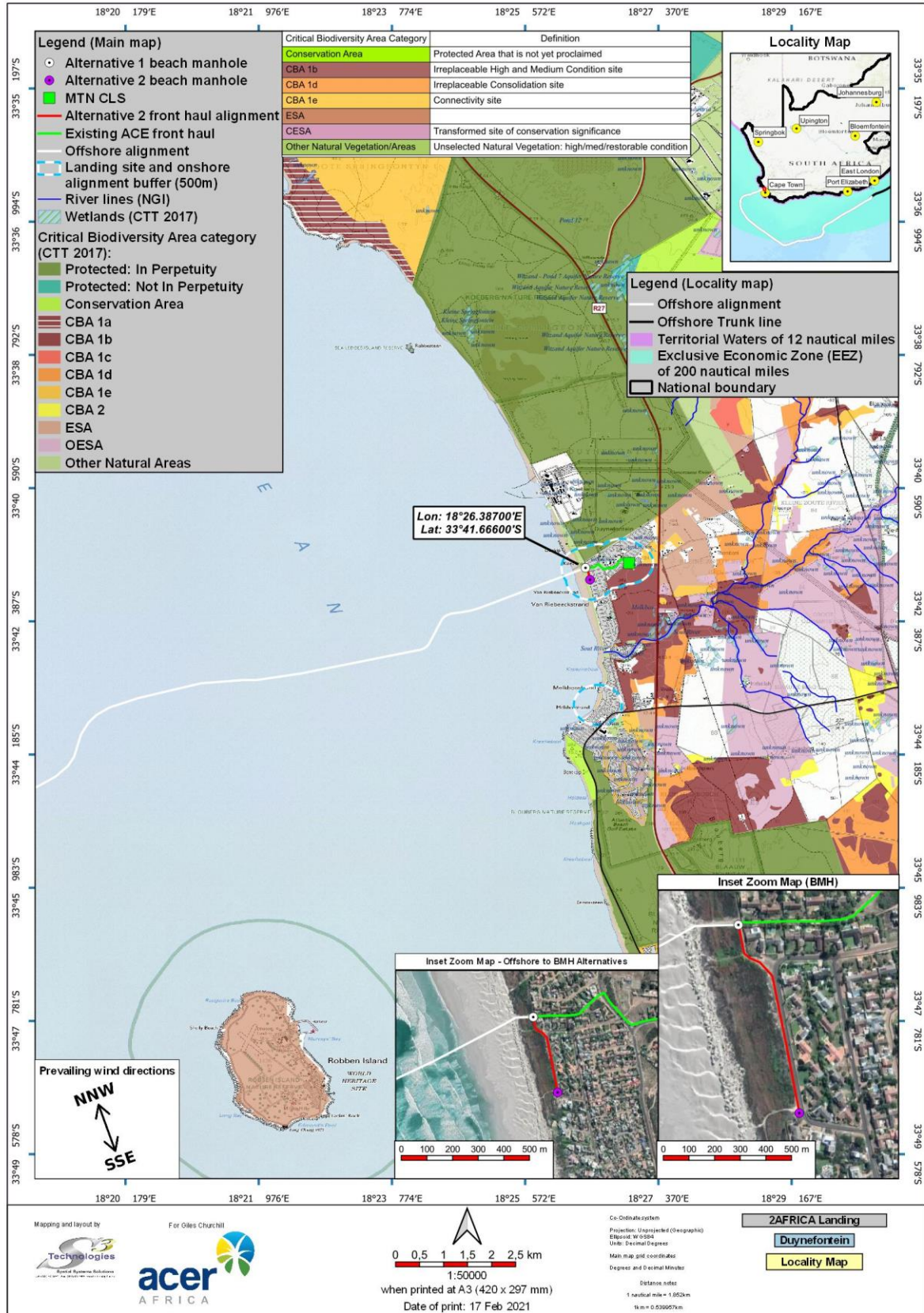


Figure 6 2AFRICA/GERA (East) Marine Cable System Alignment on the west coast of South Africa through the EEZ and SA’s Territorial Waters to the landing point at Duynefontein

- Buried sleeves from the beach anchor point up to the BMH.
- The BMH
- The onshore cable section between the BMH and the CLS.
- The CLS site in Duynefontein.

5.2 Marine components and installation methods

5.2.1 Marine Fibre Optic Cable

Offshore, the cable is laid by a purpose-built cable-laying ship. Consistent with industry practice, the unarmoured cable (Plate 1 & 2) will rest on the seabed in water depths greater than 1,500 m, where the risk of inadvertent damage from human activities is negligible.

As the cable route changes direction to approach the coastline of Van Riebeeckstrand, the cable will be buried beneath the sandy seabed of these shallower marine waters. This is typically achieved with the use of a specially designed plough which is submerged onto the seabed by the cable laying ship. The cable is then fed from the ship to the plough which effectively buries the cable to a depth of up to 1 m. This burial is intended to provide protection to the cable from the hazards posed by ships' anchors, fishing trawls/lines and the like.

The diameters of the marine fibre optic cables range in size from 17 mm diameter (cables installed at a water depth of between 7,000 – 1,500 m) to 37.5 mm diameter (rock armoured cable which is installed in shallow water depths (< 200 m)).

5.2.2 Repeaters and Branching Units

Repeaters

Repeaters are optical amplifiers that are installed along the length of the cable and are used to extend the reach of optical communications links by overcoming loss due to attenuation of the optical fibre (Plate 3). Repeaters will be installed at specific distances along the route making up the cable system.

Repeaters are designed to function continuously without maintenance for 25 years in depths of up to 8,000 m with no degradation in mechanical, electrical and optical performance. This requires a controlled ambient internal climate and a durable enclosure.

Internal atmosphere is controlled to 20% relative humidity over the operating temperature range by the hydrogen getters⁹ and moisture absorbing desiccants¹⁰. The controlled internal gas atmosphere is suitable for maintaining the life expectations of all internal components.

The main structural component of the repeater housing is a monobloc tubular case fabricated from high tensile steel. The bulkhead and composite gland assembly provide full protection against water and gas ingress, either directly from the surrounding sea or from axial cable leakage due to a cable break close to the repeater.

9 A "getter" is a deposit of reactive material placed inside a vacuum system to maintain the vacuum. Gas molecules striking the getter material combine with it chemically or by absorption, and the gas is removed from the evacuated space.

10 A **desiccant** is a hygroscopic substance that is used to induce or sustain a state of dryness (desiccation) in its vicinity

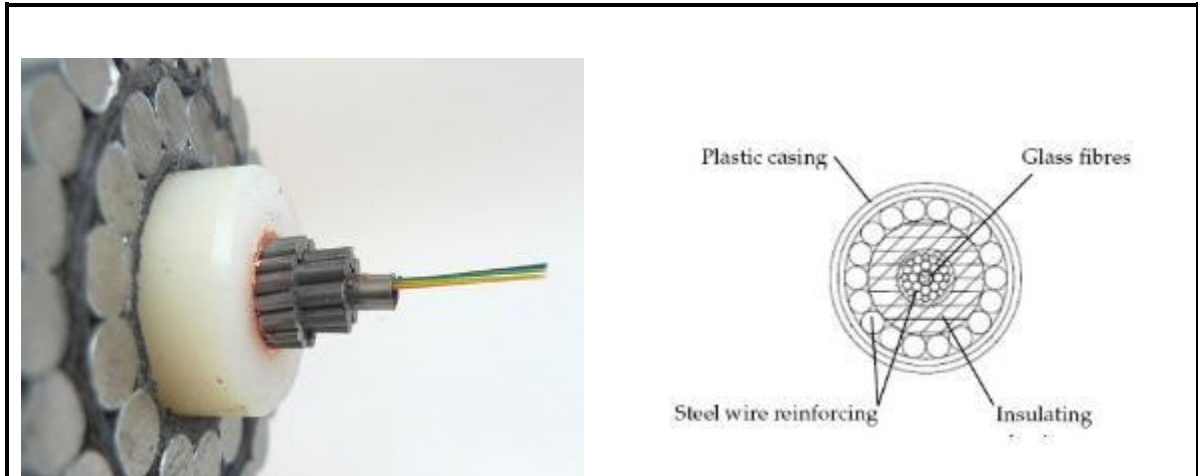


Plate 1 Cross section of a typical marine telecommunications cable



Plate 2 Cable armoring and operational depths

5.2.3

The repeater housing is protected against corrosion with an organic electrically insulating barrier coating with additional mechanical reinforcement. This prevents seawater contact with the repeater housing steel surface and eliminates risk of metal wastage and galvanic corrosion and magneto-hydrodynamic effects that could generate hydrogen.

Repeaters are electrically powered. Voltage insulation is maintained between the internal unit and the repeater housing by two insulation paths: the polyethylene liner and the power conductor feeding through the gland assembly.

The repeaters will have the following specifications:

- ❑ The diameter of the rigid sea-case (white tube section in the photo) is approximately 270 mm.
- ❑ The length of the sea-case section of the repeater is approximately 980 mm.
- ❑ The total length of repeater is approximately 3,900 mm to 4,240 mm depending on cable coupling.
- ❑ The spacing between repeaters is approximately 75 km to 83 km varying with the route plan.



Plate 3 **Repeater**

Branching units

Branching Units create junctions in submarine telecommunications cable systems so that the cable can be split to serve more than one destination.

5.2.4 *Physical characteristics of fibre optic cables*

External chemical properties of the cable

The external protection of the cable comprises a naturally occurring bitumen (asphalt) as a compound to adhere the outer polypropylene housing to the armour wires on the armoured shallow water cables. No form of additive to prevent bio-degradation or anti-fouling is used in the cable's outermost layers. The other cable components in contact with the sea are the galvanized steel armour wires and the polyethylene sheath, which also contain no additives harmful to marine life (Heath; 2001).

Electrical Current

According to Heath (2001), optical fibre cables carry a constant dc¹¹ current of 1.6 Amps to feed power to the underwater repeaters. This current is fed along the copper clad steel inner conductor and depending on the length of the cable span it may require several thousands of volts to maintain it. In very approximate terms the cable resistance is about 1 Ohm per kilometre and the repeaters, spaced at 50 km, drop about 30 volts each. Therefore, a cable spanning 4,000 km would have about 80 repeaters and require a power feed voltage of about 6,500 volts. It is normal practice to apply half this voltage at positive polarity to one end of the system and half the voltage at negative polarity to the other end to establish a zero voltage point midway along the cable span. This reduces the level of voltage stress on the cable and repeaters.

There is no external electric field associated with the power on the inner conductor. The ratio of the conductivity of the polyethylene insulation to that of seawater means that the electric field remains only within the cable insulation.

Electromagnetic Fields (EMFs)

Electromagnetic fields (EMFs) are generated by current flow passing through cables and can be divided into electric fields (called E-fields, measured in volts per metre, $V\ m^{-1}$) and magnetic fields (called B-fields, measured in μT) (Taormina *et al.*, 2018). The dc current in the inner conductor does set up a stationary magnetic field in the form of concentric rings emanating from the cable. The magnetizing force produced by this field diminishes with increasing radius from the cable. EMF's are generally effectively confined inside cables by armouring (Taormina *et al.*, 2018). As referenced from Heath (2001), for a cable carrying 1.6 amps this means that the magnetic flux density due to the cable at a distance 1 metre away is 0.32 micro Tesla. This is two orders of magnitude lower than the vertical component of the earth's magnetic field on the West Coast of the United States, which is about 43 micro Tesla. This means that marine life forms would need to approach to within less than half an inch of the cable to detect its magnetic field above that of the earth.

Audible sound and frequency association with “toning”

Audible sound lies in the range 15 to 40,000 Hertz and neither coaxial nor optical cables emit this range, or any other frequencies, during their normal operation. During the laying of the cable it does vibrate as a result of regular vortex shedding as it descends the water column. This is a low frequency phenomenon, at approximately 10 Hertz, is short lived and ceases when the cable comes to rest on the bottom.

The injection of a low frequency electrical signal from the land station is known as "toning". Toning is undertaken as an aid to cable location in the event of a fault on the cable or where other marine work is being conducted, which involves keeping a safe distance from the working cable. Toning works on the principle of a coaxial transmission line, formed by the inner conductor of the cable and the external armouring, providing a circuit for a low frequency signal.

At low frequency, a current applied to the inner conductor will propagate along the line, with its return path provided by a combination of the steel armour wires and the surrounding seawater. It is the proportion of current in the seawater, which enables electrodes trailed from a ship to detect the cable by locating the maximum level of the tone. During toning the level of the signal injected is usually around 160 mA at 25 Hz as the threshold level of detection on the ship electrodes is normally around 20 mA. The attenuation of the cables at low frequency

¹¹ Dc is direct current: the one directional or unidirectional flow electric charge

is such that the tone injected at the terminal should be detectable across the length of the cable.

Toning is undertaken infrequently and is only really required prior to or during a repair operation on the cable. Toning is also undertaken during the installation of new cables, which have to cross or come close to the existing working cables. To increase safety margins in this situation, it helps the new installer to know the precise whereabouts of existing cables, which are mostly buried on the shelf area. Although toning is less effective in buried cables, it is much more reliable than visual or magnetometer detection in shallow water regions.

Toning has been used for many years on telegraph, coaxial, and optical fibre submarine cables throughout the world. From video evidence of ROV's tracking toned cables, the short-term presence of a low frequency, low level electric field in seawater does not appear to have any influence on the behaviour of fish.

Heat dissipation

When electric energy is transported, a certain amount is lost as heat by the Joule effect, leading to an increase in temperature at the cable surface and subsequent warming of the immediate surrounding environment (OSPAR, 2012). This is commonly referred to as thermal radiation. Thermal radiation in buried cables can warm the surrounding sediment in direct contact with a high voltage cable (Emeana *et al.*; 2016). High voltage cables are used for transferring electricity related to offshore energy projects. Heat emission is higher in AC than DC cables at equal transmission rates (Taormina *et al.*, 2018). According to Taormina *et al.* (2018), the impacts of local temperature increase caused by electric cables on benthic communities have rarely been examined and *in situ* investigations are lacking. They refer to this knowledge gap as preventing conclusions from being drawn about ecological impacts of long-lasting thermal radiation on ecosystems. They conclude that considering the narrowness of the corridor and the expected weakness of thermal radiation, impacts are not considered to be significant, referring to the need for new field measurements and experiments under operational conditions.

5.2.5 Marine Fibre Optic Cable Installation

Prior to the installation of the 2AFRICA/GERA (East) Cable System taking place, the following offshore marine investigations were performed by a contractor appointed by ASN to install the cable system.

Cable Route Survey

The proposed cable route was surveyed by the project team to identify whether or not the substrate and topography of the ocean floor was suitable for the installation of the 2AFRICA/GERA (East) Cable System. The survey included the following activities:

- ❑ A geophysical survey of the deep water, shallow water, and inshore sections of each proposed cable route was undertaken. This included the establishment of bathymetric corridor widths of 500 m (inshore and up to a depth of 500 m). In deeper water this corridor extended up to three times the water depth centred on the proposed cable route.
- ❑ Conducting a side scan sonar and survey of a 500 m corridor width (inshore and up to a depth of 500 m) centred along the proposed cable route.
- ❑ Bottom samples taken at an average 10 km spacing in shallow water (less than 500 m in depth) (Sample sizes were approximately the size of a standard 10 l bucket).

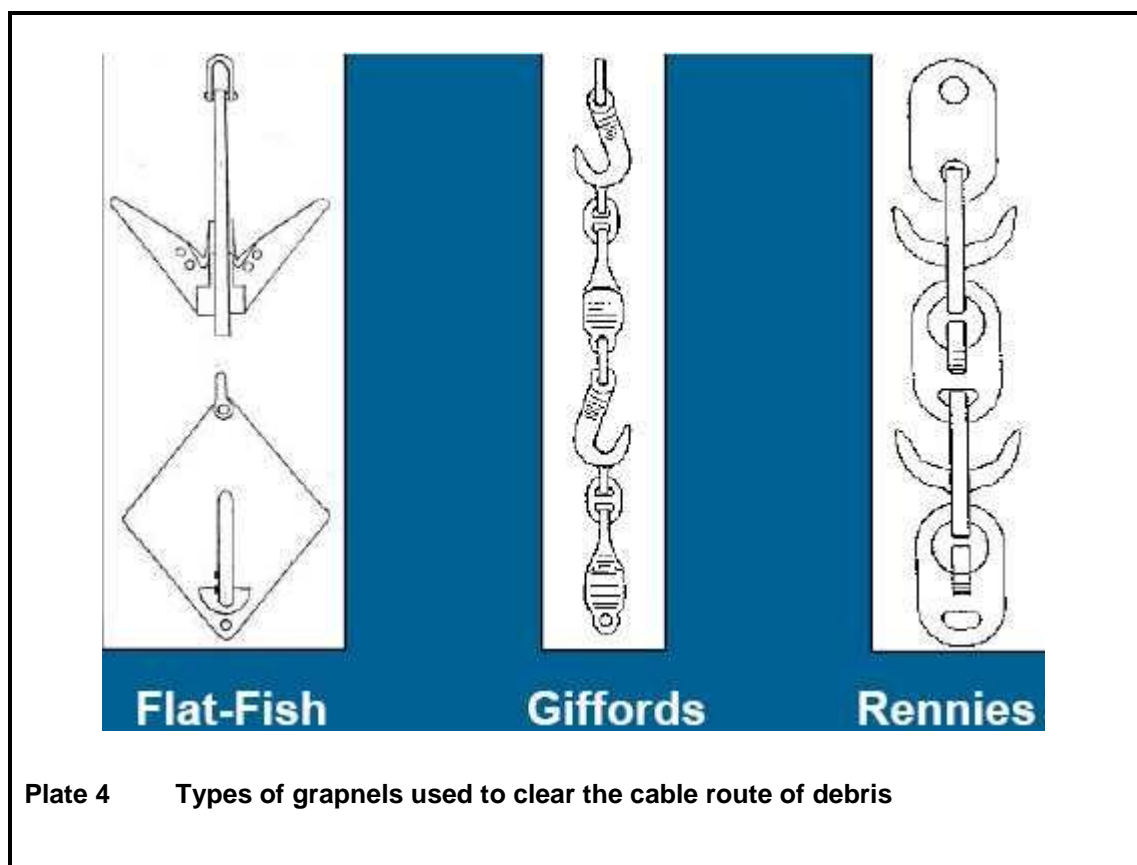
- ❑ The cable route was surveyed using a multi-beam echo sounder (MBES) Swath Bathymetry system (the MBES equipment is integrated with the ship's surface navigation equipment (GPS)).
- ❑ Bathymetric data was processed using the onboard workstation with specialised software to verify the coverage and accuracy of the collected bathymetry data and to provide colour contour charts. These charts were used to review the proposed route and where necessary plan offset lines.
- ❑ In the shallow water sections, an integrated Side Scan Sonar and a Sub-bottom Profiler was used. These were housed in a device which was towed behind the ship to get to an optimum position close to the seabed. The position of this towed device was tracked acoustically using an ultra-short base line (USBL) tracking system.
- ❑ A burial assessment survey was undertaken from the shoreline up to a depth of 1,500 m to test the suitability of the substrate for cable burial. The survey included Cone Penetrometer Tests (CPTs) with an average of 1 CPT taken at 4 km intervals in planned burial areas.
- ❑ The landing sites for all cable segments were positioned utilising Global Positioning System (GPS) and topographic surveying practices. (The in-shore survey vessels used a GPS navigation system).
- ❑ At each landing site, the survey of the shore approaches was supported where appropriate by a diver/swim team equipped with both video camera and bar probes. Any obstructions, potential hazards or engineering constraints to the submarine cable were located and fully documented.

Cable Route Clearance Operations

Prior to the installation of the 2AFRICA/GERA (East) Cable System, route clearance operations will be conducted along those sections of the route where burial is to be performed to ensure that, as far as practically possible, the burial operation will not be hindered by out of service cables or discarded fishing gear. This route clearance operation is typically called the Pre-Lay Grapnel Run (PLGR). The objective of the PLGR operation is the clearance of any seabed debris, for example wires or hawsers, fishing equipment etc., which may have been deposited along the route.

PLGR is undertaken by dragging grapnels (Plate 4) behind a ship along the proposed cable route to clear the route of debris. Different types of grapnels can be used depending on the seabed conditions (Gillford in rockier areas and Rennies and Flat Fish in softer sandy sediments). The PLGR operations are normally carried out by a vessel specifically fitted out with winches and grapnels, and capable of sustaining good slow speed positional control. The vessel will be equipped with navigation and positioning system to the same specification as the main lay vessel.

Any debris recovered during these operations will be discharged ashore on completion of the operations and disposed in accordance with local regulations. If any debris cannot be recovered, then a local re-route of the 2AFRICA/GERA (East) Cable System will be planned to avoid the debris.



Installation of the marine telecommunications cable

The 2AFRICA/GERA (East) Cable System will be installed using a purpose-built cable ship fully equipped with all the necessary equipment, tools and facilities to safely handle and install, join, test, and power the submerged plant, including simultaneous lay and plough burial. The vessel will have sufficient power and dynamic positioning capability to carry out the installation in the expected weather and current conditions. During cable laying an automatic log of all critical operational parameters will be kept including navigational data, speed, tension, slack, cable counter and plough data.

Surface Laying Operations

Surface laying implies that the cable will be laid on the surface of the seabed. The objective is to install the cable as close as possible to the planned route with the correct amount of cable slack to enable the cable to conform to the contours of the seabed without loops or suspensions.

Plough Burial Operations

The cable will be buried to a target depth as defined in the burial plan, and as determined by the cable route and burial assessment surveys. Burial depth will be controlled by adjusting the height of the plough's front skids. The depth of burial achieved will be continuously recorded by the plough and logged with the ship's data. In areas where plough burial is planned, the cable will be buried to a target depth of up to 1 m (Plate 5). The footprint of the cable trench is generally less than a 1 m in width with the plough skids having a width of less than 6 m.

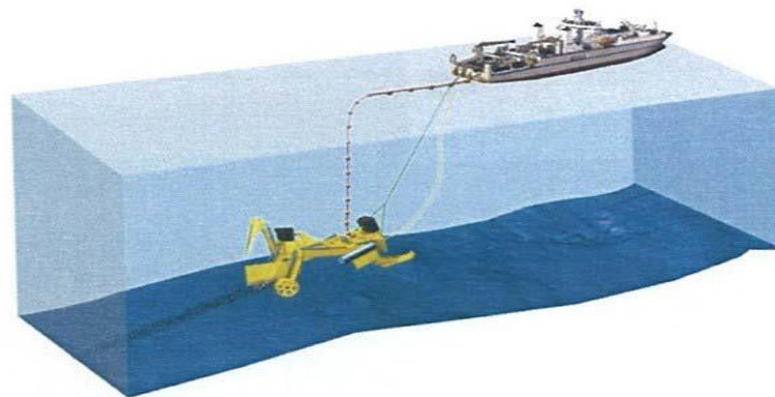


Plate 5 Sea plough to be used to bury the cable along sections of the cable alignment (less than 100 m deep) where conditions permit burial

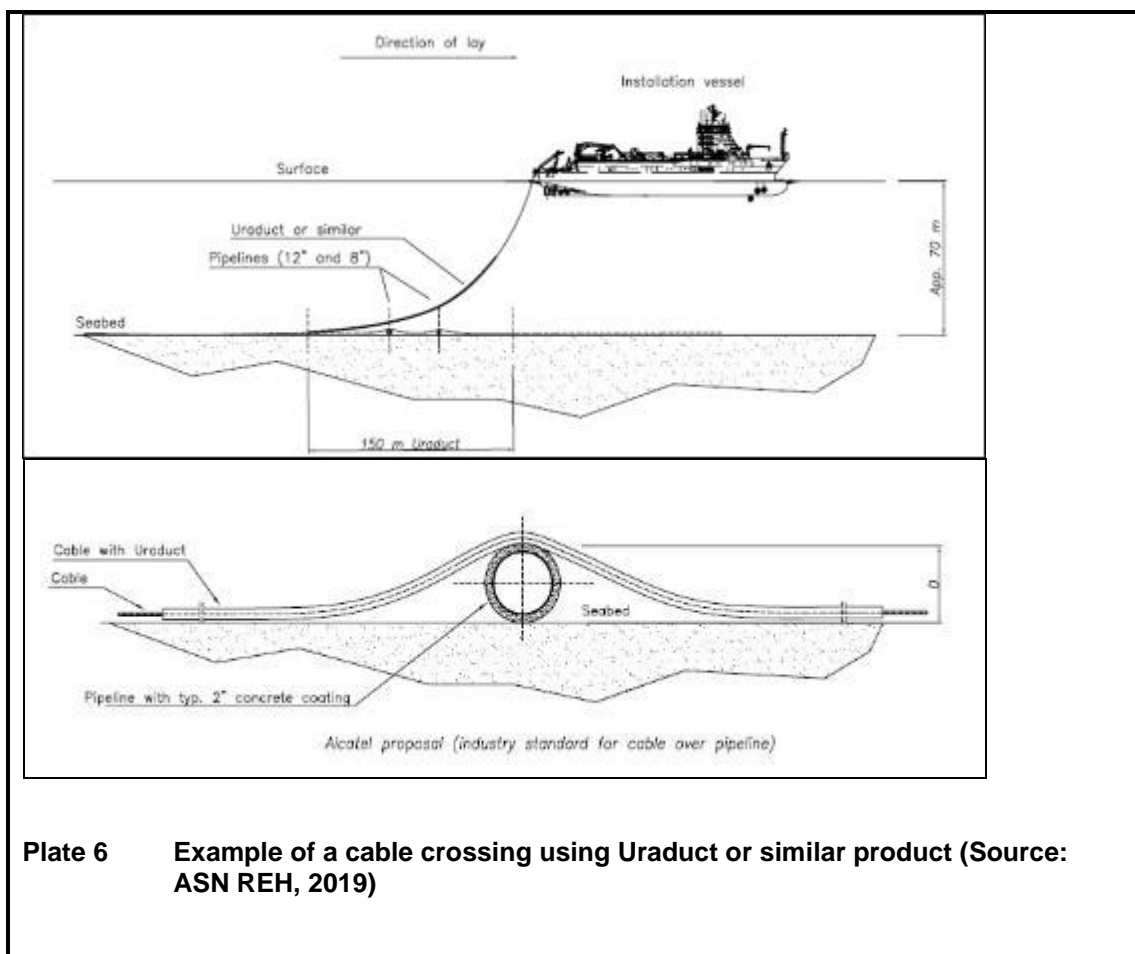
Crossing of existing submarine cables and pipelines

For cable route planning, ASN uses the Global Marine Cable Database (Global Marine, 2019) augmented by ASN's own internal databases and Admiralty Charts (UKHO, 2019) to identify all known existing and proposed telecommunication and power cable systems that will be crossed by the 2AFRICA/GERA (East) Cable System. Where existing cables are crossed, the industry norm is to ensure that the crossing is undertaken using a similar type cable, i.e. an armoured cable crosses an armoured cable or an un-armoured cable crosses an un-armoured cable. Where seabed conditions allow, post lay cable burial using a Remote Operated Vehicle (ROV) can be performed to afford additional protection to the cables at the crossing point.

If the 2AFRICA/GERA (East) Cable System requires a pipeline crossing, ASN recommends the application of Uraduct (or similar product) (Plate 6) to the cable at the point of contact with the pipeline. Uraduct is a protection system designed and developed to protect subsea fiber optic cables, power cables, umbilicals, flexible flowlines, rigid flowlines, hoses and bundled products from abrasion and impact. Generally, the length of Uraduct required for a pipeline crossing is 50 m each side of the crossing or quarter the water depth either side of the crossing. Mattressing¹² can also be used when crossing pipelines; however, this is not considered necessary for standard pipeline crossings but may be installed in special

¹² Generally, mattresses are made of high strength concrete segments linked together with a network of high strength polypropylene ropes to form a continuous flexible concrete barrier which is used to separate structures ensuring the protection of infrastructure.

circumstances at the request of the pipeline operator. (There will be no such pipeline crossing in South African waters, but there are pipeline crossings in other parts of the system).



Shore End Operations

Shore end operations refer to the installation of the cable through the shallow water near shore, through the intertidal zone and up onto the beach (Plates 7 and 8). All shore end landings will be performed directly from the main cable installation vessel except where shallow water conditions require the use of a small shallow draft vessel or barge, usually mobilised specifically for the task, and equipped with cable tanks, cable engines, cable handling gear and a suitable cable burial device.

During cable landing near Van Riebeeckstrand Beach, the following activities will be performed by the appointed contractor:

- Preparation of a detailed operational plan based on the findings of the survey, with site visits as necessary.
- Provision of an advance party to establish the beach equipment and to prepare the beach, cordon off a working area to protect the public, etc.
- The marking of any existing in-service cables at the shore end location (with the assistance of the cable owners).
- Performance of the installation of the shore end section of the sea cable and support of the cable vessel activity.
- Installation of cable slack at the beach, as required.
- Installation of a cable loop in the BMH to facilitate re-terminations.

- Securing the cable in the BMH by means of an armour wire anchor clamp.
- Burial of the cable from the BMH to the Low Water Mark (LWM) to a depth of 2 m (or to bedrock, if reached sooner).
- This may also include installation and burial of the sea earth plate and earth cable (System Earth).
- All digging will start the day before the planned cable landing.
- Reinstatement of the beach to the required standards.
- All testing, reporting, and accurate as-built records.
- Articulated pipe, where required across the beach up to the Beach Manhole (BMH), will be fixed to the BMH outside wall by means of a flange adapter.

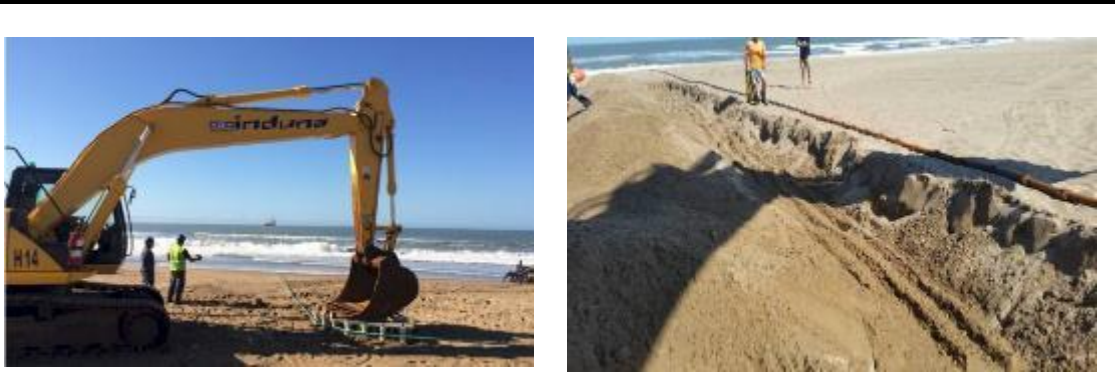


Plate 7 Landing of the cable on shore. Similar works will be undertaken for the landing of the 2AFRICA/GERA (East) Cable System

In the near shore zone (generally in waters less than 9m in depth) external protective measures such as articulated split pipes will be installed around the 2AFRICA/GERA (East) Cable to guard against cable damage due to the following:

- Surf zone wave action.
- Small vessel anchoring.
- Nearshore currents and tidal ebb and flow.

Using articulated pipe in the near shore environment increases cable protection against chafing by providing an additional physical barrier of protection against external forces. Articulated pipe (Plate 9) is usually made of cast iron and the additional weight it provides to the cable aids in stabilising the cable and in maintaining cable burial depth where that is possible. Standard practice is to apply articulated pipe to beyond the surf zone, however, at landings where burial may prove difficult, articulated pipe can be extended further offshore.



Plate 8 Bringing the cable to shore from the cable laying vessel. Cable is buoyed off and pulled to shore with smaller vessels.



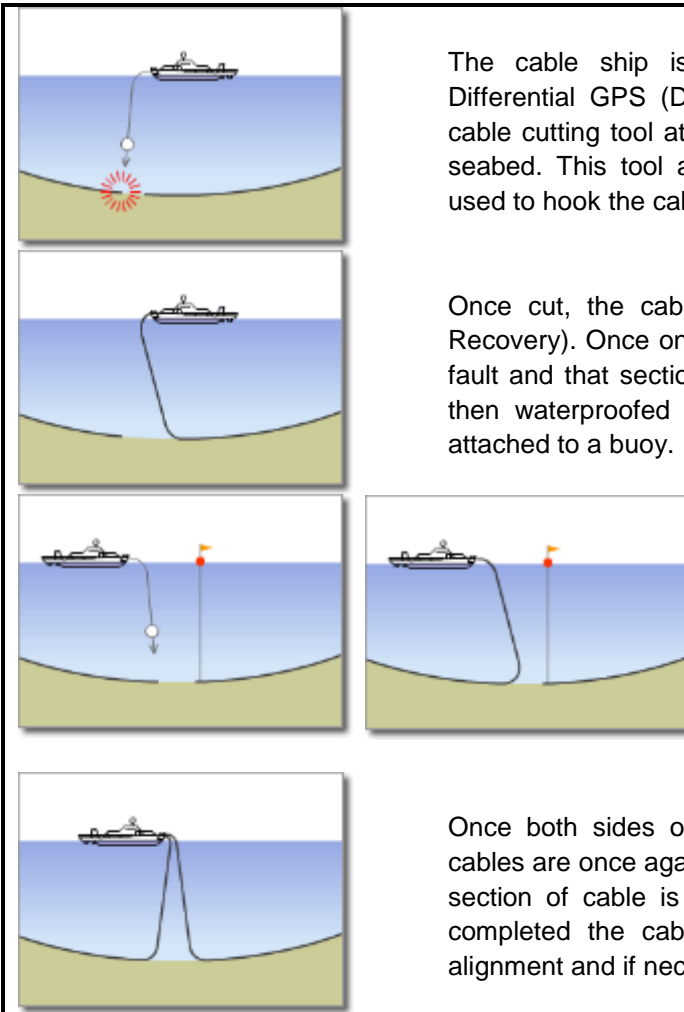
Plate 9 Articulated pipe sections which are installed around the cable in shallow water to offer additional protection.

5.2.6 *Post construction maintenance of the cable*

Once installed, marine telecommunications cables generally require little to no maintenance if

the cable is not damaged by natural disasters (underwater landslides, earthquakes, etc.) or through human activities (fishing trawlers, anchors, etc.). If the cable is damaged, a cable repair ship is dispatched to repair the cable fault (Plate 10), which usually entails the following:

- ❑ Localization of the cable failure point and recovery of the failed cable section onto the ship.
- ❑ Cutting and removal of the cable failure section and then joining the recovered cable to the new cable section on board the ship.
- ❑ Testing of the cable followed by reburial of the cable on the exact same alignment.



The cable ship is navigated to the location by a Differential GPS (DGPS). Once the fault is located, a cable cutting tool attached to the rope is paid out to the seabed. This tool and grapnel (Cable Catch) are then used to hook the cable before cutting the cable.

Once cut, the cable is recovered to the ship (Cable Recovery). Once on board the cable is tested to find the fault and that section of cable is removed. The cable is then waterproofed and dropped back to the sea floor attached to a buoy.

The same procedure is then carried out on the other section of cable still on the sea floor.

Once both sides of the fault have been repaired, the cables are once again brought up to the ship where a new section of cable is joined to the cable sections. Once completed the cable is placed back onto its original alignment and if necessary reburied.

Plate 10 Protocol for repairing cable faults to marine telecommunications cables
(Source: <http://www.k-kcs.co.jp/english/solutionRepairingMethod.html>)

5.2.7 Cables in Operation – Life Cycle Analysis

A life cycle analysis study suggests that over a typical operational lifetime of 25 years (manufacture-to-decommissioning)¹³ the main environmental impacts of a cable system are carbon emissions emanating from power consumption at the terminal station (chiefly related to air conditioning and powering of the terminal equipment); and b) vessel transits for cable maintenance.

“The results show that the use and maintenance phase clearly dominates all impact categories at an average of 66 percent. By comparison, the raw materials and design and manufacturing phases account for, on average, only 6 percent of the total potential impact.

This clearly highlights that the greatest impact over the life cycle of a submarine cable system comes from the use and maintenance activities. Namely, electricity use at the terminal to power the terminal equipment and the combustion of marine fuel during cable maintenance with purpose-built ships.”

5.3 Terrestrial components and installation methods

5.3.1 Beach Manhole

Once the fibre optic cable has made landfall and been buried through the beach section of the route, the cable will be anchored at the existing ACE BMH (Preferred Landing Site 1) on the edge of the residential area at Van Riebeeckstrand (Figure 7 and 9).

The BMH for the preferred landing alternative (Site 1) is located on the edge of the informal access track used by the City of Cape Town for maintenance of storm water infrastructure and is located directly adjacent to the existing service corridor through which the cable will be laid.



Figure 7 Beach Manhole location at the preferred landing Alternative 1 (Source: Google Earth, 2016)

¹³ Donovan, 2009. “Twenty thousand leagues under the sea: A life cycle assessment of fibre optic submarine cable systems”.

The proposed location of the BMH at the alternative landing site (Site 2) is located directly adjacent to Die Bad Road (Figure 8 and 9). Construction of the BMH for the Landing Alternative 2 (not the preferred landing alternative), and trenching from this BMH to the existing BMH (Alternative 1) would need to take place prior to the landing of the marine cable so that all infrastructure required for the landing of the 2AFRICA/GERA (East) Cable System (BMH, ducting for the cables, manholes, etc.) would be in place prior to the landing of the marine cable.

The ASN “Generic Duct Route and Manhole Construction Guidelines” (dated 02/12/2019) addresses trenching, excavations, duct laying, underground chambers and concrete and will be applicable for the construction of the BMH at Alternative 2.

Refer to Figure 10 which shows the cable route from BMH Landing Site 1 to the MTN CLS.

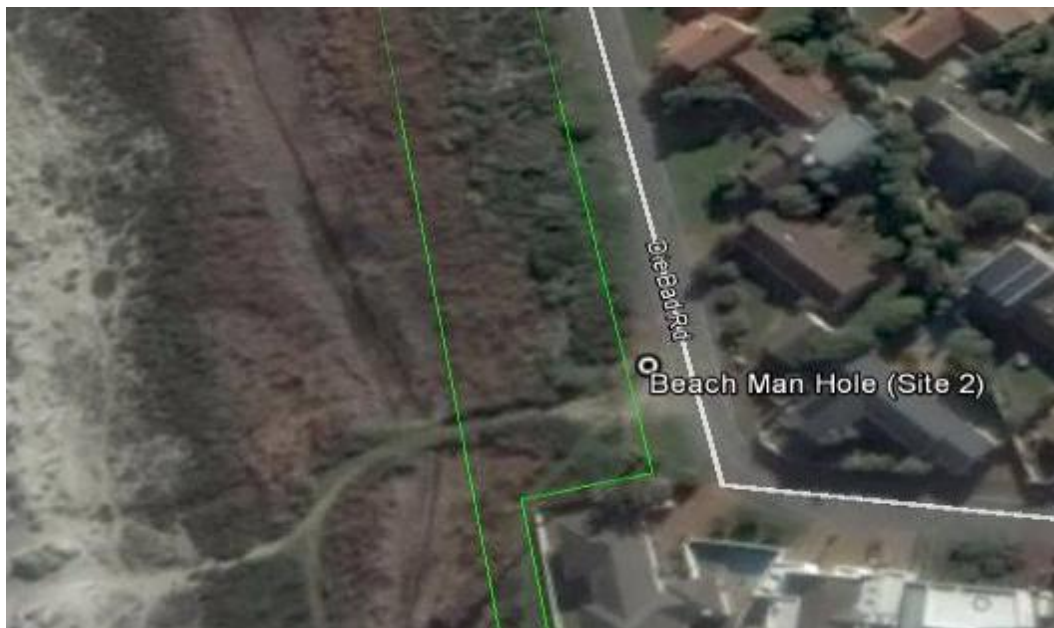


Figure 8 Beach Manhole location at the Landing Alternative 2 (Source: Google Earth, 2016)

5.3.2 Construction Programme

It is anticipated that construction of all infrastructure required for the landing of the 2AFRICA/GERA (East) Cable System will not take longer than 3-4 months to complete including the offshore cable installation.

5.3.3 Project implementation

The landing of the cable is entirely dependent on receiving a positive Environmental Authorisation which will be issued by the Department of Environment, Forestry and Fisheries and approval from SAN Parks to traverse the MPA's. Only once the environmental authorisation process is nearing its completion will the project proponent be able to realistically set dates for project implementation. ASN is hoping to have the 2AFRICA/GERA (East) Cable System installed and operational by 2022.



Figure 9 Alternative Landing 1 at the existing ACE BMH and Alternative Landing Site 2 located further south

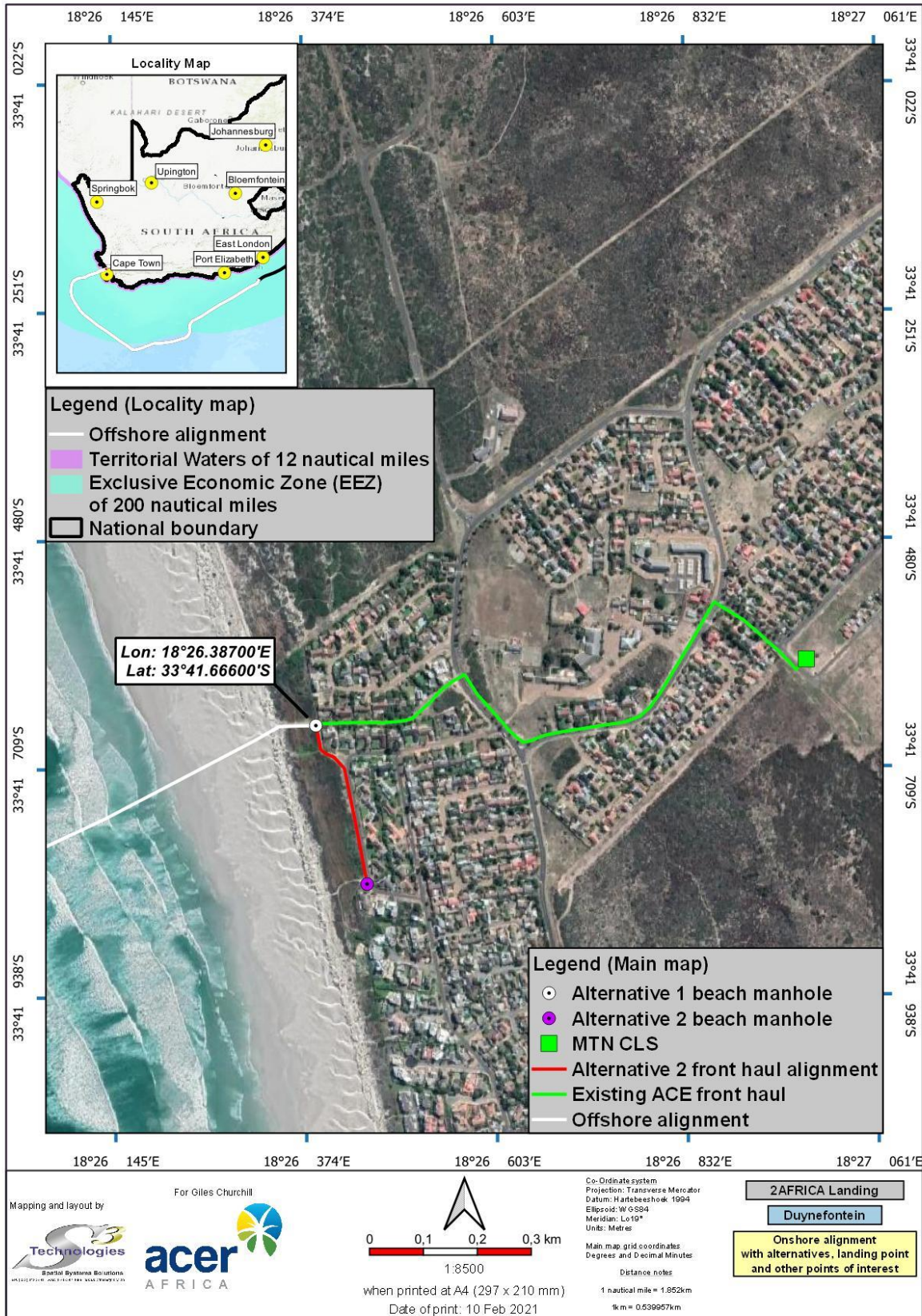


Figure 10 Alternative Landing 1 at the existing ACE BMH and front haul alignment to the existing CLS with Alternative Landing Site 2 located further south

5.4 Existing services and project implementation

During construction and installation of the 2AFRICA/GERA (East) Cable System on land the following services will be utilised by the appointed service providers.

5.4.1 *Water*

Water for construction purposes will be sourced from the closest municipal supply point and tankered to site when required. Water use during construction is however limited as no concrete works will be required for proposed landing at the preferred alternative.

5.4.2 *Sewage*

During construction and installation of the 2AFRICA/GERA (East) Cable System on land, chemical toilets will be provided for construction workers. These chemical toilets will be routinely serviced by the appointed service providers and all waste will be disposed at a licensed waste treatment works within the area. Given the short construction period associated with this project, the impact associated with sewage is not expected to pose any significant risk.

5.4.3 *Storm water*

The proposed development should not have any impact on storm water once construction is completed. However, the appointed contractor will take cognisance that the City of Cape Town does have storm water structures within the project area and that these structures should be avoided during construction.

While trenching of the cable alignment is underway, stockpiles of soil will be located outside any storm water drains to prevent the wash away of material and siltation of downstream habitats. This is of relevance in the dune slack wetland to where most of the stormwater from Van Riebeeckstrand is channelled.

5.4.4 *Waste streams*

During the construction and installation of the terrestrial section of the 2AFRICA/GERA (East) Cable System, little waste is expected to be generated on site and waste will be limited to litter, spoil from the trenching operations (where rubble or buried waste is unearthed) and material off cuts. It is envisaged that a skip will be hired for the duration of the construction period where all construction related waste will be stored and then disposed by an appointed service provider.

5.4.5 *Decommissioning*

Submarine Cables are designed to have a life-span of 25 years. Decommissioning of the of the 2AFRICA/GERA (East) Cable System in the near future is unlikely given the current growth in the telecommunications sector within South Africa. If, and when, decommissioning takes place, all activities would be subject to legislation relevant at the time.

6 PROJECT ALTERNATIVES

Alternatives are different means of achieving the purpose and need of a proposed development and include alternative sites, layouts or designs, technologies and the “no development” or “no go” alternative. This chapter describes the various alternatives **assessed for the** proposed installation and operation of the 2AFRICA/GERA (East) Cable System.

The alternatives considered during screening do not include CLS alternatives or front haul alternatives from the preferred landing point (Alternative 1), as the 2AFRICA/GERA (East) landing will make use of the existing ACE BMH, front haul infrastructure and CLS building in Duynefontein.

There are two potential shore landing points under consideration for the 2AFRICA/GERA (East) Cable System at Duynefontein (Figure 9) as further detailed below:

- ❑ The Van Riebeeckstrand Beach landing point at the existing ACE Cable System landing point (Alternative 1).
- ❑ The Van Riebeeckstrand Beach landing point to the south of the preferred landing point (Alternative 2).

6.1 2AFRICA/GERA (East) Alternative Landing Site 1 (Preferred Landing Site)

6.1.1 Location

Alternative 1 is the existing ACE Cable Landing Point (33°41'40.32"S and 18°26'12.90"E) and BMH (33°41'39.90"S and 18°26'23.17"E). It is located along the northern section of Van Riebeeckstrand Beach close to the Safety Exclusion Zone of the Koeberg Nuclear Power Plant which is approximately 1.7 km north of the proposed landing site (Figure 11).

Feature	Latitude [WGS84]; Longitude [WGS84]
ACE BMH (Alternative 1)	S 33°41'39.90 and E 18°26'23.17
Landing Point Alternative 1	S 33°41'40.32 and E 18°26'12.90

Following environmental screening of the two landing alternatives, this site has been selected as the preferred landing alternative based on the following factors:

- ❑ The existing ACE Cable System BMH can accommodate additional cables and, therefore, no new BMH needs to be constructed for the 2AFRICA/GERA (East) cable landing.
- ❑ The existing BMH is located directly adjacent to an existing services corridor which runs from the edge of the residential stands near the beach up to Otto du Plessis Road (Plate 11). As the BMH and sleeves for cables to the CLS have already been installed for the ACE Cable System there will be no construction required once the cable has been installed to the ACE BMH and therefore no impact on the residents within the area.
- ❑ The proposed (and existing) landing site can be accessed along an existing maintenance road used by the City of Cape Town, which limits the impact on the wetland area located between the primary dune cordon and the residential area (Plate 11).
- ❑ The landing of the cable at this site has the least impact on the beach environment as the primary dune cordon is relatively narrow at this point and is sparsely vegetated.

- Due to its location just south of the Koeberg Safety Exclusion Zone, the beach is not as well used by visitors and tourists compared to the beaches further south towards Melkbostrand. Therefore, the landing and installation of the cable on this section of the beach is expected to have the least impact on beach goers and recreational users.
- An existing beach storm water outlet is located directly to the south of the proposed cable landing point and as such this section of the beach is regularly disturbed through maintenance activities undertaken by the City of Cape Town to ensure that the storm water outlet remains open (Plate 11).
- The wetland located between the primary dune cordon near the beach and residential areas inland is relatively disturbed with the City of Cape Town regularly cutting back vegetation to facilitate drainage of stormwater from the residential areas of Van Riebeeckstrand. The wetland has also been channelled to facilitate drainage of stormwater.

6.1.2 *BMH Site*

The preferred alternative will make use of the existing ACE BMH, made available by MTN. No construction or unnecessary disturbance of surrounding vegetation or infrastructure will, therefore, be required for installation.

6.1.3 *BMH to CLS*

If the preferred Alternative (Alternative 1) is selected for the landing of the 2AFRICA/GERA (East) Cable System, no additional works will be required on land once the cable reaches the ACE BMH. From the BMH, the 2AFRICA cable will be accommodated within sleeves already installed during installation of the ACE Cable System. These sleeves run from the BMH to the MTN CLS site in Duynfontein. No excavations or unnecessary disturbance of surrounding vegetation or infrastructure will, therefore, be incurred.

6.1.4 *CLS Site*

The preferred alternative will make use of the existing ACE Cable Landing Station made available by MTN. No construction or unnecessary disturbance of surrounding vegetation or infrastructure will, therefore, be required for installation of the 2AFRICA/GERA (East) Cable System.

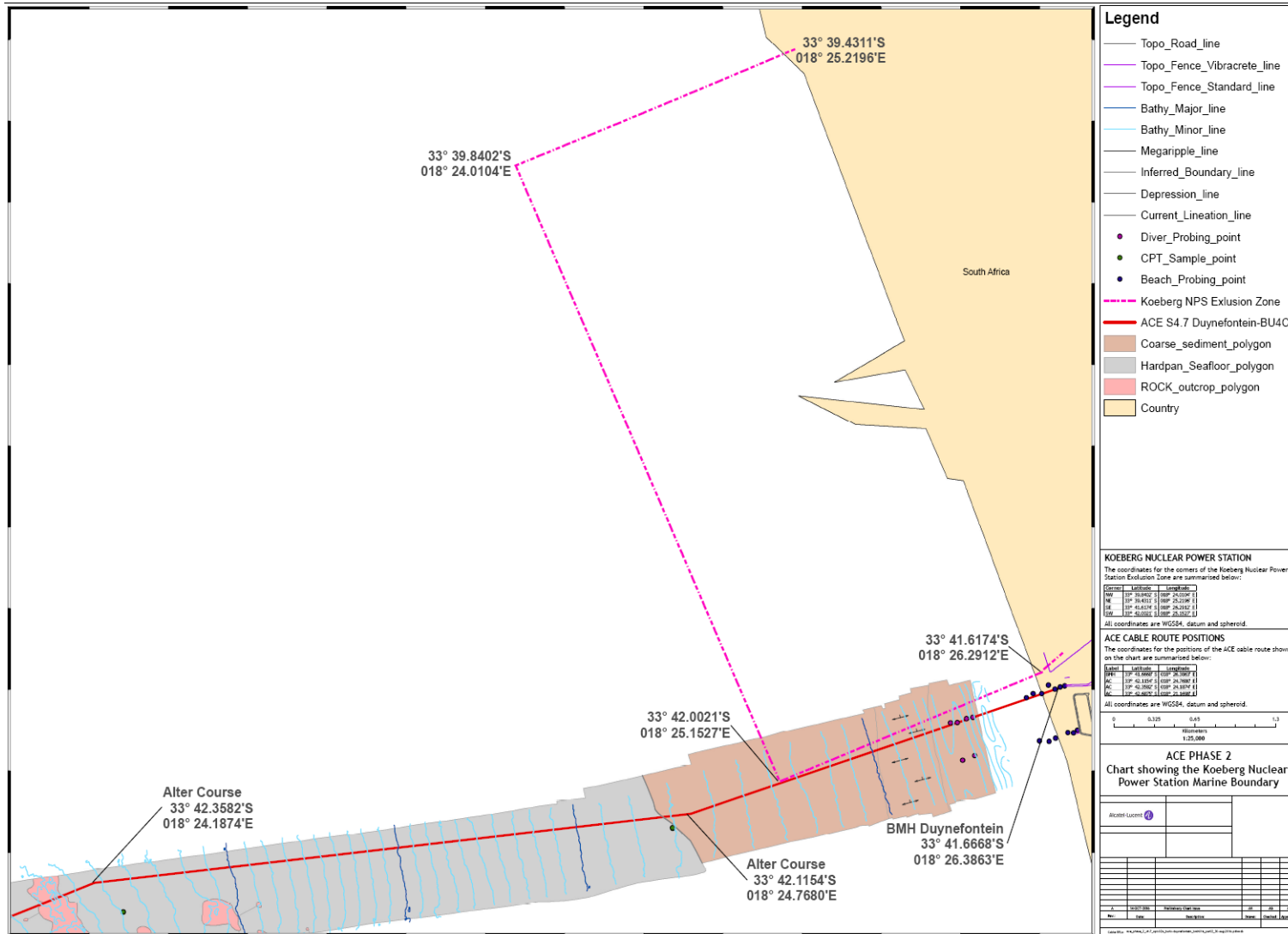


Figure 11 Koeberg Safety 2 km exclusion zone in relation to the ACE Cable alignment and BMH



Beach access path under which the ACE cable sleeves have been installed. These will accommodate the 2AFRICA cable



Service corridor from the BHM to the CLS site along the ACE front haul alignment



ACE BMH which will be used for the landing of the 2AFRICA/GERA (East) cable landing



Beach profile at the preferred landing site at the ACE cable landing point



Dune slack wetland between the beach and residential areas in Dufnefontein



ACE Cable Landing Station under construction

Plate 11 Preferred landing site (Alternative 1) at the ACE Cable System landing point at Van Riebeeckstrand

6.2 2AFRICA/GERA (East) - Duynefontein Landing Alternative 2

6.2.1 Location

The second landing site alternative considered is located along the northern section of Van Riebeeckstrand Beach (but south of Alternative 1) and can be accessed from Die Bad Road (Figures 8, 9, 10, and 12). The proposed landing point is directly in front of the access track used by the City of Cape Town for storm water maintenance (which runs from Die Bad Road towards the beach) (Plate 13).

Feature	GPS Co-ordinates
Proposed BMH Alternative 2	S 33°41'49.52 and E 18°26'26.85
Landing Point Alternative 2	S 33°41'50.94 and E 18°26'16.56
Front haul alignment from Alternative 2 BMH to the ACE BMH	Start: S 33°41'49.52 and E 18°26'26.85 Mid-point: S 33°41'44.78 and E 18°26'25.76 End: S 33°41'39.90 and E 18°26'23.17

The proposed location of the BMH will be directly adjacent to Die Bad Road where the cable from the marine environment will tie into the land cable which will have to be constructed to tie into the existing ACE BMH and front haul route (which starts at the BMH at the preferred Alternative 1 landing point).

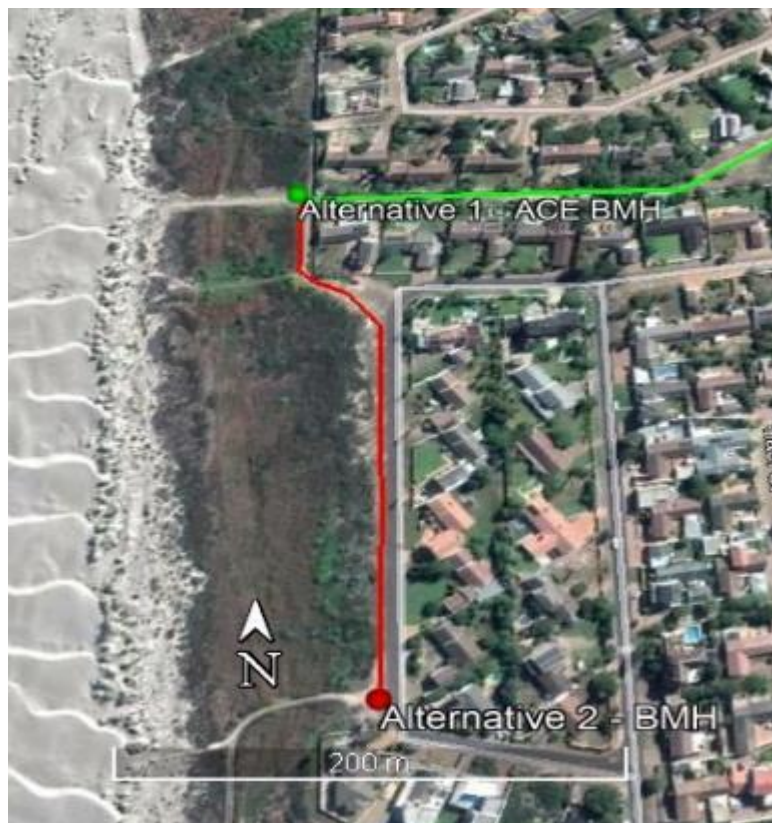


Figure 12 Alternative Landing Site 2 and position of the proposed BMH near Die Bad Road and front haul alignment to the existing ACE BMH

Following environmental screening of the area, this site has been selected as the alternative landing site (Alternative 2) to be assessed in the environmental authorisation process based on the following factors:

- The proposed BMH is located directly adjacent to Die Bad Road and by following the road, the land cable can connect to the existing ACE cable front haul alignment at Site Alternative 1 which runs from the edge of the residential stands near the beach up to Otto du Plessis Road (Plate 12). As such, there will be little impact on the residents within the area during construction.
- The proposed landing site can be accessed along an existing maintenance road used by the City of Cape Town which limits the impact on the wetland area located between the primary dune cordon and the residential area (Plate 12).
- The landing of the cable at this site will have limited impact on the beach environment as the primary dune cordon is relatively narrow at this point. Unlike Alternative Landing Site 1, no stormwater outlets are located on the beach near this landing site and, therefore, disturbance to the beach and dunes at this site would be greater than at Site 1.
- As with Alternative 1, Alternative 2 is located just south of the Koeberg Safety Exclusion Zone and, as such, the beach is not as well used by visitors and tourists in comparison to the beaches further south towards Melkbosstrand.
- As with Alternative 1, the wetland located between the primary dune cordon near the beach and residential areas inland is relatively disturbed with the City of Cape Town regularly cutting back vegetation to facilitate drainage of stormwater from the residential areas of Van Riebeeckstrand. The wetland has also been canalised to facilitate drainage of stormwater.

6.2.2 *BMH Site*

The proposed site for the BMH is located directly adjacent to Die Bad Road in a disturbed area near the access to the maintenance track into the dune slack wetland. Although impacts on the environment will be limited with the construction of the BMH at this location, the overall impact on the receiving environment will be greater than Alternative 1 where the existing ACE BMH will be utilised.

6.2.3 *BMH to CLS*

If Alternative 2 is selected for the landing of the 2AFRICA/GERA (East) Cable System, additional front haul works will be required on land once the cable reaches the BMH. From the Alternative 2 BMH, a new front haul trench along Die Bad Road will have to be constructed (red line in Figure 10) to link into the ACE BMH. These trenching activities will result in disturbance to natural vegetation along Die Bad Road. From the ACE BMH, the 2AFRICA/GERA (East) cable will be accommodated within sleeves already installed during installation of the ACE Cable System. These sleeves run from the ACE BMH to the MTN CLS site in Duynfontein.

Given that a new front haul alignment will be required for this landing alternative, the impacts on the environment are higher than those for Alternative 1 where no new excavations for front haul alignments are required. Therefore, Alternative 1 is the preferred alternative as the landing of the cable at this point has a lesser impact on the receiving environment.



Die Bad Road to the south of the beach access track



Die Bad Road to the north of the beach access track. The BMH will be located on the seaside of the road and the front haul alignment for the terrestrial cable will run along this road to the ACE BMH



Access track to the beach used by the City of Cape Town for storm water maintenance



Primary dune cordon between the beach and wetland area inland of the dune cordon



Beach at Alternative 2

Plate 12 Landing Alternative 2 near Die Bad Road, Van Riebeeckstrand. The Beach Manhole will be located to the west of Die Bad Road

6.2.4 CLS Site

Alternative 2 will also make use of the existing ACE Cable Landing Station made available by MTN. No construction or unnecessary disturbance of surrounding vegetation or infrastructure will, therefore, be required for installation of the 2AFRICA/GERA (East) Cable System at the existing CLS (Figure 13).



Figure 13 Proposed cable alignment from Alternative Landing Sites 1 and 2 to the MTN CLS site in Dufnefontein

6.3 Marine cable alignment alternatives

The main cable trunk will be located approximately 200 to 500 km from the shoreline in International Waters. From the main cable, branches will run from the main trunk line through territorial waters to the landing site in each country. The Dufnefontein landing in South Africa is the southern-most point of the cable (end station). The final route of the marine portion of the cable entering South African waters has been identified based on a combination of engineering, environmental and economic factors.

In order to reduce impacts on seabed user groups (fishing, trawling, offshore exploration and mining, etc.) the current and planned future cable landings tend to follow very similar alignments once reaching water depths of 1,000 m and less (Figure 14). These “cable corridors” have been selected to reduce the risks to other user groups as well as to capitalise on the seabed conditions required for the safe installation and longevity of the marine telecommunications cables. The alignment of the 2AFRICA/GERA (East) Cable System arriving from the east coast of South Africa, will align with the SAFE cable coming from the south before aligning closely with the ACE cable in shallower waters to link in with the existing MTN ACE BMH at Dufnefontein, or 300 m further south at the Alternative 2 Landing Site as detailed in Section 6.2.1 above.

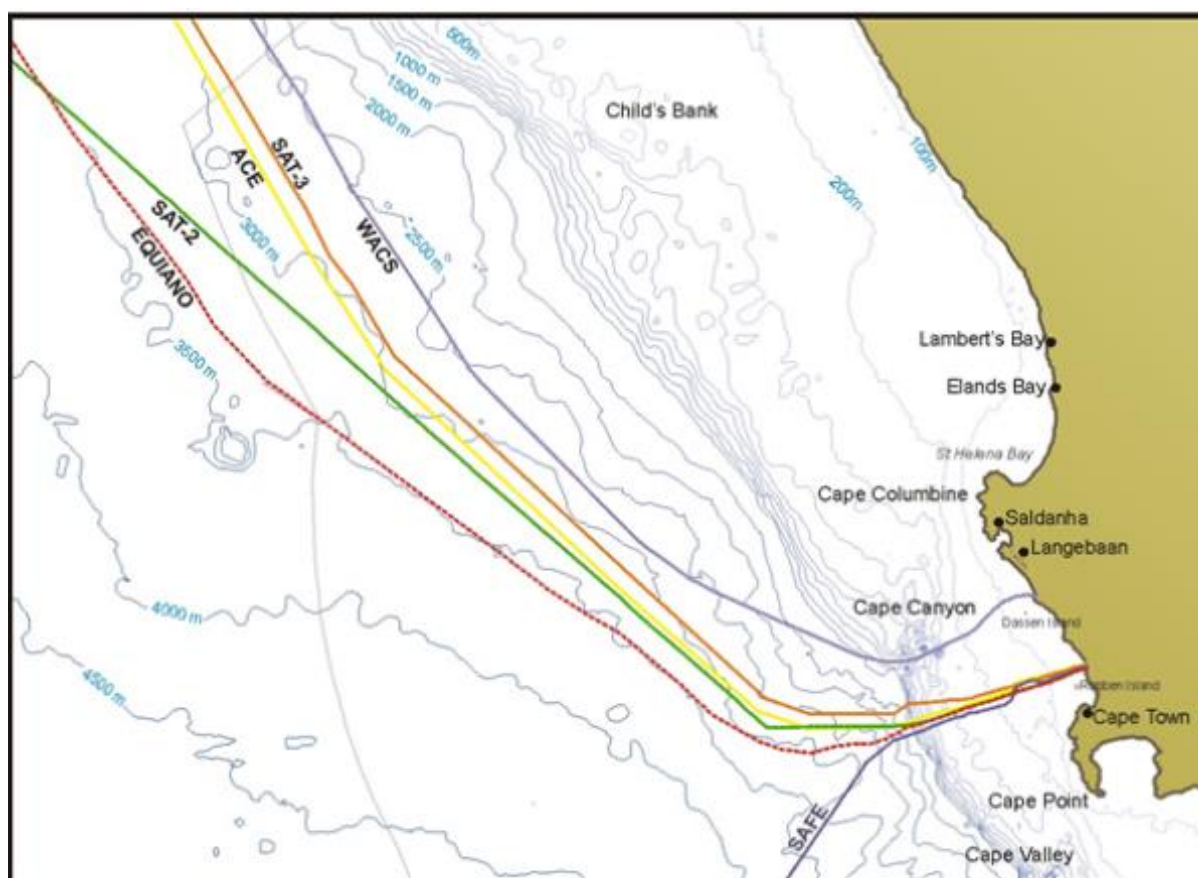


Figure 14 Map indicating other existing subsea cables and bathymetric features off the Western Cape (Pulfrich, 2020)

It should be noted that both the offshore and onshore alignments of the proposed 2AFRICA/GERA (East) Cable System and the existing ACE Cable system fall outside the

Koeberg Nuclear Power Station Public Exclusion Boundary (PEB). It is important to point out that the proposed alignment for the 2AFRICA/GERA (East) Cable System cannot approach the beach north of the existing ACE cable as this would mean that the 2AFRICA/GERA (East) cable would enter the PEB which will not be permitted by Eskom.

The proposed 2AFRICA/GERA (East) Cable System makes landfall within the 5 km Precautionary Action Zone (PAZ) of the reactors, requiring a risk assessment and emergency evacuation plan by the City of Cape Town for the proposed development during construction and operation. This Risk Assessment and Emergency Evacuation Plan will be compiled during the Environmental Impact Assessment Phase of the environmental authorisation process. The closest point of the existing ACE Cable System alignment to the PEB is located approximately 1.8 km offshore as shown in Figure 11.

6.4 Technology Alternatives

Although there are a number of available telecommunication cables used worldwide and in South Africa, the scale of customer demand and expectation of ever faster data transfer have made many of these inadequate or obsolete. Radio has largely been phased out due to restricted bandwidth and poor data transmission. Currently, Africa relies primarily on satellites with few submarine cables to provide its international communications. Satellite and microwave transmissions are unable to offer the capacity required for South Africa and other African countries to remain part of the global community in terms of communication services.

Within South Africa, fibre optic networks are currently the only available technology that can transmit sufficiently high volumes of voice and data traffic, with higher security, reliability and at a lower cost. This is the current preferred technology for meeting demand for data and voice transmission on a global scale and is one of the main reasons why the Cable System is based on a fibre optic network.

6.5 Operational Alternatives

The timing from a tourism and recreational perspective of the construction required on the beach, will need to be taken into consideration as soon as the project's timing is determined.

Operational alternatives are also applicable to the seasonal timing of the offshore installation of the 2AFRICA/GERA (East) Cable System related to seasonal whale migration patterns, should this be highlighted by the marine ecologist (a marine specialist will be commissioned to prepare a specialist report to inform the EIA Phase).

6.6 No-Go Alternative

In the context of the proposed development, the No-Go alternative would involve MTN not installing the proposed 2AFRICA/GERA (East) Cable System at Duynfontein. Although impacts on the marine and terrestrial environment would not be avoided entirely, submarine telecommunication cables are important for international telecommunication networks and it is widely recognised that access to affordable international bandwidth is key to economic development in every country.

Africa relies primarily on satellites with few submarine cables to provide its international communications. Communication via submarine telecommunication cables generally allows for lower cost, better performance, and greater capacity (throughput) than that available via

satellite. If the No-Go alternative is selected, MTN and South Africa will be missing out on an opportunity to unlock economic development within the country. In addition, should the No-Go alternative be selected it would mean that MTN will not be able to operate an international fibre-optic bandwidth and they will be unable to facilitate more affordable and effective transport of voice, data, Internet and television services to South Africa's population.

6.7 Other considerations

6.7.1 *Community safety*

The main safety issues during project implementation of the proposed Cable System are that construction activities may pose a safety risk to local residents and visitors to the beach as there will be working machinery and open trenches associated with the construction of the proposed project. Mitigation measures will be included in the EMP of the Draft EIA Report to manage these safety risks including:

- ❑ Construction vehicles must obey regulated speed limits, lights will be switched on at all times and no large vehicles will use the roads at dawn, dusk, at night or in heavy mist conditions to reduce the risk of accidents with other vehicles and pedestrians.
- ❑ Deliveries of materials and large components will be scheduled for times that fall within, or outside of the school day, and not in the early morning or mid-afternoon when there are school children using the access roads.
- ❑ All trenches must be dug with digging, placement of infrastructure and backfilling taking place on a progressive basis in order to limit the amount of open trench on site.
- ❑ All trenches must be suitably barricaded to prevent access by surrounding residents or children.

6.7.2 *Sustainable management and natural resources*

Over recent years, private sector finance for infrastructure projects, both in the developed and developing world, has increased in importance. This has exposed financial institutions to increasing pressure from Non-Governmental Organisations (NGOs) for their involvement in a variety of controversial projects and the need for greater transparency, accountability and tighter standards in the operations of commercial banking. Stemming from these demands and concerns is a set of standards known as the Equator Principles, which are based on the International Finance Corporation (IFC) performance standards on social and environmental sustainability, and on the World Bank Group's Environmental, Health and Safety General Guidelines. The Equator Principles promote socially responsible conduct and sound environmental practices in relation to project financing initiatives.

The single most important factor in reducing the environmental (and social) impacts of marine telecommunications infrastructure projects is good site selection (onshore and offshore) and the ease at which marine telecommunications cable can tie into the existing land based telecommunications network (distance from landing site to the Cable Landing Station and existing network). The best option is, as much as possible, to avoid negative impacts on the environment from the outset, thereby minimising the amount of environmental mitigation measures required.

6.7.3 *Cumulative Impacts*

A cumulative impact is an incremental impact upon the environment that results from the impact of a proposed action when added to past, existing and reasonably foreseeable future actions. Cumulative effects can be both positive and negative.

The construction of the 2AFRICA/GERA (East) Cable System will add to any cumulative impacts already likely to occur from a wide range of development interventions, i.e. increased employment, increased investment, etc. The aim of this section is to focus on the key cumulative impacts raised as concerns by stakeholders and identified by the specialists, as well as those associated with the project that may trigger different development pathways.

In this regard, a key cumulative impact has been identified to date which will require further investigation, viz. the combined impact of current and future marine telecommunication cable systems on the deep-sea trawling industry, Marine Protected Areas and the offshore Oil & Gas Sector.

Cumulative impacts associated with climate change such as the increase in severity and occurrence of storm events and the predicted rise in sea-level will be included in the management and mitigation component of the Draft EIA Report in the EMP, to monitor for erosion of the beach environment.

7 PUBLIC PARTICIPATION PROCESS

The public participation process has been designed to comply with the requirements of the EIA Regulations (Sections 41 to 44 of Regulation 982) and NEMA. The important elements relating to the public participation process that are required by the Regulations are the following:

- The manner in which I&APs were notified of the application for environmental authorisation. This includes on-site notice boards, giving written notice to landowners, letters, Background Information Documents (BID) and advertisements in the media (Section 41).
- Opening and maintaining a register containing the names and addresses of I&APs. These include all persons who have submitted comments, attended meetings, are organs of State who have jurisdiction in the assessment process, and all those who have requested that they be placed on the register as registered I&APs (Section 42).
- Registered I&APs are entitled to comment, in writing, on all written submissions made to the competent authority by the applicant or the Environmental Assessment Practitioner managing the application, and to bring to the attention of the competent authority any issues, which that party believes may be of significance when the application is considered for authorisation (Section 43).
- The comments of registered I&APs must be recorded and included in the reports submitted to the competent authority (Section 44).

The objectives of public participation in an EIA are to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

- During the Scoping Phase.
 - Identify issues of concern and provide suggestions for enhanced benefits and alternatives.
 - Contribute local knowledge and experience.
 - Verify that their issues have been considered.
- During the Impact Assessment.
 - Verify that their issues have been considered either by the EIA Specialist Studies, or elsewhere.
 - Comment on the findings of the Environmental Impact Assessment Report (EIAR), including the measures that have been proposed to enhance positive impacts and reduce or avoid negative ones.

The key objective of public participation during Scoping is to assist in defining the scope of the technical specialist studies to be undertaken during the Impact Assessment.

7.1 Notification of the application

Stakeholders are informed of MTN's intention to apply for environmental authorisation via a Background Information Document (BID), media advertisements and on-site notice board. The application is also posted on ACER's website for stakeholder review.

7.2 Identification and registration of Interested and Affected Parties (I&APs)

Key stakeholders and other I&APs, who include local, provincial and national government authorities, conservation authorities, community based organisations, local businesses, environmental interest groups, affected landowners/users and neighbours were identified and their contact details incorporated in a project database.

The direct mailing list for this EIA consists of individuals and organisations from both within the project area and beyond. A copy of the stakeholder database is provided in Appendix 2. Table 5 shows that these I&APs represent a broad spectrum of sectors of society.

Table 5 Sectors of society represented by I&APs on the direct mailing list

Government (National, Provincial and Local, Management Authorities)
Parastatals (Eskom, SAMSA, Transnet National Ports Authority)
Representative Associations:
<input type="checkbox"/> Melkbosstrand Rate Payers Association
<input type="checkbox"/> South African Deep Sea Trawling Industry Association
<input type="checkbox"/> Offshore Mining Concession Holders
<input type="checkbox"/> Conservation Organisations
<input type="checkbox"/> Tourism Organisations
Non-Governmental Organisations
Landowners and Local Residents Associations
Conservation Authorities and Conservation Groups
Business and Industry

While consultation has taken place with representatives of different sectors of society, special efforts have been made to obtain the contributions of all people who may be directly affected by the proposed project. These efforts will be on-going for the duration of the EIA.

7.3 Project announcement

The opportunity to participate in the EIA was announced as follows:

- Advertisements in local and provincial newspapers:
 - Table View Tygerburger (02 September 2020).
 - Cape Times (03 September 2020)
- A Background Information Document (BID) was compiled and emailed to all key stakeholders on 02 September 2020. All I&APs who registered following the project announcement adverts were also sent the BID for their records. Hard copies of the BID were posted to all government departments and other relevant commenting authorities.
- Notifications by telephone.
- Placement of an on-site notice board at the cable landing preferred site Alternative 1 (photos of the onsite notices are provided in Appendix 2).

7.4 Obtaining and dealing with comments from I&APs

The following opportunities will be provided to I&APs during Scoping to contribute comments:

- Completing and returning Registration and Comment Sheets.
- Providing comments telephonically or by email.
- Should the need arise, a virtual Public Open Day will be held during the DSR review period. The primary aim of this open day will be to:
 - Disseminate information regarding the proposed project to I&APs.
 - Provide I&APs with an opportunity to interact with the EAP and relevant MTN officials.
 - Discuss the studies to be undertaken within the Environmental Impact Assessment.
 - Supply more information regarding the EIA process.
 - Answer questions regarding the project and the EIA process.
 - Receive input regarding the public participation process and the proposed development.
 - Provide I&APs not previously registered on the project database with an opportunity to be formally registered and, therefore, be informed of progress for the remainder of the project.
- Virtual Focus group meetings will be held with key stakeholders should the need arise to discuss the project and to address concerns raised by key stakeholders.

Public participation documentation is provided in Appendix 2.

7.5 Comments and Responses Report

Issues and concerns raised by I&APs have been captured in a Comments and Responses Report (CRR), which is appended to this report (Appendix 3). Responses have been provided in the CRR as applicable and it is noted where issues will be taken forward for further investigation in the Impact Assessment. This report will be updated to include any additional inputs from I&APs that may be received as the EIA process proceeds, and as the findings of the EIA become available. To date, comments received from I&APs and relevant authorities relate to the following topics:

- Stakeholder registration details.
- Various comments from the City of Cape Town, relating to:
 - applicable legislation, permit and lease requirements
 - the landing site and cable position
 - public access, health and safety
 - effect on Critical Biodiversity Areas, use of directional drilling and rehabilitation requirements.
 - Koeberg Nuclear Power Station Disaster Risk Management.
 - Municipal water and sewage infrastructure.
- Coastal Navigation Safety.
- Location of trawling activities relative to the cable route.

7.6 Draft Scoping Report

The purpose of the Draft Scoping Report is to enable I&APs to provide comment. At the end of Scoping, the issues identified by I&APs and by the environmental technical specialists, will

be used to define the terms of reference for the specialist studies that will be conducted during the Impact Assessment Phase of the EIA.

The availability of the Draft Scoping Report for public comment was advertised as follows:

- All registered I&APs were notified in writing of the availability of the Draft Scoping Report for their review and comment.
- Notification letters were sent to all registered I&APs and notices were placed at strategic points (local shops, library, etc.) within and around Duynfontein notifying the public of the availability of the Draft Scoping Report for review and comment.
- The Draft Scoping Report was uploaded to ACER's website where members of the public can download the report for review and comment.
- A hard copy and electronic copy of the report was placed at the Koeberg Public Library.
- ACER engaged with I&APs during the review period of the DSR to:
 - Disseminate information regarding the proposed project to I&APs.
 - Provide I&APs with an opportunity to interact with the relevant project team members.
 - Discuss the studies to be undertaken during the Environmental Impact Assessment.
 - Supply more information regarding the EIA process.
 - Answer questions regarding the project and the EIA process.
 - Receive input regarding the public participation process and the proposed development.
 - Provide I&APs not previously registered on the project database with an opportunity to be formally registered and, therefore, be informed of progress for the remainder of the project.

The Draft Scoping Report was made available at the venues indicated in Table 6 for public review (with a 30-day comment period) (15 January – 15 February 2021).

Comments submitted during this period were taken into account when finalising the Final Scoping Report and have been included in the Final Comments and Responses Report that will be submitted to DEFF.

Table 6 List of public venues in the project area where the Draft Scoping Report was placed for public review

Venue	Street	Contact Person and Number
Koeberg Public Library	Merchant Walk, Duynfontein, 7441	Ms. Roelda Brown 021 553 2514
Melkbosstrand Ratepayers Association	25 Jacobus Crescent, Duynfontein, 7441	Mrs. Smokie La Grange 073 357 6359

7.7 Final Scoping Report

Following the updating of the Draft Scoping Report with comments and issues raised by I&APs during the public review process, the Final Scoping Report will be submitted to DEFF, with a request for the EIA to proceed to the next phase, viz. the Impact Assessment phase.

Once DEFF has approved the Final Scoping Report and Plan of Study, the Impact Assessment Phase of the EIA will commence. This will comprise various specialist studies to assess the potential positive and negative impacts of the proposed project, and to recommend appropriate measures to enhance positive impacts and to avoid or reduce negative ones.

8 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section describes relevant characteristics of the receiving environment that may affect or be affected by the proposed 2AFRICA/GERA (East) Cable System development and associated infrastructure. The aim of this chapter is to enable the reader to understand the receiving environment in the context of the proposed development.

8.1 Marine and Offshore Environment

At each landing country associated with the 2AFRICA/GERA (East) Cable System, the proposed fibre-optic cable will transit coastal waters and be brought on shore using industry-standard installation methodologies. When selecting the route alignment for the 2AFRICA/GERA (East) Cable System, the following criteria were taken into account by the engineering team in order to find the most practical and cost-effective alignments:

- ❑ The placing of the cable close to and along existing alignments of submarine telecommunications cables entering South Africa's waters (this is undertaken to reduce impacts on seabed user groups).
- ❑ The placement of the cable on suitable seabed substrate to allow for cable burial in shallow waters and to avoid substrates which could result in cable faults/breaks (rocky substrates, steep canyons, etc.). This ensures the longevity of the cable system and reduces the need for maintenance activities during operation.
- ❑ Identification of a suitable landing beach that minimises onshore environmental and infrastructure constraints and enables the cable to be linked to the proposed or existing cable station.

8.1.1 *Conservation Areas and Marine Protected Areas*

Numerous conservation areas and coastal and offshore marine protected areas (MPAs) exist along the coastline of the Western Cape and east coast of South Africa. Refer to Figure 15, which shows the offshore alignment of the 2AFRICA/GERA (East) marine cable alignment in relation to the MPAs and Focus areas for Offshore Protection. Refer to Figure 16 which shows the 2AFRICA/GERA (EAST) marine cable alignment in relation to the Robben Island MPA. The 612 km² Robben Island MPA was proclaimed in 2019 to protect the surrounding kelp forests - one of the few areas that still supports viable stocks of abalone (Pulfrich, 2020). The island harbours the third largest penguin colony, with the breeding population peaking in 2004 at 8,524, but declining since (Pulfrich, 2020). The island also holds the largest numbers of breeding Bank Cormorant in the Western Cape (120 pairs in 2000) and significant populations of Crowned Cormorant, African Black Oystercatcher (35 breeding pairs in 2000), Hartlaub's Gull and Swift Tern (Pulfrich, 2020).

The Robben Island MPA consists of four distinct zones – a Restricted Zone (RIRZ) and three controlled zones - Offshore Controlled Zone (RIO CZ), Middle Controlled Zone (RIM CZ) and an Inner Controlled Zone (RIICZ).

Although the 2AFRICA/GERA (East) Cable would pass through the RIO CZ and potentially the RIM CZ, the proposed routing follows that of the Equiano Cable System to be installed along the decommissioned SAT-2 cable alignment. All the current marine cables landing in and around Cape Town pass through Robben Island MPA. The marine ecology specialist will assess the significance of the impacts associated with the 2AFRICA/GERA (East) marine

cable passing through the Robben Island MPA including a cumulative assessment of the impacts posed by marine cables on the MPA.

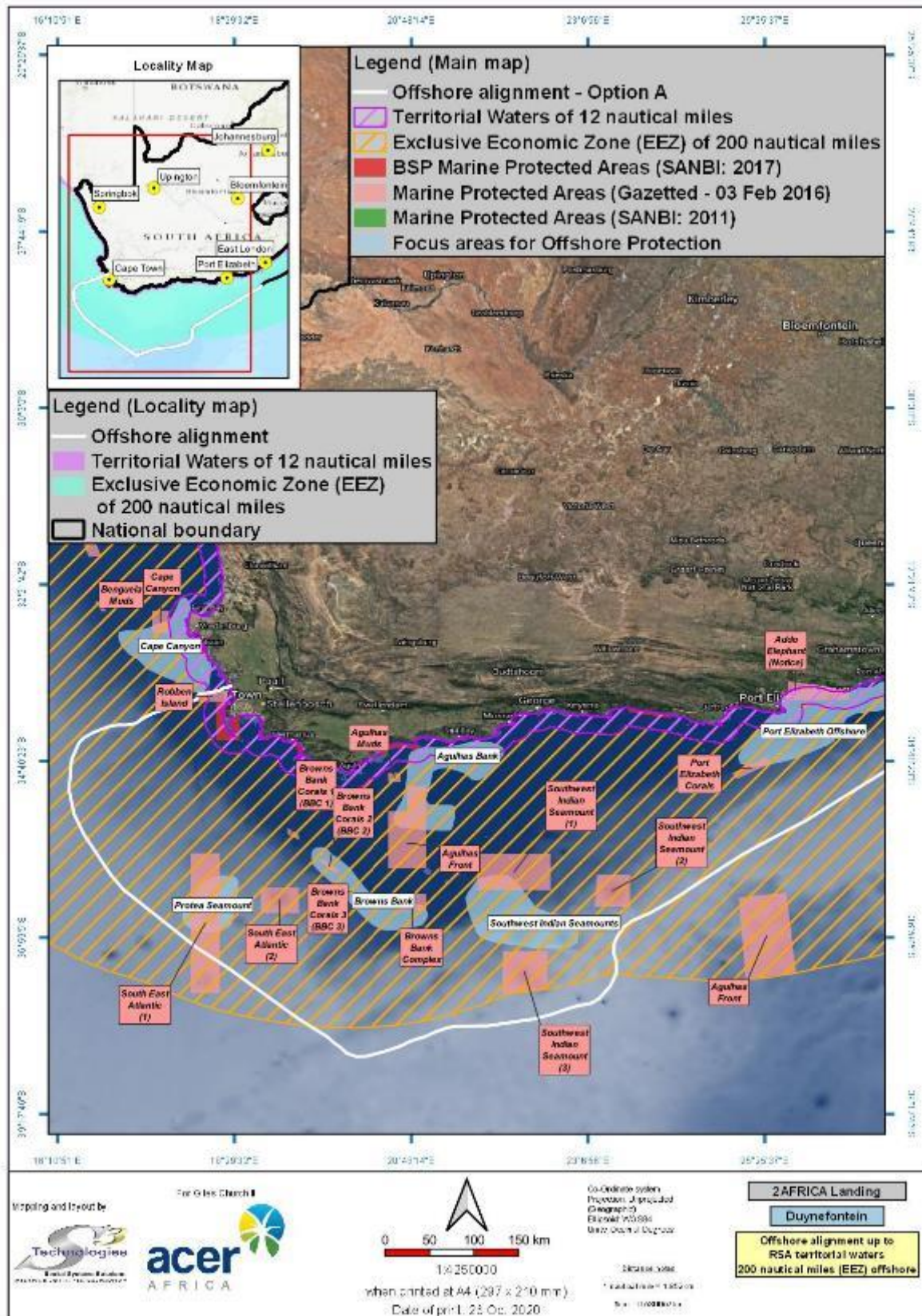


Figure 15 Marine Protected Areas and Focus Areas for Offshore Protection

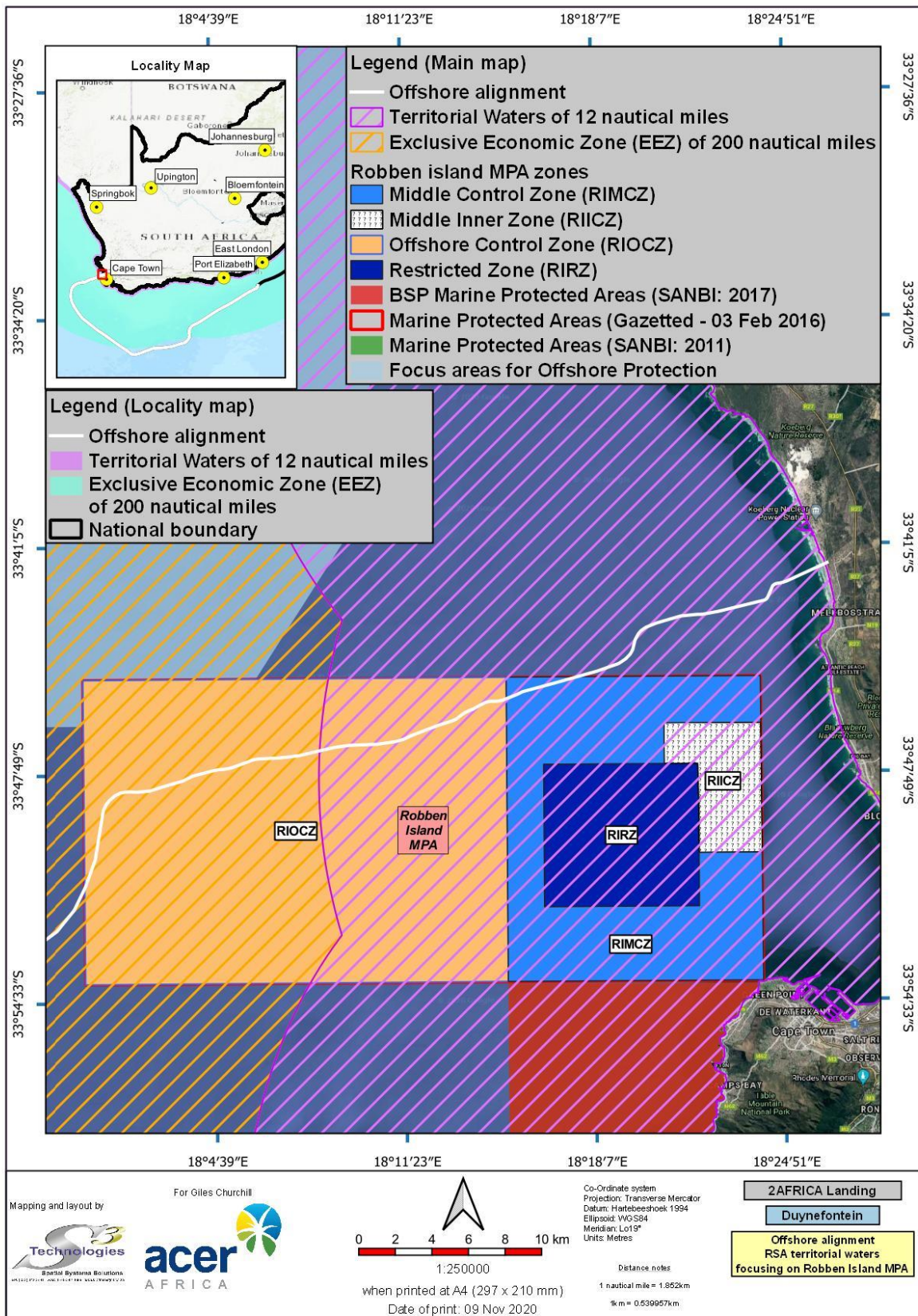


Figure 16 2AFRICA/GERA (East) marine cable alignment in relation to the Robben Island MPA

Marine telecommunications cables although having some direct negative impacts associated with the installation and operation of these cable systems, do offer protection to the marine benthic environment along their alignment through the implementation of the legislated buffer zone either side of the cable as defined in the Marine Traffic Act (Act No. 2 of 1981) read together with the Maritime Zones Act (Act No. 15 of 1994). This buffer zone effectively protects the benthos from bottom trawling and acts as a refuge for benthic fish species in this area.

8.1.2 *Geophysical Characteristics*

Bathymetry

The continental shelf along the West Coast is generally wide and deep, although large variations in both depth and width occur. The shelf maintains a general north-northwest trend, widening north of Cape Columbine and reaching its widest (180 km) off the Orange River (Pulfrich, 2020). Underwater features in the general project area include the Cape Canyon and Cape Valley (Pulfrich, 2020).

8.1.3 *Biophysical Characteristics*

Wind Patterns

Winds are one of the main physical drivers of the nearshore Benguela region, both on an oceanic scale, generating the heavy and consistent south-westerly swells that impact this coast, and locally, contributing to the northward-flowing longshore currents, and being the prime mover of sediments in the terrestrial environment. Consequently, physical processes are characterised by the average seasonal wind patterns, and substantial episodic changes in these wind patterns have strong effects on the entire Benguela region.

The prevailing winds in the Benguela region are controlled by the South Atlantic subtropical anticyclone, the eastward moving mid-latitude cyclones south of southern Africa, and the seasonal atmospheric pressure field over the subcontinent. The south Atlantic anticyclone is a perennial feature that forms part of a discontinuous belt of high-pressure systems which encircle the subtropical southern hemisphere. This undergoes seasonal variations, being strongest in the austral summer, when it also attains its southernmost extension, lying south west and south of the subcontinent. In winter, the south Atlantic anticyclone weakens and migrates north-westwards.

These seasonal changes result in substantial differences between the typical summer and winter wind patterns in the region. The strongest winds occur in summer (October to March), during which winds blow 98% of the time, and gales (winds exceeding 18 m/s or 35 kts) are frequent, as shown in Figure 17 (CSIR 2006 as cited by Pulfrich, 2020). Virtually all winds in summer come from the south to south-southeast, averaging 20 - 30 kts and reaching speeds in excess of 100 km/h (60 kts). The combination of these southerly/south-easterly winds drives the massive offshore movements of surface water, and the resultant strong upwelling of nutrient-rich bottom waters, which characterise this region in summer. Winter remains dominated by southerly to south-easterly winds.

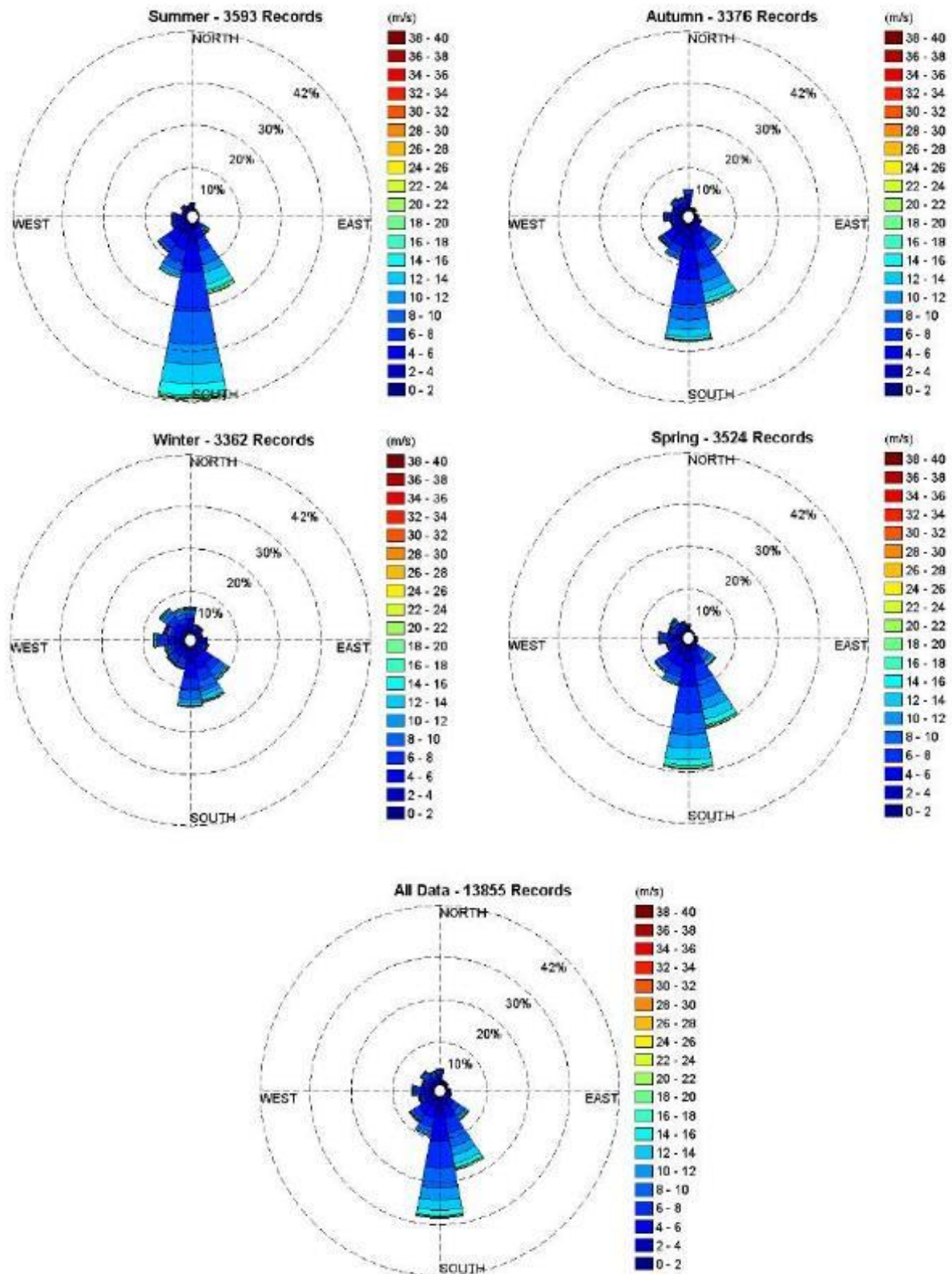


Figure 17 Wind speed vs. wind direction data for the Cape Columbine area (CSIR, 2006 as cited by Pulfrich, 2020)

Large scale circulation and coastal currents

The oceanographic regime around South Africa is dominated by two major current systems: the cold Benguela Current along the Atlantic coast to the west and the warm Agulhas Current along the Indian Ocean coast to the east (Figure 18). On the west coast, the Benguela Current has two main components namely the eastern limb of the South Atlantic Subtropical Gyre which has a broad, sluggish, equator ward flow of only $0.1\text{--}0.3\text{ m s}^{-1}$ and inshore of this, a coastal component which exhibits dynamic wind-driven upwelling. The inshore coastal component is mainly driven by local weather systems, resulting in short-term upwelling cycles with a periodicity of 5–10 days. Offshore, mean monthly sea surface temperatures range from 15.4°C to 20.1°C , but in the near shore upwelling region, variability is greater and temperatures range from 10°C to 18°C . These upwelling events along the west coast bring nutrient rich waters which result in high biological productivity, which in turn supports large fish stocks, including pilchard, anchovy, hake, and rock lobster, each forming the basis for lucrative commercial fisheries (Shannon *et al.*, 1988).

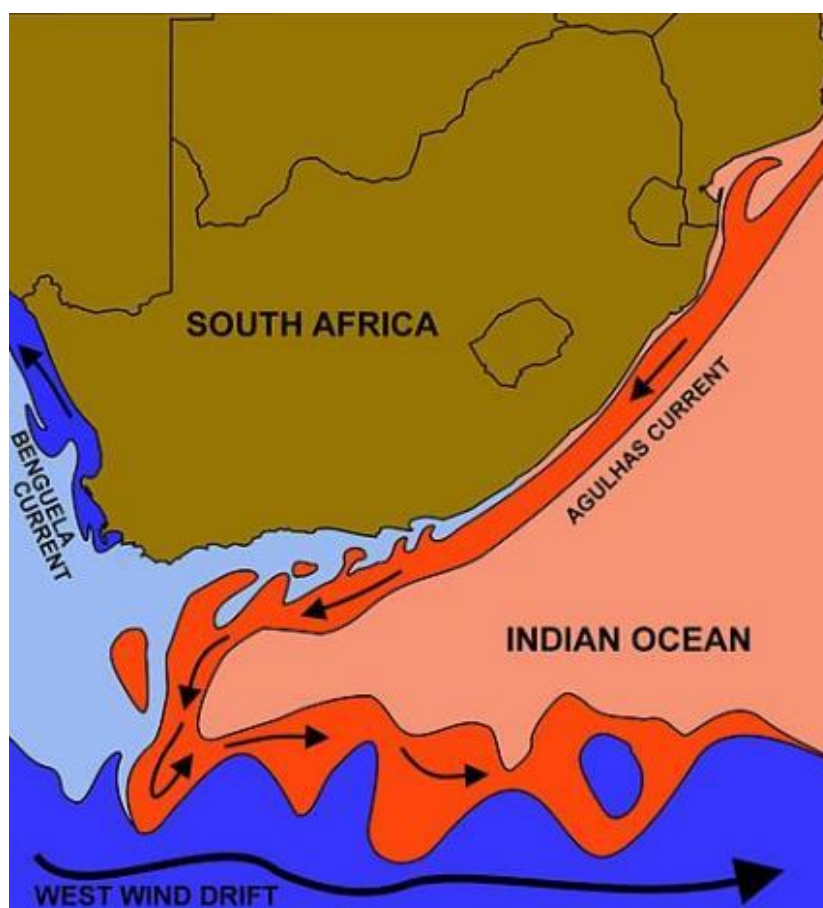


Figure 18 Major ocean currents off the coast of South Africa

The southern African West Coast is strongly influenced by the Benguela Current. On its western side, flow is more transient and characterised by large eddies shed from the retroflexion of the Agulhas Current, resulting in considerable variation in current speed and direction over the area. In the south, the Benguela current has a width of 200 km, widening rapidly northwards to 750 km. Current speeds decrease with depth, while directions rotate from predominantly north-westerly at the surface to south-easterly near the seabed. Near bottom shelf flow is mainly poleward with low velocities of typically $<5\text{ cm/s}$ (Nelson 1989; Boyd and Oberholster 1994; Shannon and Nelson 1996).

On the east coast of South Africa, the Agulhas Current that forms part of the anticyclonic Indian Ocean gyre (Shannon, 1988) dominates the KwaZulu-Natal Coast of South Africa. The current forms between 25° and 30° S and flows southwards along the east coast of southern Africa before retroreflecting between 16° and 20° E. The Agulhas Current follows the edge of the continental shelf on the east coast flowing at a rapid rate (surface speed of 1-1.5 m.sec-1 in the core) in a generally SW direction, although current speeds of 2.5 m.sec-1 or more have been recorded. Four current regions can be identified at the surface namely the:

- Inshore region comprising relatively cool, low velocity water over the continental shelf.
- The western boundary of the current consisting of a region of intense horizontal shear and a fairly strong temperature gradient (1 to 20 C in 10 km).
- The current core where the water velocity exceeds 1 m.s-1. The temperature of the Agulhas core ranges from about 22.0°C in August to 27.0°C in March.
- The eastern boundary of the current comprising weak gradients beyond the core region, where both water velocity and temperatures decrease gradually with distance from the coast.

Waves and Tides along the West Coast of South Africa

Most of the west coast of southern Africa is classified as exposed, experiencing strong wave action. Much of the coastline is therefore impacted on by south-westerly swells generated in the roaring forties, as well as large sea waves generated locally by the prevailing moderate to strong southerly winds characteristic of the region.

The wave regime along the southern African west coast shows only moderate seasonal variation in direction, with virtually all swells throughout the year coming from the S and SSW direction. Winter swells are strongly dominated by those from the S and SSW, which occur almost 80% of the time, and typically exceed 2 m in height, averaging about 3 m, and often attaining over 5 m in height. These swells can reach up to 10 m in height when combined with wind speeds capable of reaching 100 km/h during heavy winter south-westerly storms.

Summer swells tend to be smaller on average, typically around 2 m. There is also a slightly more pronounced southerly swell component in summer. These wind-induced southerly waves are relatively local and, although less powerful, tend to work together with the strong southerly winds of summer to cause the northward-flowing nearshore surface currents which result in substantial nearshore sediment mobilisation, and northwards transport, by the combined action of currents, wind and waves. As with the rest of the southern African coast, tides are semi-diurnal, with a total range of some 1.5 m at spring tide, but only 0.6 m during neap tide periods.

Upwelling and Plankton Production

The west coast of Southern Africa is characterised by upwelling events where comparatively nutrient-poor surface waters are displaced by enriched deep water, supporting substantial seasonal primary phytoplankton production. The cold, upwelled water is rich in inorganic nutrients, the major contributors being various forms of nitrates, phosphates and silicates (Chapman and Shannon 1985).

The Benguela upwelling region is an area of particularly high natural productivity, with extremely high seasonal production of phytoplankton and zooplankton. These plankton blooms in turn serve as the basis for a rich food chain up through pelagic baitfish (anchovy, pilchard, round-herring and others), to predatory fish (snoek), mammals (primarily seals and dolphins) and seabirds (jackass penguins, cormorants, pelicans, terns and others).

8.1.4 *The biological environment*

Ecoregions

Biogeographically, the 2AFRICA/GERA (East) Cable System will traverse the West Indian Offshore Bioregion from where it enters the South African EEZ from Mozambique and the South-east Indian Offshore and Indo-pacific Offshore Bioregions as it moves down the east coast of South Africa. At its southernmost point the cable enters the Southwest Indian Deep Ocean Offshore and Southern Benguela Ecoregions as the cable turns northwards from the east coast to the west coast of South Africa (Figure 19).

South Africa's marine environment includes the Atlantic, Indian and Southern oceans with the cold Benguela upwelling systems and the warm fast-flowing Agulhas current (SANBI; 2019). There are three shelf ecoregions that are recognised, these being the Cool Temperate Southern Benguela, the Warm Temperate Agulhas and the Subtropical Natal–Delagoa, whilst the deep ocean beyond the shelf edge includes two further ecoregions in the form of the Southeast Atlantic and the South-west Indian as shown in Figure 19, referenced from SANBI (2019).

The coastal, wind-induced upwelling characterising the Western Cape coastline, is the principle physical process which shapes the marine ecology of the southern Benguela region. Although the Benguela system is characterised by the presence of cold surface water, high biological productivity, and highly variable physical, chemical and biological conditions it is characterised by low marine species richness and low endemism. According to Pulfrich (2020), the biota of nearshore and offshore marine habitats on the West Coast are relatively robust, being naturally adapted to an extremely dynamic environment where biophysical disturbances are commonplace.

The benthic habitats of South Africa were mapped as part of the 2018 National Biodiversity Assessment to develop assessments of the ecosystem threat status and ecosystem protection level. The benthic ecosystem types were subsequently mapped and assigned an ecosystem threat status based on their level of protection.

The offshore marine protected areas (MPAs) along the coastline of the Western Cape and east coast of South Africa are detailed in Section 8.1.1 above and illustrated in Figures 15 and 16.

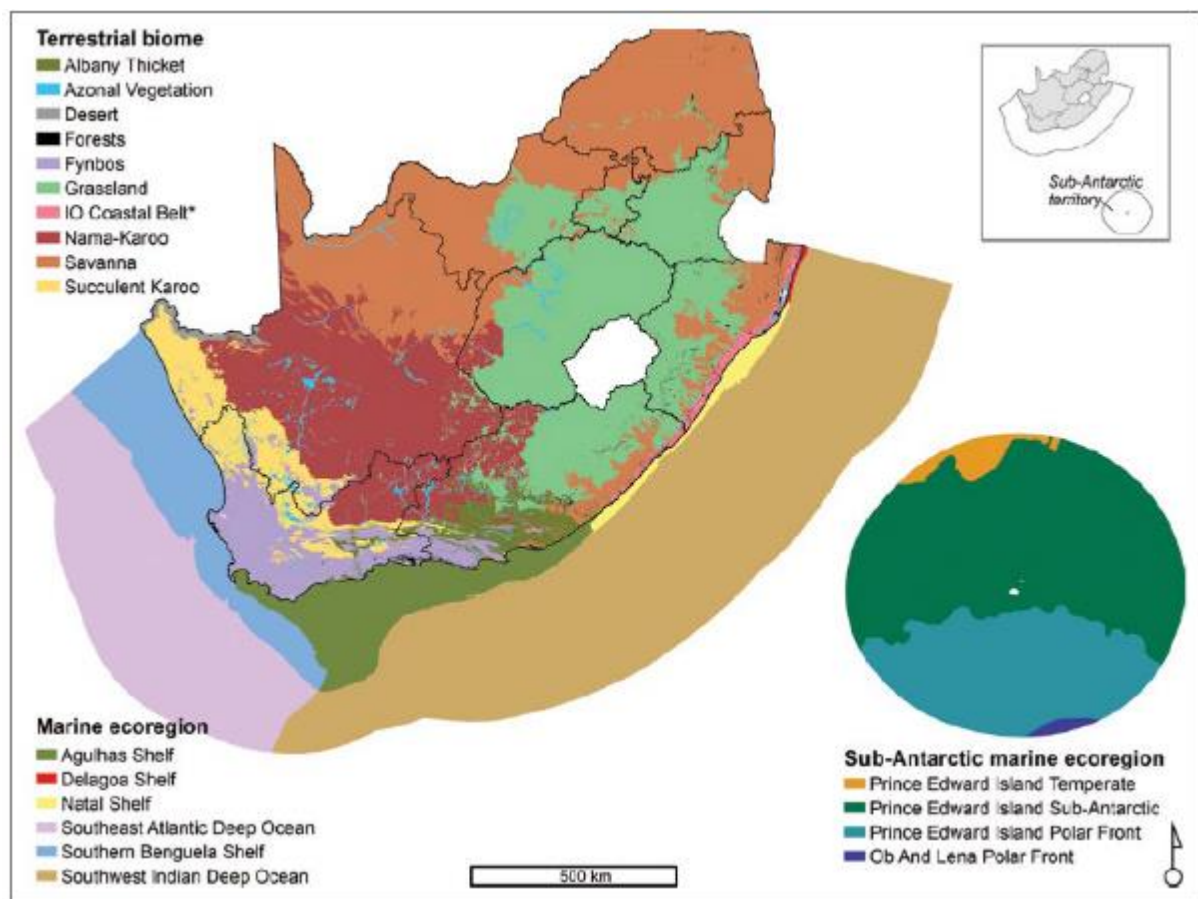


Figure 19 Marine Ecoregions and terrestrial biomes of South Africa (Sourced from SANBI (2019) Figure 16)

Marine ecoregions, habitats and associated biological communities specific to the study area is to be describe in detail by the marine ecological specialist report for inclusion in the EIA Phase, and which will include:

- Sandy intertidal beaches and subtidal substrates,
- Intertidal rocky shores and subtidal reefs, and
- The water body: demersal fish species that live and feed on or near the seabed; pelagic communities live and feed in the water column; plankton associated with the upwelling characteristic of the area; cephalopods that are distributed on the mid-shelf or on the edges of a shelf at varying depths; turtles; seabirds, and marine mammals (whales, dolphins, and seals).

8.1.5 Marine Fauna

Commercially important Fish Species (West Coast)

The marine environment off the south-western coast of Africa with its nutrient rich waters supports large populations of pelagic, mid-water and demersal fish species as well as high numbers of bird and mammalian predators (Hutchings *et al.*, 2009). Of particular relevance to the proposed 2AFRICA/GERA (East) Cable System are the fish stocks occurring within oceans surrounding the proposed cable route and the fishing industry which targets these fish species.





These fish species include the following commercially targeted species some examples of which are provided in Plate 13 below:

Pelagic species

- Pilchard (*Sardinops ocellata*).
- Anchovy (Family *Engraulidae*).
- Snoek (*Thyrsites atun*).
- Chub mackerel (*Scomber japonicus*).
- Yellowtail (*Seriola lalandi/rivoliana*).
- Tuna (numerous species).

Demersal species

- Hake (*Merluccius paradoxus/capensis*).
- Kingklip (*Genypterus capensis*).
- Monkfish (*Lophius americanus*).





	<p>Hake</p>
	<p>Pilchard</p>
	<p>Cape Snoek</p>
	<p>Kingklip</p>
<p>Plate 13 Some of the commercially targeted fish species on the West Coast of South Africa</p>	

Commercially important Fish Species (East Coast)

Along the east coast of South Africa, primary fisheries in terms of highest economic value are the demersal (bottom) trawl and long-line fisheries targeting the Cape hakes (*Merluccius paradoxus* and *M. capensis*) and the purse-seine fishery targeting small pelagic species, including pilchard (*Sardinops ocellatus*) and anchovy (*Engraulis encrasicolus*). Highly migratory tuna and tuna-like species are caught in deeper waters and seasonally within the

South African EEZ by the pelagic long-line and pole fisheries. Targeted species include albacore (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*) (Plate 14).

Outside the Western Cape, the only “significant fishery activity” occurs in the Eastern Cape (Port Elizabeth and Port St Francis) where the squid fishery is based (<http://www.stfrancistourism.co.za/industries/fishing-industry>) and a small proportion of South Africa’s sardine, inshore trawl and line-fish catch are landed. The squid (*Loligo vulgaris reynaudii*) fishery is an important fishery in the Eastern Cape particularly around Port Elizabeth and Cape St Francis where between 6,000–10,000 tonnes are landed annually (<http://www.fao.org/fi/oldsite/FCP/en/ZAF/body.htm>). The fishery has approximately 170 rights holders and up to 200 boats in the sector and is one of the main employers in the fisheries based in and around Port Elizabeth.

	<p>Albacore</p>
	<p>Bigeye Tuna</p>
	<p>Squid</p>
	<p>Swordfish</p>
<p>Plate 14 Some of the commercially targeted fish species on the East Coast of South Africa</p>	

Given the depth and distance from shore that the 2AFRICA/GERA (East) Cable System is being laid little to no impacts on the fishing industry are expected along the east coast of South Africa as the majority of the cable alignment is deeper than the continental shelf where most fisheries are concentrated. This will be confirmed through a fisheries assessment to be undertaken during the impact assessment phase of the environmental authorisation process.

Marine Mammals (West Coast of Africa)

There are a number of marine mammals which are known to occur on the West Coast of South Africa and within the project area. Included in this area is the Cape Fur Seal (*Arctocephalus pusillus*). The Cape Fur Seal is the only seal species that breeds in South Africa; however, other seal species such as Elephant Seals, Sub-Antarctic Fur Seals and Leopard Seals are occasionally encountered along South Africa's coastline. Cape Fur Seals have been protected in South Africa since 1893 but were commercially harvested up until the 1990s before a ban on the commercial harvesting seals was enforced.

There are three dolphin species generally found off the West Coast of South Africa (Plate 15), namely the common (*Delphinus delphis*), bottlenose (*Tursiops truncatus*) and the Heaviside's dolphins (*Cephalorhynchus heavisidii*). Although sightings of the Heaviside's dolphins are not uncommon off the Skeleton Coast of Namibia, they have been recorded as far south as the southern tip of South Africa. Sightings are often recorded from major population centres such as Cape Town.

There are a number of whale species which are known to occur on the West Coast of South Africa the most common of which is the southern right whale (*Eubalaena australis*) and humpback whale (*Megaptera novaeangliae*). Whales are generally observed in the waters off Melkbosstrand and Yzerfontein between June and December when groups of between 8-10 whales are often observed. During this period, the cows calve in the calm coastal waters along the coastline.

Marine Mammals (East Coast of South Africa)

Some 34 species of cetacean are believed to occur off the east coast of South Africa (eight Mysticete (baleen whale)) species and 26 odontocete (toothed whale and dolphin) species (Plate 16). Cape fur seals are limited to the West and South coasts of South Africa and are seldom encountered in the waters of the East Coast, except as occasional vagrants.

The cetacean fauna on the east coast may be further divided in terms of seasonal abundance and residency patterns, with species being defined as migratory, resident or semi-resident (where both migratory and resident components of the population occur). There are marked offshore (water depth) differences in distributions of individual species within both the migratory and resident fauna. Whilst oceanographic parameters play an important role in the distribution of the resident species (and are integral in defining faunal provinces) the migratory species travel through a broad range of environmental parameters.

Baleen whale species

The baleen whales along the east coast are largely migratory, making extensive migrations along the southern African coastal and offshore waters between summer polar feeding grounds and winter low latitude breeding grounds in both coastal and offshore waters. This results in their abundance along the east coast being highly seasonal. The seasonal presence of the baleen whale species in northern KwaZulu-Natal results from their breeding migrations as little feeding is carried out in the region (Mackintosh 1942, Bannister and Baker 1967). However, water temperatures appear to play an important role in the delineation of breeding grounds of certain species (for example Rasmussen et al. (2007) note that warmer waters (of

between 21.1 and 28.3° C) are important in defining winter breeding grounds and therefore migration patterns of humpback whales).



Humpback whale



Killer Whale



Heaviside's Dolphin

Plate 15 Cetacean species known to occur on the west coast of southern Africa

Baleen whale species recorded within the coastal and offshore waters of the study area include both pygmy and Antarctic blue whales, fin whales, sei whales, minke whales (both Antarctic and dwarf minke whales), Bryde's whales, humpback whales and southern right whales. It should be noted that most of these species had been whaled to extremely low abundance levels by the time commercial whaling terminated in the Southern Hemisphere in 1985. Some species have shown partial or almost full recoveries, but many remain depleted.



Bryde's Whale



Southern Right Whale



Minke whale



Bottlenose Dolphin

Plate 16 Cetacean species known to occur on the east coast of southern Africa

Seabirds

Birds are common and important components of coastal ecosystems, being top predators both in near shore and intertidal environments where near shore is defined as “the region extending from the low-water mark out to sea, approximately as far as the edge of the continental shelf” and the intertidal environment is defined as “that extending above the low-water spring mark to the limit of direct marine influence” (Hockey *et al.*, 1983). The distribution patterns of birds are also highly dependent on food availability and suitable nesting sites. Seabirds feed at sea and breed on land and are, therefore, important redistributors of nutrients within these environments.

The near shore environment of Southern Africa supports large numbers of both breeding and non-breeding seabirds. Breeding seabirds are spatially restricted by the availability of safe nesting sites such as islands and mainland cliffs, but non-breeding species can theoretically occur throughout the region. The distribution of sea birds is also highly dependent on food availability and, as such, the upwelling of nutrient water in the Benguela Current often results in large numbers of seabirds congregating around large shoals of fish such as pilchards and smaller pelagic shoaling fish.

The three most abundant seabird species encountered within the project area (shallow waters on the west coast of South Africa) are the Jackass Penguin (*Spheniscus demersus*), Cape Cormorant (*Phalacrocorax capensis*) and Cape Gannet (*Morus capensis*) (Plate 16). Seabird diversity varies seasonally within the project area with the area supporting a reduced diversity of species during the summer months.

Important Bird Areas (IBAs)

IBAs in the general project area include Lower Berg River wetlands and the West Coast National Park and Saldanha Bay Islands, Dassen and Robben Islands and Rietvlei Wetland. Various marine IBAs have also been proposed in South African territorial waters.

The marine ecology specialist will provide more information on the relevant IBAs as required.



Cape Cormorant



Jackass Penguin



Cape Gannet

Plate 17 Commonly encountered marine bird species off the West Coast of South Africa

Turtles

Five species of turtles are found in South African waters. The Leatherback (*Dermochelys coriacea*) and the Loggerhead (*Caretta caretta*) turtles nest on the beaches of northern KwaZulu-Natal. The Green turtle (*Chelonia mydas*) is a non-breeding resident, while the Hawksbill (*Eretmochelys imbricata*) and Olive Ridley (*Lepidochelys olivacea*) turtles occur as strays in our waters. Three species of turtle occur along the West Coast, namely the Leatherback (*Dermochelys coriacea*), and occasionally the Loggerhead (*Caretta caretta*) and the Green (*Chelonia mydas*) turtle. Loggerhead and Green turtles are expected to occur only as occasional visitors along the West Coast. The Leatherback is the only turtle likely to be encountered in the offshore waters of west South Africa. The Benguela ecosystem, especially the northern Benguela where jelly fish numbers are high, is increasingly being recognised as a potentially important feeding area for Leatherback turtles.

Marine turtles are of high ecological value for maintaining the structure and dynamics of marine and coastal ecosystems. The dominant turtle species present along the East Coast of South Africa include the Loggerhead and Leatherback turtles (Plate 17). The Loggerhead turtle is the most common sea turtle off the coast of South Africa (Hughe, 1970). Loggerhead turtles nest on the north coast of South Africa with most of the nesting sites confined to the beaches within the iSimangaliso Wetland Park. Leatherback turtles also nest along the sandy beaches of KwaZulu-Natal where nesting takes place to coincide with the westward shift in the Agulhas Current, bringing warmer waters to the coast between October and February.



Loggerhead Turtle



Leatherback Turtle

Plate 18 Turtle species known to occur on the east coast of southern Africa

Leatherback Turtles are listed as “Vulnerable” worldwide by the IUCN and are in the highest categories in terms of need for conservation in CITES (Convention on International Trade in Endangered Species), and CMS (Convention on Migratory Species). Loggerhead turtles are globally listed as “Vulnerable”, whereas Green turtles are globally listed as “Endangered”. As a signatory of CMS, South Africa has endorsed and signed a CMS International Memorandum of Understanding specific to the conservation of marine turtles. South Africa is thus committed to conserve these species at an international level.

Given the distance of the trunk line from the coastline on the east coast of South Africa and the speed at which deep water cables are laid the impacts on turtles associated with the 2AFRICA/GERA (East) Cable System is considered to be negligible.

8.1.6 Offshore Fishing Industry

Approximately 14 different commercial fishery sectors currently operate within South African waters. In addition to commercial sectors, recreational fishing occurs along the coastline comprising shore angling and small, open boats (generally less than 10 m in length). The commercial and recreational fisheries are reported to catch over 250 marine species, although fewer than 5% of these are actively targeted by commercial fisheries, which comprise 90% of the landed catch.

The primary fisheries in terms of highest economic value are the demersal (bottom) trawl and long-line fisheries targeting the Cape hakes (*Merluccius paradoxus* and *M. capensis*) and the purse-seine fishery targeting small pelagic species including pilchard (*Sardinops ocellatus*), anchovy (*Engraulis encrasicolus*) and red-eye round herring (*Etrumeus whitheadii*). Highly migratory tuna and tuna-like species are caught on the high seas and seasonally within the South African Exclusive Economic Zone (EEZ) by the pelagic long-line and pole fisheries. Targeted species include albacore (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*).

Offshore trawling is usually conducted along specific trawling lanes on “trawl friendly” substrate (flat, soft ground). The total trawl footprint within the South African EEZ is approximately 70,400 km² of which offshore grounds amount to 57,420 km² and inshore grounds 12,983 km². On the West / South-West Coast, these grounds extend in a continuous band along the shelf edge between the 300 m and 1,000 m bathymetric contours¹⁴.

The primary offshore fishing ground on the west coast is a sandy and muddy offshore ground that was first fished in the 1920s and continues to be a very important area for the offshore trawl fleet. Trawl nets are generally towed along depth contours (thereby maintaining a relatively constant depth), running parallel to the depth contours in a north-westerly or south-easterly direction. Trawlers also target fish aggregations around bathymetric features, in particular, seamounts and canyons (i.e. Cape Columbine and Cape Canyon), where there is an increase in seafloor slope. In these cases, the direction of trawls also follows the depth contours. Trawlers are prohibited from operating within five nautical miles of the coastline and within restricted zones of MPAs. A specialist assessment will be commissioned to inform the impact on the 2AFRICA/GERA (East) marine cable on the fisheries industry of South Africa.

Given the depth and distance from shore that the 2AFRICA/GERA (East) Cable System is being laid little to no impacts on the fishing industry are expected along the east coast of

¹⁴ Trawling to these depths started in the mid-1990s for deep-water species such as orange roughy.

South Africa as the majority of the cable alignment is deeper than the continental shelf where most fisheries are concentrated. This will be confirmed through a fisheries assessment to be undertaken during the impact assessment phase of the environmental authorisation process.

8.1.7 Offshore Mining and Exploration Concessions Holders

Approximately 98% of South Africa's exclusive economic zone is subject to a right or lease for offshore oil and gas exploration or production¹⁵. The Petroleum Agency of South Africa is responsible for the 'promotion and regulation of offshore exploration and production' and maintains a national database of petroleum exploration and production. Over the past decade (since 2006) this database has shown a rapid increase in the application and grant of offshore rights and leases. The South African government has also actively promoted offshore oil and gas exploration through Operation Phakisa which seeks to support the rapid development of the offshore oil and gas sector by "*creating an environment that promotes exploration*".

Refer to Figure 20, which shows the offshore alignment and trunk line from Mozambique and the offshore lease areas sourced from Petroleum SA (Feb. 2019). Figure 21 shows the offshore alignment as it moves from the east coast to the west coast of South Africa, and the offshore lease areas within the Territorial Waters of 12 nautical miles.

The following leases of offshore concession areas are crossed by the marine cable, starting from the Mozambique EEZ on the east coast and following the cable route to the west coast of South Africa to its proposed landing point at Duynefontein (as shown in in Figure 20 and Figure 21):

- Silver Wave Energy
- Sasol ENI
- ExxonMobil
- Impact Africa Statoil
- Total
- Imaforce
- Anadarko PetroSA
- Rhino Oil (located in Territorial waters)

Investigations are underway by the project team to establish which of these concessions are currently inactive or active and all concession holders will be consulted during the environmental authorisation process. It is doubtful that there will be any direct impacts on the concession holders during the installation of the proposed telecommunications cable system. If the concession holders do decide to commence exploration at a later date, they will however have to abide by the legislated buffer zone either side of the cable as defined in the Marine Traffic Act (Act No. 2 of 1981) read together with the Maritime Zones Act (Act No. 15 of 1994).

From experience on the ACE Cable System EIA, ACER will engage with each of these concession holders at the onset of the environmental authorisation process and it is recommended that the South African landing partner engage directly with the concession holders to draw up a Memorandum of Understanding (MoU) which outlines the rights, obligations and roles and responsibilities of both parties in terms of the installation and operation of subsea infrastructure. MTN has drawn up similar MoUs for the ACE Cable

15 <https://www.seafoodsource.com/news/environment-sustainability/proposed-oil-exploration-raises-concerns-from-south-africa-s-fishing-industry>

System with offshore concession holders and, therefore, are aware of the requirements and timing for concluding the MoUs.

The proposed 2AFRICA/GERA (East) Cable System enters and exits the following oil concession blocks along its proposed alignment from Duynfontein to the 2AFRICA branch cable to Port Elizabeth:

Boundary	KP	Latitude	Longitude	Source
OCB ENTER 292ER - (RHINO OIL)	0.143	33°41.6979' S	018°26.3029' E	RPL
OCB 292ER (RHINO OIL)/OCB 5-6-7 (TOTAL ER)	51.799	33°52.8351' S	017°58.3033' E	RPL
OCB 5-6-7 (TOTAL ER)/OCB 3416 (OPEN)	268.032	34°57.7706' S	016°20.0000' E	RPL
OCB 3516 (OPEN)/OCB IMAFORCE 2 TCP (IMAFORCE (PTY)LTD)	360.571	35°45.3433' S	016°36.0009' E	RPL
OCB IMAFORCE 2 TCP (IMAFORCE (PTY)LTD)/OCB 3616 (OPEN)	391.362	36°00.0000' S	016°45.7078' E	RPL
OCB 3616 (OPEN)/OCB 3617 (OPEN)	432.479	36°18.9309' S	017°00.0000' E	RPL
OCB 3617 (OPEN)/OCB 3717 (OPEN)	539.642	37°00.0000' S	017°50.6408' E	RPL
OCB 3717 (OPEN)/OCB 3718 (OPEN)	558.984	37°07.2818' S	018°00.0000' E	RPL
OCB 3718 (OPEN)/OCB 3719 (OPEN)	676.321	37°48.9158' S	019°00.0013' E	RPL
OCB EXIT 3619	731.929	38°08.7140' S	019°28.5564' E	RPL
OCB ENTER 3723 (OPEN)	1140.108	37°26.9027' S	023°29.0572' E	RPL
OCB 3723 (OPEN)/OCB 3623 (OPEN)	1190.722	37°00.0000' S	023°29.1543' E	RPL
OCB 3623 (OPEN)/OCB 3624 (OPEN)	1254.783	36°37.3962' S	024°00.0000' E	RPL
OCB 3624 (OPEN)/OCB 3524 (OPEN)	1366.790	36°00.0000' S	024°58.8203' E	RPL
OCB 3524 (OPEN)/OCB 3525 (OPEN)	1369.045	35°59.2439' S	024°59.9980' E	RPL
OCB 3525 (OPEN)/OCB 3526 (OPEN)	1478.542	35°25.9769' S	026°00.0000' E	RPL
OCB 3526 (OPEN)/OCB 276ER (SILVER WAVE ENERGY LTD)	1492.159	35°21.5189' S	026°07.1580' E	RPL
OCB 276ER (SILVER WAVE ENERGY LTD)/OCB ALGOA (IMPACT AFRICA LTD)	1557.885	35°00.0000' S	026°41.6174' E	RPL
OCB ALGOA (IMPACT AFRICA LTD)/OCB 276ER (SILVER WAVE ENERGY LTD)	1593.066	34°48.4815' S	027°00.0000' E	RPL
OCB ENTER 252ER (IMPACT AFRICA LTD)	1655.473	34°30.0000' S	027°33.0661' E	RPL

The proposed 2AFRICA/GERA (East) Cable System enters and exits the following oil concession blocks along its proposed alignment from Port Elizabeth Branch to the 2AFRICA branch cable to Amanzimtoti:

Boundary	KP	Latitude	Longitude	Source
OCB ENTER 276ER (SILVER WAVE ENERGY PTE LTD)	KP 49.690	34° 05.9696' S	028° 00.9052' E	RPL
OCB ENTER 252ER (IMPACT AFRICA LTD)	KP 78.522	34° 00.0000' S	028° 18.1764' E	RPL
3OCB ENTER 276ER (SILVER WAVE ENERGY PTE LTD)	KP 98.542	33° 55.5046' S	028° 30.0000' E	RPL
OCB EXIT 276ER (SILVERWAVE ENERGY PTE LTD)	KP 429.225	32° 00.0000' S	031° 10.9859' E	RPL

The proposed 2AFRICA/GERA (East) Cable System enters and exits the following oil concession blocks along its proposed alignment from the Amanzimtoti branch to where the 2AFRICA/GERA (East) Cable System enters South Africa’s EEZ from Mozambique:

Boundary	KP	Latitude	Longitude	Source
EXIT ExxonMobil - Durban Deepwater / ENTER Eni - Durban Offshore	1.655	31° 00.0000' S	032° 16.6502' E	Database
EXIT Eni - Durban Offshore / ENTER Silver Wave Energy - Tugela Deepwater	231.09 1	29° 34.6515' S	034° 00.0000' E	Database
EXIT Silver Wave Energy - Tugela Deepwater	422.29 8	27° 56.4250' S	034° 32.0000' E	Database
ENTER CB - 2734 (Open)	423.11 6	27° 56.0321' S	034° 32.2293' E	Database

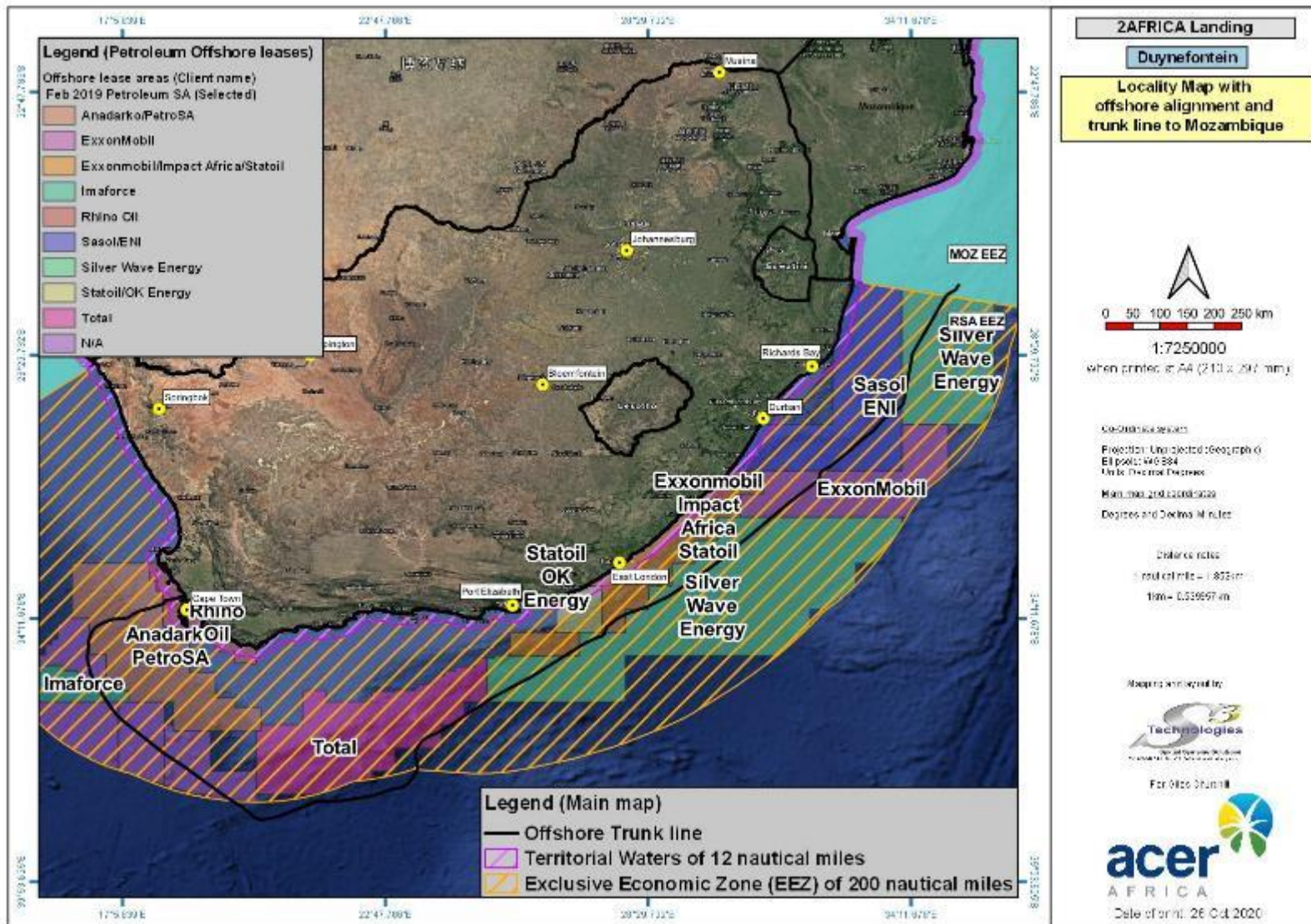


Figure 20 2AFRICA (East) Trunk line to Dufnefontein from Mozambique showing the offshore lease areas

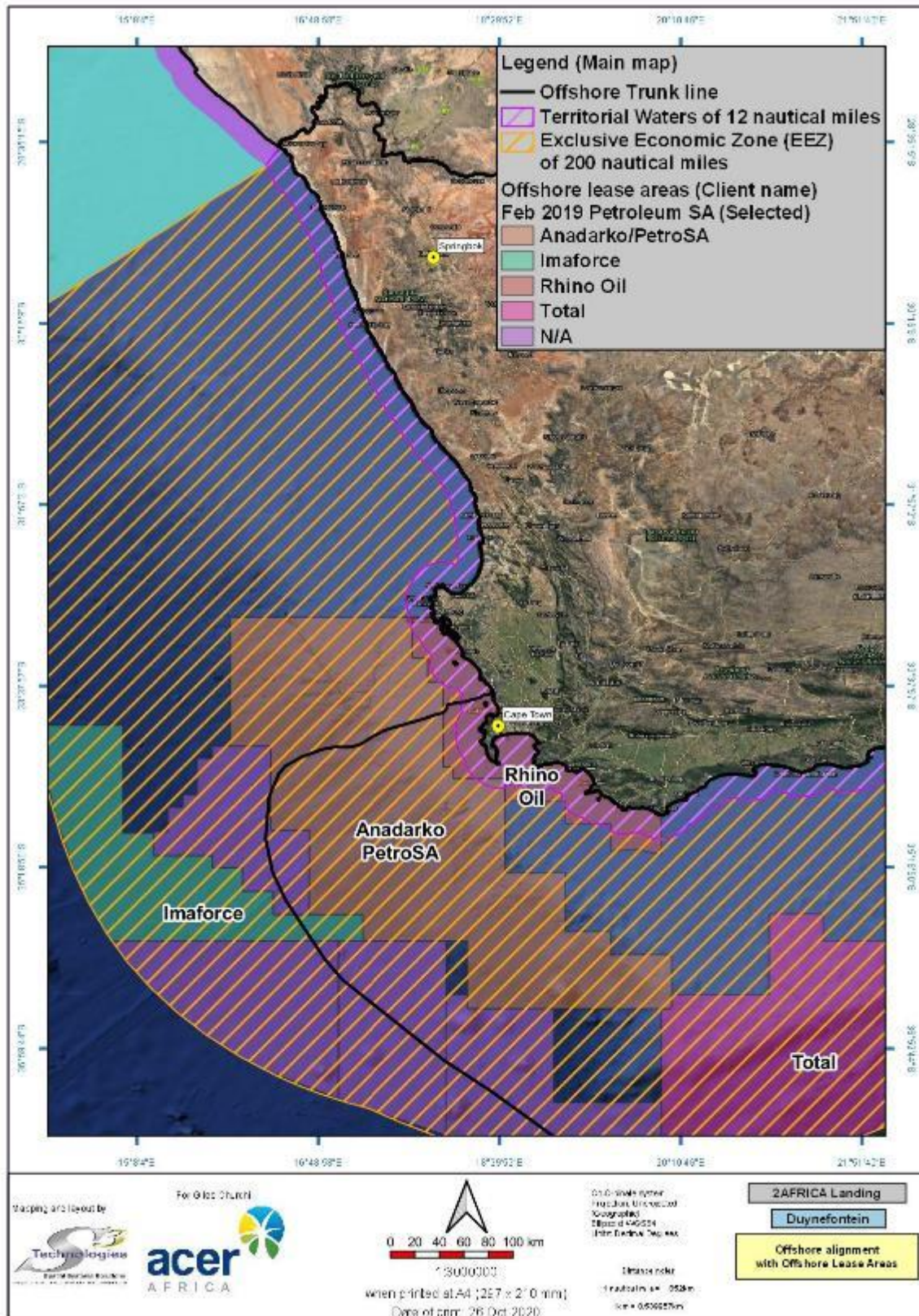


Figure 21 2AFRICA (East) Trunk Line to Duynefontein showing the offshore alignment with the offshore lease areas showing more detail in Territorial Waters at the landing location

8.1.8 *Offshore marine telecommunications infrastructure*

Telkom SA, as one of the operators of other marine telecommunication cable systems running on the same west coast route (SAT-3/WASC/SAFE and WACS), has an interest in the proposed 2AFRICA/GERA (East) Cable System from an operational and risk perspective. MTN, like Telkom SA, is a member of the International Cable Protection Committee (ICPC) and, as such, there are a number of guidelines and standards to abide by to ensure that new cable systems do not negatively impact on existing marine telecommunications systems. Therefore, MTN must abide by the conditions stipulated by the ICPC to ensure no negative impacts are experienced by existing marine cable operators such as Telkom SA. As per the recommendations of the ICPC, MTN will engage directly with Telkom SA to reach a formal agreement with regards to the installation and operation of the 2AFRICA/GERA (East) Cable System. Telkom SA's support of the 2AFRICA/GERA (East) Cable System must be noted as it will aid as a driver of Africa's economic growth and supports NEPAD's goals. In addition, Telkom SA welcomes an additional cable on the west coast of South Africa as it allows South Africa to maintain access to Europe should the WACS (operated by Telkom SA) fail.

8.2 **Beach and Terrestrial Environment**

The final section of the 2AFRICA/GERA (East) Cable System which makes landfall in South Africa involves the installation of the cable through the intertidal zone, across the beach to the existing BMH and then approximately 1.5 km of land cable within the existing cable ducts until reaching the existing Cable Landing Station (CLS) site in Duynfontein. The following section of this report briefly describes the biophysical, social, heritage and economic environment.

8.2.1 *Conservation Categories as per Western Cape Biodiversity Spatial Plan (2107)*

Refer to Figure 21, which provides an overview of the conservation categories in the study area, referenced from the Western Cape Biodiversity Spatial Plan (2017) (WCBSP). The WCBSP is the product of a systematic biodiversity planning assessment that delineates Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) which require safeguarding to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services, across terrestrial and freshwater realms. These spatial priorities are used to inform sustainable development in the Western Cape Province. This product replaces all previous systematic biodiversity planning products and sector plans with updated layers and features.

Further details on the category of conservation status is provided in the sub-section on wetlands below and illustrated in Figure 23.

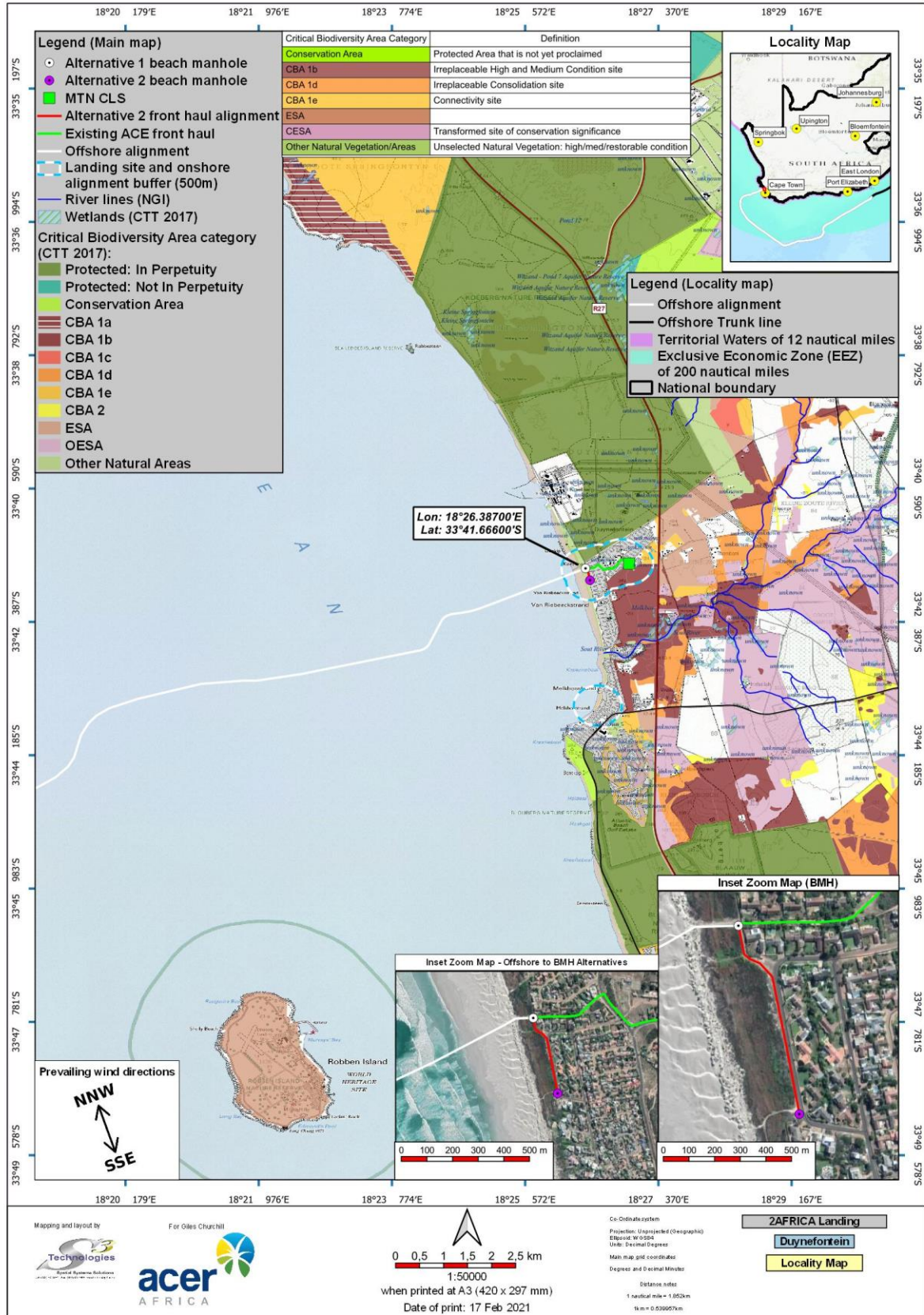


Figure 22 General Locality showing conservation status and Koeberg Nuclear Power Plant located to the north of the landing site

8.2.2 Van Riebeeckstrand Beach and Coastal Dunes

Van Riebeeckstrand Beach is a long, sandy beach between the southern border of the Koeberg Nuclear Power Station, and the mouth of the Kleine Zoute River. The beach is predominantly used by local residents for walking, swimming, surfing and fishing, although kite surfers/wind surfers also frequent this beach as it has a left to right break with swells reaching up to 3 m at times. Van Riebeeckstrand Beach is backed by the suburbs of Duynefontein and Van Riebeeckstrand. There are numerous access points along its 2 km stretch and both of the proposed landing sites for the 2AFRICA/GERA (East) Cable system are located near two of these access points to the beach.

The dune cordon at Van Riebeeckstrand lies leeward of a wide dissipative beach as reported by Bundy (2017). The cordon comprises of a number of dune structures and a wide, permanently wet dune cordon referred to as wet dune slack, as illustrated in Figure 23, which is an idealised cross section of the beach and dune morphology at Van Riebeeckstrand (Bundy; 2017).

Munica and Rutherford (2006) describe dune slacks as the damp interdune depression usually found in complex dune systems, such as in extensive dunefields. The groundwater found in these dune slacks are reported to be rich in nutrients, lying close to the surface as it flows towards the sea, where plant root systems can reach creating an environment where water availability is not a limiting factor as in other parts of the dune field. Further details on the vegetation type found in this ecosystem is provided in the section on vegetation below.

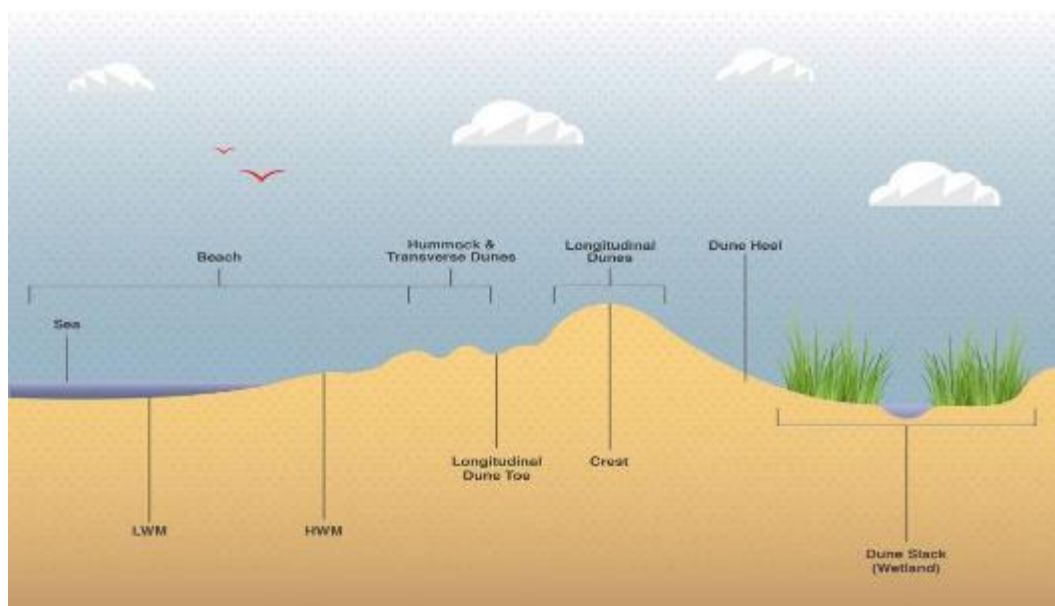


Figure 23 Graphic representation of the cross section of Van Riebeeckstrand beach and dune cordon

8.2.3 Vegetation

From an ecological perspective, prevailing climate, habitat complexity and species diversity are known to play a significant role in determining the state of a dune form. Using SANBI data (2018 Vegmap), the project area is comprised of three habitat types, viz. Cape Seashore Vegetation, Cape Flats Dune Strandveld and Atlantis Sand Fynbos (Figure 24).

Of these vegetation types, Cape Seashore Vegetation (located in the foredune area) is considered to be “least threatened” from a habitat conservation perspective, while Cape Flats Dune Strandveld (located behind the foredunes) is considered to be “endangered”. The preferred cable landing alignment to BMH 1 traverses both these ecosystems, as shown in Figure 24.

Atlantis Sand Fynbos (FFd 4) is a more terrestrial, inland habitat and is considered to be “critically endangered” from a conservation perspective, and listed as such (with Criterion D1¹⁶) in GN 1002 of GG 34809 dated 9 December 2011: “National Environmental Management: Biodiversity Act (10/2004): National list of ecosystems that are threatened and in need of protection”. The existing CLS is located adjacent to this ecosystem type, and there is therefore not expected impact on the Atlantis Sand Fynbos ecosystem.

Cape Flats Dune Strandveld (FS 6) is listed as “Endangered” (with Criterion D1), in GN 1002 of GG 34809 dated 9 December 2011: “National Environmental Management: Biodiversity Act (10/2004): National list of ecosystems that are threatened and in need of protection”.

Of the three vegetation types, Cape Flats Dune Strandveld is most severely threatened by urban sprawl (Mucina and Rutherford, 2006), as well as invasion by alien plant species. The impacts on the wetland ecosystem and associated fauna have been investigated by the specialist assessment previously conducted for the ACE Cable System EIA in 2016, as detailed in the sub-sections below on wetlands and fauna.

Behind the primary dune cordon the wet dune slack gives rise to a habitat dominated by *Typha capensis* and *Juncus kraussii*. Where better drained soils occur, species typical of Cape Flats Dune Strandveld veld type are evident, specifically *Chrysanthemoides monilifera* and *Dassispernum suffruticosum*.

Vegetation within the study area is subject to ongoing disturbance, primarily through pedestrian traffic moving through the dune slack and frontal dune cordon to access the beach. In addition, the establishment of storm water infrastructure within the dune slack and clearance of vegetation have resulted in ongoing disturbance to the area, the latter is evident where there are attempts within the slack to facilitate the flow of water. There is also evidence of informal attempts to stabilise the frontal dune cordon through *ad hoc* brush wood packing and occasional plantings.

No significant impacts on natural vegetation is anticipated with the landing of the 2AFRICA/GERA (East) cable as the cable will tie into the anchor block constructed for the ACE cable System at the base of the primary dune cordon. From this point no further disturbance to natural vegetation is expected on the terrestrial environment if the preferred landing alternative is selected. A vegetation specialist will be appointed to confirm this assumption and to provide mitigation measures to minimise potential impacts during project implementation.

8.2.4 Wetlands

The information in this section has been referenced from the Wetlands Specialist Assessment prepared by the Freshwater Consulting Group (2016) to inform the ACE Cable System landing at Duynfontein. The potential impacts of the proposed cable installation on freshwater ecosystems were assessed using the criteria outlined in DEA&DP’s Guideline for

16 D1: Threatened Plant Species Associations.

Biodiversity Specialist Studies (Brownlie; 2005) and a protocol developed by Freshwater Consulting Group for rating the significance of impacts on freshwater ecosystems. According to the NFEPA project and its map products, there are no Freshwater Ecosystem Priority Areas (FEPAs) in the study area, but the study area does form part of a Fish Sanctuary Area associated with the Lower Berg sub WMA.

According to the previous wetland investigation undertaken for the ACE Cable System (Ollis; 2017), of relevance to the 2AFRICA/GERA (East) Cable System is the “dune slack wetland” behind the primary dunes of the beach, near to the proposed landing points (Alternative 1 and 2). The wetland is classified as a depression (following the national classification system for inland aquatic ecosystems of Ollis *et al.* 2013), with an extent of approximately 2.1 ha.

The dune slack wetland that was identified and delineated is situated along the eastern edge of the beach at Van Riebeeckstrand between two lines of dunes (Figure 23). It is an inter-dune depression that would presumably, in its natural state, have been fed predominantly by groundwater (through the seasonal rising of the water table, which is probably relatively close to the ground surface based on the landscape setting of a coastal plain). At present however a substantial portion of the current-day extent of the dune slack wetland at Van Riebeeckstrand consists of features developed for the transport and attenuation of stormwater runoff from the adjacent residential area. In addition, two berms (with pipe culverts running through them) have been constructed across the wetland / stormwater pond to allow for pedestrian access to the beach. These features have substantially transformed the area from its presumed natural reference state. Within the wetland and immediate surrounds there are only small pockets of relatively undisturbed natural vegetation delineated in the “disturbance map” as shown in Figure 23.

A summary of the PES assessment results for the dune slack wetland are based on the WET-Health “Level 2” assessment and the catchment landuse/water quality assessment undertaken. The results of the PES assessments indicate that there has been a significant alteration to the natural habitat and biota within the wetland, relative to the presumed natural ecological state. The PES of most components was rated to be largely to seriously modified (Ecological Category D or E), with the overall rating being Ecological Category E (i.e. seriously modified).

8.2.3 Fauna

Mammals

The study area is likely to have relatively low mammalian species richness. Although the site falls within or near the edge of the distribution range of 42 terrestrial mammals and nine bats, the high degree of transformation within the study area means that only species tolerant of human development are likely to be present. Species which are known to be located within the study area include the Cape Gerbil (*Tatera afra*) and the Cape Molerat (*Georychus capensis*). Two listed terrestrial mammal species are described as potentially occurring within the study area, namely the Honey Badger (*Mellivora capensis*) and the White-tailed Mouse (*Mystromys albicaudatus*) (Endangered) but their presence at the site is highly unlikely given the extensive transformation of most habitats within the urban setting of the routes.

Reptiles

According to the Southern African Reptile Conservation Assessment (SARCA) database, 31 reptiles have been recorded within the study area. This includes three listed species, the Bloubergstrand Dwarf Burrowing Skink (*Scelotes montispectus*), Cape Dwarf Chameleon (*Bradypodion pumilum*) and Cape Sand Snake (*Psammophis leightoni*). Although the Cape Dwarf Chameleon might occur in residents’ gardens, it is unlikely that these three species

occur within the affected areas of the cable route as the habitat is not suitable either through the transformed nature of the urban context or through degradation of remnant vegetation along the route. In terms of the likely impacts of the development on reptiles, habitat loss is not likely to be highly significant as the cable alignment routes are not likely to create a large loss of habitat. Although the construction phase will generate some disturbance which may negatively impact reptiles, this would be temporary and in the long-term, impacts on reptiles are likely to be low.

Amphibians

The impact on amphibians within the affected area is likely to be relatively low given the low diversity of frogs in the project area and the small terrestrial footprint of the cable system. Impacts on amphibians are likely to be low and, if any, concentrated in the construction phase. From a faunal importance perspective, up to eight species of frogs could be associated with the dune slack wetland but only one of these species is currently noted to be of conservation concern by the IUCN, namely *Cacosternum capense* (Cape Caco), which is listed as Near Threatened. The likelihood of finding this species in the dune slack wetland is, however, very limited because the wetland does not provide optimal breeding or foraging habitat (the Cape Caco typically breeds in very shallow, temporary 'pans' in clay soils). Therefore, from a faunal perspective, at least with respect to amphibian fauna, the dune slack wetland does not hold significant conservation value. This was confirmed in the faunal specialist study by Todd (2016), undertaken for the ACE Cable System, who concluded that the diversity of amphibians within the affected area is likely to be relatively low and that the impacts on amphibians that could result from the proposed cable installation, if any, are likely to be of low significance.

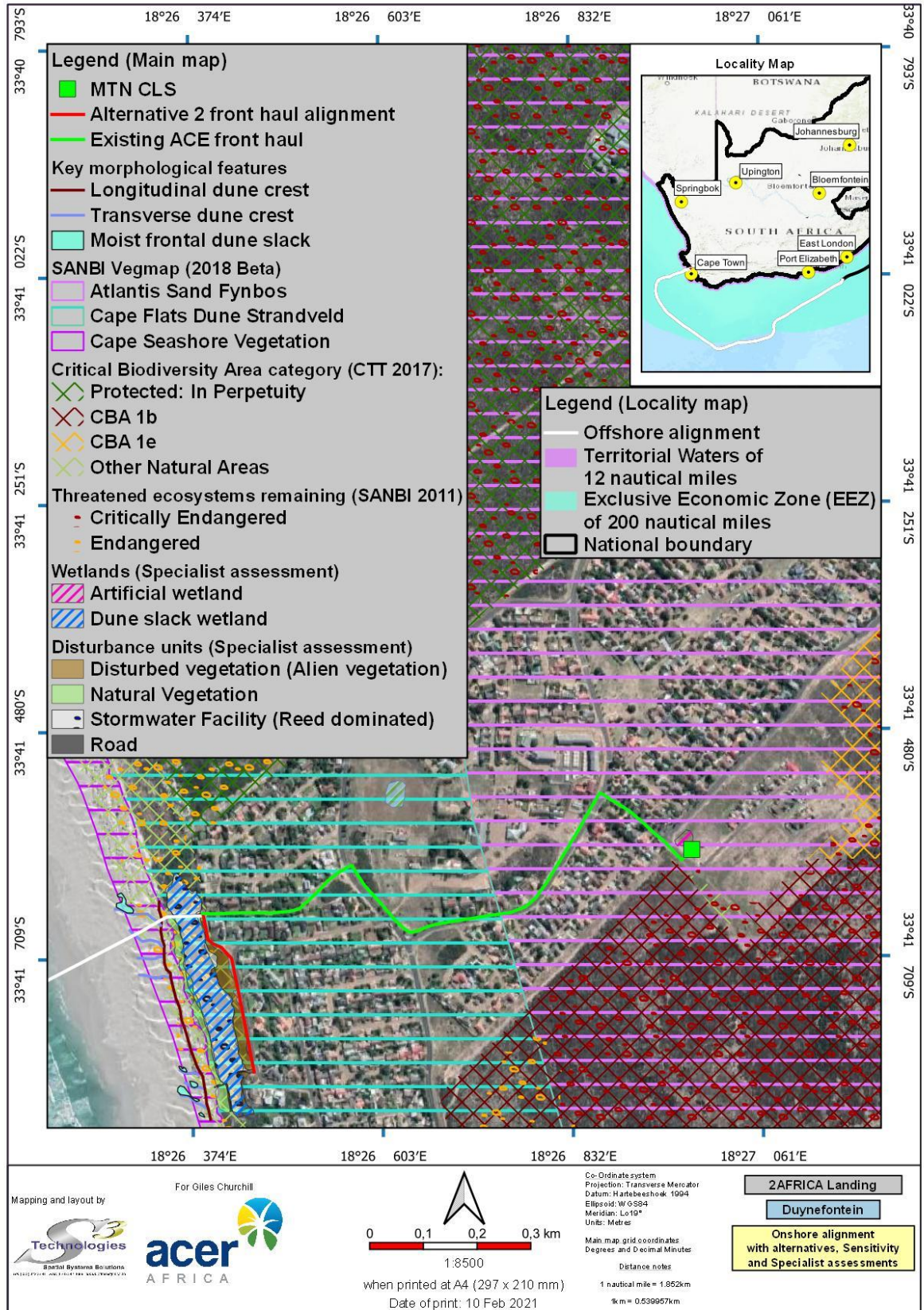
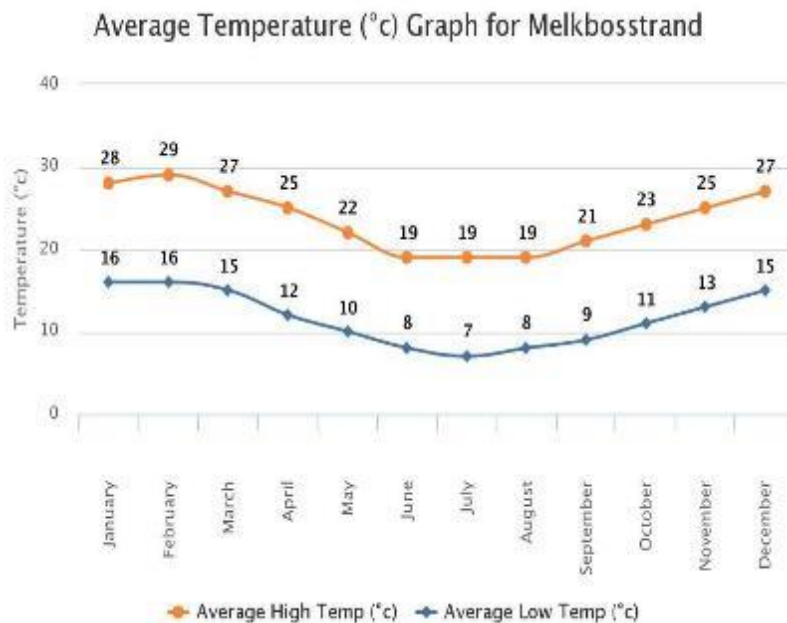


Figure 24 Environmental Sensitivity Map, including vegetation types and wetland details

8.3 Climate

The Western Cape has a semi-arid Mediterranean climate, which is strongly influenced by the cold Benguela Current and coastal winds. The Cape Town area is characterised by dry summer months (December to February) of hot, sunny weather, with an average temperature of around 26°C. This is the most popular time to visit Cape Town and tourists and residents usually enjoy approximately 11 hours of sunshine every day.

During the winter months, the weather is characterised by cooler rainy weather with June-August being the coldest months having an average temperature of 19°C. Rainfall within the study area predominantly occurs during the winter months with the highest monthly rainfall occurring in July when it rains for approximately 18 days on average each year (<http://www.worldweatheronline.com>). Graphs depicting the average monthly temperatures and rainfall for Melkbosstrand are provided in Figure 25 below.



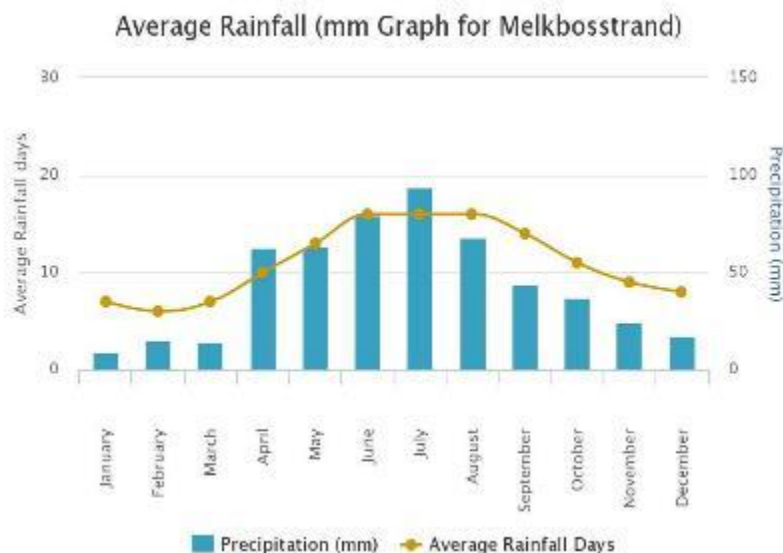


Figure 25 Average monthly rainfall and temperatures for Melkbosstrand

8.4 Topography and geology

The project area and the settlement of Duynfontein are situated in close proximity to the R27 regional road and are surrounded by conservation areas such as Koeberg Nature Reserve and the Cape West Coast Biosphere Reserve, with the Blouberg Provincial Nature Reserve located to the south. The study area falls within the Southern Western Coastal Belt Aquatic Ecoregion. This ecoregion is characterised by plains and a moderate to low relief, with gentle slopes (<5% gradient) occurring over more than 80% of the region.

The surface geology along the coast at Van Riebeeckstrand is dominated by Quaternary sediments, overlying metasediments of the Tygerberg Group. The Quaternary sediments grade from those associated with the Langebaan Formation (consisting of limestone and calcrete, partially cross-bedded with calcified parabolic dune sand) immediately inland of the coastline to those associated with the Witzand Formation (consisting of unconsolidated calcareous sand of marine origin), with the more acidic light-grey to pale-red sandy soils of the Springfontyn Formation occurring further inland, to the east.

8.5 Socio-economic overview of the receiving environment

The proposed project is located in Ward 23 of the City of Cape Town. In order to identify, assess and place in context potential socio-economic impacts that the proposed project may have, the socio-economic dynamics of the receiving environment need to be understood. The following section provides an overview of the socio-economic characteristics of the project area based on the Social Impact Assessment that was conducted by ACER Africa (2017).

Population

Ward 23 has a population of 33,448 which equates to 13,215 households with an average household size of 2.53 people which is below the municipal average of 3.5 people per household (StatsSA, 2012). The population within the ward is predominantly white (76%) which is in contrast to the municipal averages where 42% of the population is classified as coloured and 39% black (StatsSA, 2012). In terms of age structure the majority of the population (60.7%) fall between the ages of 25 and 64 years of age, higher than the municipal

figure of 51.3% in the same age category (StatsSA, 2012). Access to education is also better within Ward 23 than the municipality as a whole, with 82% of the population over the age of 20 in Ward 23 having completed a Grade 12 or higher while only 46% of the population in the municipality have attained this level of education (StatsSA, 2012).

Economic profile

In terms of income, 17% of households have a monthly income of R 3,200 or less within Ward 23 which is significantly lower than the 47% of households in the City of Cape Town reporting a monthly income of R 3,200 or less (StatsSA, 2012). Figure 26 below illustrates the higher level of income experienced by households within Ward 23 in comparison to the City of Cape Town as a whole.

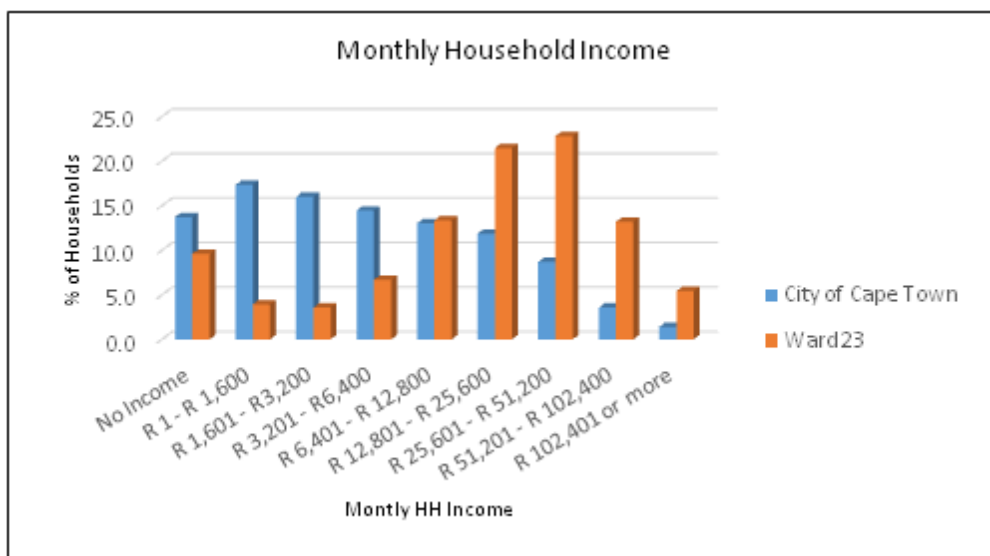


Figure 26 Monthly household income within the City of Cape Town and Ward 23

Access to services

Household access to piped water, sanitation and electricity is on average better in Ward 23 than it is for the City of Cape Town as a whole. This is particularly noticeable when looking at the percentage of households with access to piped water inside their dwelling and flush toilets connected to a formal sewerage system. Figures 27 to 29 illustrate the differences in the level of access to services between Ward 23 and the rest of the City of Cape Town.

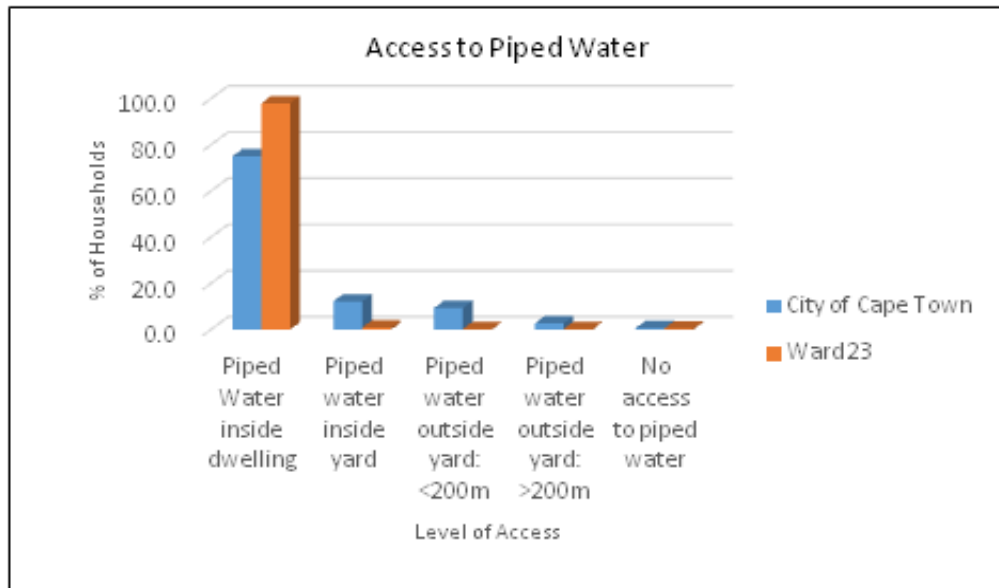


Figure 27 Access to piped water in City of Cape Town and Ward 23

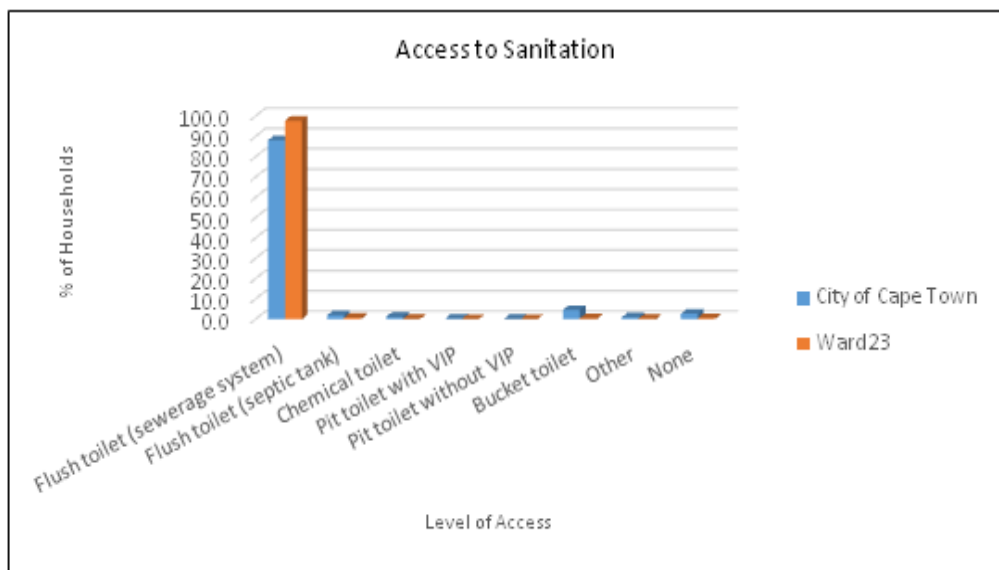


Figure 28 Access to sanitation in the City of Cape Town and Ward 23

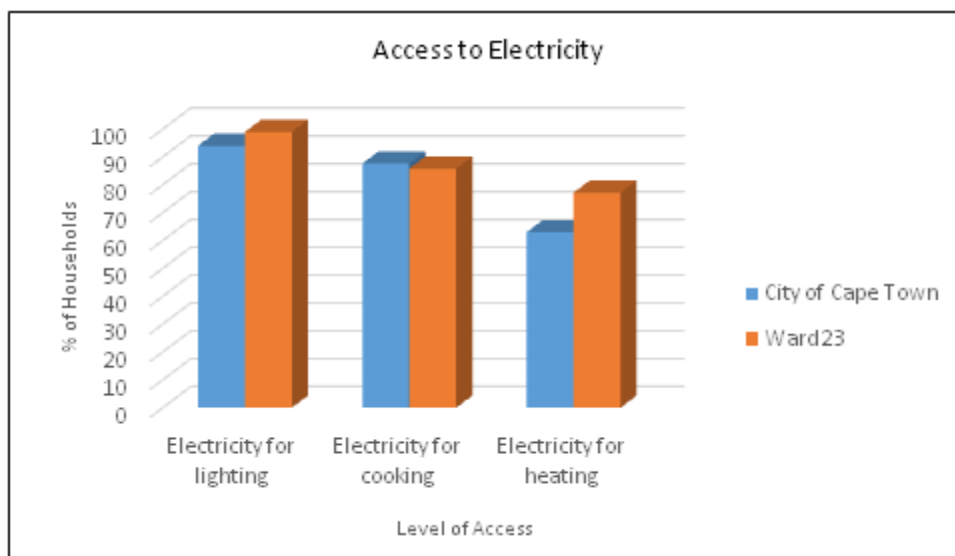


Figure 29 Access to electricity in City of Cape Town and Ward 23

The proposed project site is located entirely within Ward 23 of the City of Cape Town. While the ward includes agricultural areas as well as the Blaauwberg Nature Reserve, the area where the proposed 2AFRICAGERA/ (East) cable will land can be described as a middle to upper income suburban area.

Ward 23 exhibits higher levels of socio-economic development than the City of Cape Town, the Western Cape Province and South Africa as a whole. Households within the study area have higher levels of income, better access to education and unemployment levels in the ward are significantly lower than municipal (24%), provincial (21.4%) and national averages (29.4%) (StatsSA, 2012).

8.6 Koeberg Nuclear Power Station

Koeberg is the only nuclear power station in Africa and ranks amongst the safest of the world's top ranking PWRs of its vintage and is the most reliable Eskom power station (<http://www.eskom.co.za>). Its location in relation to the proposed cable landing site is shown in Figure 21 above. Koeberg has operated safely for more than 20 years and has recently undergone a successful peer review by the World Association of Nuclear Operations. The power station is intended to have a further active life of 30 to 40 years, after which time it will be decommissioned in line with the requirements set out by the National Nuclear Regulator.

Koeberg is surrounded by a 3,000 ha private game reserve owned by Eskom, containing more than 150 species of birds and half a dozen small mammal species. The power station was originally located outside the metropolitan area, whose growth has far exceeded expectations in the intervening 20 years, so that the power station is now close to suburban housing. Development is however prevented within the Public Exclusion Boundary (PEB) which, is an area within a 2 km radius from the nuclear facility (both on and offshore), and which is not accessible to the public. It should be noted that the offshore alignment and onshore alignments of the proposed 2AFRICA/GERA (East) Cable System fall outside of the PEB. The closest point of the proposed cable alignment to the PEB is located approximately 1.8 km offshore as shown in Figure 11.

In terms of the National Nuclear Regulator Act, 1999 and Government Notice No. 287, 2004, developments surrounding a nuclear installation must be assessed to demonstrate that the municipality's Nuclear Emergency Plan can be effectively implemented.

As the proposed 2AFRICA/GERA (East) Cable System makes landfall within the 5 km Precautionary Action Zone (PAZ) of the reactors (Figure 29), a risk assessment and emergency evacuation plan are required by the City of Cape Town for the proposed development during construction and operation. These plans will be submitted to the City of Cape Town for review and signoff prior to project implementation if authorised. One of the key components of the plan must be to show that all staff or employees on the project must be capable of being evacuated from the area within four hours of an event.

Comments received from the City of Cape Town (via email dated 14/10/2020) on the Background Information Document stated that the Disaster Risk Management Centre (DRMC) is the custodian (on behalf of the City of Cape Town) of the execution of the Koeberg Nuclear Power Station Radiological Release Hazard Disaster Risk Management Plan (RRR). It is tasked with the responsibility of ensuring that the public safety arrangements are in place in the case of a nuclear emergency and that individual citizens are not endangered with particular emphasis on the population residing and working in the UPZ of the 0 – 16km area from the Koeberg Nuclear Power Station (KNPS). In light of the aforementioned, the DRMC require the following:

- That a risk assessment and emergency / evacuation management plan for the marine telecommunications system (during the construction and operational phases) be compiled.
- That this application be tested against the Koeberg Nuclear Power Station Traffic Evacuation Model (TEM). In order for the TEM model to be run the anticipated population increase during the construction phase of each alternative must be provided in the TEM form 2. The duly completed TEM form 2 must be included in the various scoping- and environmental impact assessment reports of this project.

The draft Risk Assessment and Emergency Evacuation Management Plan is attached in Appendix 7 as well as the draft TEM form 2 which must still be reviewed and approved by the DRMC.

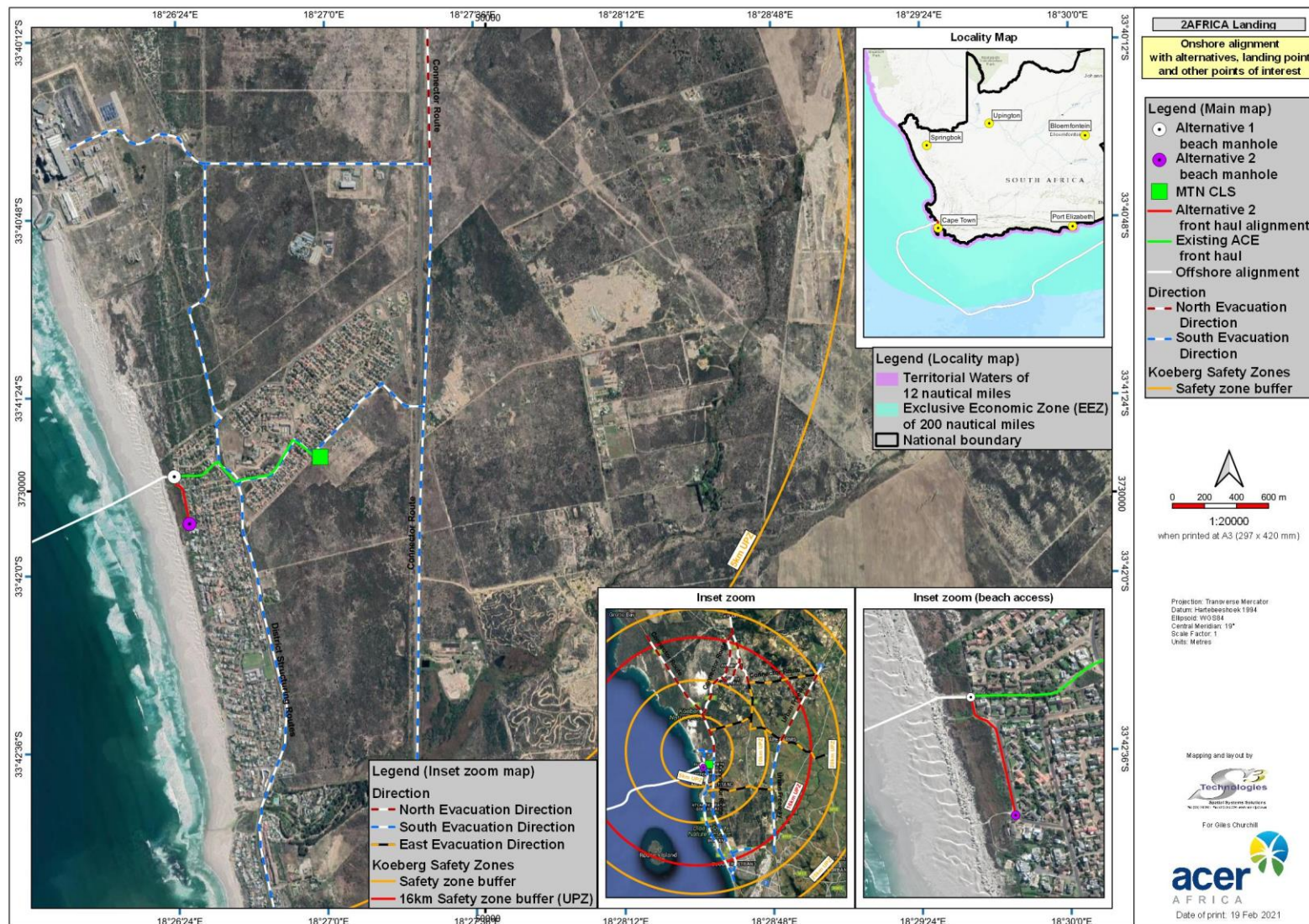


Figure 30 Evacuation routes from within the Koeberg 5 km Precautionary Action Zone (PAZ)

8.7 Cultural Heritage

The marine portion of the cable route to the BMH is under the jurisdiction of the South African Heritage Resources Agency (SAHRA), whilst the terrestrial portion of the cable route inland of the BMH falls under the jurisdiction of Heritage Western Cape. South Africa's record of maritime and underwater cultural heritage resources is based on a mix of information derived from historical documents and other secondary sources, and from very limited primary sources such as geophysical data and other field-based observations and site recordings (Gribble; 2019).

According to Gribble (2019), South Africa has a rich and diverse underwater cultural heritage. Strategically located on the historical trade route between Europe and the East, South Africa's rugged and dangerous coastline has witnessed more than its fair share of shipwrecks and maritime dramas in the last 500 years. At least 2400 vessels are known to have sunk, grounded, or been wrecked, abandoned or scuttled in South African waters since the early 1500s. This does not include the as yet unproven potential for shipwrecks and other sites that relate to pre-European, Indian Ocean maritime exploration, trade and interactions along the South African east coast.

Although the proposed cable is located in a paleontologically-sensitive region of potentially fossiliferous sediments. The proposed 2AFRICA/GERA (East) cable landing does not anticipate impacting on any terrestrial heritage resources as the beach and primary dune have previously been disturbed through excavations when landing the ACE Cable System. This will need to be confirmed by a heritage specialist during the impact assessment phase of the environmental authorisation process. A Notice of Intention to Develop will be compiled and submitted to the City of Cape Town for comment during the impact assessment phase of the environmental authorisation process.

Offshore it is unlikely that heritage resources such as shipwrecks will be impacted on as the cable survey for the cable alignment will try to avoid any seabed structures or deposits which pose a risk to the cable. The survey reports will be made available to the heritage specialist to confirm that no wrecks are located within the surveyed corridor which he/she will then use to cross reference on known shipwrecks in the area. No impact on heritage resources are expected in deeper waters as the cable is simply laid on the ocean floor with no disturbance to sediments taking place.

9 ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

The information-gathering phase during scoping included obtaining input from the project proponent, the technical team, I&APs and guidelines and clarification obtained from DEFF during the pre-application meeting. Information gathering focused on gaining an understanding of the environmental context and status in order to:

- Identify the key issues of concern.
- Focus and tailor the scope of work for specialist studies, to address each issue of concern identified during scoping.

It should be noted that ACER undertook desktop screening for the proposed project through the use of the DEA Screening Tool as well as site visits to ground truth the receiving environment. The DEA Screening Tool identified 4 possible specialist studies required for the proposed landing of the 2AFRICA/GERA (East) Cable System (Refer to Appendix 1). These specialist studies are often based on generalised Geographic Information System (GIS) data which is often outdated and requires on site verification by the appointed Environmental Assessment Practitioner (EAP) to establish the relevance of the listed specialist studies and determine whether they are required. In the case of the proposed 2AFRICA/GERA (East) Cable System most of the proposed project works are limited to the offshore, intertidal and beach environments as the 2AFRICA/GERA (East) Cable System will make use of the existing ACE Cable System land-based infrastructure once installed to the ACE cable anchor block just inland of the beach. As such, the following specialist studies have been commissioned for the impact assessment phase of the EIA while motivations for excluding the remainder identified in the DEA Screening Tool are provided below:

Identified Specialist Studies as per the DEA Screening Tool	Reason why we have or have not commissioned the study
1. Archaeological and Cultural 2. Palaeontology	These specialist assessments will be undertaken to ensure compliance with the National Heritage Resources Act, 1999 (Act 25 of 1999).
3. Terrestrial Biodiversity	A Fauna and Flora Assessment will be undertaken, and an Impact Statement will be prepared to inform any mitigation measures required.
4. Aquatic Biodiversity	An aquatic wetland assessment will be conducted to identify any wetlands within 500m of the site to ensure compliance with the National Water Act, 1998 (Act 36 of 1998).
5. Marine Impact Assessment	A marine ecological impact assessment will be conducted, in addition to a marine fisheries impact assessment.
6. Defence Assessment	The DEA Screening Tool identified the need for a defence assessment. This study will not be conducted as the proposed cable system will have no impacts on facilities of national importance and will not affect any military areas.
7. Avian	DEFF O&C raised a concern of the potential impacts on offshore bird species in previous EIAs undertaken by ACER. This potential impact will be addressed in the DEIAR and an avifauna specialist will be

	commissioned to assess the potential impact posed by the cable laying ship during cable installation on offshore migratory bird species
8. Geotechnical	A dune and beach geomorphologist will assess the ecomorphology of the beach and dune environment and provided mitigation measures for inclusion in the EMPr. A Geotechnical Assessment is not required for the installation of the cable system as once the cable reaches the ACE cable system anchor block hust inland of the beach no further works are required in the terrestrial environment.

The issues identified during Scoping have been formulated as eight key questions, within which potential impacts are identified and described:

- ❑ What are the potential social and socio-economic impacts associated with the construction and operation of the proposed 2AFRICA/GERA (East) Cable System?
- ❑ What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the natural environment (flora, avifauna, and fauna)?
- ❑ What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the marine environment including MPA's?
- ❑ What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the fishing industry?
- ❑ What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on wetlands within the study area?
- ❑ What impact will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the beach and dune cordon at Van Riebeeckstrand?
- ❑ What impact will the construction of 2AFRICA/GERA (East) Cable System have on cultural and heritage resources, including any paleontological resources (if any are identified during the study)?
- ❑ What cumulative impacts will the construction of the 2AFRICA/GERA (East) Cable System have?

It is important to note that although these aspects have been raised as issues, it is not a given that potential impacts will actually occur. However, these issues do need to be considered and investigated to inform decision-making and to enable the relevant parties to proactively address any impacts, should they occur. The no-development option will be considered and assessed as part of these issues.

These key issues are elaborated hereunder.

9.1 What are the potential social impacts associated with the construction and operation of the proposed 2AFRICA/GERA (East) Cable System?

Submarine telecommunication cables are important for international telecommunication networks as they transport almost 100% of transoceanic Internet traffic throughout the world (www.iscpc.org). It is widely recognised that access to affordable international bandwidth is key to economic development in every country. Although the national advantages of have submarine telecommunications cables is known, there are some potential social and socio-economic impacts related to the actual landing of the 2AFRICA/GERA (East) Cable System. Although not considered significant, the EAP is of the opinion that further investigations are

required into the direct impacts the proposed landing of the 2AFRICA/GERA (East) Cable System at Van Riebeeckstrand will have on local residents, businesses within the area and the social environment.

Social impacts associated with this proposed development are well understood as are the potential social impacts associated with this development. It is not considered necessary to appoint a specialist to assess and investigate these matters further due to the existing information gathered during the EIA process conducted for the ACE Cable System during 2017.

9.2 What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the natural environment (flora, avifauna, and fauna)?

Marine Environment

The proposed marine cable is expected to have some direct impact on flora (sea weed, etc.) within the study area during construction of the cable system through cable burial activities. These impacts are however, limited mainly to the seabed (benthos) and will be limited to the actual cable alignment (less than 5 m wide corridor). The long term impacts of the marine telecommunications cable on the benthic environment (both fauna and flora) are however, expected to be positive due to the implementation of the legislated buffer zone (1 NM) as defined in the Marine Traffic Act (Act No. 2 of 1981) read together with the Maritime Zones Act (Act No. 15 of 1994). This buffer zone effectively protects this environment from disturbance due to bottom trawling activities, mineral exploration and the anchoring of vessels.

A Marine Ecological Impact Assessment will be required to comment on the 2AFRICA/GERA (East) Cable System traversing the east coast and west coast of South Africa. Although sections of the study area have been investigated by the marine specialist for the ACE Cable System and Equiano Cable Systems, of interest will be comment on the cumulative impact of the increase in numbers of marine cables landing on the west coast of South Africa.

Terrestrial Environment

The study area has been extensively modified by anthropogenic impacts in the form of urban development. Much of the terrestrial environment within the study area falls within the residential settlements of Van Riebeeckstrand and Duynfontein, with a small section of the project footprint falling within a natural area between the coastline and the residential areas of Van Riebeeckstrand.

The local project area was previously assessed by a biodiversity specialist for the ACE Cable System. It is recommended that a follow-up status quo vegetation and terrestrial fauna assessment be undertaken by the same biodiversity specialist to assess and investigate the possible impacts the 2AFRICA/GERA (East) Cable System may have.

Avifauna

A number of migrant birds (especially from the Southern Ocean) occur as you get further offshore. DEFF O&C raised a concern in previous EIAs conducted for the installation of marine telecommunications cables of the potential impacts on these species especially in certain conditions at night where lighting on the vessel could cause mortality of birds (e.g., petrels, prions, shearwaters) through collisions or entanglement in ship rigging. An avifauna specialist will be commissioned to assess the potential impact posed by the cable laying ship during cable installation on offshore migratory bird species.

9.3 What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the fishing industry?

Demersal trawling in South Africa started in the 1890s and has developed into the country's most important and mature fishing industry which is highly capital intensive and is further characterised by the high rate of employment per ton of fish landed. The fishery also has a high degree of value adding established globally competitive brand names and the well organised local and international marketing and distribution networks.

The offshore alignment of the proposed 2AFRICA/GERA (East) Cable System passes through the trawling grounds of the demersal trawling industry and may impact on the fishery through the restriction of fishing activities 500 m either side of the telecommunications cable (the requirement for a "no-fishing" (exclusion) zone on either side of submarine cables is defined in the Marine Traffic Act (Act No. 2 of 1981) read together with the Maritime Zones Act (Act No. 15 of 1994)). It must be noted that, although MTN has made every effort to follow existing cable alignments and their exclusion zones, the 2AFRICA/GERA (East) Cable System will result in additional exclusion areas which will impact the fishing industry.

An investigation into the possible impacts these additional exclusion zones will have on the demersal trawling industry must be undertaken in the form of a fisheries assessment during the impact assessment phase of this environmental authorisation process. Furthermore, the EAP recommends that the project proponent engage directly with the South African Deep Sea Trawling Industry Association (SADSTIA) to discuss the project in detail and to identify SADSTIA concerns and issues pertaining to the proposed development.

9.4 What impacts will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the wetlands within the study area?

The proposed 2AFRICA/GERA (East) Cable System will have an impact on one wetland within the terrestrial environment, namely the dune slack wetland between the beach and residential areas of Van Riebeeckstrand. Although this wetland has been extensively modified and impacted through urban development and the management of storm water, it still provides essential ecological services within the area.

A wetland assessment was conducted in 2016, and the findings reported on in the EIA prepared by ACER at the time.

It is recommended that a follow-up wetland status quo assessment be undertaken by the same wetland specialist to assess and investigate the possible impacts the 2AFRICA/GERA (East) Cable System may have on this wetland following the construction of the ACE Cable System along the same alignment that the preferred landing will follow.

9.5 What impact will the construction and operation of the 2AFRICA/GERA (East) Cable System have on the beach and dune cordon at Van Riebeeckstrand?

The dune cordon at Van Riebeeckstrand lies leeward of a wide dissipative beach. The cordon comprises of a number of dune structures and a wide, permanently wet dune cordon. Recent imagery indicates that previously stable portions of dune have become more transgressive in nature and that the dune slack is an important stabilising feature within the area.

Dunes are formed as a result of a number of drivers in the near shore and supra tidal environment which are driven by bio-physical processes. These processes are often

interdependent and when changes in any one of following drivers occurs the morphology of the coastal dune cordon can change drastically:

- Wind and wave regimen.
- Climate state.
- Beach morphology.
- Vegetation cover.

Due to the dynamic nature of dune systems and the numerous factors at play which influence the morphology and function of these dune systems, the construction of the 2AFRICA/GERA (East) Cable System may have an impact on the dune cordon at Van Riebeeckstrand. However, impacts on the dune cordon are only expected to be temporary in nature, limited to the construction phase of the proposed development (less than 10 days to bury the cable through the dune cordon), and highly localised.

Given that the ACE Cable System has been laid through the dune cordon to link to the existing ACE BMH, the specialist that assessed the impacts associated with this cable system will be requested to assess and investigate possible impacts on the dune cordon associated with the proposed 2AFRICA/GERA (East) Cable System installation in close proximity.

9.6 What effects will the construction of 2AFRICA/GERA (East) Cable System have on cultural and heritage resources, including any paleontological resources (if any are identified during the study)?

In terms of the National Heritage Act, it is necessary to appoint a heritage practitioner to determine if any cultural heritage resources occur along the proposed alignment of the 2AFRICA/GERA (East) Cable System or if there are any in the vicinity which may need to be avoided by the cable alignment.

Based on the findings by ACO Associates in 2017 during their assessment of the ACE Cable Route beach landing and route to the CLS, the maritime and cultural heritage resources are well understood for the project area comprising the 2AFRICA/GERA (East) Cable System beach landing to the now existing ACE BMH.

It is therefore suggested that a Heritage Practitioner submit the necessary notices to SAHRA and HWC for information purposes of the intention by MTN to land the 2AFRICA/GERA (East) Cable system at Duynefontein.

9.7 What cumulative impacts will the construction of 2AFRICA/GERA (East) Cable System have?

A cumulative impact is an incremental impact upon the environment that results from the impact of a proposed action when added to past, existing and reasonably foreseeable future actions. Cumulative effects can be both positive and negative.

The construction of the 2AFRICA/GERA (East) Cable System will naturally add to any cumulative impacts already likely to occur from a wide range of development interventions, i.e. increased employment, increased investment, etc. The aim of this section is to focus on the key cumulative impacts raised as concerns by stakeholders and identified by the specialists, as well as those associated with the project that may trigger different development pathways.

In this regard, one key cumulative impact has been identified to date which will require further investigation, namely: the combined impact of current and future marine telecommunication cable systems, on the deep-sea trawling industry, Marine Protected Areas.

10 PLAN OF STUDY FOR IMPACT ASSESSMENT

This section outlines the Plan of Study for the EIA for the proposed construction and operation of the 2AFRICA/GERA (East) Cable System and the associated infrastructure.

Potential impacts and issues of concern, as described in Section 9, need to be taken forward for further investigation. During the impact assessment phase, the significance of these potential impacts will be investigated and assessed in detail, by way of specialist studies and further input by other project team members, as required.

The specialists will provide scientifically sound information in regard to the various issues raised and will not work in isolation but will be required to interact and discuss aspects during their investigations. An integrated approach will be adopted to consider direct, secondary and cumulative impacts. Thereafter, the findings will be integrated by the EAP to provide a comprehensive understanding of the issues and associated potential impacts.

The technical and public participation processes will continue to interact at important stages to ensure that both processes build towards a comprehensive investigation of the issues identified. The integrated findings will be presented in an Environmental Impact Assessment Report (EIAR).

10.1 Key tasks to be undertaken

The main activities to be undertaken during this phase are consistent with NEMA requirements and the EIA Regulations of 2014 (as amended), and are as follows:

- ❑ Take into consideration any comments from DEFF with respect to the Final Scoping Report and Plan of Study for EIA.
- ❑ Commission and undertake status quo studies on the potentially significant issues identified during Scoping that were previously assessed for the ACE Cable System, and that are relevant to the 2AFRICA/GERA (East) Cable System landing at Duynfontein.
- ❑ Maintain communication and interaction with stakeholders for the duration of the Impact Assessment phase.
- ❑ Integrate the findings of the detailed studies into a comprehensive and objective EIAR, inclusive of mitigation measures to ameliorate the effects of negative impacts and to optimise positive ones.
- ❑ Prepare an Environmental Management Programme (EMPr).
- ❑ Distribute the draft EIAR and EMPr to registered stakeholders for review.
- ❑ Process and consider stakeholder review comments.
- ❑ Amend and finalise the draft EIAR and EMPr as required, incorporating review comments, into a Final Comments and Responses Report.
- ❑ Submit the final EIAR and EMPr to DEA for consideration and decision-making.
- ❑ Notify registered stakeholders of the decision on the application for environmental authorisation and of their right to appeal.

10.2 Proposed specialist studies

Terms of reference for the specialist studies are outlined below. They will be undertaken by independent professionals regarded as specialists in their specific disciplines. There will be compliance with the requirements for specialist reports stipulated in the EIA Regulations 2014 (as amended). In addition, in terms of Appendix 6 of the EIA Regulations (2014) all specialist studies must contain:

- ❑ Details of the person who prepared the report, and the expertise of that person to carry out the specialist study or specialised process (in the form of a curriculum vitae attached as an appendix to the report).
- ❑ A declaration that the person is independent.
- ❑ An introduction that presents a brief background to the study and an appreciation of the requirements stated in the specific terms of reference for the study.
- ❑ The date and season of the site investigation, and the relevance of the season to the outcome of the assessment.
- ❑ Details of the approach to the study where activities performed and methods used are presented.
- ❑ The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure.
- ❑ An identification of any areas to be avoided, including buffers.
- ❑ A map superimposing the activity, including associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided and buffers.
- ❑ A description of any assumptions made and any uncertainties or gaps in knowledge.
- ❑ A description of the affected environment and the study area to provide a context under which the assessment took place.
- ❑ Description of proposed actions, and alternatives of development and operation of the project that could affect the prevailing environment, and the risks that these actions and alternatives present.
- ❑ A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment as well as the environment on the proposed development.
- ❑ A reasoned opinion as to whether the proposed activity or portions thereof should be licensed, and if so; any avoidance, management actions, mitigation measures and monitoring recommendations.
- ❑ A description of any consultation process that was undertaken during the course of carrying out the specialist study.
- ❑ A summary and copies of any comments that were received during any consultation process.
- ❑ A clear analysis as to how each recommended mitigation action would reduce negative impacts or enhance positive ones.

10.2.1 *Vegetation and Ecological Specialist Study*

The appointed specialist must provide an assessment of the potential impact that the 2AFRICA/GERA (East) Cable System and related infrastructure will have on the biodiversity of the area (vegetation and terrestrial fauna) taking into account the environmental status quo prepared for the ACE Cable System in 2017. The specialist study should identify and discuss the following key aspects.

1. What are the potential impacts on vegetation arising from the proposed 2AFRICA/GERA (East) Cable System and associated construction activities?

Specifically, the Vegetation Assessment must address the following primary elements:

- Description of the vegetation present, the relevant and important characteristics and components thereof, including ecological functioning, which may be affected by the proposed 2AFRICA/GERA (East) Cable System or which may affect the proposed development during site establishment, construction, operation and maintenance and/or decommissioning.
- The assessment must consider the terrestrial environment within the development footprint as well as the terrestrial environment directly adjacent to the proposed cable servitude and construction footprints.
- Identification of species of conservation importance, including Red Data/CITES and TOPS species potentially affected by the proposed project.
- The impact of the development must be assessed in terms of compliance with approved City of Cape Town: Environmental Management Framework's (EMF) management priorities.
- Identify and GPS significant sites that should be conserved, indicate on a suitable map, and motivate why they should be conserved.
- Identify the likely risks and impacts (negative and/or positive, including cumulative impacts if relevant) and their significance, which the proposed activity/infrastructure may have on vegetation assemblages and vice versa during site establishment, construction, operation and maintenance and/or decommissioning. Recommend mitigation measures for enhancing positive impacts and avoiding or mitigating negative impacts and risks (to be implemented during the design, construction, operation and/or decommissioning phases), for inclusion in an Environmental Management Programme.
- The identification of permit requirements as related to the removal and/or destruction of vegetation and specific plant species (all protected tree species within the proposed cable servitude must be counted and their position recorded to facilitate permit application processes).
- Address specific issues and concerns raised by stakeholders during the public review phase of the EIA process (an Comments and Responses Report will be provided to specialists).
- Discuss any other sensitivities and important issues from your specialist perspective that are not identified in these terms of reference.

2. What are the potential impacts on terrestrial fauna and ecology arising from the proposed 2AFRICA/GERA (East) Cable System and associated construction activities?

- Animal species identification, including an indication of dominant species, rare and endangered species (Red Data species), and exotic and invasive species.
- Animal species and their habitats.
- Assessment of the habitat condition for the animals.
- Desktop study to determine the probability of occurrence of any fauna of concern within these identified habitats.
- Determine the state of health of the ecosystem by taking into consideration all aspects concerning the natural resources.
- Recommend mitigation measures to ameliorate the negative impacts of the proposed development on the natural environment to be included in the Environmental Management Programme.

- ❑ The impact of the development must be assessed in terms of compliance with approved City of Cape Town: Environmental Management Framework's (EMF) management priorities.
- ❑ Address specific issues and concerns raised by stakeholders during the public review phase of the EIA process (a Comments and Responses Report will be provided to specialists).

10.2.2 *Fisheries Specialist Study*

The appointed specialist must provide an assessment of the potential impact that the 2AFRICA/GERA (East) Cable System and related infrastructure will have on the trawling industry based on the alignment selected. With this in mind, the specialist study should identify and discuss the following topics:

- ❑ Determine the actual number of trawls (all types but more importantly bottom) per annum over the proposed 2AFRICA/GERA (East) Cable alignment and depict how and from what source of information this was calculated as well as the accuracy of the data.
- ❑ Typically, at what depths are the bottom trawls along the proposed 2AFRICA/GERA (EAST) Cable alignment?
- ❑ Provide details of un-trawlable seabed areas along the proposed cable alignment.
- ❑ Provide a detailed explanation of the key methods of how trawls are recorded and clearly depict the accuracy of these recordings.
- ❑ Assess the current trawling logs within the Cape Town area and investigate whether the existing cable alignments and their exclusion zones are avoided by trawling vessels specifically the SAT3/WASC, SAFE, WACS, SAT-2 (Out of Service) and ACE Cable Systems.
- ❑ Provide a brief comment on the impact of the proposed 2AFRICA/GERA (East) Cable System alignment and its potential significance to the trawling industry/grounds and also propose an alternate solution with less impact if any. This comment on significance should cover aspects such as the relative percentage of the trawling grounds impacted and/or if the proposed alignment is likely to have any impact on trawling in terms of increased operational costs.
- ❑ Address specific issues and concerns raised by relevant stakeholders during the public review phase of the EIA process (an Issues and Responses Report will be provided to all identified specialists).
- ❑ Discuss any other sensitivities and important issues from a fisheries industry perspective that are not identified in these terms of reference.

In addition, the following maps should be generated and be included in the specialist report:

- ❑ Provide a map of trawl data over the last five years showing trawls across the proposed 2AFRICA/GERA (East) cable alignment including the existing SAT3/WASC, SAFE and ACE cables. The map legend should include trawl numbers for each year assessed and specific areas of catches.
- ❑ Provide a similar map of trawl data for trawls over the existing WACS cable for the period five years prior to its installation and since its installation, and for the ACE cable, since its installation.
- ❑ Establish the extent of trawling activities in between the cables with separation of surface and bottom trawls.

10.2.3 *Marine Ecological Specialist Study*

This specialist study is intended to be undertaken in a phased manner.

- A desktop assessment of the potential impact that the proposed 2AFRICA/GERA (East) Cable System and related infrastructure will have on the Marine Ecology Environment based on the alignment selected. In this context, the specialist study should identify and discuss the following topics.
 - An introduction with a brief project overview, study approach, methodology, and assumptions and limitations.
 - A description of the marine environment of the project area, focusing on the benthic invertebrate communities based on available literature and experience.
 - A description of the potential impacts of the project on the benthic invertebrate fauna, marine mammals and other marine fauna, followed by an assessment of the significance of these impacts using the assessment criteria provided (it must be noted that marine telecommunications cables once installed have a legislated 0.5 Nm buffer either side of the cable where no fishing/trawling or anchoring of vessels may take place).
 - A description of the impacts on MPAs traversed by the 2AFRICA/GERA (East) Cable System. This assessment must consider cumulative impacts associated with currently installed cables and future cable installations through these MPAs.

At this point in the assessment, the specialist must advise whether existing literature and experience need to be supplemented by site investigations:

- If yes, these investigations must be undertaken.
- If no or after the site investigations have been completed, the assessment can continue addressing the following:
 - A detailed motivation why site investigations were deemed unnecessary (if applicable).
 - The assessment of impacts must take into account the spatial scale, intensity, duration, etc. of the impacts and include recommendations for mitigation of impacts.
 - Address specific issues and concerns raised by I&APs during the public review phase of the EIA process (a Comments and Responses Report will be provided to specialists).
 - Discuss any other sensitivities and important issues from a Marine Benthic perspective that are not identified in these terms of reference.

10.2.4 *Wetlands Specialist Study*

The appointed specialist must provide an assessment of the potential impact that the 2AFRICA/GERA (East) Cable System and associated infrastructure will have on wetlands within the project area. It is recommended that a follow-up wetland status quo assessment be undertaken by the same wetland specialist to assess and investigate the possible impacts the 2AFRICA/GERA (East) Cable System may have on this wetland following the construction of the ACE Cable System along the same alignment that the preferred landing will follow.

The specialist study should identify and discuss the following key aspects.

1. What are the potential impacts on wetlands arising from the proposed 2AFRICA/GERA (East) Cable System, associated infrastructure and construction activities?

The necessity for another Wetland Delineation and Functional Assessment to identify and evaluate all wetlands within the proposed development footprint and within 500 m of the proposed development footprint will be discussed with the wetland specialist prior to commissioning. Should it be agreed that such a detailed investigation is required, the assignment must address the following primary elements:

- ❑ The delineation of the outer edge of the temporary zone of wetlands in accordance with: A practical field procedure for identification and delineation of wetlands and riparian areas (DAAF, 2006).
- ❑ Determination of all wetland boundaries (viz. the edge of the temporary wetness zone in each case).
- ❑ Determination of ecological buffers as stipulated by both National (DWS) and Provincial legislation.
- ❑ Mapping of the wetlands and their respective buffer zones at an appropriate scale.
- ❑ The impact of the development must be assessed in terms of compliance with approved City of Cape Town: Environmental Management Framework's (EMF) management priorities.
- ❑ Functional assessment using methods outlined in Wet-Ecoservices (Kotze et al., 2005). This will comprise a desktop and infield assessment scoring the ecosystem services that the wetlands supply, which will allow for more informed planning and decision making.
- ❑ Description of the current state of the wetlands and riparian zones (specifically focusing on Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS)) using the Wet-Health tool (Macfarlane et al., 2007). In addition to the PES and EIS, the overall impact of all activities that affect hydrological, geomorphological or vegetation health must be calculated as this is a requirement for the water use licensing process.
- ❑ Address specific issues and concerns raised by stakeholders during the public review phase of the EIA process (a Comments and Responses Report will be provided to specialists).

For wetlands that are not within the development footprint but are within 500 m of the proposed development, it is only necessary to assess the wetland if the proposed development will impact on one of the four main wetland drivers, viz. habitat, biota, flow and water quality.

10.2.5 *Beach and Coastal Dune Dynamics Specialist Study*

The appointed specialist must provide an assessment of the potential impact that the 2AFRICA/GERA (East) Cable System and associated infrastructure will have on beach and coastal dune dynamics within the project area. It is recommended that a follow-up status quo assessment be undertaken by the same beach and dune morphology specialist (that investigated the ACE cable system) to assess and investigate the possible impacts the 2AFRICA/GERA (East) Cable System may have, following the construction of the ACE Cable System along the same alignment that the preferred landing is proposed to follow.

The specialist study should identify and discuss the following key aspects.

1. What are the potential impacts of the proposed 2AFRICA/GERA (East) Cable System on the primary dune, beach and beach dynamics, in particular, areas of sensitive vegetation, such as the primary dunes, beach access points and the beach/dune/wetland interface?

2. What measures can be applied to rehabilitate, mitigate and manage these impacts in order to optimise environmental integrity at the proposed cable landing points?
3. How should the dunes in question be rehabilitated and what measures are required to ensure dune stability and functionality (i.e. outline a specific action plan)?

The objectives of the dune and coastal dynamics specialist study are to:

- Provide a description of the primary dunes and dune belt present at Van Riebeeckstrand and the relevant and important characteristics and components thereof, including dune dynamics.
- Identify and describe the components, characteristics and natural processes of the coastal environment that may be affected by the proposed development (during pre-construction, construction, operation, maintenance and/or decommissioning), from the perspective of coastal dynamics and dune stability.
- Identify and describe the components of the development that may be affected by the environment (during pre-construction, construction, operation, maintenance and/or decommissioning), from the perspective of coastal dynamics and dune stability.
- The assessment must consider the 2AFRICA/GERA (East) Cable System development footprint from the intertidal zone up to the BMH located approximately 80 m inland from the primary dunes. Particular attention should be paid to proposed development activities on the primary dunes and near the beach/dune interface.
- Identify the likely risks and impacts (negative and/or positive, including cumulative impacts if relevant) and their significance, which the proposed activity/infrastructure may have on relevant environmental components and processes, and vice versa during site establishment, construction, operation and maintenance and/or decommissioning. Make recommendations on alternatives where additional alternatives could be implemented to avoid negative impacts.
- Recommend mitigation measures for enhancing positive impacts and avoiding or mitigating negative impacts and risks (to be implemented during the design, construction, operation and/or decommissioning phases), for inclusion in an Environmental Management Programme (EMPr).
- Identify key impacts that should be monitored as part of ongoing management of the site, and simple methods of monitoring these impacts.
- Identify and delineate by GPS co-ordinates, significant areas that should be conserved or rehabilitated, indicate on a suitable map, and motivate why they should be conserved or rehabilitated.
- The impact of the development must be assessed in terms of compliance with approved City of Cape Town: Environmental Management Framework's (EMF) management priorities, and mitigation measures identified as per the City of Cape Town's Maintenance Management Plan: Dunes and Beaches, prepared by the Department: Environmental Management, dated 17 November 2017.
- Discuss any other sensitivities and important issues from a specialist perspective that are not identified in these terms of reference.
- Address specific issues and concerns raised by stakeholders during the public review phase of the EIA process (a Comments and Responses Report will be provided to specialists).

10.2.6 *Heritage Specialist Study*

Based on the findings by ACO Associates in 2017 during their assessment of the ACE Cable Route beach landing and route to the CLS, the maritime and cultural heritage resources are well understood for the project area comprising the 2AFRICA/GERA (East) Cable System

beach landing to the now existing MTN BMH.

It is therefore suggested that the same Heritage Practitioner submit the necessary notices to SAHRA and HWC for information purposes of the intention by MTN to land the 2AFRICA/GERA (East) Cable system at Duynefontein.

The appointed specialist must comment on the need to provide an assessment of the potential impact that the 2AFRICA/GERA (East) Cable System and related infrastructure will have on heritage resources within the same area, taking into account their previous study prepared for the ACE Cable System. With this in mind, the specialist study should identify and discuss the following key aspects.

1. What are the potential impacts on heritage resources arising from the proposed landing of the 2AFRICA/GERA (East) Cable System, and associated construction and operational activities?

Specifically, the Heritage Impact Assessment must address the following primary elements:

- The identification and assessment of potential impacts on cultural heritage resources, including historical sites arising from the construction and operation of the proposed 2AFRICA/GERA (East) Cable System.
- The early identification of any red flag and fatal flaw issues or impacts.
- Information must be provided on the following:
 - Results of an overview survey of the project area, and the identification of cultural heritage resources that may be affected by the proposed project or which may affect the proposed project during construction and operation.
 - Recommended mitigation measures for enhancing positive impacts and avoiding or minimizing negative impacts and risks (to be implemented during design, construction and operation).
- Address specific issues and concerns raised by stakeholders during the public review phase of the EIA process (a Comments and Responses Report will be provided to specialists).
- Formulation of a protocol to be followed by MTN for the identification, protection or recovery of cultural heritage resources during construction and operation, including a list of all necessary permit applications, which may be required.
- The impact of the development must be assessed in terms of compliance with approved City of Cape Town: Environmental Management Framework's (EMF) management priorities.
- The identification and assessment of any paleontological aspects or findings arising from the construction and operation of proposed 2AFRICA/GERA (East) Cable System.
- The identification of mitigation measures for enhancing benefits and avoiding or mitigating negative impacts and risks (to be implemented during design, construction and operation of the proposed project).

In compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA), a Phase 1 Heritage Impact Assessment (HIA) must address the following key aspects:

- The identification and mapping of all heritage resources in the area affected.
- An assessment of the significance of such resources in terms of heritage assessment criteria set out in the regulations.
- An assessment of the impact of the development on heritage resources.
- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.

- The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.
- If heritage resources will be adversely affected by the proposed development, the consideration of alternatives.
- Plans for mitigation of any adverse effects during and after completion of the proposed development.

10.3 Integration and Impact Assessment

Once the specialist investigations and integration of findings have been undertaken, an EIAR and EMPr will be prepared in accordance with Appendix 3 and Appendix 4, respectively, of GNR 326 which specifies in detail the required content of these documents (Appendix 9).

10.4 Impact assessment conventions

The following methodology has been applied to predict and assess the potential impacts associated with the proposed development:

- **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.
- **Nature** – the evaluation of the nature of the impact. Most negative impacts will remain negative, however, after mitigation, significance should reduce:
 - **Positive.**
 - **Negative.**
- **Spatial extent** – the size of the area that will be affected by the impact:
 - **Site specific.**
 - **Local** (limited to the immediate areas around the site; <2 km from site).
 - **Regional** (would include a major portion of an area; within 30 km of site).
 - **National or International.**
- **Duration** – the timeframe during which the impact will be experienced:
 - **Short-term** (0-3 years or confined to the period of construction).
 - **Medium-term** (3-10 years).
 - **Long-term** (the impact will only cease after the operational life of the activity).
 - **Permanent** (beyond the anticipated lifetime of the project).

- **Intensity** – this provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium or high):
 - **Negligible** (inconsequential or no impact).
 - **Low** (small alteration of systems, patterns or processes).
 - **Medium** (noticeable alteration of systems, patterns or processes).
 - **High** (severe alteration of systems, patterns or processes).

- **Frequency** – this provides a description of any repetitive, continuous or time-linked characteristics of the impact:
 - **Once off** (occurring any time during construction).
 - **Intermittent** (occurring from time to time, without specific periodicity).
 - **Periodic** (occurring at more or less regular intervals).
 - **Continuous** (without interruption).

- **Probability** – the likelihood of the impact occurring:
 - **Improbable** (very low likelihood that the impact will occur).
 - **Probable** (distinct possibility that the impact will occur).
 - **Highly probable** (most likely that the impact will occur).
 - **Definite** (the impact will occur).

- **Irreplaceability** – of resource loss caused by impacts:
 - **High** irreplaceability of resources (the project will destroy unique resources that cannot be replaced).
 - **Moderate** irreplaceability of resources (the project will destroy resources, which can be replaced with effort).
 - **Low** irreplaceability of resources (the project will destroy resources, which are easily replaceable).

- **Reversibility** – the degree to which the impact can be reversed/the ability of the impacted environment to return/be returned to its pre-impacted state (in the same or different location):
 - Impacts are **non-reversible** (impact is permanent).
 - **Low** reversibility.
 - **Moderate** reversibility of impacts.
 - **High** reversibility of impacts (impact is highly reversible at end of project life).

-
- **Significance** – the significance of the impact on components of the affected environment (and, where relevant, with respect to potential legal infringement) is described:

Please note that this excludes positive impacts on the environment. In these cases, the level of significance should be denoted as Low**, Moderate** or High**.

 - **Low** (the impact will not have a significant influence on the environment and, thus, will not be required to be significantly accommodated in the project design).
 - **Medium** (the impact will have an adverse effect or influence on the environment, which will require modification of the project design, the implementation of mitigation measures or both).
 - **High** (the impact will have a serious effect on the environment to the extent that, regardless of mitigation measures, it could block the project from proceeding).

- **Confidence** – the degree of confidence in predictions based on available information and specialist knowledge:
 - **Low.**
 - **Medium.**

- High.

10.5 Project schedule

Key activities and anticipated timeframes for the EIA are shown below. This programme takes into account the technical and public participation processes, and interaction between them.

Table 7 Anticipated timeframes for the EIA Phase

#	Activity	Dates
1	Project Announcement	03 Sep 2020
2	Initial Comment Period (30 days)	03 Sep - 05 Oct 2020
3	Submit DSR and Application to DEFF	15 Jan 2021
4	DSR Public Review Period/	15 Jan – 15 Feb 2021
5	Submit Final Scoping Report and Plan of Study for Impact Assessment to DEFF	26 Feb 2021
6	DEFF acknowledgement of receipt	26 Feb 2021
7	Acceptance of Final Scoping Report and Plan of Study for Impact Assessment by DEFF (43 days from submission)	22 Apr 2021
8	Specialist studies and preparation of DEIAR & EMPr	Jan – Apr 2021
9	DEIAR & EMPr Public Review Period (30 days)	21 May – 22 Jun 2021
10	Revision of EIAR and EMPr according to public comment	23 Jun - 14 July 2021
10	Submit FINAL EIAR and EMPr to DEFF	15 Jul 2021
11	DEFF Decision making (107 days) and issue of EA	1 Nov 2021

11 CONCLUDING REMARKS

The EAP is of the opinion that due environmental process has been followed during the preparation of this Final Scoping Report and associated Public Participation Programme. The analysis of key issues during Scoping suggests that there are no negative impacts that can be classified as fatal flaws. However, further investigation following comment from I&APs is required to assess potentially significant issues, viz. impacts on wetlands, impacts on vegetation, impacts on the coastal dune cordon, marine ecology, and the trawling industry, and a review of maritime cultural heritage resources.

Much of the previous specialist investigations undertaken during 2016/2017 for the ACE Cable System for the landing at Duynfontein provide information on the sensitivity of the receiving environment for this EIA for the 2AFRICA/GERA (East) Cable System, proposed to land at the same BMH (preferred Alternative 1), now existing and owned by MTN at Duynfontein.

Recommendations are provided in the Plan of Study of Impact Assessment for further specialist investigations where required.

Following the comment period for the Draft Scoping Report, the issues raised by stakeholders, together with those of technical specialists and the regulatory authorities, were captured in this Final Scoping Report (FSR). This report will be submitted to DEFF for consideration and acceptance. Thereafter, if DEFF accepts the report, the Impact Assessment phase will be undertaken.

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APPENDIX 1: APPLICATION FOR AUTHORISATION

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