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Strategic Environmental Overview: Developmental Opportunities and constraints



ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES

Cape Agulhas Municipality SDF:
Duiker Street to Struisbaai Harbour Precinct Development Plan

**Strategic Environmental Overview:
Developmental Opportunities and Constraints**

Prepared for:



KAAP AGULHAS MUNISIPALITEIT
CAPE AGULHAS MUNICIPALITY
U MASIPALA WASECAPE AGULHAS

Prepared by:



ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES

www.cesnet.co.za

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AUTHORS DETAILS

Dr Anthony (Ted) Avis

Ted Avis is a leading expert in the field of Environmental Impact Assessments, having project-managed numerous large-scale ESIA's to international standards (e.g. International Finance Corporation). Ted was principle consultant to Corridor Sands Limited for the development of all environment aspects for the US\$1billion Corridor Sands Project. He has managed ESIA studies and related environmental assessments of similar scope in Kenya, Madagascar, Egypt, Malawi, Zambia and South Africa. Ted has worked across Africa, and also has experience in large scale Strategic Environmental Assessments in southern Africa and has been engaged by the International Finance Corporation (IFC) on a number of projects.

Ted was instrumental in establishing the Environmental Science Department at Rhodes University whilst a Senior lecturer in Botany, based on his experience running honours modules in EIA practice and environmental. He is an Honorary Visiting Fellow in the Department of Environmental Sciences at Rhodes. He was one of the first certified Environmental Assessment Practitioner in South Africa, gaining certification in April 2004. He has delivered papers and published in the field of EIA, Strategic Environmental Assessment and Integrated Coastal Zone Management and has been a principal of CES since its inception in 1990 and Managing Director since 1998.

Ted holds a PhD in Botany and was awarded a bronze medal by the South African Association of Botanists for the best PhD adjudicated in that year, entitled "Coastal Dune Ecology and Management in the Eastern Cape". Ted is a Certified Environmental Assessment Practitioner (since 2002) and a professional member of the South African Council for Natural Scientific Professionals (since 1993).

Ms Tarryn Martin

Tarryn holds a BSc (Botany and Zoology), a BSc (Hons) in African Vertebrate Biodiversity and an MSc with distinction in Botany from Rhodes University. Tarryn's Master's thesis examined the impact of fire on the recovery of C₃ and C₄ Panicoid and non-Panicoid grasses within the context of climate change for which she won the Junior Captain Scott-Medal (Plant Science) for producing the top MSc of 2010 from the South African Academy of Science and Art as well as an Award for Outstanding Academic Achievement in Range and Forage Science from the Grassland Society of Southern Africa. She conducts vegetation assessments including vegetation and sensitivity mapping to guide developments and thereby minimise their impacts on sensitive vegetation. Tarryn has conducted a number of vegetation and impact assessments in southern Africa.

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1 INTRODUCTION

The overall objective of the project is to identify appropriate and commercially viable tourism development opportunities for current municipal land within the area referred to as the Duiker Street Precinct, located within the coastal town of Struisbaai. The final outcome will be a Master Plan for the Appropriate and Optimised Development of the Duiker Street to Struisbaai Harbour Precinct Development Plan. The spatial extent of the precinct, and the study area, is defined in Figure 1-1



Figure 1-1: The spatial extent of the precinct.

The location of the site along the coastline dictates that portions of the site are likely to be ecological sensitive, and hence any development interventions need to take cognizance of this ecological sensitivity. In addition, coastal processes need to be carefully considered to ensure that any suggested developments are ecological appropriate and environmentally sustainable. It is for this reason that an overview of the environmental setting, with particular emphasis on the coastal zone, is required so that it can be used to inform future development in the area. It is equally important to consider the institutional frameworks that govern developments along the coastline. In particular, the Integrated Coastal Management Act and the National Environmental Management Act: EIA regulations.



Therefore, this report provides a brief overview of the environmental setting, the institutional and regulatory frameworks that will affect developments from an environmental perspective, and then goes on to identify both environmental opportunities and environmental constraints for especially tourism related developments.



2 APPROACH AND METHODOLOGY

The environmental analysis has focused on the coastal strip and public open spaces within the Duiker Street precinct. The methodology applied has been a modification of the approach adopted in strategic environmental assessments. This involved undertaking a high level analysis of the environmental setting, to describe the current situation. This involved both a site visit to the area, as well as a desktop analysis.

An overview of the key pieces of legislation that require consideration, as well as applicable policies and programmes (such as the Overberg Coastal Management programme) is provided in order to better understand the regulatory and institutional frameworks governing the study area.

Spatial data in the form of Google earth images and available maps were utilised, together with aerial photographs taken with a Drone, to aid the interpretation of the biophysical setting. Information gathered during the field survey was interpreted and synthesised to provide an overall description of the terrestrial ecology of the site, and to identify ecologically sensitive areas regarded as inappropriate for development. An internal workshop was then held with the study team to identify various opportunities for tourism development, as well as constraints based on the knowledge gained during the field survey and literature review. Further literature reviews were undertaken to identify institutional and legislative requirements and issues relevant to the projects.

Based on the situational assessment, the opportunities and constraints for various development interventions were identified. For example, the presence of sensitive vegetation or the coastal setback line would result in a constraint for certain types of development (hard structures) but an opportunity for other responses, such as defining the area as public open space.

The outcome of this analysis is a map that categorises the area into the following three categories:

Low constraint - These areas can be easily developed, as there are only minor constraints, and little mitigation and management is required. These areas have the greatest flexibility in terms of land use and development.

Moderate constraint - These areas can accommodate development, but there are constraints. Mitigation and management will be required to reduce significant environmental impacts to acceptable levels, and appropriate technology and design will be required to reduce impacts and ensure sustainability. Sound arguments as to why the development cannot be located in less sensitive areas will be required to justify locating development in moderately constrained areas

Significant constraint - If development takes place in these areas, considerable effort (and most likely expense) will be required to design out, mitigate or manage negative environmental impacts. In many cases this will not be possible and in general no development should take



place in these areas. Only facilities that are location dependent should be permitted in these areas. For example, a road crossing a sensitive dune area.



3 ENVIRONMENTAL ANALYSIS OF THE AREAS

3.1 CLIMATE AND WEATHER

The biological environment is influenced by the climate and weather present at the site. Struisbaai is characterised by a warm and temperate climate with an average temperature of 17.1°C. The warmest months are January and February with an average temperature of 24°C and the coolest months are July and August with an average temperature of 10°C (www.climate-data.org; Accessed: 21 October 2019).

Rainfall occurs during the winter months (June – August) with an average annual rainfall of 513mm. The driest month is January with an average of 18mm while June receives the highest rainfall of 67mm (www.climate-data.org; Accessed: 21 October 2019).

The dominant winds are westerlies and easterlies, which generally blow at an average speed of 10 to 11 knots (www.windfinder.com; Accessed: 21 October 2019). Easterly winds blow in the months of January to April and October to December. These onshore winds would therefore blow during the peak season. In winter (May to September) winds are exclusively westerly and hence offshore.

Wind direction distribution in %

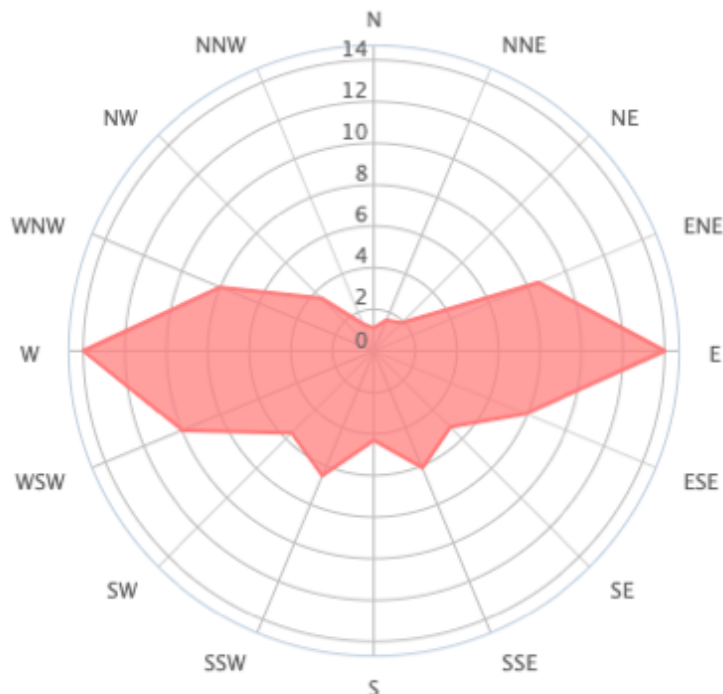


Figure 3-1: Wind rose for Struisbaai.



3.2 CLIMATE CHANGE

Panning and spatial development must focus on sustainable and equitable development that also increases resilience to the impacts of climate change. Thus it is important to consider coastal vulnerability, defined as “both the potential damage to the coastline as a result of natural hazards and the existing state of the coastline before it encounters an event” (Murali, et. al. 2013). The natural and man-made assets along the coast are vulnerable to dynamic coastal processes that will be compounded by climate change impacts. Inappropriate planning and unregulated development in high risk coastal areas can compromise coastal infrastructure and the resilience of coastal ecosystems, reducing the ability of remaining natural areas to withstand these dynamic processes. It is therefore important that such high risk areas be identified.

This has been achieved in the study area through the determination of a draft Coastal Management Line (CML), determined using best available science for the entire Western Cape coastline, including the Overberg DM (see Section 3.6).

3.3 LANDFORM AND DUNE TOPOGRAPHY

The shoreline of the Agulhas LM is both rocky and sandy, although the majority of the coastline is referred to as a soft coastline, with a relatively wide sandy beach backed by vegetated dunes. Behind this is a sandy, flat coastal plain with numerous marshes, vleis and pans (SANParks, 2012). Eastward of Struisbaai development is limited and the coastline is best described as a wilderness coast which is unbroken for long stretches (for example, the area east of Struisbaai, and the 60km stretch east of Witsand to Still Bay) (Plate 3-1).

The coastline consists of a narrow, gently sloping beach backed by a low foredune ridge. Towards the east there is a district sandy promontory that extends approximately 175m seaward from the inland edge. Struisbaai harbor is located immediately east of this promontory.

Struisbaai harbor consists of a 185m breakwater defining its eastern edge, two small offloading quays, a jetty and three slipways. The western head is defined by a sandy promontory (Plate 3-2). A trot mooring system is used, which offers 56 trot moorings. A trot mooring system consists of a network of long and heavy ground chains anchored, with risers at intervals. Repair, maintenance and upgrading of existing infrastructure in the harbour took place in 2018. The harbor was dredged and sand was deposited immediately east of the breakwater as well as on the beach in front of the caravan park.

A small, low and narrow band (2m) of incipient foredunes is located immediately behind the high-water mark (HWM) along most of the beach in the study area. Behind this is a very flat and low sandy plain that is vegetated with exotic grasses and other indigenous species (see 3.4 below), or has been developed as a car park and restaurant (the Beach Shack) or caravan park (Plate 3-3). Immediately west of the caravan park, and approximately 1,2km from the harbor, is a road that provides vehicle access to the beach. North west of this point the beach becomes more natural, and is backed by a wider band of foredunes, which is 160m at its widest point. Behind this foredune ridge, in a dune depression, is an unpaved parking area.



This dune consists of natural vegetation, unlike the vegetation further east that has been disturbed.



Plate 3-1: View of Struisbaai beach looking south-east. Caravan park in the foreground and harbor in the background. The beach is relatively wide, with incipient foredunes in undisturbed areas. The hinterland is level.



Plate 3-2: Struisbaai harbor, with sandy, well-vegetated promontories located both east and west of the harbor offering protection from swell.



There is a very small increase in topography from the HWM landwards, and this presents a significant constraint to development, as it has strongly influenced the location of the Coastal Management Line. However, the sandy promontory also provides protection and mitigates the constraint from low topography to some extent (see Section 3.6).



Plate 3-3: Caravan park behind Struisbaai beach. Note the very gentle increase in elevation, and low foredune ridge impacted from trampling (low vegetation cover and incipient foredunes absent).

3.4 VEGETATION

According to the National Vegetation map, two vegetation types occur within the study area; (i) Cape Seashore Vegetation and (ii) Overberg Dune Strandveld.

3.4.1 Cape Seashore Vegetation

The Cape Seashore Vegetation is found in the Western and Eastern Cape Provinces along the temperate coasts of the Atlantic and Indian Ocean (Mucina and Rutherford, 2012). It is characterised by beaches, coastal dunes, dune slacks, coastal cliffs and open grassy, herbaceous and dwarf-shrubby vegetation located on young coastal sandy sediments, and in some instances, shell beds.

This vegetation type is listed as Least Threatened with a conservation target of 20% with only 1.7% of this vegetation being transformed by urban development. Almost half of the area in which this vegetation type occurs is statutorily conserved within a number of protected areas.

There is a thin band of this vegetation type within the study site (Figure 3-2). Given its extent, it is unlikely that this will be negatively impacted on by the proposed development.



3.4.2 Overberg Dune Strandveld

The Overberg Dune Strandveld occurs as scattered patches within the Western Cape Province from Rooiels (Cape Hangklip area) as far east as Cape Infanta with the largest patch occurring around the Agulhas Peninsula. This vegetation type is characterised by flat or slightly undulating dune fields that support up to 4 m tall, closed evergreen shrublands in moist dune slacks, coastal thicket up to 1 m tall along windy areas in exposed littoral zones.

This vegetation type is listed as Least Threatened with a conservation target of 36%. Approximately 30% is statutorily conserved and a further 11% is conserved in private reserves. It is estimated that over 5% has been transformed by urban development and cultivation.

Although Figure 3-2 illustrates the entire project area to be comprised of this vegetation type, most of it in the site itself has been transformed as a consequence of urban development. Small patches of this vegetation type remain in the study area and these are located along the coastline, behind the Cape Seashore Vegetation.



Figure 3-2: Vegetation types present within the study site and surrounds.



3.5 CONSERVATION AND BIODIVERSITY SETTING

The Western Cape Biodiversity Spatial Planning tool was overlaid on the project area to determine whether the site falls within a critical biodiversity area (CBA), ecological support area (ESA) or other natural area (ONA).

CBA's are areas that have been identified for meeting conservation targets for species, ecosystems and ecological processes. These areas are of "*high biodiversity and ecological value and need to be kept in a natural or near natural state, with no further loss of habitat or species*" (Cape Nature, 2017). The management of these areas should be to "*rehabilitate to natural or near-natural condition*" with "*only low impact, biodiversity sensitive land uses*" occurring within these areas (Cape Nature, 2017).

ESA's are "*areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Protected Areas or CBAs, and are often vital for delivering ecosystem services*" (Cape Nature, 2017). The management of these areas should be to "*restore and/or minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement*" (Cape Nature, 2017).

ONA's are "*Areas that have not been identified as a priority in the current biodiversity spatial plan but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although they have not been prioritized for meeting biodiversity targets, they are still an important part of the natural ecosystem.*" (Cape Nature, 2017).

Within the project site there are a few small patches of area designated as a CBA1, the largest of which occurs on the eastern side of the sandy promontory (Figure 3.3). Small patches of ESA2 areas are situated adjacent to the CBA1 areas along the coastline. A small patch of ESA1 occurs in the north western portion of the site (Figure 3.3).

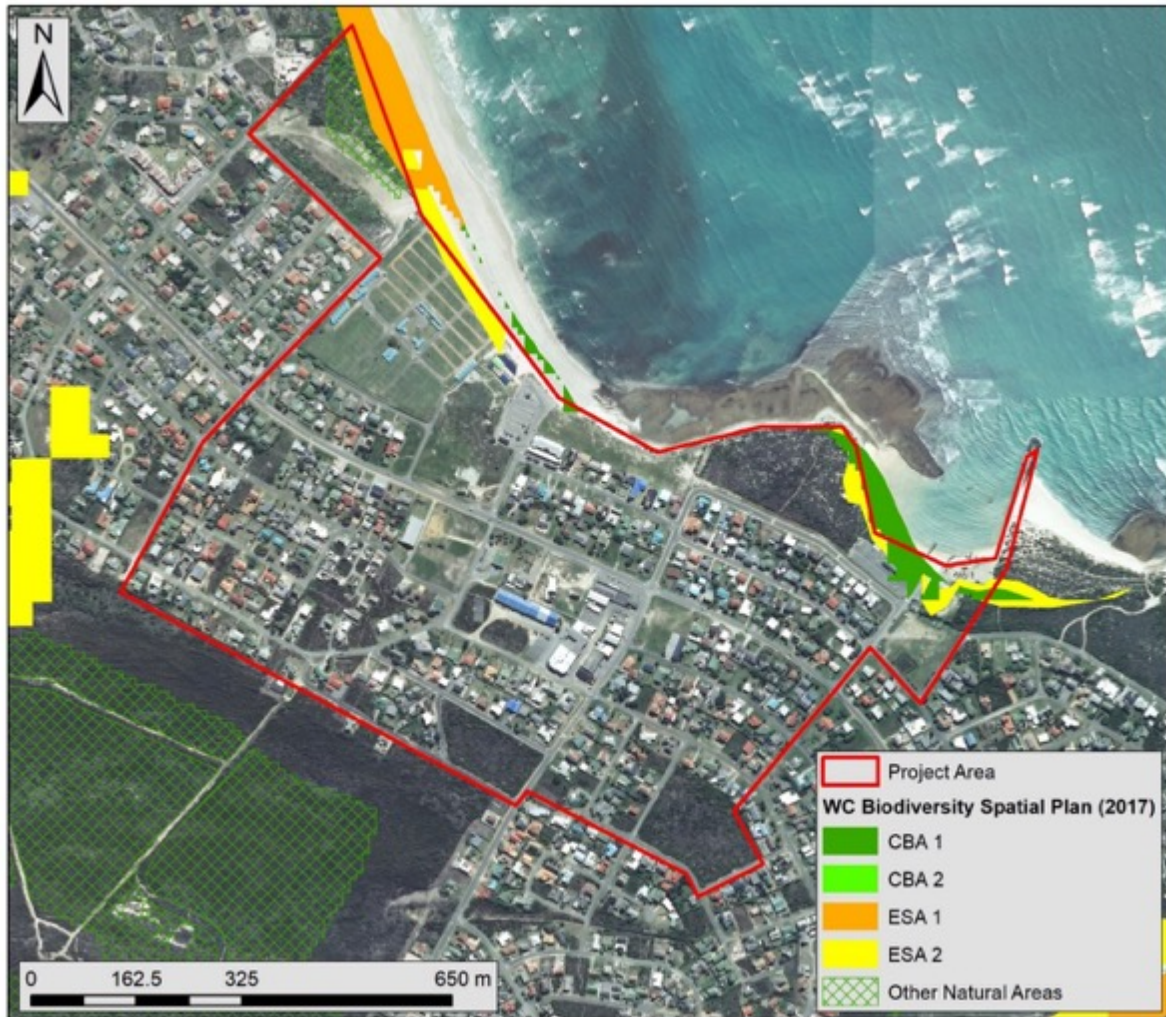


Figure 3-3: Critical Biodiversity Areas and Ecological Support Areas present within the study site and surrounds.

3.6 COASTAL MANAGEMENT LINE AND LITTORAL ACTIVE ZONE

The coastal management line was obtained from DEA&DP, and represents the results of a detailed determination of the CML by specialist coastal engineers. It has been prepared for the entire Western Cape coastline, in line with the requirements of the ICMA. However, it has not been adopted yet by the Provincial MEC, and hence is not a statutory requirements.

The high water mark is located few metres from the frontal dune at the back of the beach area. The three CML's define anticipated erosion over 20, 50 and 100 years, and can be defined respectively as low, medium and high risk zones. Figure 3-4 presents the CML for the study area.

It is important that hard structures are located behind the CML, and that only select types of developments (e.g. boardwalks or wooden structures) be permitted seaward of the CML.

The Integrated Coastal Management Act defines the **littoral active zone (LAZ)** as “any land forming part of, or adjacent to, the seashore that is:



- Unstable and dynamic as a result of natural processes; and
- Characterised by dunes, beaches, sandbars and as land forms composed of unconsolidated sand, pebbles or other such material which is either unvegetated or partially vegetated”.

Based on the above definition, the LAZ in the eastern part of the study area has been defined as the 1:10 year high water mark in the eastern portion of their study area. However, due to previous erosion events, it is set back slightly from the 1:10 year high water mark in front of the caravan park. To the north-east it includes the vegetated dune system and moves landward to the 1:50 year medium risk coastal management line. TYhis is because of the risk of wind erosion and blowout dune development in this area of soft coastline. The LAZ is at the 1:10 year high water mark on either side of the harbour, as there are reefs that protect these two sandy promontories.

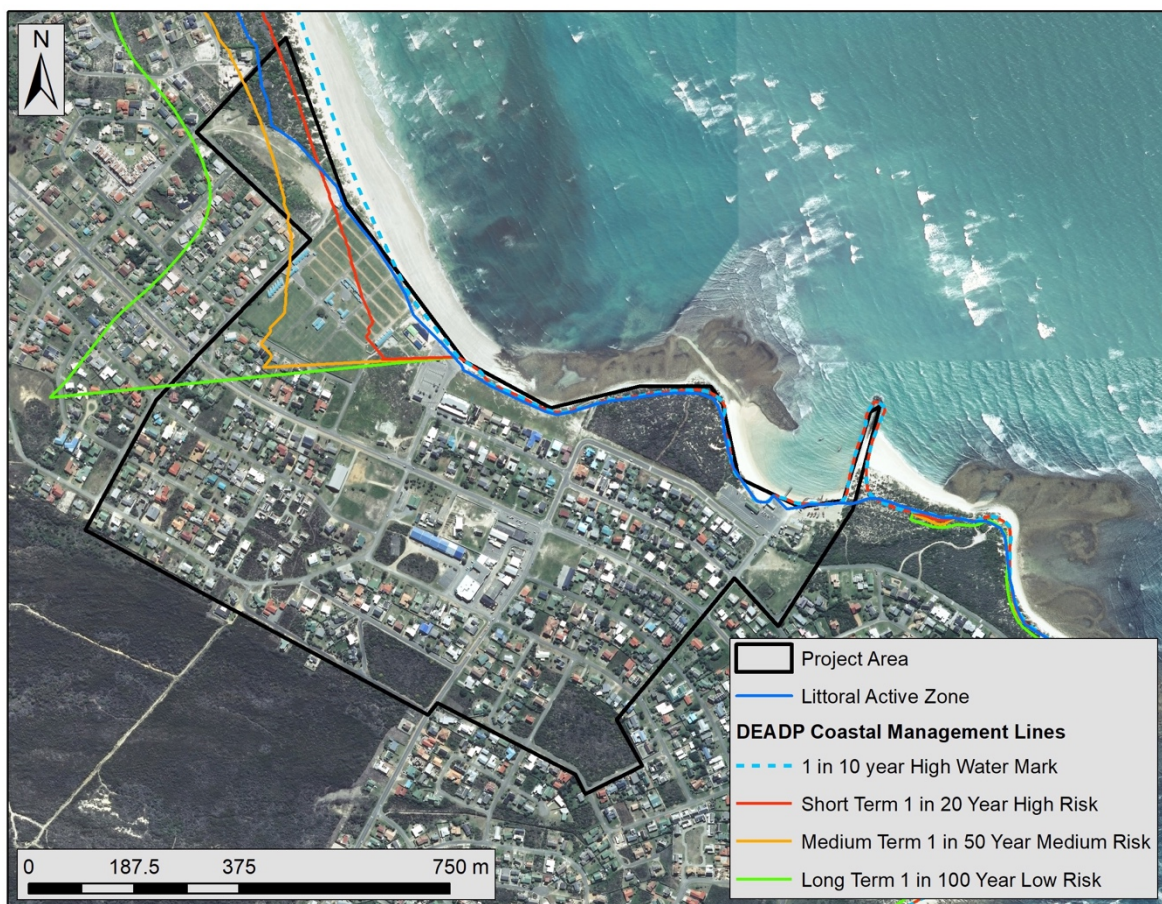


Figure 3-4: Coastal Management Line and LAZ showing the high water mark and short term, medium term and long term areas of risk.

In our opinion the medium risk line is incorrect, as the determination of these setback lines was undertaken at a broader resolution. It should follow the ridgeline in the caravan park (the landmost road in the caravan park), then follow Duiker Street north-easterly direction to the position of the ablution facility. Thereafter, it should follow the LAZ line.



Plate 3-4: View of the shoreline within the Duiker Street Precinct. The red lines indicates the approximate position of the Coastal Management Lines.

3.7 CURRENT LAND AND RECREATIONAL USE

The CAM SDF describes Struidbaai as the largest coastal settlement in the municipality, and as a sought-after retirement and second home area, as well as a popular holiday destination.

The town of Struisbaai is characterised by a low number of permanent residents, a large number of non-resident property owners, and large influx of tourists over especially the Easter long weekend and the Christmas holiday period. There are only approximately 5000 residents who live permanently in Struisbaai, but over the Christmas period the population swells to approximately 70,000. This places significant strain on services, although they are able to cope, and generally problems related to water, electricity and wastewater are not experienced over this Christmas period. However, as expected the beach becomes very full (Plate 3.XX), and any development interventions it's to take this influx of people into consideration.

A major problem experienced over the period is traffic congestion, were up to 200 vehicles with both trailers queue for access to these slipways located at the harbour. This is compounded by the large number of people wishing to gain access to L'Agulhas and the southernmost tip of Africa. Bumper to bumper traffic is experienced in Hoof Street, Duiker Street, Protea Road and Malvern Drive.

The main attractions rely on coastal related activities such as swimming, sunbathing and relaxing at the extensive beach, and fishing, the latter predominantly offshore using ski boats. The CAM SDF recognises this, and prioritises the upgrading of beach amenities and other activities to enhance recreational access to the coast. It also identifies the need to explore



expanding tourism, to focus on new tourism related facilities, including the establishment of a pathway and boardwalk linking Struisbaai North all the way to the Lighthouse at L'Agulhas. These aspects require consideration in the Duiker Street precinct plan, and are more fully discussed in the planning report.



Plate 3-5: The main beach at Struisbaai in January 2019 (source TripAdvisor).



4 THE REGULATORY FRAMEWORK

4.1 THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

In terms of the South African Environmental Legislative Framework, it is likely that most proposed projects will require an Environmental Authorisation (EA) as per the NEMA EIA Regulations. To obtain an EA for the proposed development, the EIA process as defined under the National Environmental Management Act (Act No. 107 of 1998): EIA Regulations (2014 as amended in April 2017) must be followed.

Within the EIA Regulations (as amended), various listed activities are provided for the determination of the magnitude of impacts. These are used to determine if an EIA is necessary and if so, are used to determine the environmental authorisation process that should be followed prior to activities commencing.

4.2. INTEGRATED COASTAL MANAGEMENT ACT

Coastal management or set-back lines (referred to as coastal management lines or CML's) are important in the face of climate change as it allows for the planning of future development based on the quantification of the potential risks. These CML's are used to determine how existing development is to be maintained over time, and how new development will be allowed to proceed.

The Integrated Coastal Management (ICM) Act (Act 24 of 2008 as amended by Amendment Act No. 36 of 2014) accommodates for the establishment of coastal management lines, and it empowers authorities to prohibit or restrict the establishment of structures that are wholly or partly seaward of the line. The intention of this Act is to protect or preserve:

- Coastal Public Property including coastal waters, land and natural resources;
- Coastal Private Property such as private residences and business properties;
- Public safety in the face of extreme climate and other natural events;
- The Coastal Protection Zone; and
- The aesthetics or 'sense-of-place' of the Coastal Zone.

4.1.1 The Coastal Protection Zone

Section 63 (2b) of ICM relates to environmental authorisations and states that "*the competent authority may not issue an environmental authorisation if the development or activity for which authorisation is sought is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established, as set out in section 17*".

Section 17 states that the Coastal Protection Zone was established to enable *the use of land that is adjacent to coastal public property or that plays a significant role in a coastal ecosystem to be managed, regulated or restricted in order to -*



- (a) protect the ecological integrity, natural character and the economic, social and aesthetic value of coastal public property;*
- (b) avoid increasing the effect or severity of natural hazards in the coastal zone;*
- (c) protect people, property and economic activities from risks arising from dynamic coastal processes, including the risk of sea-level rise;*
- (d) maintain the natural functioning of the littoral active zone;*
- (e) maintain the productive capacity of the coastal zone by protecting the ecological integrity of the coastal environment; and*
- (f) make land near the seashore available to organs of state and other authorised persons for -*
 - (i) performing rescue operations; or*
 - (ii) temporarily depositing objects and materials washed up by the sea or tidal waters.*



5 ENVIRONMENTAL OPPORTUNITIES AND CONSTRAINTS ANALYSIS

5.1 SPATIAL REPRESENTATION OF THE ENVIRONMENTAL CONSTRAINTS

Figure 5.1 presents the spatial extent of the environmental constraints, mapped according to the following three categories:

Significant constraint - If development takes place in these areas, considerable effort and expense will be required to mitigate or manage negative environmental impacts. Areas with significant constraints includes all land seaward of the 1 in 20 high risk zone, as defined by the Coastal Management Setback line. These areas are likely to be subject to coastal erosion over time, due to sea level rise and the associated increase in storm events (both frequency and magnitude), wave run-up and erosion from storm waves. In addition, sensitive dune vegetation and areas defined as CBA 1 and ESA 2, areas with Cape Seashore vegetation, and vegetated areas within the Littoral Active zone are included in the area mapped as having significant constraints. No permanent structures should be established in this area, and it would be preferable to use it for recreation, which can be both passive and active. The construction of temporary structures for purposes of meeting the recreational needs could be established, for example over peak periods, where after they would need to be removed. And appropriate structures such as an elevated wooden boardwalk would be acceptable.

Moderate constraint - These areas can accommodate development, but there are constraints. Areas with moderate constraints includes all land between the 1 in 20 high risk zone and the 1 in 50 medium risk zone, as defined by the Coastal Management Setback line. It also includes Overberg Dune Strandveld that is not located in the Littoral Active zone.

Low constraint - These areas can be easily developed. They essentially include all areas located behind the 1 in 50 medium risk zone, as defined by the Coastal Management Setback line, and all areas already developed, including public open space.

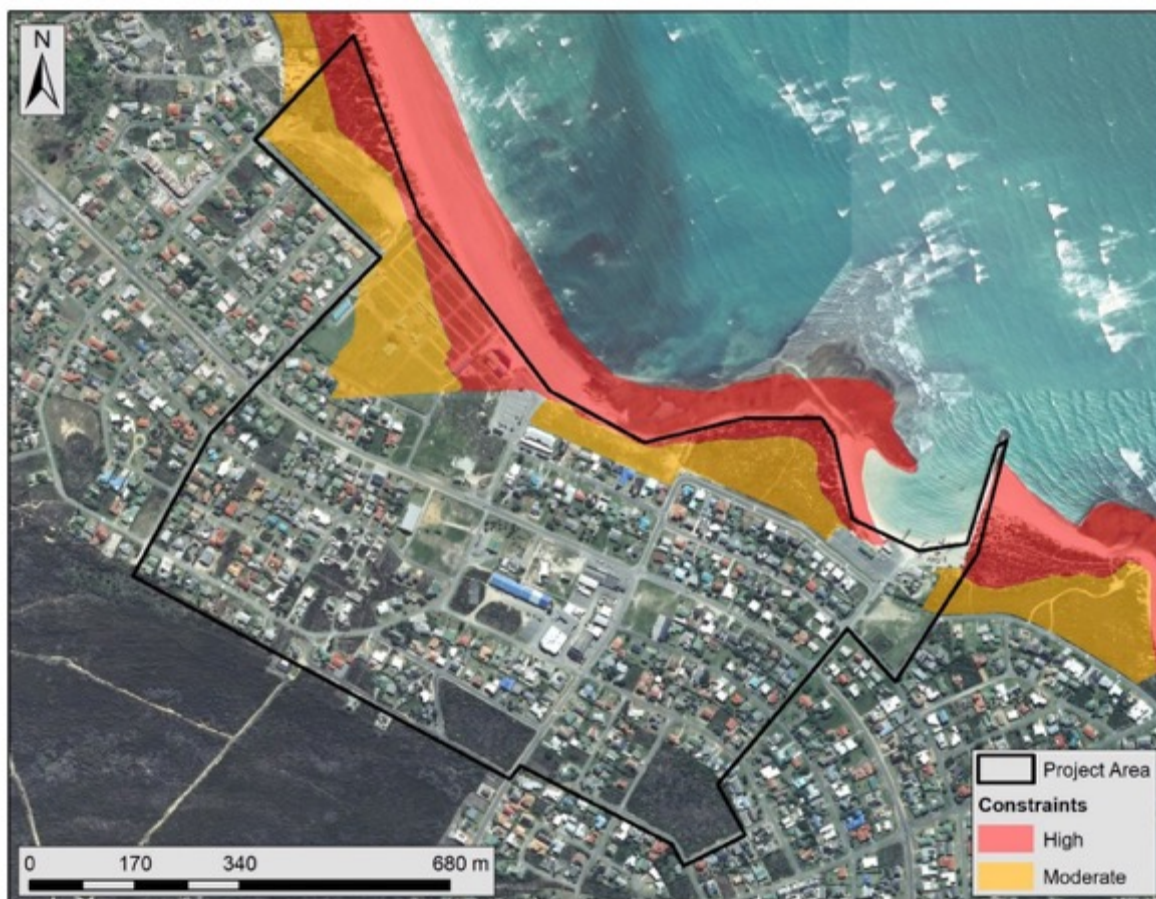


Figure 5-1: Spatial extent of environmental constraints

5.2 ENVIRONMENTAL OPPORTUNITIES AND CONSTRAINTS

Opportunities and constraints associated with the environment are presented in Table 1 below.

Table 5-1: Environmental opportunities and constraints.

Opportunity	Constraint
Climate and Weather	
<ul style="list-style-type: none"> Climate is agreeable and suitable in summer for multiple activities. Developments should be orientated toward sunset to increase tourist experiences. The warm summer months for holiday makers coincides with the school holidays. 	<ul style="list-style-type: none"> Winter months will be too wet and cold for tourists. Sea water is very cold all year round. The “worst” season for holiday makers (June-September) is the peak season for northern hemisphere tourists. The area experiences strong and frequent winds, which blow onshore during the peak December period.
Climate change	
<ul style="list-style-type: none"> High risk areas have been identified through the establishment of a CML and can therefore be avoided 	<ul style="list-style-type: none"> Storm searches will need to be considered for any form of development, as the beach in narrow, has a gentle slope and has been exposed to erosion events in the past.



Opportunity	Constraint
<ul style="list-style-type: none"> Opportunities exist to locate facilities in positions that can accommodate any rise in sea level. 	<ul style="list-style-type: none"> Sea level rise is predicted to occur, and this will affect the beach and any developments like a boardwalk seaward of the CML.
Landform and dune topography	
<ul style="list-style-type: none"> Land within the coastal zone and behind the dune is flat and easily developed. The frontal dune system is low and does not prevent sea views The beach is easily accessible and wide enough for sun bathers and others to enjoy recreational activities. The open space immediately behind the beach has resulted in properties being set well back (except for the Beach Shack and parking lot), and this creates a visually appealing and natural promenade. It should be extended past the caravan park. The harbour provides an opportunity to be enhanced and to provide accommodation and restaurants in a mini-marina setting. 	<ul style="list-style-type: none"> The level topography means that only a few rows of houses and other forms of development will have prime sea views Properties with sea views will obstruct views for properties behind them. Dune systems are sensitive to recreational pressures (trampling) and will need to be protected. Certain areas might need to be rehabilitated. The open space is disrupted by the Beach Shack and parking lot), and property owners regard this as their land (and not open space). The harbour is small with limited development opportunities Development will not be permitted within the littoral active zone.
Vegetation	
<ul style="list-style-type: none"> Most of the vegetation on site has low constraints associated with it, meaning that impacts on these areas are likely to be insignificant or easily mitigated. Portions of the vegetation inland on the east of the breakwater, adjacent to Kuswag Oos Street could be developed The status of both vegetation types (listed as Least Threatened) enhances the chances of developments obtaining environmental authorisation provided the areas designated as CBA1 are avoided. 	<ul style="list-style-type: none"> The coastal dune systems are sensitive to development and recreational impacts. The patch of indigenous vegetation on the sandy promontory adjacent to the harbour should not be developed.
Coastal Management Line and littoral active zone	
<ul style="list-style-type: none"> A defined CML reduced risks to developments from climate change and sea level rise, if complied with. Developments behind the CML are more likely to obtain environmental approval, as these also fall outside the LAZ. 	<ul style="list-style-type: none"> The CML is set well back from the Beach Shack, and approximately half the caravan park is in front of the CML, which reduces the amount of developable land. It is unlikely that any permanent structures located in front of the CML and within the LAZ will obtain environmental authorisation.
Recreational activities	
<ul style="list-style-type: none"> The extensive sandy beach offers excellent opportunities for beach goers. The Struisbaai beach offers safe swimming (TripAdvisor, accessed 11 October). 	<ul style="list-style-type: none"> Opportunities for land based recreational activities away from the beach are limited.
Landscape and aesthetics	



Opportunity	Constraint
<ul style="list-style-type: none"> The beach promenade area is attractive, with extensive sandy beaches. The grassy area immediately behind the frontal dunes and the caravan park create a wilderness beach in an urban setting. The large area available for redevelopment provides the opportunity to create a particular architectural response that could redefine the urban fabric of the town. 	<ul style="list-style-type: none"> The parking lot and beach shack at the end of Protea road are very close to the HWM, within the LAZ, and detract from the wilderness setting of the beach. The undeveloped areas east and west of the harbour are natural assets and development in these areas will be limited as approvals might not be obtained.
Current developments	
<ul style="list-style-type: none"> The large portion of land used as a caravan park offers an opportunity to redevelop portions, as the site is not ecologically sensitive. The low lying area behind the dunes at the end of Duiker Street is undeveloped, and presents opportunities for a parking area or other developments, as it is behind the CML and protected by the intact frontal dune. The existing boardwalk presents an opportunity to extend this all the way to Duiker Street, where it could terminate in an entertainment facility or restaurant. The undeveloped land behind the harbour is not ecologically sensitive and could be developed. 	<ul style="list-style-type: none"> Approximately half the caravan park is in front of the CML, which reduces the amount of developable land. The low lying area at the end of Duiker Street might be classified as a wetland or dune slack, and hence excluded from development.
Institutional and Regulatory Frameworks	
<ul style="list-style-type: none"> Redevelopment of the Duiker Street precinct is aligned with the CAM SDF. Developments within the urban edge and outside the coastal zone may not require environmental approval, although this depends on the type of development and whether it results in any listed activities. 	<ul style="list-style-type: none"> Permanent structures located in front of the CML and within the LAZ might not obtain environmental authorisation. EIAs or Basic Assessments must incorporate the requirements of the ICMA, especially the requirements of sea level rise and how the environment could affect the development (the risk that the coastal environment might cause). Any developments in the well vegetated area east and west of the harbour might not obtain environmental authorisation.



6 OVERALL OPPORTUNITIES AND CONSTRAINTS

6.1 DEVELOPMENT CONSTRAINTS

The environmental constraints presented in the report reduce the amount of land suitable for development, as it is recommended that the following areas of land with significant constraints (Figure 5.1) are not utilized for the construction of permanent structures:

- All land seaward of the 1 in 20 high risk zone, as defined by the Coastal Management Setback line.
- All areas with Cape Seashore vegetation.
- Areas with Overberg Dune Strandveld that fall within the littoral active zone.

6.2 DEVELOPMENT OPPORTUNITIES

Based on this analyses, Figure 6.1 provides a synopsis of the development opportunities offered by the site, with due consideration of the environmental constraints identified, and the recommendations provided to environmental sustainability.

- **Area A** – The low-lying portion of land has been disturbed, and the central section grassed with Kikuyu. There are patches of Overberg Dune Strandveld, but the landward patch could be developed, provided the integrity of the frontal dune remains by ensuring there is no developed in the area mapped as having a high constraint. The only possible limitation is if this area becomes classified as a wetland during any EIA process that will be required.
- **Area B** – The site of the caravan park is suitable, from an ecologically sensitivity perspective, for more intensive development. It is located behind the high-risk, 1 in 20-year CML, and the vegetation is largely not indigenous.
- **Area C** – This area is also located behind the high-risk, 1 in 20-year CML, and the vegetation is of moderate sensitivity, as it has already been disturbed. The parking lot is located in the significantly constrained area, and should ideally be reduced in size so that it is not located in the high-risk area.
- **Area D** – Although this area consists of small patches of Overberg Dune Strandveld in good condition, and is ecologically sensitive, portions of this area could be used for development. For example, widening of the parking bays in Kusweg North road, and an appropriate low-key development on the sandy promontory, but located behind the littoral active zone and outside of the CBA 1 area.
- **Area E** – The port area is already disturbed, and a restaurant is located in the back-of-port area. However, some land to the west could be developed, again provided that it is an appropriate low-key development with the correct architectural response. As this area consists of Overberg Dune Strandveld in good condition, the development footprint would need to be well contained.



In terms of areas D and E, the natural vegetation provides a valuable natural assets and enhances the landscape quality of the town. Therefore, development in these two areas, whilst acceptable, is not encouraged.



Figure 6-1: Development opportunities

6.3 KEY RECOMMENDATIONS RELATED TO THE NATURAL ENVIRONMENT

The following key recommendations are provided:

1. **Significant constraints** – No formal developments and hard structures must be located in this area. Temporary structures and a boardwalk would be acceptable.
2. **Develop in low or moderate constraint areas only** - It is recommended that only areas that have been mapped as having low or moderate constraints (see Figure 5.1) are developed. Areas of high constraints should not be developed.
3. **Disturbed area** – Ideally larger scale developments such as restaurants, hotels and other forms of accommodation should take place in areas that have already been disturbed, such as Areas A, B and B.



4. **Environmental sensitivity** - The environmental sensitivity of the terrestrial environment, needs to be considered in further planning, but overall a relatively large portion of the site is available for development.
5. **Coastal Management Line** - The CML has been determined and must be complied with. It is unlikely that developments in the high-risk area will obtain environmental authorization.
6. **Landscape quality** – *Any developments to be located in the developable areas identified in this report must consider visual impacts, and have an appropriate architectural response that enhances the urban setting (rather than detracting from it).*