



APPLICATION – FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

For

PROPOSED DEVELOPMENT OF KINETIC CATAMARANS INDUSTRIAL
FACILITY ON ERF 1339, AS WELL AS DEVELOPMENT /
REDEVELOPMENT OF THE SOUTH AFRICAN SEA CADET CORPS
INFRASTRUCTURE ON ERF 1316, KNYSNA, WESTERN CAPE



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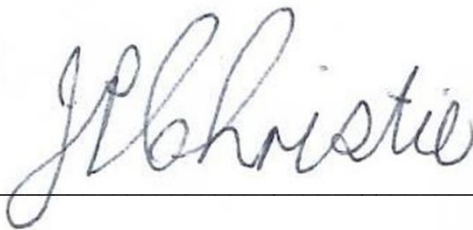
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STATEMENT OF INDEPENDENCE

I, **Jessica Christie**, of Eco Route Environmental Consultancy, in terms of Regulation 13 of the Environmental Impact Assessment Regulations, 2014 (as amended), hereby declare that I provide services as an independent Environmental Assessment Practitioner (**EAPASA Reg: 2019/1855**) and receive remuneration for services rendered for undertaking tasks required in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 (as amended). I have no financial or other vested interest in the project.

EAP SIGNATURE: _____



ENVIRONMENTAL MANAGEMENT PROGRAMME REQUIREMENTS:

Appendix 4 of Regulation 982 of the 2014 EIA Regulations contains the required contents of an Environmental Management Programme (EMP). The table below serves as a summary of how these requirements were incorporated into this EMPR:

(1) An EMP must comply with section 24N of the Act and include:-

Requirement	Description
(a) Details of – (i) The EAP who prepared the EMPR; and (ii) The expertise of the EAP to prepare an EMPR, including a curriculum Vitae;	Appendix H and H1
(b) A detailed description of the aspects of the activity that are covered by the EMPR as identified by the project description;	Section 2
(c) A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	2026.26.12 - Application DBAR - Kinetic Catamarans – Section C
(d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Section 3, 6, 7, 8, and 8
(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practises; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	Section 3, 6, 7, 8, and 8

(iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 5
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 5
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 5
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 5
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 5
(l) a program for reporting on compliance, taking into account the requirements as prescribed by Regulations;	The entire report serves as a programme for reporting on compliance
(m) an environmental awareness plan describing the manner in which – (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 5
(n) any specific information that may be required by the competent authority.	N/A

Glossary of Terms

BAR	Basic Assessment Report – A tool used by the EAP to submit to the competent authority if listed activities is triggered in Regulations GNR 327 and GNR 324 as per NEMA to make a decision regarding a proposed development.
DFFE	Department Forestry Fisheries and Environment – the national authority for sustainable environmental management and integrated development planning.
DFFE&DP	Department of Environmental Affairs and Development Planning – the provincial authority for sustainable environmental management and integrated development planning.
CBA	CBA Critical Biodiversity Area – Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
EAP	Environmental Assessment Practitioner – An EAP and a specialist, appointed in terms of regulation 12(1) or 12(2) must – (a) be independent. (b) Have expertise in conducting environmental impact assessments or undertaking specialist work as required, including knowledge of the Act, these regulations and any guidelines that have relevance to the proposed activity. (c) Ensure compliance with these Regulations (d) Perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the application. (e) Take into account, to the extent possible, the matters referred to in regulation 18 when preparing the application and any report, plan or document relating to the application; and (f) Disclose to the proponent or applicant, registered and affected parties and the competent authority all material information in the possession of the EAP and, where applicable, the specialist, that reasonably has or may have the potential of influencing – i. Any decision to be taken with respect to the application by the competent authority in terms of these regulations; or ii. The objectivity of any report, plan or document to be prepared by the EAP or specialist, in terms of these Regulations for submission to the competent authority; unless access to that information is protected by law, in which case it must be indicated that such protected information exists and is only provided to the competent authority. (2) In the event where the EAP or specialist does not comply with sub regulation (1)(a), the proponent or applicant must, prior to conducting public participation as contemplated in chapter 5 of these regulations, appoint another EAP or specialist to externally review all work undertaken by the EAP or specialist, at the applicants cost. (3) An EAP or specialist appointed to externally review the work of an EAP or specialist as contemplated in sub regulation (2), must comply with sub regulation (1).
ECO/ESO	Environmental Control Officer – A site agent who needs to ensure that all environmental authorisation and conditions are adhered to during the construction phase of the project

EMPr	Environmental Management Programme – can be defined as “an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced”.
ESA	Ecological Support Area – Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Pas or CBAs, and are often vital for delivering ecosystem services.
MMP	Maintenance Management Plan – means a maintenance management plan for maintenance purposes defined and adopted by the competent authority
NEMA	National Environmental Management Act (Act 107 of 1998) as amended 2017 – national environmental legislation that provides principles for decision-making on matters that affect the environment.
PA	Protected Area - A protected area is an area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition. ¹ The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas.

Key Documents to consider with the EMPr – Annexures

Source	Context	Reference
Stormwater Pollution Prevention Plan (SPPP)	The purpose of this SPPP is to set out the management measures required to prevent, control and monitor stormwater-borne pollution arising from construction and operational activities at the proposed development.	2026.26.09 – Application EMPr – Annexure A – Stormwater Pollution Prevention Plan
Spill Prevention, Control And Countermeasure (SPCC) Plan	The purpose of this SPCC Plan is to set out a structured, risk-based framework to prevent, contain and respond to spills of hazardous and polluting substances handled at the proposed Kinetic Catamarans facility.	2026.26.09 – Application EMPr – Annexure B – Spill Prevention, Control and Countermeasure (SPCC) Plan

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1. INTRODUCTION

According to the National Environmental Management Act (Act 107 of 1998) (NEMA), it is specified under Section 24 N that an Environmental Management Programme (EMPr) be prepared and implemented as part of obtaining Environmental Authorisation (EA) for specified activities that may have a significant impact on the environment. It emphasizes that an EMPr must detail the mitigation measures, monitoring, and management actions necessary to ensure that environmental impacts are controlled during all phases of the project.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with this project.

This EMPr is a dynamic document that may need to evolve during its implementation period so that it recognises any new issues that may arise; or changes in the parameters of identified issues and can address these issues with the required/amended mitigation.

1.1. Purpose of the EMPr

The purpose of this EMPr is to ensure that the negative environmental impacts of the proposed activities are managed, mitigated and kept to a minimum during the planning, construction and operation of the proposed development. The EMPr focuses on avoiding damage or loss on ecosystems and the services they provide, and to enhance positive environmental impacts where possible.

The EMPr is a living document that is flexible and responsive to new and changing circumstances, however, should a change be made within the EMPr permission from the competent authority must first be obtained.

Once the EMPr is approved by the competent authority it is seen as a legal binding document on the following affected parties:

- 1 Project Applicant.
- 2 All contractors.
- 3 Sub-contractors and construction staff.
- 4 The appointed ECO monitoring the construction phase.

Copies of this EMPr must be kept on site and all senior personnel are expected to familiarise themselves with the content of this EMPr.

It is suggested that the EMPr be reviewed on a 5 yearly basis if required. Should any amendments need to be made during operational phase, written authorisation should be obtained from DEA&DP.

1.2. The Polluter-Pays Principle

This principle provides for “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.” The Polluter Pays Principle will be rigorously applied throughout the construction phase of this project.

2. PROJECT DETAILS

Eco Route Environmental Consultancy has been appointed by the Applicant, **Kinetic Catamarans SA (PTY) Ltd**, to prepare an Environmental Management Programme (EMPr) in compliance with the Basic Assessment Report Conditions set by Department of Forestry, Fisheries, and the Environment (DFFE) for Environmental Authorisation.

2.1. Location Description

It should be noted that the proposed development encompasses two interrelated components. The first involves the expansion of the existing Kinetic Catamarans manufacturing facility, while the second entails the upgrade of the South African Sea Cadet Corps – TS Knysna facilities located on the adjoining property. Both components are being assessed collectively under a single Basic Assessment process and are hereafter referred to jointly as “the development area.”

The development area is situated within the established industrial and maritime precinct along Main Road (N2) in Knysna, under the jurisdiction of the Knysna Local Municipality, Western Cape Province. The site occupies a prominent position on the northern shore of the Knysna Estuary, approximately 1.2 kilometres east of the Knysna Central Business District (CBD).

Table 1: Western Cape SG information of the ¹proposed development area of the factory and ²the proposed development area of the sea cadets

¹ SG Region:	KNYSNA
¹ Erf Nr:	RE/1339
¹ Development Area (Ha):	± 0.3 Ha
¹ SG Code:	C03900050000133900000
² SG Region:	KNYSNA
² Erf Nr:	RE/1316
² Development Area (Ha):	± 0.15 Ha
² SG Code:	C03900050000131600000



Figure 1: Locality Map of RE/1339 as well as RE 1316 (indicating the development area) (Cape Farm Mapper)

2.2. Receiving Environment

This section reviews the available environmental data in conjunction with the specialist reports to provide an overview of the current state of the receiving environment. It considers historical classifications and identifications while incorporating ground-truthing data to contextualize the existing conditions. This method is crucial because desktop data may sometimes differ from actual on-site findings.

A. VEGETATION

The National Vegetation Map produced by SANBI (VEGMAP, 2018) indicates that the entire built-up area of Knysna sustains the capability of hosting Garden Route Shale Fynbos (Figure 2). This includes the development area.



Figure 2: The development area vegetation map (VEGMAP, 2018)

The characteristics of this classified vegetation types include distinct landscape features and plant communities specific to the region –

- Garden Route Shale Fynbos

“Western and Eastern Cape Provinces: Patches along the coastal foothills of the Langeberg at Grootberg (northeast of Heidelberg), the Outeniqua Mountains from Cloete's Pass via the Groot Brak River Valley, Hoekwil, Karatara, Barrington and Knysna to Plettenberg Bay. Patches from the Bloukrans Pass along coastal platform shale bands south of the Tsitsikamma Mountains via Kleinbos and Fynboshoek to south of both Clarkson and the Kareedouw Mountains. Altitude 0–500 m. Undulating hills and moderately undulating plains on the coastal forelands. Structurally this is tall, dense proteoid and ericaceous fynbos in wetter areas, and graminoid fynbos (or shrubby grassland) in drier areas. Fynbos appears confined to flatter more extensive landscapes that are exposed to frequent fires—most of the shales are covered with afrotemperate forest. Fairly wide belts of Virgilia

oroboides occur on the interface between fynbos and forest. Fire-safe habitats nearer the coast have small clumps of thicket, and valley floors have scrub forest (Vlok & Euston-Brown 2002)."

Along the southern boundary of the development area, mapping from the 2018 National Vegetation Map (VEGMAP) identifies a narrow band of Estuarine Vegetation (salt marsh) associated with the Knysna Estuary. This estuarine vegetation occurs outside of the proposed development footprint, within the natural intertidal and supratidal zones that form part of the Knysna Estuarine Functional Zone. The proposed development area is therefore located immediately adjacent to, but not within, the mapped estuarine zone.

It was observed that a grassed strip occurs between the proposed development footprint and the edge of the Knysna Estuary. This area, although anthropogenically maintained, provides a functional buffer between the industrial surfaces and the estuarine zone. The grassed patch assists in reducing surface runoff velocity, trapping sediments, and filtering potential pollutants, thereby serving an important protective role in mitigating indirect impacts from the adjacent developed area on the estuarine environment.

The vegetation originally mapped for this area was classified as having an Endangered ecosystem threat status (Figure 3). However, more recent (though not yet gazetted) updates to the national vegetation and ecosystem mapping indicate that the remaining extent of this vegetation type no longer includes the Knysna area, including the current development property (Figure 4). Site photographs further confirm that the development footprint remains in a previously disturbed state, with no remnant natural vegetation evident within the project area



Figure 3: SANBI Original Ecosystem Threat Status



Figure 4: SANBI Remaining Ecosystem Threat Status

B. SENSITIVE AREAS (CBA, ESA, and PA)

According to the updated Western Cape Biodiversity Spatial Plan (WCBS, 2023), the entire development area is mapped within a Protected Area. The following information is provided to give context to the meaning and implications of this designation within the WCBS framework.

Definition:	Areas proclaimed as protected areas in terms of national or provincial legislation.
Management objective:	Must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity. A benchmark for biodiversity.



Figure 5: Western Cape Biodiversity Spatial Plan (WCBS 2017) Sensitive areas

While the WCBSP (2023) identifies the development area as falling within a Protected Area, this mapping is not fully reflective of the site's current level of transformation. The entire property has been substantially altered through historical development, including the establishment of parking areas, buildings, and the existing Sea Cadet facilities. As such, no remaining natural habitat consistent with a Protected Area is present within the proposed development footprint. Notwithstanding this, the proposed development remains committed to upholding the management objectives of the WCBSP by implementing responsible environmental design, runoff control, and buffer protection measures that will help maintain and enhance the ecological integrity of the adjacent Knysna Estuary.

C. AQUATIC SENSITIVITIES

It is indicated that the entire development area falls within the National Freshwater Ecosystem Priority Areas (FEPA) and the National Wetland Inventory (NWI) datasets, which broadly map aquatic and wetland systems of national ecological importance. These datasets are developed at a regional scale to identify areas that contribute to the maintenance of freshwater ecosystem functioning, hydrological connectivity, and water quality regulation. In this instance, the mapping reflects the proximity of the site to the Knysna Estuary and its associated salt marsh and tidal wetland habitats, rather than the presence of discrete wetland features within the development footprint itself.



Figure 6: National Freshwater Ecosystem Priority Areas (FEPA) – The Development Area

The appointed aquatic specialist, Upstream Consulting, further noted that the boundary of the Garden Route National Park (GRNP), which includes the Knysna Estuary, lies in close proximity to the proposed development area. Although the development footprint itself falls outside the formal park boundary, its location adjacent to a protected estuarine system necessitates careful consideration of potential indirect impacts such as surface runoff, pollution, and visual intrusion on the estuarine conservation zone.

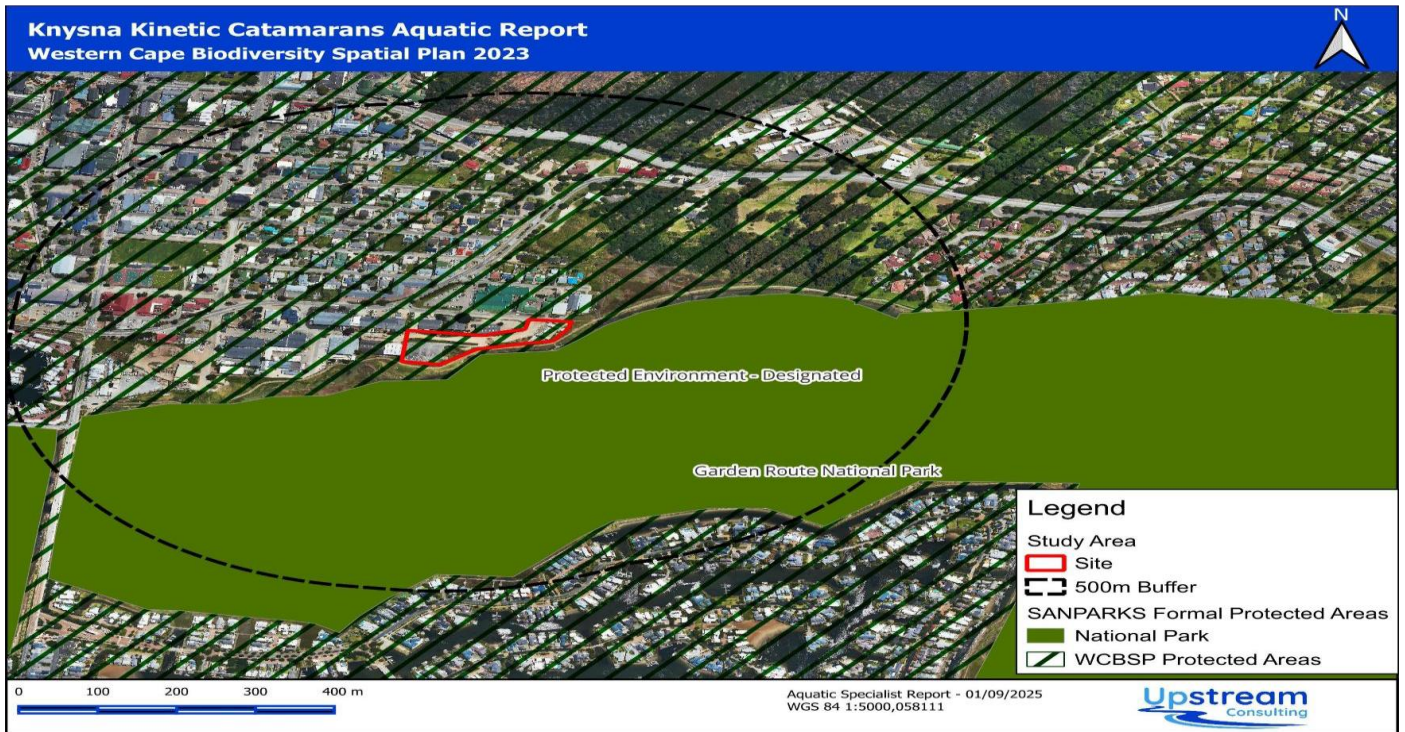


Figure 7: Aquatic sensitivities from desktop data (Upstream Consulting, 2025)

Following the contextualisation of the study area with the available desktop data, a site visit was conducted on the 17th of August 2025, to ground truth the findings and delineate the aquatic habitat within study area. In total there are two different natural hydrogeomorphic (HGM) units identified and mapped within the 500m study area, the Knysna Estuary and an unnamed perennial riparian system to the far east of the study area. Only the Knysna Estuary will be impacted by the proposed scope of works. The additional information collected in the field allowed for the development of an improved baseline river and wetland delineation map (Figure 8).

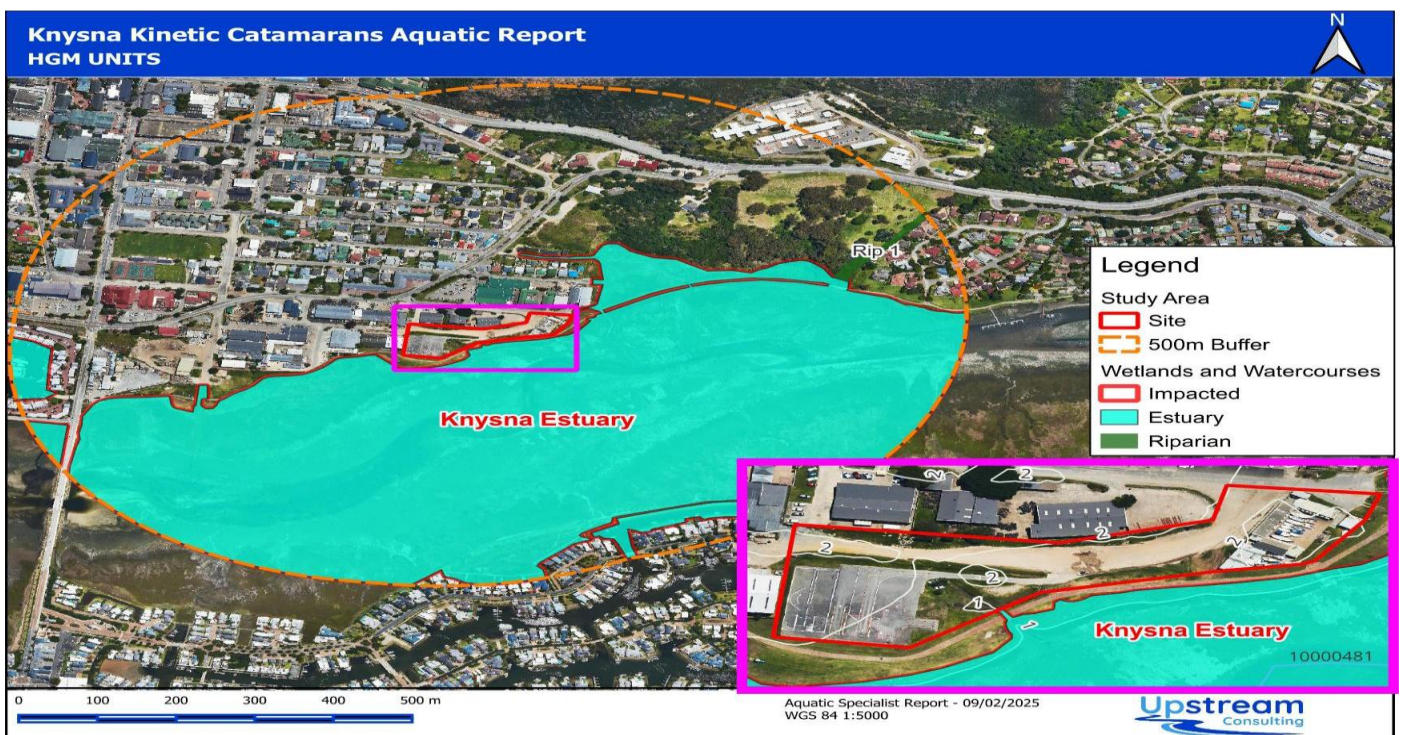


Figure 8: Map of the delineated aquatic habitat within the study area following site verification, pink box is zoomed in site with contours (Upstream Consulting, 2025)

Following the conclusion of the mapping exercise, this section provides a description of the systems that are currently being impacted by the state of the sewer system and will be impacted in the future construction / maintenance phases.

Knysna Estuary (Upstream Consulting, 2025)

The section of the Knysna Estuary adjacent to the study area, near the Costa Sarda and Ashmead Channel, has long functioned as an urban-industrial zone, dating back to before 1973. Despite historic modifications such as bank stabilisation, canal-edge development, and stormwater infrastructure, the estuarine margin retains notable natural features (Frames 1–12). Intertidal areas remain vegetated with saltmarsh species such as *Carpobrotus edulis*, *Sarcocornia perennis*, *Chenolea diffusa*, and *Triglochin striata*, while reedbeds of *Juncus kraussii* and *Phragmites australis* persist in stormwater-influenced sections.

Where vegetation is left undisturbed, dense saltmarsh cover develops, helping to slow surface runoff and reduce bank erosion (Frame 4). The underlying estuarine geomorphology remains stable, with no major erosion observed (Frame 12), and tidal flushing continues to support ecological functioning beyond the stormwater outlets located below the High-Water Mark (HWM) (Frames 4–6).

According to the Garden Route National Park Management Plan (2025–2029), this section of the estuary forms part of the Estuary Functional Zone, largely designated as low-intensity leisure use with adjacent high-sensitivity quiet zones protecting saltmarsh and eelgrass habitats. Despite ongoing urban pressures, the area remains ecologically significant, providing nursery habitat for estuarine species and foraging grounds for waterbirds such as the Egyptian goose (*Alopochen aegyptiaca*) (Frame 9).





Frame 5



Frame 6



Frame 7



Frame 8



Frame 9



Frame 10



Frame 11



Frame 12

It should be additionally noted that a detailed high-water mark (HWM) survey was undertaken by Eden Geomatics during November 2024 – February 2025 as part of the topographical and engineering survey for the proposed development. The survey established the current high-water mark of the Knysna Estuary along the southern boundary of the application area, referencing historical Survey Record 2475/1966 for positional accuracy. The delineated high-water mark runs immediately south of the existing paved surface and fenced boundary of the former vehicle testing facility, confirming that the proposed yacht factory will be situated landward of the surveyed HWM and entirely within an already transformed and elevated platform approximately two metres above mean sea level.

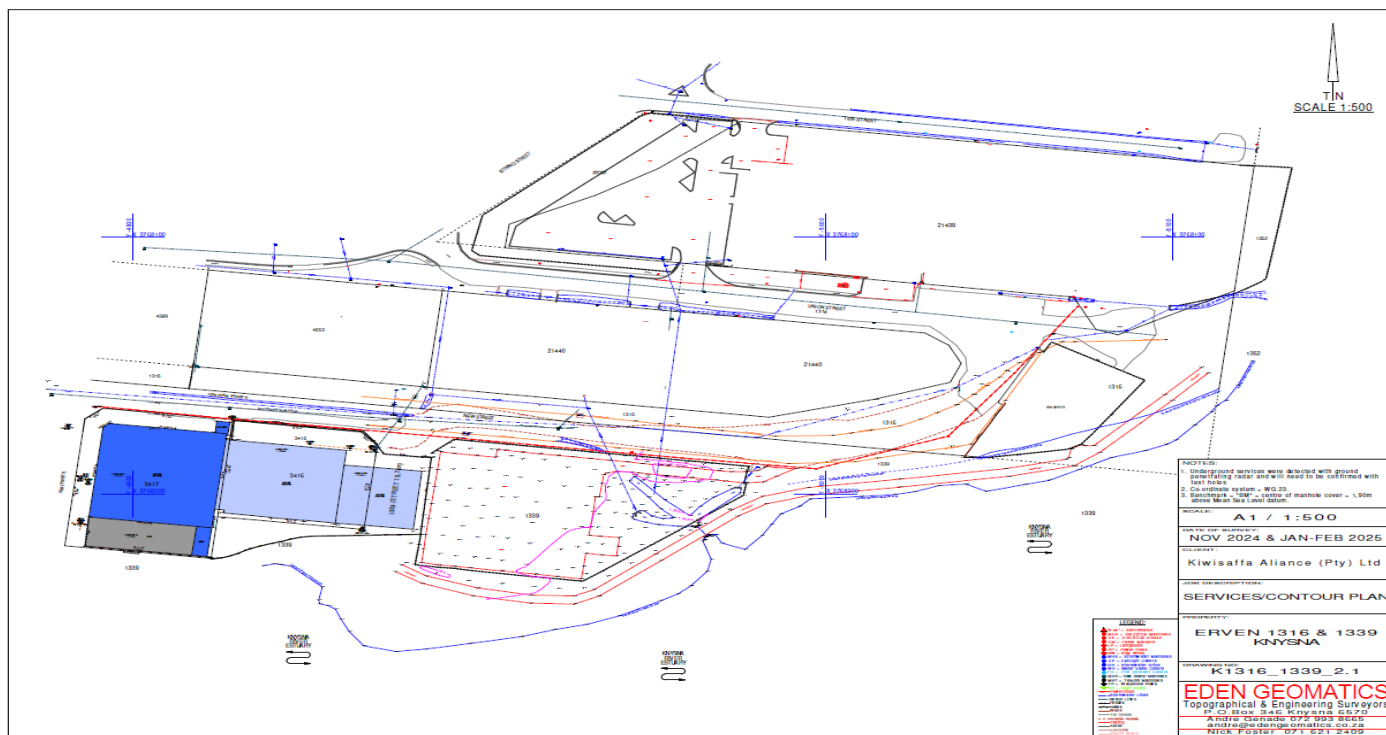


Figure 9: Topographical and Services Survey Plan for Erven 1316 and 1339, Knysna (Eden Geomatics, 2024–2025)

D. TOPOGRAPHY

According to the topographical mapping (Figure 10), the entire development area is situated below the 5 m contour line, which places it within the low-lying coastal platform directly associated with the Knysna Estuary. The site exhibits a gentle southward slope toward the estuarine margin, creating a natural surface-water drainage gradient that channels stormwater runoff in the direction of the estuary. Due to extensive historical levelling and surfacing for industrial use, the terrain is now highly compacted and impervious, which limits infiltration and increases the potential for surface runoff and localised erosion if drainage is not properly managed.

Although the current hardened and grassed surfaces have reduced the likelihood of active soil erosion, the site's elevation relative to the estuary makes it sensitive to stormwater discharge and sediment transport. The grassed strip along the estuary edge provides a minor but functional buffer that helps dissipate runoff energy and capture sediment before water reaches the estuarine zone. Consequently, future development works must integrate effective stormwater attenuation and erosion control measures to maintain the stability of this low-lying platform and prevent indirect impacts on the Knysna Estuary's intertidal habitats.



Figure 10: Topography map of the development area

2.3. Proposed development (Preferred Alternative – Alternative A)

The proposed development involves the construction of a new yacht manufacturing facility and associated site upgrades for Kinetic Catamarans SA (Pty) Ltd on portions of the Remainder of Erven 1339 and 1316, Knysna, situated adjacent to the Knysna Estuary within the established Lower Industrial Precinct. The development forms part of a municipally initiated land revitalisation project, through which underutilised municipal land is being transferred to Kinetic Catamarans to enable the expansion of its existing marine manufacturing operations currently located on Erven 3416 and 3417. In addition to the yacht factory, the proposal includes the refurbishment and upgrade of the existing South African Sea Cadet building, located on the eastern portion of the site. The building, which currently serves as a training and storage facility, will undergo aesthetic and structural improvements to enhance its functionality and alignment with surrounding developments, while maintaining its existing educational and maritime training role. Together, these interventions aim to revitalise the lagoon-front precinct, converting a previously paved and fenced vehicle testing ground and adjacent underutilised land into a modern, environmentally managed industrial and community-oriented space that supports Knysna's long-standing boat-building heritage and local economic development.

The scope of works has been expanded to explicitly include the existing Sea Cadets slipway. While no immediate upgrade plans have been prepared, the slipway has been incorporated into this Basic Assessment to ensure that any future works are authorised under the current application. It is recommended that a condition be attached to the authorisation requiring the submission of a detailed method statement to the competent authority for approval prior to implementation of any slipway upgrade. This approach ensures that potential impacts associated with vessel launching and slipway use are comprehensively addressed within a single, integrated authorisation process, avoiding the need for separate future applications.

Engineering services have been confirmed through the Site Development Plan and supporting engineering inputs. The development will connect to the municipal water and sewer networks, supplemented by seven 10 kL rainwater harvesting tanks to reduce potable demand and provide emergency supply for hose reels. Sewer connections have been designed with appropriate gradients to ensure reliable flow, while stormwater management will be upgraded through new catchpits, permeable paving, and controlled discharge to prevent estuarine contamination. Electrical supply will be provided via a 60 A three-phase connection, supported by solar PV installations to reduce reliance on grid power. Solid waste will be managed through sealed skips and private disposal, with no on-site burning or dumping permitted.

Table 2: Summary of key infrastructure and environmental integration

Infrastructure component	Design Description	Environmental Integration Measure
Yacht Factory (12 m high, 2056 m ²)	Steel structure with administrative mezzanine	Reuses existing disturbed footprint; height stepped to minimise lagoon visibility
Sea Cadets Facility (495 m ²)	Refurbished existing structure	Retains existing footprint; future redevelopment to comply with EMPr and method statement
Public Park	Lagoon-front landscaped open space	Enhances public access and ecological buffer
Water Supply	Municipal link + 7 × 10 kL rainwater tanks	Rainwater reuse, reduced potable demand
Sewer	Connection to existing municipal network	No new servitude required; all underground
Stormwater	Upgraded catchpits and permeable paving	Improved runoff quality, controlled flow
Electricity	60 A three-phase + solar PV	Reduced reliance on grid power
Solid Waste	Sealed skips, private disposal	No on-site burning or open dumping

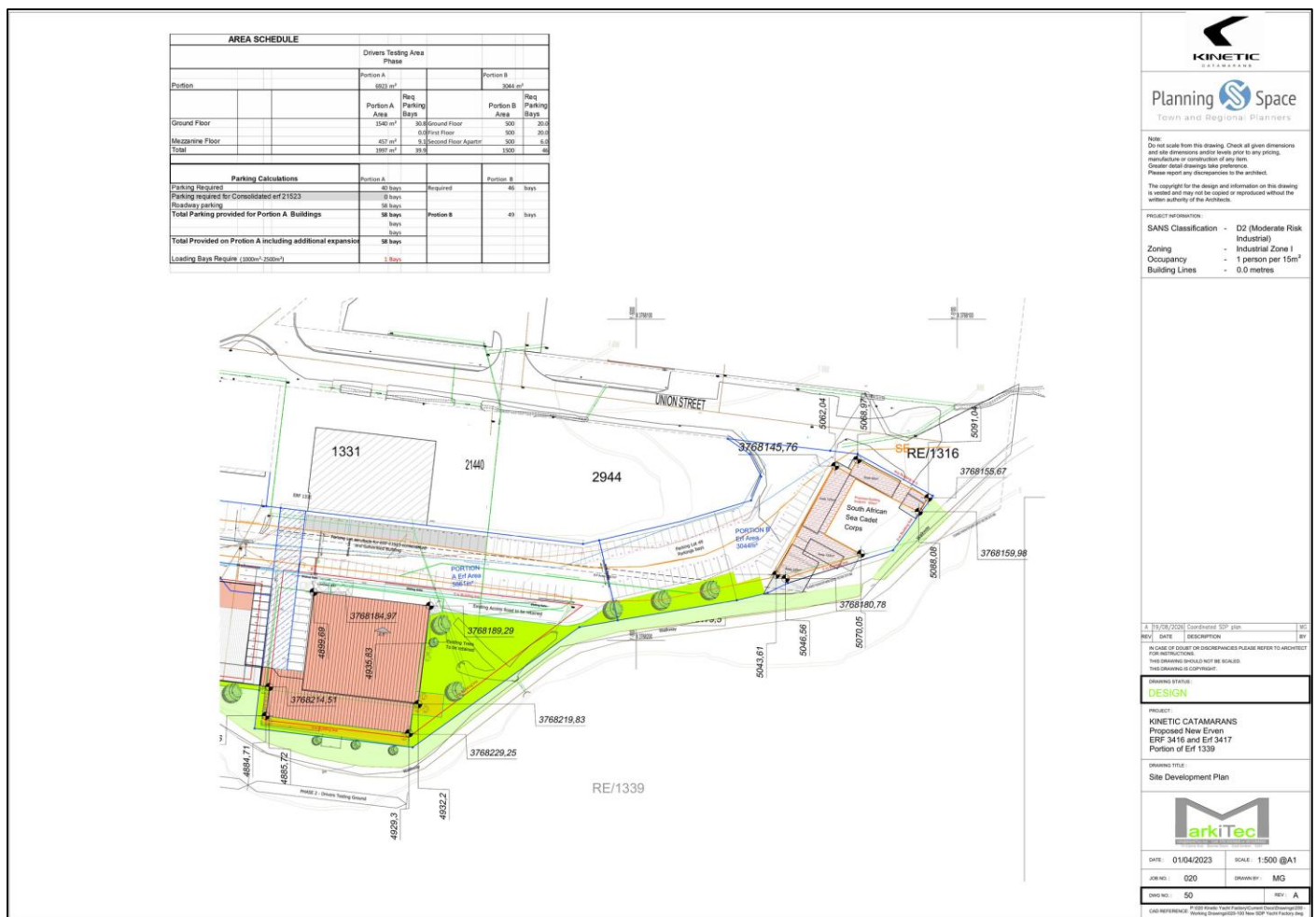


Figure 11: 020-51 New SDP Yacht Factory Coordinated-51 SDP DTA (Mark Gale – 19/08/2026) (refer to Appendix B for detailed SDP)

A. PROJECT COMPONENTS

Yacht factory building (Portion A – 020-51 New SDP Yacht Factory Coordinated-51 SDP DTA)

The primary component of the development is the establishment of a new yacht manufacturing building located on RE/1339, indicated on the site development plan (SDP) as Portion A. The proposal was designed to accommodate the production of large luxury catamarans up to 90 feet (27 metres) in length.

According to the provided documentation, the building footprint measures approximately 2,056 m², comprising:

- Factory floor area ± 1,560 m²
- Mezzanine level (administration & offices): ±496 m²
- Overall height: up to 12 m, in line with approved height departure
- SANS occupancy classification: D2 (Moderate Risk Industrial)
- Design capacity: ±137 employees (1 person per 15 m² industrial floor space)
- Proposed finished floor level: 2.89 m above mean sea level (m.a.m.s.l.), approximately 800 mm above existing natural ground level (±2.29 m a.m.s.l.), in accordance with climate

change adaptation and coastal flood resilience requirements as guided by the project engineer and architect

- Approximate building ridge height: ± 14.1 m a.m.s.l. (comprising the 12 m structure above the finished floor level of 2.89 m a.m.s.l.), with a 200 mm construction tolerance applied

The structure is designed using steel framing with AZ200 IBR cladding and Kliprite 700 roof sheeting, with integrated roof insulation, polycarbonate translucent panels for daylighting, and solar PV installations to reduce grid dependency. The factory includes a loading bay, refuse handling area, and paved circulation areas suitable for light- and medium-duty vehicles. A single 12 m-wide access gate will serve the main delivery and dispatch area, while internal service circulation connects to New Street, which will be converted into a private access and parking area. The factory's southern façade, facing the Knysna Lagoon, has been visually softened through stepped rooflines and darker material tones to reduce glare and visual bulk when viewed from the water. Architectural sections confirm that the building's lagoon-facing side is lower in elevation than the inland side to reduce visual prominence. Building colours have been selected to blend with the estuary interface, in accordance with the requirements of SANParks, and will be confirmed in the final architectural drawings prior to construction. Solar PV installations are restricted to north-facing roof surfaces only. No panels have been positioned on south-facing roof surfaces facing the Knysna Estuary, thereby eliminating the risk of solar glint or glare as viewed from across the lagoon and from within the Garden Route National Park buffer zone. External security lighting is fixed at high level on the building structure and is directed inward over the site. The lighting design has been developed to prevent light pollution over the Knysna Estuary, in accordance with SANParks' requirements and the conditions recommended for inclusion in the Environmental Authorisation.



KINETIC CATAMARANS SA
South East Perspective
Revised 12/12/2024



Figure 12: 3D Render from the Southeast Perspective of the proposed development on Portion A of the SDP (Mark Gale, 2024)

Sea Cadets Building (Portion B – 020-51 New SDP Yacht Factory Coordinated-51 SDP DTA)

Portion B of the SDP currently accommodates the existing South African Sea Cadet Corps building, a 495 m² single-storey structure with an enclosed yard area used for boat storage and training. The current phase includes only refurbishment and external improvements to the building and its surroundings. A future mixed-use redevelopment is envisaged, potentially introducing a restaurant, retail units, and upper-level accommodation while maintaining the Sea Cadets' activities on the ground floor. This portion will be rezoned to Business Zone 1 to allow future flexibility. Access to Portion B will be from Union Street, with 20 parking bays provided on-site.

All refurbishment and future redevelopment activities associated with Portion B must adhere to the Environmental Management Programme (EMPr), ensuring that construction practices, operational controls, and mitigation measures are implemented to protect the adjacent estuarine environment. In particular, the management of stormwater, waste, and landscaping must comply with EMPr provisions to prevent indirect impacts on the Knysna Estuary.

The scope of the Basic Assessment has also been expanded to include the existing Sea Cadets slipway. While no immediate upgrade plans have been prepared, the slipway has been incorporated into this authorisation to ensure that any future works are assessed under the current application. In line with specialist recommendations, slipway activities must adhere to precautionary measures such as limiting works to dry conditions and implementing sediment control. Importantly, no slipway upgrade may proceed without the prior submission and approval of a detailed method statement to the competent authority. This condition ensures that potential impacts associated with vessel launching and slipway use are comprehensively managed before implementation.

Public Park and Lagoon Interface

A public open space corridor will be established along the lagoon edge, forming part of a broader linear park system envisioned in the Knysna Spatial Development Framework.

The area will include:

- Indigenous landscaping and seating areas
- Low-level lighting for safety and evening use
- A pedestrian linkage between Union Street and the existing lagoon walkway

This intervention replaces the current degraded and uninviting lagoon frontage with a landscaped buffer that enhances public access and ecological interface.

A future climate-change defence intervention involving the raised walkway to the south of the site has been raised by SANParks but is not included as part of this application. Should the need for this intervention arise in future, it will be monitored and included as an action in the Operational EMPr, subject to the necessary environmental regulatory approvals.

Regarding the long-term management of the public open space corridor, SANParks has noted that discussions are required between Kinetic, Knysna Municipality and SANParks on how this area will be managed. The Applicant / Facility Manager will initiate this engagement within three months of commencement of operation, with the outcome to be recorded as an amendment to the

Operational EMPr. Pending conclusion of a formal management arrangement between the parties, the Applicant will be responsible for basic maintenance of the corridor (landscaping, litter removal, and the functioning of low-level lighting) to ensure it remains in a safe and presentable condition.

B. SITE ACCESS AND TRAFFIC CIRCULATION

The development incorporates a reconfiguration of New Street, currently a public road traversing the site, into a privately maintained internal access route.

The proposal includes:

- Closure of ±185 m of New Street, to be repurposed as internal circulation and parking.
- Private servitudes securing access to adjacent properties (Erf 21440 and Erf 4653).
- 108 parking bays provided across the site (including factory, staff, and visitor bays).
- 1 x loading bay (4.5 m × 12 m) for the industrial section.

A Traffic Impact Assessment (ITS Engineers, 2025) confirmed that the development will not result in significant additional congestion or require road upgrades, with adequate capacity remaining across adjacent intersections.

C. SERVICES INFRASTRUCTURE

Water supply

Potable water will be supplied via the existing 75mm diameter municipal water main running along the northern boundary of the property, which operates at a confirmed pressure of 6–8 bar. Engineering calculations confirm an average daily demand of approximately 3,040 litres per day, based on an estimated occupancy of 137 people at a design density of one person per 15 m² of industrial floor space, in line with Red Book guidelines. The available municipal capacity is sufficient to meet this demand without requiring off-site infrastructure upgrades. The size of the final connection will be determined in consultation with the relevant fire authority to meet fire protection requirements.

To promote sustainability and reduce reliance on municipal supply, the proposed yacht factory will incorporate seven 10,000-litre rainwater harvesting tanks, providing a total storage capacity of 70,000 litres, fed from roof runoff collected via gutters and downpipes. Captured water will be filtered and pumped into the internal reticulation system for ablutions, general cleaning, and factory floor wash-down activities. A dedicated filtration system will be fitted to the reticulation lines supplying the ablution facilities to ensure water quality compliance. The 70kL tank system will additionally be connected to hose reels to facilitate factory floor cleaning and wash-down of the manufacturing area, reducing reliance on municipal potable water for non-drinking purposes. Municipal water will supplement this system only during dry periods and for emergency fire protection systems, including hydrants and hose reels. This dual-supply approach ensures resilience, reduces potable demand, and aligns with the project's environmental integration objectives and SANParks' requirement for sustainable building design.

Sewerage

The proposed development area for Portion A is not currently connected to the municipal sewer network but will be linked to the existing 160mm diameter municipal sewer in New Street via an established manhole on the northwestern side of the site. The manhole invert level is confirmed at 0.68m above mean sea level, and a gravity connection to Portion A has been confirmed as feasible by the project engineer. The internal reticulation will comprise 100mm and 160mm diameter uPVC sewer pipes, designed at gradients of 1:40 and 1:60 respectively, ensuring effective conveyance in accordance with municipal engineering standards. The kitchen facility within Portion A has been repositioned in the revised building layout to facilitate a clean and direct sewer connection. Engineering inputs confirm that the sewer outflow will correspond proportionally with the calculated water demand of approximately 3,040 litres per day, ensuring reliable capacity within the existing municipal network.

To safeguard long-term accessibility and compliance with municipal engineering standards, two larger municipal sewer rising mains (350mm and 375mm diameter) that traverse the property will be retained in situ and protected within a registered municipal services servitude.

The Sea Cadets building (Portion B) is already connected to the municipal sewer network, and no alterations are required at this stage. The existing connection will remain functional until such time as the building undergoes a more substantial redevelopment in a later phase. Any future redevelopment or upgrade of sewerage infrastructure associated with Portion B will be required to adhere to the Environmental Management Programme (EMPr), ensuring that construction practices and operational controls prevent contamination of the adjacent estuarine environment.

In accordance with the requirements of SANParks, the project engineer (Hofmeyr & Associates) has confirmed the technical feasibility of connecting Portion A to the existing 160mm municipal sewer in New Street, and has confirmed that the municipal network has sufficient capacity to receive and manage sewage generated by the development. It is noted that Knysna Municipality does not typically enter into formal Service Level Agreements with developers; rather, the municipality's standard practice is to review and approve engineering drawings submitted for construction. Accordingly, formal engineering drawings for the proposed internal sewer reticulation will be submitted to Knysna Municipality for approval prior to construction, and this approval will serve as the municipality's confirmation of the connection and its capacity to service the development. This approach has been confirmed as the appropriate and accepted mechanism by the project engineer. All sewage infrastructure design, construction, and operational controls will be incorporated into the Construction and Operational EMPr to ensure ongoing protection of the Knysna Estuary.

Stormwater

The existing stormwater system on site comprises a combination of catchpits, underground pipes, and open unlined channels that drain toward the Knysna Lagoon. Historically, stormwater outlets from this and surrounding areas have contributed to nutrient enrichment and eutrophication within the Ashmead Channel, resulting in the loss of eelgrass beds and degradation of saltmarsh habitat along the estuarine margin. Although the estuary margin in this area is characterised as urban-industrial, tidal flushing continues to maintain broader ecological functioning. Stormwater management has accordingly been identified as a key environmental sensitivity for this development, and a comprehensive drainage strategy has been developed in response to concerns raised by SANParks, the aquatic specialist, and other stakeholders.

The existing system will be upgraded and formalised to manage runoff from the new industrial building and associated parking areas in accordance with municipal standards. All new hard surfaces will be brick-paved and graded to direct runoff into the upgraded stormwater infrastructure. Kerbs and surface drains will be installed to prevent uncontrolled overland flow, and all stormwaters will be managed through controlled systems with no direct discharge to the Knysna Estuary.

Particular care will be exercised with respect to the existing drainage channel that runs through the former vehicle testing ground and enters the estuary via a culvert. This channel has been specifically identified by SANParks as a risk pathway for pollutants and sediment. The stormwater design ensures that this channel is retained within the upgraded system and that any runoff entering it is managed and attenuated before reaching the estuarine environment.

In response to concerns raised by SANParks and informed by the findings of the Aquatic Specialist Report (Upstream Consulting, 2025), the stormwater design incorporates Sustainable Urban Drainage Systems (SuDS) principles to improve water quality and reduce discharge volumes. The aquatic specialist identified untreated runoff as a key risk factor for aquatic biodiversity, with the potential to increase sedimentation, nutrient loading, and contamination of the estuary. The following integrated measures have been incorporated into the stormwater management design:

- Seven 10,000-litre rainwater harvesting tanks, providing a total attenuation capacity of 70,000 litres, fed from roof runoff via gutters and downpipes. Tanks are designed to discharge at 70% of capacity, retaining a 30% buffer to absorb peak flows during high-intensity rainfall events. Tank overflow will be directed to the natural soakaway depression south of Portion A.
- Brick-paved surfaces with kerbs and catchpits to direct and control runoff, improving water quality by eliminating sedimentation and siltation from unbound surfaces currently entering the lagoon from the degraded gravel parade ground.
- The natural depression south of Portion A will be retained and will continue to function as an informal soakaway, further slowing and filtering runoff before it reaches the estuarine margin.
- Permeable paving and grass block surfacing will be utilised where practicable to reduce hard surface runoff and promote infiltration in accordance with SuDS principles.

In addition, a 5-metre vegetated buffer zone will be maintained along the saltmarsh habitat boundary, managed in accordance with a "Grow don't Mow" policy as recommended by the aquatic specialist. This buffer will slow surface runoff, stabilise banks, and reduce the risk of sediment and nutrient transfer into the estuary.

Hazardous materials associated with factory operations, including chemicals, resins, and fuels, will be stored in a secure bunded facility positioned as far from the estuary as practicable. Pollution sump catch pits will be designed and constructed to intercept and contain any hazardous substances before they can enter the stormwater system or reach the estuary, in accordance with SANParks' requirements and the recommendations of the aquatic specialist.

All stormwater management measures will be incorporated into the Construction and Operational Environmental Management Programme (EMPr) and will be subject to monitoring

and oversight by the appointed Environmental Control Officer (ECO) during both construction and operational phases. With the implementation of the above mitigation measures, stormwater impacts on the Knysna Estuary are assessed as being of Low significance, which is considered acceptable given the urban-industrial nature of the existing site and the significant improvements the proposed stormwater system represents over current conditions.

Electrical Supply

Electrical demand for the new yacht factory will be met through a new 60-amp three-phase connection to the municipal network. This connection will be taken from the existing overhead infrastructure situated along New Street. The design includes adequate provision for future capacity increases should production operations expand. The facility will also include solar photovoltaic panels installed on the roof to supplement the municipal supply and to provide uninterrupted power to critical equipment during load-shedding or network interruptions.

Portion B, accommodating the Sea Cadets, will retain its existing 80-amp three-phase connection, which remains sufficient for current operational needs.

All overhead lines traversing the property will be formalised within the municipal services servitude and clearly demarcated on the final Servitude Plan to prevent future encroachment or maintenance issues

Solid Waste Management

Waste management for the proposed development has been informed by the existing Environmental Management Plan (EMP) and Operational Environmental Management Plan (OEMP) developed for the current Kinetic Catamarans facility, which provide an established operational baseline for waste handling practices on site.

Construction Phase

Waste generated during the construction phase will be industrial and general in nature, including excavation material, concrete offcuts, packaging, timber offcuts, metal off-cuts, and general contractor waste. The following measures will apply throughout the construction phase:

- All solid construction waste will be stored in covered skips or drums within designated areas within the construction camp, located in already-disturbed portions of the site. Regular removal of waste to approved municipal landfill sites will be carried out in accordance with arrangements agreed with the relevant authorities. Recyclable construction materials, including timber, metal, and packaging, will be segregated at source and directed to appropriate recycling facilities where feasible. No burning or indiscriminate dumping of any waste material will be permitted on site or in the surrounding environment.
- Hazardous materials used during construction, including fuels, petrochemicals, oils, and chemical substances, will be stored in secure, bunded storage areas with restricted access and appropriate hazard signage. All hazardous material storage facilities will be subject to approval by the appointed Environmental Control Officer (ECO) prior to use. Spill kits and

firefighting equipment will be maintained on site at all times. No wastewater or effluent disposal will be permitted within 100 metres of any watercourse, in compliance with the requirements of the National Water Act (Act No. 36 of 1998).

- Sanitation for construction workers will be provided by way of chemical toilets at a minimum ratio of one unit per 15 workers. Toilets will be regularly serviced and maintained by a licensed contractor, screened from public view, and connected to conservancy tanks where required. Where feasible, connection to the municipal sewer network will be implemented.

Operational Phase

Waste generated during factory operations will be industrial in nature, primarily consisting of fibreglass off-cuts, resin containers, packaging materials, and general waste from staff facilities and ablution areas. Waste will be managed in accordance with the following measures, informed by the existing Kinetic OEMP and aligned with the Knysna Municipality Integrated Waste Management Plan:

- Solid manufacturing waste will be stored in sealed, covered skips within the designated refuse area on site, positioned away from the estuary-facing southern boundary of Portion A. A licensed private contractor will be responsible for regular collection, transport, and disposal at an authorised landfill or recycling facility. A recycling policy will be implemented on site, with clearly labelled wheely bins provided for different waste streams. Recyclable materials, including metal, cardboard, and clean plastics, will be segregated at source to encourage resource recovery and reduce landfill pressure.
- Dust and airborne waste generated by manufacturing processes, including CNC cutting, timber processing, and painting activities, will be managed through dedicated extraction systems fitted with replaceable filters in cutting and processing areas. A centralised dust collection system and dedicated paint filtration system will be implemented to prevent particulate emissions from impacting the surrounding environment, including the adjacent estuarine buffer zone.
- Hazardous manufacturing waste, including resins, solvents, and chemical containers, will be stored in secure, bunded facilities positioned as far from the estuary as practicable, with restricted access and appropriate hazard signage maintained at all times. A flammable liquid store will be located away from the estuary boundary. A bunded containment area will be provided to contain firefighting water in the event of a fire emergency, preventing contaminated firefighting runoff from reaching the Knysna Estuary. Should any soil contamination be identified during site clearing or construction, from any historic land use, contaminated material will be removed and disposed of at an approved hazardous waste facility in accordance with the requirements of the National Environmental Management: Waste Act (Act No. 59 of 2008).

All waste management practices during both construction and operational phases will be incorporated into the Construction and Operational EMP and will be subject to monitoring and oversight by the appointed ECO. The ECO will monitor waste storage, disposal, and recycling practices and will report on compliance on a regular basis. Non-compliance will be escalated through the EMP enforcement procedure.

D. CONSIDERATION OF DEVELOPMENT ALTERNATIVE(S) (ALTERNATIVE B)

In accordance with the requirements of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended), promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998), an environmental assessment must include a description of the reasonable alternatives to the proposed development. These may include location, layout, activity, process, technology, and no-go alternatives, each assessed in terms of their feasibility, environmental consequences, and ability to meet the applicant's objectives.

In this instance, no feasible alternatives to the proposed development exist, as discussed below. The project footprint and associated infrastructure have been designed to occur entirely within an already disturbed area, and the development proposal represents the only practical and environmentally responsible option to achieve the intended outcome.

Site Alternatives

No alternative sites were considered. The land forming part of the application, portions of the Remainder of Erven 1316 and 1339, Knysna, was specifically identified by the Knysna Municipality through a public tender process for the revitalisation of municipal land within the Lower Industrial Precinct. The tender was awarded to Kinetic Catamarans SA (Pty) Ltd based on their capacity to expand existing marine manufacturing operations adjacent to this location. The proposed site directly adjoins the company's existing production facilities on Erven 3416 and 3417, providing operational continuity and allowing the factory expansion to integrate with existing infrastructure, workforce, and logistics. Relocating the proposed development to another property would fragment operations, increase transport requirements, and compromise the functional efficiency of the boat-building process. Furthermore, alternative locations within Knysna would likely occur on undeveloped or vegetated land, resulting in greater environmental disturbance compared to the current fully transformed site. Accordingly, the current site represents the most suitable and least environmentally damaging location for the proposed development.

Layout and Design Alternatives

Given the limited available area within the disturbed footprint, the layout of the proposed factory and associated infrastructure has been optimised to fit within the existing paved and fenced boundary of the former vehicle testing ground. The design ensures that no encroachment occurs into the natural lagoon buffer or any undeveloped open space. The building orientation and height were dictated by operational needs (such as the accommodation of large catamarans up to 90 feet in length) and by the requirement to minimise visual impact along the lagoon edge. The architectural design includes stepped rooflines and lagoon-facing articulation to soften the building's appearance. Therefore, no viable alternative layout or configuration exists that would further reduce environmental impact or improve functional efficiency.

Technology and Process Alternatives

The manufacturing process proposed for the new facility will follow the same proven techniques currently employed by Kinetic Catamarans at its neighbouring site. These processes are already established as environmentally compliant, relying on controlled composite fabrication, enclosed lamination areas, and standardised waste-handling procedures. Alternative manufacturing technologies were not considered necessary or practical, as the proposed methods already represent best practice for this sector and are regulated through the facility's operational Environmental Management Programme (EMPr).

“No-Go” alternatives

The “no-go” alternative, in which the proposed development does not proceed, would result in the continued underutilisation and degradation of municipal land currently used as a disused vehicle testing facility and informal parking area. This would perpetuate the visual and functional decline of the precinct and forego significant socio-economic benefits, including local job creation, skills development, and the strengthening of Knysna's marine manufacturing economy. From an environmental perspective, the “no-go” alternative offers no measurable benefit, as the site is already completely transformed, containing existing hard surfaces, fencing, and buried infrastructure. No natural vegetation or aquatic features would be protected through non-development. Accordingly, while the “no-go” alternative is acknowledged as part of the NEMA process, it is not regarded as an environmentally preferable or reasonable option.

3. ENVIRONMENTAL IMPACTS AND GENERAL MITIGATIONS

Based on the updated environmental considerations and the proposed development, the following impacts have been identified. Recommendations from specialists regarding each of the identified environmental sensitivities are provided, ensuring that the proposed activities align with best environmental practices and minimise any potential negative impacts.

3.1. Impact of Proposed Development

All construction-phase impacts were found to be of low to very low significance after mitigation, with no irreversible or long-term effects. The implementation of the Environmental Management Programme (EMPr) will ensure effective mitigation through standard best practices such as erosion control, bunding, spill containment, and stormwater management.

Table 3: Summary of impacts of proposed development associated with alternative A – Construction Phase

Impact	Without Mitigation	With Mitigation
	Significance of Impact	Significance of Impact
Sediment mobilisation and dirty stormwater runoff to Knysna Estuary (specialist)	Medium – negative (-)	Low – negative (-)
Hazardous spills	Medium – negative (-)	Low – negative (-)
Construction and general waste	Low – negative (-)	Negligible – negative (-)
Dust generation and nuisance	Low – negative (-)	Negligible – negative (-)
Construction noise and vibration	Low- negative	Negligible – negative (-)
Traffic & access safety (Union/New Street interface)	Low- negative (-)	Low- negative (-)
Temporary stormwater capacity/flooding (before final tie-ins)	Low- negative (-)	Negligible – negative (-)
Temporary visual/amenity (camp, stockpiles, lighting)	Low – negative (-)	Negligible – negative (-)
Disturbance / Loss of Aquatic Habitat (specialist)	Medium – negative (-)	Low – negative (-)
Modified Hydrodynamics (specialist)	Low- negative (-)	Low- negative (-)

The operational impacts were all rated as low or negligible after mitigation, with no loss of ecological function or irreplaceable biodiversity. The development also introduces positive socio-economic impacts, including long-term employment, local procurement, and skills development within Knysna's marine economy.

Table 4: Summary of impacts of proposed development associated with alternative A – Operational Phase

Impact	Without Mitigation	With Mitigation
	Significance of Impact	Significance of Impact
Operational Stormwater quality and discharge to estuary	Low – negative (-)	Negligible – negative (-)
Hazardous materials handling and storage	Medium – negative (-)	Low – negative (-)

Aquatic – Disturbance / Loss of Habitat (specialist)	Medium – negative (-)	Low – negative (-)
Aquatic – Erosion & Sedimentation (specialist)	Low – negative (-)	Negligible – negative (-)
Visual character and night-time lighting along lagoon	Low- negative	Negligible – negative (-)
Aquatic – Modified Hydrodynamics (specialist)	Medium – negative (-)	Negligible – negative (-)
Aquatic – Erosion & Sedimentation (specialist)	Low- negative (-)	Negligible – negative (-)
Socio-economic (positive)	Medium – positive (+)	High – positive (+)

3.2. Summary of Recommendations from Specialist Input

The mitigation of negative impacts on biodiversity and ecosystem goods and services is a legal requirement for authorisation purposes and must take on different forms depending on the significance of the impact and the specific area being affected. Mitigation requires the adoption of the precautionary principle and proactive planning that is enabled through a mitigation hierarchy. Its application is intended to strive to first avoid disturbance of ecosystems and loss of biodiversity, and where this cannot be avoided altogether, to minimise, rehabilitate, and then finally offset any remaining significant residual negative impacts on biodiversity (DEA 2013). The mitigation measures detailed within this report must be taken into consideration during financial planning of the construction phase of the structures. This is to ensure that sufficient funds are available to implement all the measures required to maintain the current PES score of the estuary impacted upon.

Any potential risks must be managed and mitigated to ensure that no deterioration to the water resource takes place. Standard management measures should be implemented to ensure that any on-going activities do not result in a decline in water resource quality. Mitigation measures related to the impacts associated with the construction activities are intended to augment standard/generic mitigation measures included in the project-specific Environmental Management Programme (EMPr).

The monitoring of the development activities is essential to ensure the mitigation measures are implemented. Therefore, compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report. In the case where there is extensive damage to any aquatic system, where rehabilitation is required, a suitably qualified aquatic specialist must audit the site. Monitoring for non-compliance must be done on a daily basis by the contractors. Photographic records of all incidents and non-compliances must be retained. This is to ensure that the impacts on the aquatic habitat are adequately managed and mitigated against and the successful rehabilitation of any disturbed areas within any system occurs. Monitoring should especially focus on preventing water pollution, avoiding disturbance of aquatic habitat, and preventing unnecessary soil disturbance or infilling.

The following mitigation measures must be adhered to during all project phases:

- The implementation of SUDS (Sustainable Urban Drainage Systems) is critical for the paving and parking areas.

- SUDS is green infrastructure solutions for managing rainwater in urban areas by mimicking natural drainage processes, such as infiltration and filtration, rather than conventional piping systems. SUDS includes features like green roofs, permeable pavements, rain gardens, and vegetated areas to reduce flood risk, improve water quality, enhance biodiversity, and add amenity value to the urban environment. SUDS are a key strategy for increasing urban resilience against climate change and for creating more sustainable and liveable cities.
- The facility needs to implement rainwater harvesting to reduce the volume of runoff entering the estuary.
- Any green strips of permeable pavement like the *Carpobrotis edulis* planted should be retained.
- A “Grow Don’t Mow” policy should be adopted for any of the open green spaces within 5m of any saltmarsh to allow for the adjacent vegetation to grow robust like Plate 4. Such vegetation structure slows down surface water flow and increases infiltration. It also provides additional habitat for saltmarsh fauna.
- Damage to saltmarsh must be minimised and to the *Zostera* beds must be avoided during the construction and operational phase. The jetty and slipway may not be expanded beyond their existing footprint.
- No infillings, excavations or retaining walls should be allowed.
- The jetty is currently a floating jetty and must be constructed of unpainted hardwood and/or building standard treated pine. Recycled plastic ‘timber’ may also be used. No metal frames or structures should be allowed that can rust and degrade rapidly over time.
- No roofs, rooms or other structures may be attached to or built onto the jetty. Railings may be considered if in keeping with the purpose of the structure.
- Gangways are not to be wider than the current structure. Consider the use of removable planks at intervals along the gangway which can be removed when the jetty is not in use, to increase sunlight upon the saltmarsh below.
- Pontoons must be made from corrosion-proof material and should be constructed in such a way that if ruptured they remain afloat.
- All pontoons must be clean of any foreign materials such as oil residue or chemicals and must be inspected prior to installation.
- The structures must cause the minimum disturbance to the normal current flow of the river and may not cause stagnant water areas.
- The structures may not cause an obstruction or change to natural sand movement or cause accelerated erosion of the riverbank. There must be no drains, channels or culverts dug in the estuary.
- Artificial stabilisation and infilling below the high water mark should not be allowed, outside of the current design.
- During construction and operation, trampling of tidal habitat like salt marshes should be prevented. The primary motivation for allowing these structures is to protect indiscriminate trampling. The creation of pathways must be prevented. Measures such as the placement of wooden boards/ planks on top of the saltmarsh surface, to be used as temporary walkways and removed after construction, are acceptable.
- The working corridor must be kept to a minimum and be identified and demarcated clearly before any construction commences to minimise the impact. This must be approved by the ECO prior to commencement. Site supervisors must ensure that impacts are confined to the

construction zone. Staff environmental induction must take place prior to construction commencing and any subcontractors utilised must be inducted before starting work onsite.

- Construction of the slipway must only be undertaken under dry conditions with no rainfall predicted during significant construction within it. Additionally, it is advisable that the work is planned with consideration to the low and high tides of the estuary.
- The excavations within aquatic habitat should be, as far as possible, manually hand-dug rather than dug using machinery. Machinery within the estuarine habitat must be avoided as far as possible. Excavation of any soils in the aquatic habitat must be done to allow the storage of soil in sequence. Topsoil must be removed and stored very carefully for rehabilitation.
- Any material excavated from the estuary must not be dumped onto any vegetated areas. Any fauna (crabs, etc.) that are found within the construction area must be moved to the closest point of similar habitat type outside of the areas to be impacted.
- Affected surface vegetation must be removed, appropriately stored then reinstated, immediately post-construction, as close to their original position as possible, to reduce the possibility of longer-term change to the vegetation community.
- Dewater in a manner that does not cause erosion and does not result in water with a high silt content flowing into the channel. Remove the dewatering structures as soon as possible after the completion of dewatering activities.
- Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.
- It is the landowner and contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas. Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use, for the necessity, type proposed to be used, effectiveness and impacts of the product on aquatic biota.
- A monitoring programme shall be in place, not only to ensure compliance with the EMPr throughout the construction phase, but also to monitor any post-construction environmental issues and impacts such as erosion. The monitoring should be regular and daily visits are encouraged.
- The property owners are encouraged to share their jetty and slipway with their neighbours, as far as possible. It should be noted that as per the EMPr the Ashmead channel is zoned as a no motorised zone. This can substantially reduce the need for more privately-owned structures that would collectively have a greater impact on the environment.
- The applicants must maintain the jetty in a serviceable condition according to the instructions set by SANParks. Should such a structure no longer be required or used, the lessee must remove the structure and rehabilitate the riverbank. Regular inspections of these structures must take place.
- Maintenance operations of the jetty and slipway must ensure a minimal footprint. No additional excavations or vegetation clearance should be involved, only necessary maintenance such as debris removal. This maintenance should be undertaken with manual labour unless otherwise approved by an environmental authority.
- No construction camp or activities may be established on any current grassed or green areas, outside of the current design footprint.
- During the operational phase of the new yacht building facility the following mitigation measures are required:

- **Waste and Material Storage:** All materials, especially hazardous ones like paints, solvents, and lubricants, should be stored indoors in secure, designated areas. These should be kept in properly labelled, sealed containers and placed within a secondary containment system, such as a spill tray or a containment berm, to capture any leaks or spills.
 - **Spill Prevention and Response:** A comprehensive Spill Prevention, Control, and Countermeasure (SPCC) plan is crucial. This plan should include procedures for material handling, a detailed inventory of all chemicals and their locations, and regular inspections of storage containers and equipment for leaks.
 - **Employee Training:** All employees should be trained on the proper handling of hazardous materials, spill response procedures, and the location and use of spill kits. This is a critical step to ensure that any spills are contained and cleaned up promptly, minimizing the risk of contamination.
 - **Floor Drains and Sewer Connections:** It is essential to ensure that no floor drains inside the facility are connected to the stormwater sewer system. All wash water, which may contain paint particles, dust, and other pollutants, should be collected and disposed of properly, not discharged into a public drain.
 - **Recycling and Waste Disposal:** Implementing a plan for recycling and proper disposal of all waste products, including spent solvents, abrasives, and waste oil, is also vital. This includes using a licensed hazardous waste contractor for materials that cannot be recycled.
- The establishment of the gravel parade ground and parking bays on that area are not supported.
 - The Knysna Estuary Forum must be made aware of the proposed works (once approval has been received). The applicant is encouraged to join the Estuary Forum.
 - The ECO must ensure that the contractors have fully complied (partial compliance is unacceptable) with all the recommendations within this report, as well as the EMPr, before leaving site, and the local municipal environmental officer, SANParks, Cape Nature, DFFE Oceans and Coasts, landowners and Estuary Forum should undertake ongoing monitoring.
 - Construction must be immediately followed by suitable rehabilitation.
 - Soil replacement must be conducted in same sequence as excavated and excess soil removed from the estuary.
 - The solid domestic waste must be removed and disposed of offsite. All post-construction building material and waste must be cleared in accordance with the EMPr.
 - In the case where there is extensive damage to any aquatic system, where rehabilitation is required, a suitably qualified aquatic specialist must audit the site.

3.3. NO – GO Areas and Controlled Disturbance Zones

The purpose of this section is to clearly demarcate the parts of the site that may be disturbed during construction (the “Disturbance Area”) versus all areas that must remain untouched (the “No-Go Areas”). These controls are binding on the Contractor, all sub-contractors, suppliers and visitors.

A. DISTURBANCE AREA

Work is confined to the existing transformed footprint only. The disturbance area includes:

- New factory/Sea Cadets upgrade footprint as per the approved SDP.
- Existing hardstand/concrete and asphalted yard areas required for access, cranes, workshops, lay-down and parking.

- A 2-metre working buffer immediately around new buildings within the hardstand for scaffolding, formwork and façade works (no excavations beyond design).
- Service tie-ins in road reserve:
 - Stormwater: trenching along the shortest practical route to connect to municipal infrastructure (kerb inlets/lines) in Union Street/New Street only, with trench width kept to the minimum and reinstatement to municipal standard the same day where feasible.
 - Water & Sewer: direct, shortest practical trench routes to existing municipal connections in Union Street; test and reinstate immediately.
 - Electrical: ducting in existing hardstand or road reserve only, avoiding vegetated berms; reinstate surfacing to original specification.
- Temporary stockpiles: on existing concrete/hardstand only, behind silt fencing and away from any stormwater inlets (min. 10 m), with perimeter bunds and covers.
- Contractor's site camp: within the paved yard footprint shown on the SDP; no camp on unpaved/vegetated surfaces.

Note: Any expansion of the disturbance area requires the ECO's written approval and evidence that it remains within the transformed footprint and outside all No-Go Areas.

B. NO-GO AREAS

The following areas are out of bounds to all construction activities and plant:

- All ground south of the existing concrete hardstand toward the Knysna Estuary, i.e. the vegetated berm/embankment and public path along the water's edge (see site photo). This includes any area beyond the surveyed High-Water Mark (HWM) and its edge protection, no clearing, tracking, stockpiling, or foot traffic.
- Any unpaved/vegetated surfaces inside the property that fall outside the approved SDP footprint and 2 m working buffer.
- Public open space and road verges, except for narrow, demarcated service trench alignments approved by the ECO and relevant authority; all other verge areas remain no-go.
- Stormwater channels, kerb inlets and existing outlet structures, no works other than the approved tie-ins and outlet protection. No washing-out of concrete, paints, grout or tools.
- Outside the cadastral boundary of Erven 1339/1316 (unless within a permitted municipal road-reserve trench and wayleave).
- Vegetated pocket near the eastern yard edge (adjacent to the estuary-facing slope) which functions as a stabilised berm, retain as a no-go buffer.
- Any newly rehabilitated/landscaped surfaces until signed off by ECO.
- Ad-hoc parking areas created on unpaved ground, strictly prohibited.



Eco Route
Environmental Consultancy

NO-GO Map (Kinetic Catamarans Development Area)

Created by: Justin Brittion (2025/11/05)

Figure 13: Schematic representation of NO-GO areas (Kinetic Catamarans – Development Area including the Sea Cadets)

C. PHYSICAL DEMARCATION AND CONTROL

- The Contractor shall peg and fence the No-Go Areas with durable barrier netting and signage before site establishment.
- Stormwater inlets inside the disturbance area must be fitted with silt socks/filter bags; stockpiles to have toe silt fencing and bunds.
- Access gates and haul routes must be kept to hardened surfaces only, turning on vegetated berms or the lagoon path is prohibited.
- The ECO will undertake checks (and post-rainfall spot-checks) to ensure boundary integrity. Any encroachment triggers immediate stop-work and rehabilitation at the Contractor's cost.

4. LEGISLATIVE CONTEXT AND COMPLIANCE FRAMEWORK

The Environmental Management Programme (EMPr) for the proposed Kinetic Catamarans yacht manufacturing facility and Sea Cadet upgrade has been compiled in accordance with the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2014 (as amended).

In terms of Regulation 35(2), this EMPr provides the operational framework to ensure that the mitigation measures identified in the Basic Assessment process are properly implemented, monitored, and enforced throughout the life of the project.

4.1. Environmental Duty of Care

Section 28 of NEMA places a legal duty of care on any person who causes, has caused, or may cause significant environmental degradation to take reasonable measures to prevent, minimise, or rectify such harm. This duty extends to all contractors, subcontractors, and personnel operating on the site. The EMPr therefore functions as a practical expression of that duty, setting out the management actions required to prevent pollution, conserve natural resources, and ensure sustainable use of the environment during both construction and operation.

4.2. Regulatory Context and Authorisation

The project is subject to environmental authorisation in terms of NEMA and the Listing Notices (GN R.327, R.325 and R.324 of 2014, as amended). The relevant authorisation, once issued by the Department of Forestry, Fisheries and the Environment (DFFE), will bind the applicant, contractor, and all persons responsible for activities within the site to comply with this EMPr and any associated conditions of approval.

* Note – Upon approval, all conditions of authorisation will be inserted here prior to submission for final approval.

In addition to the Environmental Authorisation, the project will operate within the regulatory framework of the following key environmental statutes:

- The National Environmental Management: Biodiversity Act (Act 10 of 2004), insofar as it governs the control of alien and invasive species and the protection of listed ecosystems.
- The National Environmental Management: Waste Act (Act 59 of 2008), which regulates waste generation, storage, and disposal. All waste generated must be managed according to the waste hierarchy (avoid, reduce, reuse, recycle, dispose) and transported by licensed service providers.
- The National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008), applicable due to the site's proximity to the Knysna Estuary, a protected coastal public property managed by SANParks under the Knysna Protected Area Regulations.
- The National Water Act (Act 36 of 1998), which controls water use, stormwater discharges, and the protection of surface and groundwater resources.
- The National Heritage Resources Act (Act 25 of 1999), requiring that all chance finds of heritage material or artefacts be reported to Heritage Western Cape (HWC) immediately.

HWC has confirmed (Case No. 29084RB0625, 6 August 2026) that the proposed development does not trigger Section 38(1) of the Act; the chance-finds requirement above remains a standing precaution regardless of this confirmation.

- The Occupational Health and Safety Act (Act 85 of 1993), which governs worker safety and health standards during construction and operation.

4.3. Local and Municipal Instruments

At a municipal level, the development must comply with all applicable by-laws and permit requirements administered by the Knysna Municipality, including those regulating building control, stormwater, waste management, and environmental health. The development area also falls within the Outeniqua Sensitive Coastal Area Extension (OSCAE), however, the environmental authorisation process under NEMA takes precedence, ensuring that all relevant coastal sensitivities are addressed in this EMPr and the approved Environmental Authorisation.

The Outeniqua Sensitive Coastal Area Extension (OSCAE) regulations were promulgated under the Environmental Conservation Act (Act 73 of 1989). They were designed to control vegetation clearance, earthworks, and building within designated sensitive coastal zones (including Knysna). However, after the 2006 and 2010 repeal of the ECA framework and the introduction of the NEMA EIA Regulations (2006, then 2010, 2014, and later amendments), the NEMA process superseded OSCAE permitting for listed activities that already trigger environmental authorisation.

Knysna Municipality still administers OSCAE permits as a local planning tool, but if a development triggers a listed activity under NEMA (which yours does), the NEMA authorisation process takes precedence. In practice, Knysna Municipality acknowledges that if an environmental authorisation is granted by DFFE, the OSCAE permit is not separately required, because the environmental sensitivities (coastal vegetation, stormwater, slope stability, etc.) are already addressed within the NEMA process and the EMPr.

4.4. Implementation Requirements

Compliance with these legislative provisions is the joint responsibility of:

- the Applicant (Kinetic Catamarans SA (Pty) Ltd), as holder of the Environmental Authorisation,
- the appointed Environmental Control Officer (ECO), as independent compliance monitor; and
- the Contractor, who has a direct obligation to implement mitigation and management measures on site.

Non-compliance with any condition of the Environmental Authorisation or the provisions of this EMPr constitutes a legal offence and may result in enforcement action by the competent authority or local authority.

5. ADMINISTRATION OF THE EMPr

The following section outlines the guidelines that will remain in effect until all components of the proposed development are fully completed, including site rehabilitation and the fulfilment of all contractor responsibilities. As the operational phase of the development has been assessed to have a low environmental impact, the EMPr will conclude once the final operational phase audit report confirms that all requirements have been satisfactorily met.

5.1. Phasing of the EMPr

The following provides clear distinction for the different phases of the proposed development –

Pre – construction phase:

This phase refers to all actions that need to proceed prior to the first physical implementation of activities related to the proposed development. Examples include (but are not limited to) the demarcation of recommended NO-GO areas. During this part of the pre-construction phase, all necessary mitigations must be in place before the physical execution of construction activities.

Construction phase:

This phase involves the physical construction and related activities necessary for development of the establishment of the managers' cottages, conference centre and tourist facilities, garages, and the entertainment facilities.

Operational phase:

This phase refers to the period when the constructed facilities are available for use. Confirmation of the operational phase marks the end of all construction related to all the proposed development structures.

Rehabilitation and Maintenance phase:

Rehabilitation and maintenance should be conducted during all phases of the development to minimize environmental impact and ensure that the post-construction rehabilitation workload does not become a burden on the applicant and contractor. Essentially the idea is to keep the surrounding environment intact. To have the environment represent a better state than before the proposed development of as near as originally assessed.

Decommission phase:

It is not expected that the proposed development will be decommissioned. However, once the operational phase reaches its end, decommissioning will involve removing the operating assets of the development.

5.2. Revisions of the EMPr

The EMPr is an integral part of the environmental application documentation and cannot be significantly amended without applying to the competent authority and undergoing public participation.

It is also recommended that the EMPr be reviewed during external audits, which will serve as the primary mechanism for suggesting amendments. The secondary mechanism will originate from such recommendations from the appointed Environmental Control Officer (ECO).

Any deficiencies identified within the EMPr should be addressed through the preparation of detailed method statements, outlining how tasks will be executed and how environmental impacts will be mitigated.

Clarification on method statements:

The Contractor may be required to provide Method Statements for approval by the ECO to work commencing on aspects of the project which are deemed to be, or identified as being, of greater risk to the environment, and/or which may not be covered in sufficient detail in the EMP, when called upon to do so by the ECO.

A Method Statement is a "living document" in that modifications are negotiated between the Contractor, the ECO, and the project management team, as dictated by circumstances. All Method Statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP. Note that a Method Statement is a 'starting point' for understanding the nature of the intended actions to be carried out and allows for all parties to review and understand the procedures to be followed in order to minimise risk of harm to the environment.

Changes to, and adaptations of Method Statements can be implemented with the prior consent of all parties. A Method Statement describes the scope of the intended work in a step-by-step description in order for the ECO and the Principal Agent to understand the Contractor's intentions. This will enable them to assist in devising any mitigation measures, which would minimise environmental impact during these tasks. For each instance where it is requested that the Contractor submit a Method Statement to the satisfaction of the PA and ECO, the format should clearly indicate the following:

The format of method statements should clearly indicate the following:

What	A Brief description of the work to be undertaken
How	A detailed description of the process of work, methods, and materials
Where	A description / sketch map of the locality of work
When	The dates which are due for commencement and completion dates estimates
Who	The person responsible for undertaking the works described in the method statement

Examples of method statements that the ECO may require include (but are not limited to) dust management, storage of hazardous materials (if applicable), and handling of any Knysna Seahorse (*Hippocampus capensis*) encountered during construction or slipway-related works.

5.3. Monitoring and Compliance

It is clearly defined in the EMP what is expected in terms of implementation of mitigation recommendations. The effectiveness of implementation of proposed mitigation recommendations and compliance therewith must be monitored.

5.3.1. Frequency

1. It is recommended that the appointed Environmental Control Officer (ECO) visit the proposed development site at least once during the pre-construction phase, unless otherwise determined at the discretion of the ECO, to establish a baseline of site conditions and confirm the implementation of pre-construction recommendations. During the construction phase, the ECO should conduct two (2) site visits per month, and once (1) per month during the operational phase, continuing until the final external audit is completed to monitor and report on rehabilitation compliance.
2. The ultimate authority is hereby given to the ECO to establish the necessity of frequency of site visits. This document only highlights the recommended frequency and must therefore be arranged by the ECO.

5.3.2. Reporting procedure of monitoring and compliance

1. It is stipulated (under roles and responsibilities) that an ECO must be appointed, and that it is the responsibility of the ECO to do regular site inspections to gather evidence of compliance against the EMPr.
2. The ECO should then compile a site inspection report that highlights the findings and serves as documented evidence of compliance with the recommendations and requirements outlined in this report. This report will form part of the ongoing monitoring process, ensuring that all environmental guidelines and best practices are adhered to throughout the development phases.

Reporting procedure of non-compliance:

The non-compliance is defined as, and will be issued for:

- Any deviation by the Applicant from the environmental conditions and requirements as set out in the EMPr, or;
- Any contravention by the Applicant of environmental legislation, or;
- Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the ECO but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

Types of non-compliances issued:

Two types of non-compliances may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on a formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- Total disregard by the Applicant to the environmental conditions and requirements listed in the EMPr;
- An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

A Non-Conformance Report (NCR) will be issued to the Applicant as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Applicant in writing.

Preceding the issuing of a NCR, the Applicant must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of an NCR.

The following information should be recorded in the NCR:

- Details of non-conformance;
- Any plant or equipment involved;
- Any chemicals or hazardous substances involved;
- Work procedures not followed;

- Any other physical aspects;
- Nature of the risk;
- Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account;
- Agreed timeframe by which the actions documented in the NCR must be carried out; and
- ECO should verify that the agreed actions have taken place by the agreed completion date, when completed satisfactorily; the ECO and Applicant should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

If no remediation occurs for the reported non-compliances, the non-compliances will be communicated to the appropriate municipality and competent authority whereby financial implications will be determined.

5.4. Audits

Two construction audits are required prior to handover to the applicant. The first must commence within a year of the start of construction phase. Followed by a second within 30 days of the final construction phase completion activity.

Audits must be completed by an independent party (who is not the ECO or the appointed EAP) and must comply with the requirements of regulation 34 of the EIA regulations, 2014 (as amended). The contents of the environmental audit report must comply with Appendix 7 of the EIA regulations.

5.5. Clarified Roles and Responsibilities

The following section outlines roles and responsibilities to clarify the position of parties relevant to the proposed development. These roles remain fixed, unless otherwise mutually agreed upon by the relevant parties.

5.5.1. The Applicant / Holder of the EA

The holder of the EA / property owner is the overseeing entity responsible for ensuring that all activities undertaken on the property comply with the Environmental Authorisation (EA) and associated Environmental Management Programme (EMPr) (& any other approval / licence / permit).

Actions relate (but are not limited to) –

- Ensure that that all tender documentation include reference to, and the need for compliance with, the EA and EMPr as well as any other legally binding documentation.
- Ensure that all employed Contractors and Engineers are aware of and understand the conditions of the EMPr (Include the EMPr in all tender documents)
- The right to remove any person or appointed contractors or personnel from site if the contravene with the EMPr.
- Appoint an Environmental Control Officer.
- The project Applicant (holder of the Environmental Authorisation of the EMPr) must notify the competent authority of the commencement of maintenance management activities 14 days prior to such commencement taking place.

5.5.2. The ECO

The ECO's duties, inter alia, must be to ensure compliance with the EMPr through monitoring, and through proactive and open communication with the project/

The ECO's responsibility should include (but are not limited to) the following:

- Monitoring and verifying that the EMPr is adhered to at all times and taking action if the specifications are not followed.
- To environmentally educate and raise the awareness of the Contractor and his staff as to the environmental requirements relating to the Site and to facilitate the spread of the correct attitude during works on Site.
- To take immediate action on Site where clearly defined and agreed no-go areas are violated or are in danger of being violated.
- Monitoring and verifying that environmental impacts are kept to a minimum.
- Reviewing and approving construction method statements together with the PA.
- Assisting the Contractor in finding environmentally responsible solutions to problems.
- Keeping records of all activities/ incidents on Site in a Site Diary concerning the environment.
- Monitoring implementation of the Spill Prevention, Control and Countermeasure (SPCC) Plan (Annexure B to this EMPr) and maintaining the associated spill-incident register.
- Inspecting the Site and surrounding areas regularly (minimum monthly) with regard to compliance with the EMP (note that this could be reduced further in consultation with the environmental officer at SPM in the case of low activity on Site but would need to be increased to weekly inspections during high risk/high activity work).
- Keeping a register of complaints and report these first to the PA for action and follow-up.
- Requesting the removal of person(s) and/or equipment not complying with the specifications (done via the PA).
- Recommending the issuing of penalties for transgressions of environmental Site specifications to the PA.
- Completing start-up, monthly, and Site closure checklists and reports.
- Keeping a photographic record of progress on Site from an environmental perspective.
- Undertaking a continual internal review of the EMPr and making recommendations to the PA.

Site Visit Frequency:

- It is recommended that the appointed Environmental Control Officer (ECO) visit the proposed development site at least once during the pre-construction phase, unless otherwise determined at the discretion of the ECO, to establish a baseline of site conditions and confirm the implementation of pre-construction recommendations. During the construction phase, the ECO should conduct two (2) site visits per month, and once (1) per month during the operational phase, continuing until the final external audit is completed to monitor and report on rehabilitation compliance.

Environmental induction and training

- It will be the responsibility of the ECO to provide adequate environmental awareness training of senior site personnel takes place and that all construction workers receive an induction presentation on the importance and implications of the EA and EMPr.
- Where staff turnover is high and with additional appointment of Sub-contractors, it may be necessary to undertake additional induction training sessions. The Contractor must keep records of all environmental training sessions, including names, dates and the information presented.

5.5.3. The Engineers and Contractors

The responsibilities indicated here are also relevant to Sub-Contractors. The responsibilities of the Engineers and Contractors include but are not limited to the following:

- Adhere with the conditions and recommendations of the EMPr or any other legally binding documentation.
- Prevent actions that may cause harm to the environment.

- Be responsible for any remedial activities in response to an environmental incident within their scope of influence.
- Ensure compliance of all site personnel and / or visitors to the EMPR and any other authorisations.

6. PRE - CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

Aspect / Activity	Management Objective	Mitigation / Management Measures	Responsibility	Monitoring / Compliance Indicator	Frequency / Timing
6.1. Appointment and authorisation	Ensure all legal appointments and documentation are in place prior to site mobilisation.	- Obtain Environmental Authorisation (EA) from DFFE and ensure all conditions are understood. - Appoint independent ECO and notify DFFE formally. - Keep copy of EA and EMPr on site and accessible to all parties.	Applicant / EAP	Copy of EA and ECO appointment letter available on site.	Once-off prior to site establishment.
6.2. Pre-construction meeting and induction	Establish clear communication lines and ensure all staff are aware of environmental obligations.	- Hold a pre-construction kick-off meeting between Applicant, ECO, Engineer and Contractor. - ECO to conduct induction covering no-go zones, spill response, waste segregation, estuary sensitivity, emergency contacts. - Keep signed attendance register.	ECO / Contractor	Induction register signed; meeting minutes on file.	Before mobilisation and for all new workers.
6.3. Method statements	Ensure that high-risk activities are planned, reviewed, and	Contractor to submit method statements for: earthworks,	Contractor / ECO	Approved method statements signed by ECO.	Prior to start of each high-risk activity.

	authorised prior to commencement.	stockpiling, refuelling, stormwater tie-ins, and hazardous storage. ECO to review and approve prior to execution.			
6.4. Site demarcation	Confine all works within approved footprint and protect sensitive estuary edge.	- Peg and fence development footprint according to SDP. - Install shade cloth or equivalent durable barrier netting along No-Go areas (per SANParks Condition 7, 2 April 2026) - Maintain signage "NO ENTRY – ENVIRONMENTALLY SENSITIVE AREA".	Contractor under ECO supervision	Fencing and signage intact; ECO sign-off.	Before any ground disturbance.
6.5. Service confirmation & wayleaves	Prevent accidental damage to existing underground infrastructure.	- Confirm all municipal service alignments before excavation. - Obtain wayleave approvals for Union / New Street connections. - Mark routes on site plan and protect during works.	Contractor / Engineer	Wayleave approval; marked routes.	Once-off prior to trenching.
6.6. Stormwater protection preparation	Protect downstream systems and the Knysna Estuary from sediment or pollutants.	Fit silt socks / gravel bags to all inlets before works.	Contractor / ECO	Functional controls in place; no turbid discharge.	Continuous during establishment.

		- Place temporary berms or straw bales at discharge points. - Inspect and clean weekly or after rainfall.			
6.7. Temporary waste management setup	Ensure legal and orderly waste handling from day one.	- Provide labelled, covered skips for general, recyclable and hazardous waste. - Place skips on existing hardstand, bund if necessary. - Contract licensed waste collector.	Contractor	Skips installed and labelled; proof of contract.	Prior to mobilisation.
6.8. Toilet and ablution facilities	Prevent contamination of stormwater or soil.	- Install chemical toilets on hard surfaces ≥ 20 m from drains and inlets. - Maintain clean, serviced units at all times.	Contractor	Toilets positioned correctly; service records.	During setup; weekly inspection.
6.9. Hazardous material storage	Ensure safe containment of fuels and chemicals before use.	- Establish banded storage area on impermeable slab (110 % of total capacity). - Provide spill kits and fire extinguishers. - Train designated personnel.	Contractor	Bunding integrity; spill kit log.	Before material delivery.
6.10. Baseline site condition record	Provide benchmark for later compliance audits.	ECO to take dated photographs of site before disturbance.	ECO	Baseline photo record filed with ECO report.	Once-off before commencement.

		Record condition of hardstands, drains, and estuary berm.			
6.11. ECO authorisation to commence	Ensure site is environmentally ready before works begin.	- ECO to inspect and verify that fencing, signage, toilets, waste facilities, and stormwater controls are in place. - ECO issues written "Permission to Commence Works".	ECO / Applicant	Signed authorisation filed on site.	Immediately before construction start.

7. CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

Aspect / Activity	Management Objective	Mitigation / Management Measures	Responsibility	Monitoring / Compliance Indicator	Frequency / Timing
7.1. Estuarine buffer protection	Protect the estuarine vegetated buffer, saltmarsh and lagoon edge from any encroachment, sediment, runoff or trampling during construction.	- Maintain a minimum 5 m vegetated buffer landward of the saltmarsh boundary, demarcated with shade cloth before site establishment. - Apply a "Grow Don't Mow" policy within the buffer; no mowing, trimming or vegetation removal without prior ECO approval. - No stockpiling, refuelling, washing, parking or stationary	Contractor / ECO	Buffer demarcation intact; no encroachment recorded; berm condition stable.	Continuous; upon ECO inspection; immediate repair of damage.

		plant within the buffer or No-Go Areas. • Lagoon-edge berm to be inspected weekly and repaired immediately if disturbed. • Any disturbed vegetation to be reinstated promptly with locally indigenous species.			
7.2. Avifauna and estuarine fauna protection	Avoid disturbance to estuarine birds and fauna using the saltmarsh and mudflat margins adjacent to the site.	• No high-noise activities (piling, percussive demolition, loud machinery) during peak bird breeding and foraging windows (broadly September–March; ECO to confirm at induction) where reasonably avoidable. • No vehicle, equipment or foot traffic into saltmarsh, reedbed or mudflat areas at any time. • Construction lighting to be down-shielded to prevent estuarine spill. • ECO to record any observed disturbance, mortality	Contractor / ECO	No recorded disturbance incidents; ECO Inspection Register entries.	Continuous; logged at each ECO inspection.

		or active nesting on the buffer edge in the Site Inspection Register, and to escalate to the EAP if a nest is identified within 50 m of active works.			
7.3. Site establishment & housekeeping	Maintain a tidy, well-organised site and prevent general pollution.	• Confine all works to demarcated disturbance area. • Keep daily housekeeping log; remove waste before weekends. • Ablutions on hardstand only and serviced regularly. • No washing, cooking, or maintenance in vegetated/no-go areas.	Contractor / ECO	Site inspections; ECO monthly report.	Continuous during construction.
7.4. Earthworks and excavation	Limit soil disturbance and prevent erosion or sedimentation of stormwater.	• Strip and store topsoil separately if uncovered. • Protect exposed areas with silt fencing or geotextile. • Schedule earthworks in dry conditions where possible. • No excavation beyond approved footprint.	Contractor / ECO	Intact erosion controls; no off-site sediment.	Continuous; after rainfall events.

7.5. Stormwater management (temporary)	Prevent contaminated runoff entering the Knysna Estuary or municipal system.	• Maintain temporary diversion drains and berms. • Fit silt socks and gravel bags to all inlets and outlets. • Inspect after rainfall; clean sediment traps. • Dewatering (if required) through settlement tanks only.	Contractor / ECO	Visual inspection of water clarity and flow direction.	Weekly and after rainfall.
7.6. Material stockpiling	Prevent erosion, dust, and runoff from stockpiles.	• Place all stockpiles on existing hardstand; no stockpiles within 10 m of drains or estuary berm. • Bund and cover with tarpaulin during rain or wind. • Use toe silt fencing.	Contractor	Stable, covered stockpiles; clean perimeter.	Continuous; after rainfall.
7.7. Alien invasive plant species control	Prevent the establishment and spread of alien invasive plant species	• Conduct monthly inspections to identify any invasive species emerging on disturbed soils, stockpile areas, or along access routes. • Any alien invasive plants identified will be manually removed (uprooted) before seed set. • Topsoil stripped during construction will be stockpiled separately			

		and monitored for invasive germination. • Sand, gravel, and fill material will be sourced from approved suppliers and kept in bunded areas to prevent contamination with invasive propagules. • Construction staff will receive induction training on recognising common invasive species.			
7.8. Hydrocarbon and chemical handling	Prevent spills contaminating soil and water.	• Store all fuels and chemicals in bunded area (110% capacity). • Refuel on impermeable surface with drip tray. • Spill kits at all high-risk areas; staff trained. • Maintain incident register; report to ECO within 24 h.	Contractor / ECO	Spill register; bund integrity check.	Continuous; monthly ECO audit.
7.9. Concrete, resin and paint handling	Prevent cementitious or chemical contamination of stormwater.	• Mix on impervious surface; capture wash water in lined pit or container. • No washing into stormwater system. • Dispose hardened residues as general waste.	Contractor	No cement residue visible; clean mixing area.	Continuous.

7.10. Waste management	Maintain legal, safe and hygienic waste management system.	• Segregate recyclable, general and hazardous waste. • Store in labelled skips on hardstand. • No burning or burying. • Keep disposal manifests from licensed service provider.	Contractor / ECO	Waste log; clean site; manifests on file.	Weekly and at project end.
7.11. Noise and vibration	Minimise disturbance to neighbouring receptors (Sea Cadets, industrial neighbours).	• Working hours 07:00–18:00. • Maintain silencers; use broadband reverse alarms. • Notify Sea Cadets before noisy operations.	Contractor	Noise kept within 85 dBA; complaints register.	Continuous; verify monthly.
7.12. Dust suppression	Reduce air-quality nuisance.	• Wet surfaces as needed; cover trucks; restrict vehicle speed ≤ 20 km/h. • No excessive dust crossing boundary.	Contractor	Visual inspections; no complaints.	Daily and after dry/windy conditions.
7.13. Traffic & access control	Maintain safe vehicle movement and protect public access.	• Use existing paved access; no driving on vegetated berms. • Implement Traffic Management Plan (TMP) with flagmen for deliveries. • Coordinate with Sea Cadets schedules.	Contractor / ECO	TMP in force; zero incident log.	Continuous.
7.14. Water quality & estuary protection	Protect Knysna Estuary from construction pollution.	• Establish and maintain no-go buffer at surveyed HWM.	Contractor / ECO	No visible discharge to estuary; inspection record.	Weekly and post-rainfall.

		• Regularly inspect berm condition; repair immediately if disturbed. • Install temporary runoff controls at southern edge of site. • Report any visible turbidity or sheen to ECO.			
7.15. Slipway upgrade works	Ensure that any slipway upgrade works (when undertaken under the EA validity) protect the estuarine margin and comply with the Public Launch Site Regulations (GN R497 of 27 June 2014).	• Slipway construction or upgrade may only be undertaken under dry conditions with no rainfall predicted during significant works, planned around tides. • A method statement is to be submitted to DFFE and SANParks for approval prior to commencement of any slipway upgrade. • No expansion of the slipway footprint beyond the existing structure. • Hand-excavation within aquatic habitat where practicable; no machinery within the estuarine zone except by ECO authorisation.	Contractor / ECO / Engineer	Approved method statement on file; ECO sign-off; no expansion of footprint.	Once-off, prior to any slipway upgrade.

7.16. Heritage chance finds	Prevent destruction or removal of heritage artefacts.	• Stop work immediately on discovery; demarcate 10 m buffer. • Notify Heritage Western Cape via ECO. • Resume work only after clearance.	Contractor / ECO	Incident record; HWC response on file.	As required.
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8. OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

Aspect / Activity	Management Objective	Mitigation / Management Measures	Responsibility	Monitoring / Compliance Indicator	Frequency / Timing
8.1. Stormwater management and estuary protection	Ensure stormwater runoff remains uncontaminated and controlled to protect the Knysna Estuary.	• Maintain oil-water separators, sediment traps, and inlet filters quarterly. • Sweep paved surfaces, no hose wash-downs. • Inspect outlets after major rainfall; repair any erosion immediately. • Maintain vegetated berm between hardstand and estuary as permanent buffer.	Facility Manager / ECO (periodic)	Maintenance logs; clean outlets; berm intact; no visible discharge to estuary.	Monthly inspections and after heavy rainfall.
8.2. Hazardous-material storage and	Prevent contamination of soil,	• Keep Safety Data Sheets for all hazardous materials.	Facility Manager	Bund integrity; training records; incident register.	Continuous; formal inspection quarterly.

handling (resins, solvents, paints)	groundwater, or stormwater.	• Store in ventilated, bunded areas (110 % capacity). • Maintain spill kits and train staff annually. • Keep spill-incident register and disposal records. • No factory floor drain shall be connected to the stormwater system; all wash water collected internally and disposed of by a licensed liquid-waste contractor (cross-reference SPPP section-5 and SPCC section-4)			
8.3. Sewer Rising Main Emergency Protocol	Ensure rapid containment and reporting in the unlikely event of rupture or leakage of the 350 mm or 375 mm municipal sewer rising mains traversing the site, given the direct estuarine consequence.	• On detection of any leak, rupture or surface signs of failure, immediately notify Knysna Municipality, SANParks, DFFE Oceans & Coast and the ECO. • Deploy temporary containment (sandbags, absorbent booms) at the southern boundary to prevent migration to the estuary.	Facility Manager / ECO / Knysna Municipality	Visual inspection log; joint biennial inspection with Municipality; incident-free record.	Monthly visual inspection by Facility Manager; biennial joint inspection with Municipality; immediate response on detection.

		- Remove and dispose of all spilled effluent and contaminated material at a licensed facility. - Submit an incident report to DFFE within 14 days. - Cross-reference SPPP Section 12 and SPCC Section 8 (Tier 3 procedures).			
8.4. Air quality and VOC emissions	Minimise nuisance odours and occupational exposure.	- Operate extraction and carbon-filtration systems; service per manufacturer specs. - Conduct routine checks of ventilation ducting and filters. - Schedule high-VOC work during daytime hours. - Keep complaint register and response record. - Position and operate any standby generators so as to avoid nuisance to neighbouring receptors.	Facility Manager	Filter-service log; no unresolved complaints.	Monthly check; annual service.
8.5. Solid-waste management	Maintain sustainable waste segregation and legal disposal.	Segregate recyclables, general and hazardous waste at source.	Facility Manager	Waste manifests; clean storage area; audit summary.	Continuous; audit annually.

		• Store in covered, labelled containers on hardstand. • Contract licensed collectors and retain manifests. • Audit waste volumes annually to identify reduction opportunities.			
8.6. Annual estuary water-quality verification	Verify that operational stormwater controls are not contributing to deterioration of Knysna Estuary water quality.	• Once-yearly grab sample at the southern stormwater outfall, analysed by an independent SANAS-accredited laboratory for turbidity, total suspended solids and total petroleum hydrocarbons. • Sampling to be conducted within 7 days of a typical wet-season rainfall event. • Results compared against Knysna Estuary background reference values; exceedances investigated and reported to DFFE and SANParks.	Facility Manager (commissioned laboratory)	Annual laboratory report; results within reference values.	Annual (operational phase).
8.7. Energy and water-use efficiency	Promote sustainable resource consumption and cost savings.	• Monitor monthly electricity and water consumption.	Facility Manager	Utility-tracking spreadsheet; service reports.	Monthly monitoring; annual service.

		• Operate rooftop PV array and rainwater-harvesting system; record output. • Service pumps, meters and lighting sensors annually.			
8.8. Maintenance of buildings, hardstands and drains	Prevent deterioration that could create environmental risks.	• Inspect roofs, gutters, sumps and hardstands quarterly. • Clean drains of debris; repair cracks that could cause leakage. • Maintain all signage and boundary fencing.	Facility Manager	Inspection checklists; repair orders closed out.	Quarterly.
8.9. Emergency preparedness and spill response	Ensure rapid, effective response to environmental emergencies.	• Maintain site Emergency Response Plan with contact list. • Conduct spill drills twice yearly. • Stock and service fire extinguishers and absorbents.	Facility Manager / ECO	Drill records; equipment in date.	Bi-annual drills; monthly visual checks.
8.10. Community, Sea Cadets and public access (CPP)	Maintain safe coexistence and positive stakeholder relations.	• Keep boundary fencing and signage in good condition. • Schedule large deliveries outside Cadet training hours. • Participate in joint safety or community events when requested.	Facility Manager	Zero incident reports; feedback log.	Ongoing; review annually.

		Public access along the lagoon-edge walkway and Coastal Public Property to be maintained at all times; no fencing, signage or operational activity shall restrict pedestrian access to the seashore or estuarine edge, in accordance with the objectives of the ICM Act			
8.11. Biodiversity and landscaping maintenance	Retain functional vegetated buffer and aesthetic quality.	- Maintain a minimum 5 m vegetated buffer landward of the saltmarsh boundary, demarcated with shade cloth before site establishment. - Apply a "Grow Don't Mow" policy within the buffer; no mowing, trimming or vegetation removal without prior ECO approval - Irrigate and maintain planted berm species until established. - Remove alien or invasive species quarterly.	Facility Manager / ECO	Healthy vegetation cover; no alien regrowth.	Quarterly inspections.

		• Replace dead vegetation promptly.			
8.12. Legal compliance and reporting	Demonstrate ongoing adherence to environmental legislation and authorisation conditions.	• Keep EMPr and Environmental Authorisation accessible. • Conduct annual internal environmental audit. • Maintain training and waste documentation for five years. • Submit a Quarterly Stormwater and Spill Compliance Report to DFFE and SANParks summarising inspection findings, incidents, corrective actions and notifications, in accordance with SPPP section -14 and SPCC section 12.4.	Facility Manager / ECO	Completed audit reports; compliance certificates.	Quarterly reporting; annual auditing

9. REHABILITATION AND MAINTENANCE PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

Aspect / Activity	Management Objective	Mitigation / Management Measures	Responsibility	Monitoring / Compliance Indicator	Frequency / Timing
9.1. Progressive rehabilitation of completed sections	Ensure that areas no longer required for construction are promptly stabilised to	10. Re-shape and level disturbed surfaces to natural or designed gradients.	Contractor under ECO supervision	Vegetative cover ≥ 80 % within 8–12 weeks; no sediment-laden runoff.	Continuous as works are completed.

	prevent erosion or sedimentation.	11. Scarify compacted soil; apply locally sourced topsoil or growth medium if available. 12. Seed or hydro-mulch with a locally adapted grass mix to achieve rapid ground cover. 13. Maintain temporary erosion-control mats until vegetation is established.			
13.1. Rehabilitation of stormwater outlets and berms	Protect the estuarine buffer and prevent erosion at discharge points.	14. Install rock-riprap, gabions or vegetated outlet protection as specified by engineer. 15. Replant disturbed berm areas with locally adapted vegetation. • Inspect after first major rainfall and repair promptly.	Contractor / Engineer / ECO	Outlet structures intact; no gully or bank erosion.	Post-rainfall inspections for first 6 months.
15.1. Removal of temporary works and infrastructure	Restore all temporary construction areas to pre-construction condition.	16. Remove temporary offices, fences, signage, stockpile bunds and waste skips. 17. Break up and remove temporary concrete or hardstand patches	Contractor	Clearance certificate issued by ECO.	Once-off at end of construction.

		not forming part of permanent works. 18. Dispose of waste via licensed facility; keep disposal slips.			
18.1. Pollution cleanup and verification	Prevent residual contamination of soil or stormwater system.	19. Inspect all bundled and storage areas for hydrocarbon or chemical residues. 20. Remove contaminated soil for disposal at authorised facility; test if required. 21. Clean all stormwater inlets and sediment traps before hand-over.	Contractor / ECO	No visible staining or odour; disposal manifests.	Once-off before closure.
21.1. Rehabilitation of service trenches and reinstatement	Ensure reinstated surfaces match surrounding levels and drainage gradients.	22. Backfill trenches in 150 mm layers and compact. 23. Reinstall surfacing (paving or asphalt) to municipal standard. 24. Re-vegetate unpaved shoulders or verges with indigenous cover.	Contractor / Engineer	Reinstated surfaces level and stable.	Once-off after service installation.
24.1. Final site cleanup and demobilisation	Leave the site clean, stable and safe for operation.	25. Remove all construction materials, litter, and redundant equipment. 26. Conduct final ECO inspection and issue Environmental	Contractor / ECO	ECO completion report filed with Applicant and DFFE.	Once-off at construction close-out.

		Completion Statement confirming compliance with EMPr and EA.			
26.1. Long-term rehabilitation / decommissioning (if applicable)	Provide for potential future closure of the facility.	27. Should decommissioning occur, compile a site-specific Closure Plan addressing waste removal, infrastructure demolition, and soil/groundwater testing. 28. Engage ECO and DFFE for approval before closure.	Applicant / ECO	Approved Closure Plan; post-closure monitoring results.	Only if decommissioning occurs.

ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

PROJECT NAME:

PROPOSED DEVELOPMENT OF KINETIC CATAMARANS INDUSTRIAL FACILITY ON ERF 1339, AS WELL AS DEVELOPMENT / REDEVELOPMENT OF THE SOUTH AFRICAN SEA CADET CORPS INFRASTRUCTURE ON ERF 1316, KNYSNA, WESTERN CAPE

DFFE Reference: TBC

APPLICANT:

Signed: Date:

CONTRACTOR:

Signed: Date:

ENVIRONMENTAL CONTROL OFFICER

Signed: Date: