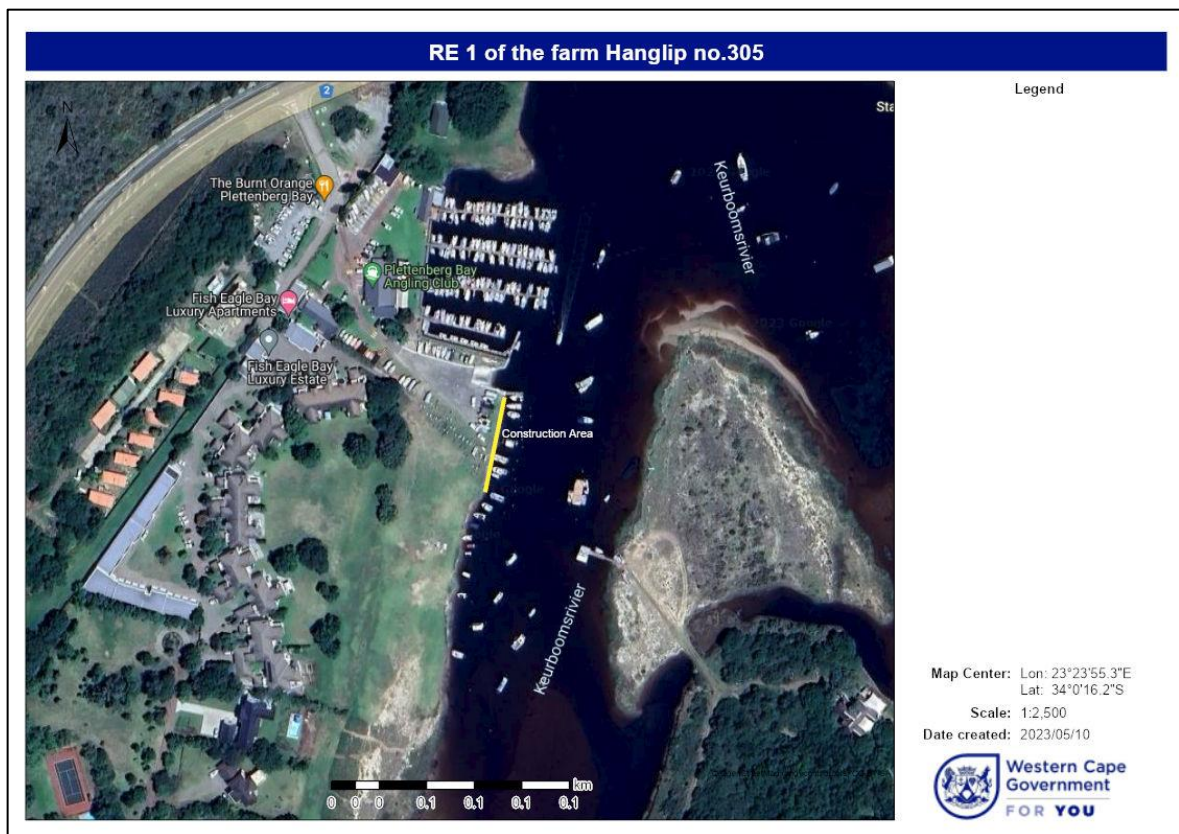




Proposed Stabilisation of a Portion of The Keurbooms River Embankment South of the Plettenberg Bay Angling Club, RE 1 of the farm Hanglip No.305

PRE-APPLICATION BASIC ASSESSMENT REPORT



Date: July 2024

Compiled by: Samatha Teeluckdhari (2023/6443)
Assisted by: Lizelle Genade (Candidate 2023/7793)

S. Teeluckdhari

L. Genade

EAP Signature: _____ Candidate Signature: _____

ISSUED BY:

Eco Route

Submitted to:

DEA&DP

Document Reference:

DEA&DP REF: 16/3/3/6/7/1/D1/3/0307/23

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STATEMENT OF INDEPENDENCE

I, **Samantha Teeluckdhari** of Eco Route Environmental Consultancy, in terms of section 33 of the NEMA, 1998 (Act No. 107 of 1998), as amended, hereby declare that I provide services as an independent Environmental Assessment Practitioner (EAPASA Reg: 2023/6443) with assistance from Lizelle Genade (EAPASA Reg: Candidate 2023/7793) 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.



**Western Cape
Government**

Department of Environmental Affairs and
Development Planning

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

JULY 2024



BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

JULY 2024

(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

Proposed Stabilisation of a Portion of The Keurbooms River Embankment South of the Plettenberg Bay Angling Club, RE 1 of the farm Hanglip No.305
--

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. *Submission of documentation, reports and other correspondence:*

The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

DEADPEIAAdmin@westerncape.gov.za

Directorate: Development Management (Region 1):
City of Cape Town; West Coast District Municipal area;
Cape Winelands District Municipal area and Overberg District Municipal area.

DEADPEIAAdmin.George@westerncape.gov.za

Directorate: Development Management (Region 3):
Garden Route District Municipal area and Central Karoo District Municipal area

General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

4. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
5. All applicable sections of this BAR must be completed.
6. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za> to check for the latest version of this BAR.

8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
9. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
10. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
11. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
12. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
13. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
14. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.
15. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ("NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1) (City of Cape Town, West Coast District, Cape Winelands District & Overberg District)	GEORGE REGIONAL OFFICE: DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3) (Central Karoo District & Garden Route District)
<p>The completed Form must be sent via electronic mail to: DEADPEIAAdmin@westerncape.gov.za</p> <p>Queries should be directed to the Directorate: Development Management (Region 1) at: E-mail: DEADPEIAAdmin@westerncape.gov.za Tel: (021) 483-5829</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000</p>	<p>The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za</p> <p>Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530</p>

MAPS

<p>Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.</p>	
<p>Locality Map:</p>	<p>The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. <p>For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.</p> <p>Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.</p>
<p>Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.</p>	
<p>Site Plan:</p>	<p>Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:</p> <ul style="list-style-type: none"> • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development must be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.

	<ul style="list-style-type: none"> • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> ○ Watercourses / Rivers / Wetlands ○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); ○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): ○ Ridges; ○ Cultural and historical features/landscapes; ○ Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow <p>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.</p>
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as Appendix C . The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as Appendix D .
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as Appendix A3 .

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			✓ (Tick) or x (cross)
Appendix A:	Maps		
	Appendix A1:	Locality Map	✓
	Appendix A2:	Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning	✓
	Appendix A3:	Map with the GPS co-ordinates for linear activities	✓
Appendix B:	Appendix B1:	Site development plan(s)	✓
	Appendix B2	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;	✓
Appendix C:	Photographs		✓
Appendix D:	Biodiversity overlay map		✓
Appendix E:	Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.		
	Appendix E1:	Final comment/ROD from HWC	✓
	Appendix E2:	Copy of comment from Cape Nature	x
	Appendix E3:	Final Comment from the DWS	x
	Appendix E4:	Comment from the DEA: Oceans and Coast	x
	Appendix E5:	Comment from the DAFF	x
	Appendix E6:	Comment from WCG: Transport and Public Works	x
	Appendix E7:	Comment from WCG: DoA	x

	Appendix E8:	Comment from WCG: DHS	X
	Appendix E9:	Comment from WCG: DoH	X
	Appendix E10:	Comment from DEA&DP: Pollution Management	X
	Appendix E11:	Comment from DEA&DP: Waste Management	X
	Appendix E12:	Comment from DEA&DP: Biodiversity	X
	Appendix E13:	Comment from DEA&DP: Air Quality	X
	Appendix E14:	Comment from DEA&DP: Coastal Management	X
	Appendix E15:	Comment from the local authority	X
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management)	X
	Appendix E17:	Comment from the District Municipality	X
	Appendix E18:	Copy of an exemption notice	X
	Appendix E19	Pre-approval for the reclamation of land	X
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	X
	Appendix E21:	Proof of land use rights	✓
	Appendix E22:	Proof of public participation agreement for linear activities	X
Appendix F:	Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.		✓
Appendix G:	Specialist Report(s)		✓
Appendix H:	EMPr		✓
Appendix I:	Screening tool report		✓
Appendix J:	The impact and risk assessment for each alternative		X

Appendix K:	Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline	✓
Appendix.....	Any other attachments must be included as subsequent appendices	x

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE: REGION 1		GEORGE OFFICE: BEGION 3
	(City of Cape Town, West Coast District	(Cape Winelands District & Overberg District)	(Central Karoo District & Garden Route District)
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent: Name of contact person for Applicant/Proponent (if other): Company/ Trading name/State Department/Organ of State: Company Registration Number: Postal address: Telephone: E-mail:	Plettenberg Bay Angling Club		
	Warren Webster		
	N/A		
	P.O. Box 2, Plettenberg Bay		
			Postal code: 6600
	(044) 535 9057		Cell: 082 493 0385
	pbac@mweb.co.za		Fax:
	Eco Route Environmental Consultancy		
	Samantha Teeluckdhari		
	P.O. Box 1252		
Sedgefield		Postal code: 6573	
+27 (0)72 773 5397		Cell: 072 773 5397	
samantha@ecoroute.co.za		Fax: 086 402 9562	
BSS Geography and Environmental Management			
2023/6443			
Duplicate this section where there is more than one landowner Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:	Same as proponent		
			Postal code:
	()		Cell:
			Fax: ()
Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:			
			Postal code:
			Cell:
			Fax: ()
Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	Bitou Local Municipality		
	Chris Schliemann/ Anje Taljaard		
	P/Bag X1002		
	Plettenberg Bay		Postal code: 6600
	(044) 501 3324		Cell:
	CSchliemann@plett.gov.za/ aminne@plett.gov.za		Fax: ()

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	New	✓	Expansion																				
2.	Is the proposed site(s) a brownfield or greenfield site? Please explain.																							
Greenfield																								
3.	For Linear activities or developments This is a linear development																							
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:																							
RE 1 of the farm Hanglip no.305																								
3.2.	Development footprint of the proposed development for all alternatives.				55m																			
The proposed embankment stabilization will be approximately 55 meters in length.																								
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.																							
The stabilization activities will occur along a section of the embankment of the Keurbooms River (approximately 55 meters), south of the Plettenberg Bay Angling Club, Western Cape – GPS Coordinates: 34° 0'17.20"S 23°23'55.62"E.																								
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.																							
Access to the embankment is via the Plettenberg Bay Angling Club.																								
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives	C	0	3	9	0	0	0	0	0	0	0	0	0	0	0	3	0	5	0	0	0	0	1
3.6.	Starting point co-ordinates for all alternatives																							
	Latitude (S)	34°			0'	15.30"																		
	Longitude (E)	23°			23'	56.25"																		
	Middle point co-ordinates for all alternatives																							
	Latitude (S)	34°			0'	16.18"																		
	Longitude (E)	23°			23'	56.09"																		
	End point co-ordinates for all alternatives																							
	Latitude (S)	34°			0'	16.85"																		
	Longitude (E)	23°			23'	55.91"																		
Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.																								
4.	Other developments N/A																							
4.1.	Property size(s) of all proposed site(s):				m ²																			
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):				m ²																			
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:				m ²																			
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).																							
4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.																							
4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:																							
4.7.	Coordinates of the proposed site(s) for all alternatives:																							
	Latitude (S)	°			'	"																		
	Longitude (E)	°			'	"																		

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	NO
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2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	NO
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1. NID was submitted to Heritage Western Cape. Comment from Heritage Western Cape as Appendix E1	YES	NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	YES	NO
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	YES	NO
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	YES	NO
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	YES	NO
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	YES	NO
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	YES	NO

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.
OSCAE permit

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
National Policy Development Framework 2020
The National Environmental Management Act, 1998 (107 Of 1998)
Bitou Municipal Land Use Planning Bylaw, 2015
Spatial Planning and Land Use Management Act (16 Of 2013)
Western Cape Land Use Planning Act, 2014 (3 Of 2014)
National Heritage Resources Act, 1999 (Act 25 Of 1999)

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.
DEA&DP Biodiversity Guideline (June 2005)
DEA&DP EIA Guideline (March 2013)
DEA&DP Guideline on Need and Desirability (March 2013)
DEA Guideline on Need and Desirability (2017)
National Development Plan (2011)
Provincial Spatial Development Framework (2014)
Bitou Municipality IDP 2017-2022
Garden Route Biodiversity Sector Plan

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form
Please see attached Site Sensitivity Verification Report. Appendix I

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
12	<p>The development of—</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding—</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p>	<p>The proposed activity will be approximately 220 square metres within the Keurbooms River.</p>

	(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	
17	<p>Development—</p> <p>(i) in the sea;</p> <p>(ii) in an estuary;</p> <p>(iii) within the littoral active zone;</p> <p>(iv) in front of a development setback; or</p> <p>(v) if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater; in respect of—</p> <p>(a) fixed or floating jetties and slipways;</p> <p>(b) tidal pools;</p> <p>(c) embankments;</p> <p>(d) rock revetments or stabilising structures including stabilising walls; or</p> <p>(e) infrastructure or structures with a development footprint of 50 square metres or more —</p> <p>but excluding—</p> <p>(aa) the development of infrastructure and structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) the development of temporary infrastructure or structures where such structures will be removed within 6 weeks of the commencement of development and where coral or indigenous vegetation will not be cleared; or</p> <p>(dd) where such development occurs within an urban area.</p>	The proposed activity will be the construction and installation of engineered embankment stabilisation approximately 220 square metres in the Keurbooms River labelled as an Estuary in terms of the Wetland Freshwater Priority Areas (FEPAs).
19A	The infilling or depositing of any material of more than 5 cubic metres into, or the	The proposed activity will require the excavation of more than 5 cubic

	<p>dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—</p> <p>(i) the seashore;</p> <p>(ii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater; or</p> <p>(iii) the sea; — but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(f) will occur behind a development setback;</p> <p>(g) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(h) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(i) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>metres of soil from the Keurbooms River.</p>
<p>Activity No(s):</p>	<p>Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3</p>	<p>Describe the portion of the proposed development to which the applicable listed activity relates.</p>
<p>14</p>	<p>The development of—</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or</p> <p>(ii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p>	<p>The proposed activity will be approximately 220 square metres within the Keurbooms River. The area for construction is within a CBA and in the Estuarine Functional Zone.</p>

	<p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>i. Western Cape</p> <p>ii. Outside urban areas:</p> <p>(aa) A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(cc) World Heritage Sites;</p> <p>(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>(ee) Sites or areas listed in terms of an international convention;</p> <p>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>(gg) Core areas in biosphere reserves; or</p> <p>(hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.</p>	
26	<p>Phased activities for all activities—</p> <p>i. listed in this Notice and as it applies to a specific geographical area, which commenced on or after the effective date of this Notice; or</p> <p>ii. similarly listed in any of the previous NEMA notices, and as it applies to a specific geographical area, which commenced on or after the effective date of such previous NEMA Notices— where any phase of the activity was below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold; —</p> <p>excluding the following activities listed in this Notice—</p>	<p>The applicant will be undertaking the bank stabilisation in two stages:</p> <p>Stage 1 – this will be the construction of approximately 30 metres of the total length of the stabilisation activity being applied for.</p> <p>Stage 2 – this will comprise of the remaining +/- 25 metres of the stabilisation activities.</p>

	7; 8; 11; 13; 20; 21; and 24.	
Note: <ul style="list-style-type: none"> The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority. 		

List the applicable waste management listed activities in terms of the NEM:WA

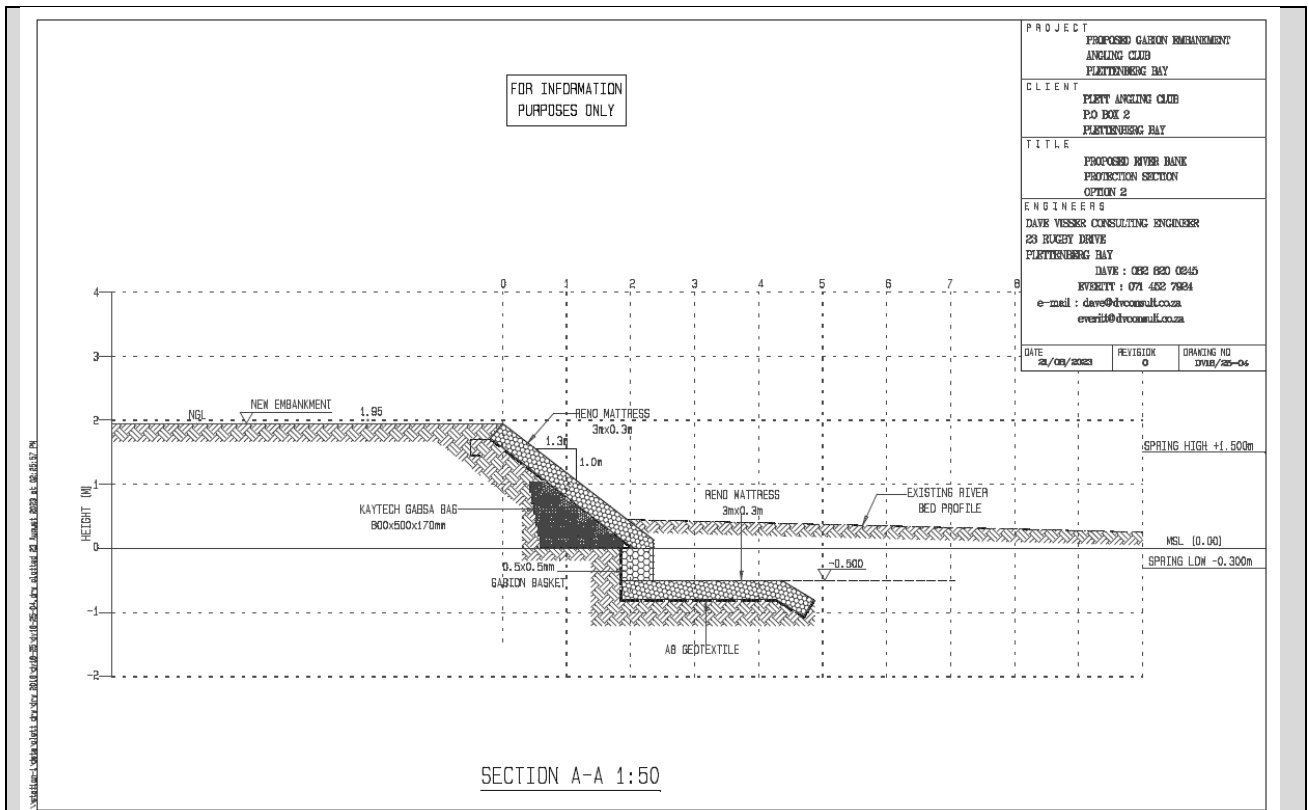
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Category A	Describe the portion of the proposed development to which the applicable listed activity relates.

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant Listed Activity(ies)	Describe the portion of the proposed development to which the applicable listed activity relates.

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
<p>The stabilization activities will occur along a section of the embankment of the Keurbooms River (approximately 55 metres), south of the Plettenberg Bay Angling Club, Western Cape – GPS Coordinates: 34° 0'17.20"S 23°23'55.62"E.</p> <p>Option 2 is most recommended by the aquatic specialist as it is consistent with other bank stabilization structures that have been implemented at other locations in the estuary and entails reprofiling the bank (1.3 m horizontal to 1 m vertical) using sandbags (800 mm x 500 mm x 170 mm), and covering these with a 0.3 m x 3.0 m reno mattress (Estuarine and Plant Species – Specialist Assessment, Appendix G)</p>	



2. Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The stabilization of the embankment will be in line with the management and protection of property from future erosion as a result of storm surges as a result of climate change.

3. Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.

N/A

4. Explain how the proposed development will be in line with the following?

4.1 The Provincial Spatial Development Framework.

The protection of oceans and coasts is highlighted as a policy within the WCPSDF 2014. It is known "as the coastal zone is a desirable location for human settlement, diverse economic activities, harvesting of natural resources, and recreation, it is subject to increasing pressures." For this reason and more it is so important to manage the coast. The Keurbooms-Bitou Estuary Management Plan is an important management document which draws off of the policies of WCPSDF.

4.2 The Integrated Development Plan of the local municipality.

The Integrated Development Plan of Bitou municipality for 2022-2025 aims to align the Sustainable Development Goals, National development plan and Provincial priority area by protecting and enhancing environmental assets and natural resources.

The resilience of the region is closely tied to its overall risk profile, and highlights the need for disaster risk management, natural resource management And climate change adaptation. There is an undeniable pressure between infrastructure development and the environmental asset protection, as well as the impact of such development on the municipal financial sustainability and its ultimate resilience.

Municipality is required to consider the area's overall economic and social development and must establish a framework for how land is used, what infrastructure and services are required, and how to protect the environment.

This proposed stabilization of the river embankment to stop and reduce erosion, is in line with all of the above as it will assist with protecting the existing infrastructure on the property adjacent to river, it will reduce further degrading of embankment , and protect it against high tides and storm surges, without extreme impact on the river itself, as well as promoting natural function.

4.3. The Spatial Development Framework of the local municipality.

The SDF of the Bitou Local Municipality will not be altered by the proposed activity.	
4.4.	The Environmental Management Framework applicable to the area.
The Garden Route EMF 2010 states that structures within the littoral zone will be subject to a detailed impact assessment that must take the continuous erosion and accretion of the coast, as well as wave energy dissipation into consideration. All aquatic systems are considered important and to have value. Rivers are to be kept ecologically sound and visibly healthy. The GREMF addresses threats of bank stabilization to estuary conservation and provides guidelines to dealing with estuary conservation.	
5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
<p>Comments from DEA&DP on NOI (8 November 2023):</p> <ul style="list-style-type: none"> - The STR specifies a VERY HIGH sensitivity rating for the Aquatic Biodiversity Theme. According to the SSVR an Aquatic Impact Assessment will be undertaken. In light of the sensitivity rating identified by the STR, the specialist assessment must adhere to the requirements for the Aquatic Biodiversity Specialist Assessment as stipulated in the protocol. - The STR indicates that the sensitivity in terms of the Terrestrial Biodiversity Theme is VERY HIGH. According to the SSVR a specialist has been appointed to conduct a site visit and confirm the sensitivity in the form of a report which meets the requirements of the gazetted protocol. In light of above, specialist assessment must comply with the content requirements of the protocol based on the findings of the specialist i.e. a Terrestrial Biodiversity Compliance Statement for LOW sensitivity or Terrestrial Biodiversity Specialist Assessment for VERY HIGH sensitivity. 	
Both biodiversity assessments were conducted Confluent, SACNASP registered, who followed protocol as requested.	
As per the Estuarine Assessment Report September 2023 compiled by water and biodiversity specialist, Dr. James Dabrowski of Confluent Environmental, <i>"the structure is intended to rehabilitate an eroded section of the channel and will result in negligible to minor impacts to the estuary. The proposal is therefore aligned to CBA management objectives."</i>	
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
<p>The site is identified as 'Least Threatened' as per the Ecosystem Threat Status 2016 results, and as 'Endangered' by the SANBI Red List of Ecosystems. However, the site has been severely eroded and as per the Estuarine Assessment Report September 2023 compiled by Dr. James Dabrowski of Confluent Environmental, the water and biodiversity specialist <i>"the entire bank is devoid of any indigenous riparian vegetation and is covered by kikuyu lawn (Cenchrus clandestinus)."</i></p> <p>As per the Estuarine Assessment Report September 2023 compiled by Dr. James Dabrowski of Confluent Environmental, <i>"the structure is intended to rehabilitate an eroded section of the channel and will result in negligible to minor impacts to the estuary. The proposal is therefore aligned to CBA management objectives."</i></p> <p>The Western Cape Biodiversity Spatial plan(2017) emphasise the need to protect infrastructure from coastal processes by allowing for: absorption of the impacts of severe storm sequences, shoreline movement, global sea level rise and increased storm surges, the fluctuation of natural coastal processes, and any combination of these factors. This proposed stabilization will assist with absorption of impacts mentioned above and will not interfere with seasonal migration of animals, hydrological regimes and will not cause habitat transformation, degradation and fragmentation which occur primarily through changes in land use which either result in the outright loss of natural ecosystems, or pressures which impact negatively on habitat condition.</p> <p>In the Estuarine and Plant Species – Specialist Assessment, April 2024, the water and biodiversity specialist stated that the proposed activity will not have an irreversible effect on <i>Eelgrass (Zostera capensis)</i>, which is important given the Red List status of this plant and is present on site. This species is represented elsewhere in the estuary (therefore it has a low irreplaceability rating at the site location). Also, The Knysna seahorse (<i>Hippocampus capensis</i>) occurs in the Keurbooms estuaries and recent studies indicate that the species also use artificial habitats (including reno</p>	

mattress) extensively and that constructed artificial habitats such as marinas and boat harbours using reno mattresses within the estuaries have increased population numbers and increased the range of the species. The <i>Hippocampus capensis</i> can also tolerate a wide range of environmental conditions.	
7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
As stated in the Integrated Coastal Management Act (Act No. 24 of 2008) (hereafter the ICM Act), the coastal protection zone is established to manage use of land that is adjacent to coastal public property and aims: <ul style="list-style-type: none"> - To protect the ecological integrity, natural character, and the economic, social and aesthetic value of the neighbouring coastal public property; - To avoid increasing the effect or severity of natural hazards; - To protect people, property and economic activities from the risks and threats which may arise from dynamic coastal processes such as wave and wind erosion, coastal storm surges, flooding and sea-level rise; - To maintain the natural functioning of the littoral active zone <p>This development is in line with the purpose of the protection zone as it will protect people, and property from the increased effects of natural hazards, like coastal storm surges , flooding and sea-level rise. The impact of the construction according to the water and biodiversity specialist (Estuarine and Plant Species – Specialist Assessment, April 2024), will be minimal and this development will most probably improve the natural functions of the river, as erosion is reduced.</p>	
8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
Screening report date 7 September 2023 has not changed. See Appendix I	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
N/A	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
The stabilization will better protect the existing property from storm surges, and extreme high tides in the future due to climate change.	
11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).
N/A	
12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.
See Appendix K	

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

Regulation 41 of the Environmental Impact Assessment, 2014 ("EIA Regulations, 2014") is complied with simultaneously during the application phase. (Acknowledgement and Comment DEA&DP, 8 November 2023)

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

N/A – this is a Pre-application PPP.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

Pre-application. Below are State Departments and Organs of State that will be consulted -

STATE DEPARTMENTS			
Name	Contact Person	Contact Details	Email
Dept of Environmental Affairs & Development Planning (DEA&DP)	Steve Kleinhans	Private Bag x6509, George, 6530 044 805 8602 (T) 044 805 8650 (F)	Steve.Kleinhans@westerncape.gov.za DEADPEIAAdmin.George@westerncape.gov.za
Heritage Western Cape	Ayanda Mdludlu	Private Bag x9067, Cape Town, 8000 021-483 9729 (T) 021-483 9845 (F)	ayanda.mdludlu@westerncape.gov.za
Department of Water & Sanitation	John Roberts	Private Bag x16, Sanlamhof, 7532 021 941 6179 (T) 021 941 6082 (F)	RobertsJ@dwa.gov.za
Dept of Agriculture Land Use Management	Cor van der Walt Brandon Layman	Private Bag x1, Elsenburg, 7601 021 808 5099 (T) 021 808 5092 (F)	Cor.VanderWalt@westerncape.gov.za Brandon.Layman@westerncape.gov.za

Biodiversity & Coastal Management Unit, DEA&DP	leptieshaam Bekko Mercia J Liddle Hilda Hayward Ryan Apolles	Private Bag x9086, Cape Town. 8000 021 483 3370 (T) 078 744 9205 (Cell) (leptieshaam Bekko)	leptieshaam.Bekko@westerncape.gov.za Mercia.Liddle@westerncape.gov.za Hilda.Hayward@westerncape.gov.za Ryan.Apolles@westerncape.gov.za
Department of Forestry, Fisheries & the Environment (DFFE)	Melanie Koen Innocent Mapokgole	Private Bag x12, Knysna, 6570 044 302 6902 (T) 044 382 5461 (F)	Mkoen@dffe.gov.za imapokgole@dffe.gov.za
Department of Environmental Affairs: Oceans and Coasts	Tabisile Mhlana	Private Bag X4390, Cape Town, 8000 021 493 7052 (T)	OCEIA@dffe.gov.za tmhlana@dffe.gov.za
ORGANS OF STATE			
Name	Contact Person	Contact Details	Email
Breede-Olifants Catchment Management Agency (BOCMA)	Andiswa Sam R Mphahlele	PO Box 1205, George, 6530 023 346 8000 (T) 023 347 2012 (F)	asam@bocma.co.za rmphahlele@bocma.co.za
Cape Nature Land Use Advice	Megan Simons	Private Bag x6546, George, 6530 044 802 5328 (T) 044 802 5313 (F)	msimons@capenature.co.za

SANPARKS	Vanessa Weyer	PO Box 3542, Knysna, 6570 044 302 5613 (T) 074 707 8199 (F)	Vanessa.weyer@sanparks.org
South African Civil Aviation Authority	Canny Mothapo	083 461 6292	environment@caa.co.za
MUNICIPALITIES			
Name	Contact Person	Contact Details	Email
Bitou Municipality	Chris Schliemann Anje Minne	PO Box 255, Plettenberg Bay, 6600 044 501 3324 (T) 086 659 7954 (F) 083 628 4001	cschliemann@plett.gov.za aminne@plett.gov.za
Bitou Municipality	Municipal Manager Mbulelo Memaini	Private Bag X1002, Plettenberg Bay, 6600 044 501 3000 (T) 067 495 845 (M)	mmaini@plett.gov.za
Bitou Municipality	Ward 2 Councillor David Swart	Private Bag x 1002 Plettenberg Bay, 6600 072 769 2342	DSwart@plett.gov.za
Garden Route District Municipality	Mr. Lusanda Menze	P.O. Box 12, George, 6530 044-8031300 (T) 0865556303 (F)	info@gardenroute.gov.za
Garden Route District Municipality	Dr. Nina Viljoen	P.O. Box 12, George, 6530 044-8031300 (T) 0865556303 (F)	nina@gardenroute.gov.za

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

This a pre-application. State Departments and Organs of States required will be included in the public participation process.

5. if any of the State Departments and Organs of State did not respond, indicate which.

Pre-application. N/A

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

This a pre-application. Issues raised by I&APs will be addressed in the draft phase.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that "Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
 - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
 - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
 - if a facsimile was sent, a copy of the facsimile Report;
 - if an electronic mail was sent, a copy of the electronic mail sent; and
 - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	YES	NO
1.2.	Provide the name and or company who conducted the specialist study.		
N/A			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
N/A			
1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.		
N/A			

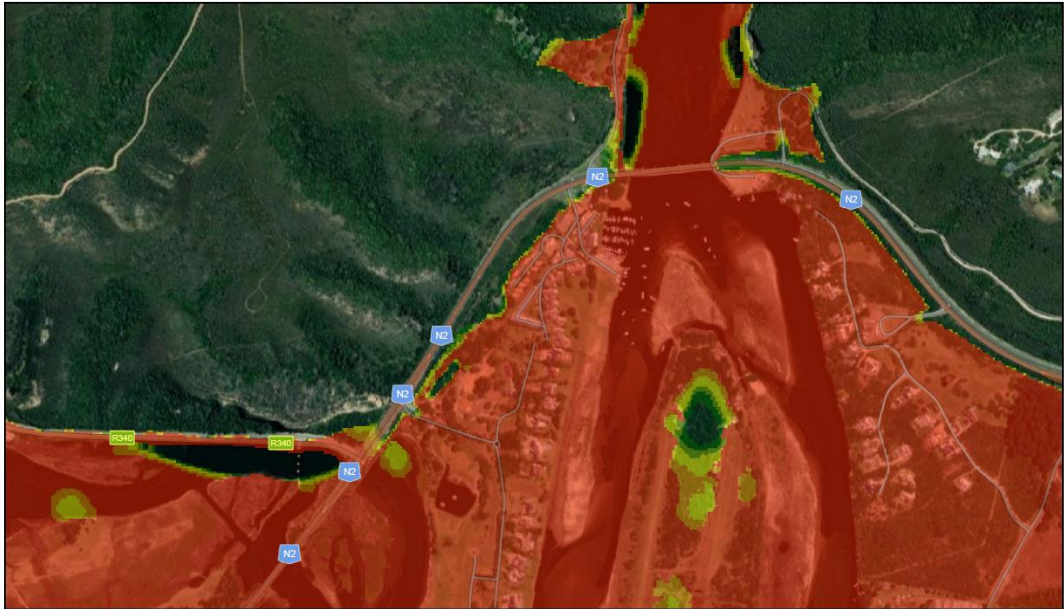
2. Surface water

2.1.	Was a specialist study conducted? See Appendix G	YES	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Confluent Environmental (Pty) Ltd			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
<p>The proposed construction will take place directly adjacent to and within the Keurbooms River. According to the water and biodiversity specialist in the Estuarine and Plant species Specialist Assessment (2024), the surrounding land and catchment area needs to be managed in a way that maintains the good ecological condition of the river reach, which in this case, is the Keurbooms River. It is therefore important that development does not result in any deterioration of the river or its catchment area. The proposed activities will not result in modifications to surface flows into the estuary and will not result in the construction of infrastructure across the estuary. The development will therefore in no way impact on the base flows or hydrological regime (i.e. timing and magnitude of surface flows) of the estuary or cause fragmentation or loss of ecological connectivity. Furthermore, the activities are of such a scale that will in no way impact on the frequency of estuary mouth closure.</p>			

3. Coastal Environment

3.1.	Was a specialist study conducted? See Appendix G	YES	NO
3.2.	Provide the name and/or company who conducted the specialist study.		
Confluent Environmental (Pty) Ltd			
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
<p><i>According to Section 63 of ICMA, The competent authority must ensure that the terms and conditions of any environmental authorisation are consistent with the objectives of any coastal management programme in the area.</i></p> <p><i>This development is in line with the coastal management programme as was discussed above in Section E, No. 7</i></p>			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
<p>A specific management objective highlighted in the Keurbooms EMP (2017) that is relevant to the proposed development structures is that privately owned and developed land should be managed in such a way as to prevent further bank erosion during flood events. This proposed stabilization will be in line with preventing further erosion of the embankment.</p> <p>Also, bank stabilization to repair existing damage flooding from the extreme storm events and to minimize impacts from future events, are recommended in the Keurbooms-Bitou Estuarine Management Plan, 2017.</p>			
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		

Coastal Flood Risk



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Coastal Flood Risk

very low	low	moderate	high	very high
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1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri Community Maps Contributors, Esri South Africa, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS, Google Municipality, Maxar

Coastal Long Term Erosion Risk



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Coastal Long term Erosion Risk

very low	low	moderate	high	very high
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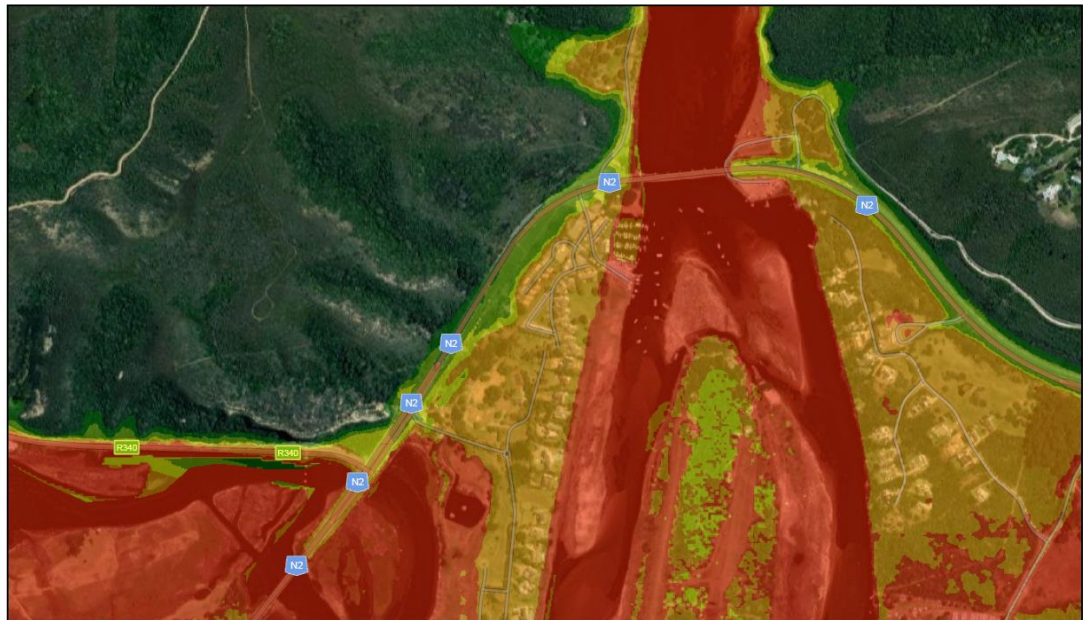
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0 0.1 0.2 0.4 km

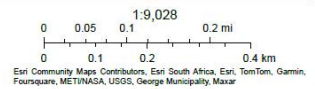
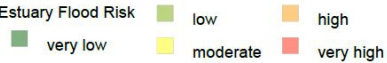
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Estuary Flood Risk

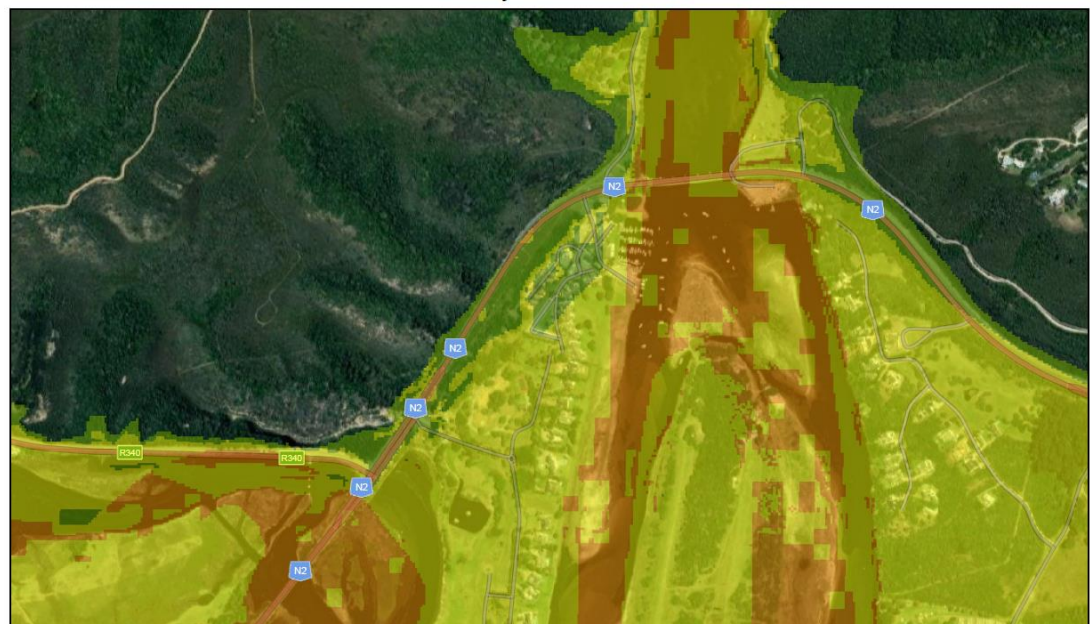


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Estuary Flood Risk

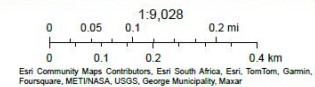


Estuary Erosion Risk



6/7/2024, 1:56:14 PM

Estuary Erosion Risk



In terms of the Integrated Coastal Management Act, the **coastal protection zone's** purpose is:

- To protect the ecological integrity, natural character, and the economic, social and aesthetic value of the neighbouring coastal public property;
- To avoid increasing the effect or severity of natural hazards
- To protect people, property and economic activities from the risks and threats which may arise from dynamic coastal processes such as wave and wind erosion, coastal storm surges, flooding and sea-level rise.
- To maintain the natural functioning of the **littoral active zone**.
- To maintain the productivity of the coastal zone; and
- To allow authorities to perform rescue and clean-up operations.

	<p>Large sections of the Keurbooms Estuarine Functional zone have been developed into residential and agricultural properties. The proposed development will help protect these properties against destabilizing of the embankment during storm surges and high tides.</p> <p>The proposed development will promote the natural function of the bank as further degradation will be prevented.</p>
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4. Biodiversity

4.1.	Were specialist studies conducted? See Appendix G	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
Confluent Environmental (Pty) Ltd			
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		
<p>FEPA (Freshwater Ecosystem Priority Areas), Outeniqua strategic water source areas (SWSA), NBA 2018 Vegetation Type was used in the specialist study to determine the impact of the proposed development.</p> <p>The water specialist confirm that the project areas of influence (PAOI) is limited to an approximately 55 m length of the eroded bank of the estuary (where the bank stabilization structure will be constructed) and a distance of approximately 10 m inland from the banks and 5 m into the inter-tidal zone of the estuary (where habitat may be disturbed due to the construction activities and vehicles). The total surface area of the footprint of the PAOI is less than 1 000 m². See figure 9 in Estuarine and Plant Species Special Assessment(April, 2024) Appendix G</p> <p>The Terrestrial Biodiversity specialist states in the Terrestrial Biodiversity Assessment (April 2024)(Appendix G), terrestrial vegetation has been completely transformed and no fynbos representing the Garden Route Shale Fynbos vegetation type persists here, nor does any other naturally occurring vegetation type and as a result the proposed activity will not affect terrestrial vegetation that is integral to maintaining ecological function and integrity of the FEPA sub-catchment.</p>			
4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.		
<p>The Western Cape Biodiversity Spatial plan (2017) emphasise the need to protect infrastructure from coastal processes by allowing for:</p> <p>absorption of the impacts of severe storm sequences, shoreline movement, global sea level rise and increased storm surges, the fluctuation of natural coastal processes, and any combination of these factors. This proposed stabilization will assist with absorption of impacts mentioned above and will not interfere with seasonal migration of animals, hydrological regimes and will not cause habitat transformation, degradation and fragmentation which occur primarily through changes in land use which either result in the outright loss of natural ecosystems, or pressures which impact negatively on habitat condition.</p> <p>The water and biodiversity specialist states in the Estuarine and plant species assessment (April, 2024) that the proposed activity will not have an irreversible effect on Eelgrass (<i>Zostera capensis</i>), which is important given the Red List status of this plant and is present on site. This species is represented elsewhere in the estuary (therefore it has a low irreplaceability rating at the site location). Also, The Knysna seahorse (<i>Hippocampus capensis</i>) occurs in the Keurbooms estuaries and recent studies indicate that the species also use artificial habitats (including reno mattress) extensively and that constructed artificial habitats such as marinas and boat harbours using reno mattresses within the estuaries have increased population numbers and increased the range of the species. The <i>Hippocampus capensis</i> can also tolerate a wide range of environmental conditions. See Appendix G</p> <p>In the Terrestrial biodiversity report (April 2024)(Appendix G), the biodiversity specialist confirms the sensitivity of the terrestrial biodiversity theme for the site is confirmed as Low for the following reasons:</p>			

Terrestrial vegetation has been completely transformed and no fynbos representing the Garden Route Shale Fynbos vegetation type persists here, nor does any other naturally occurring vegetation type.

The proposed activity will not affect terrestrial vegetation that is integral to maintaining ecological function and integrity of the FEPA sub-catchment.

- The project area is located in the outer-most extent of the Outeniqua SWSA and no modifications to natural vegetation will occur that will affect the ability of the area to continue to produce high volumes of good quality water.
- The streambank stabilization is unlikely to have any detrimental consequences or effects for the Garden Route National Park buffer within which it falls.
- The site is included in the National Protected Area Expansion Strategy (NPAES), and this is likely because the site is part of a critical biodiversity area (CBA 1: Estuaries) and is located just south of the Keurbooms River Nature Reserve. However, the proposed stabilization of the banks does not compromise the NPAES strategy, nor does it negatively impact the nearby existing protected areas. In fact, the stabilization of the banks will prevent the degradation of the mapped CBA area and will also promote the natural function of the bank as further degradation will be prevented.

4.5. Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.

Discussed above in point 4.4

4.6. If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

The site is included in the National Protected Area Expansion Strategy (NPAES), and this is likely because the site is part of a critical biodiversity area (CBA 1: Estuaries) and is located just south of the Keurbooms River Nature Reserve. However, the proposed stabilization of the banks does not compromise the NPAES strategy, nor does it negatively impact the nearby existing protected areas. In fact, the stabilization of the banks will prevent the degradation of the mapped CBA area and will also promote the natural function of the bank as further degradation will be prevented as determined by water specialist in the Estuarine and Plant species assessment (April, 2024). See Appendix G

4.7. Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

Discussed above in point 4.4.

In addition, I would like to add the conclusion of the Terrestrial Animal Species (April, 2024) report which states that no SCCs were observed during the site visit and based on the available habitat, no SCC are expected to occur in the PAOI or expected to be affected by construction and operational phase activities conducted in the PAOI.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

According to the Terrestrial biodiversity study, April 2024, the site is confirmed to occur within National Priority Areas for Protected Areas Expansion, SAN Parks Buffer Areas, Strategic Water Source Areas (SWSAs) (terrestrial), Freshwater Ecosystem Priority Area (FEPA) (terrestrial) and Red Listed Ecosystems, although the overlap with the Garden Route Shale Fynbos vegetation type and the Outeniqua SWSA is marginal.

Soil Types according to Cape Farm Mapper:

Symbol: EA

Class: Soils with limited pedological development

Description: Soils with minimal development, usually shallow on hard or weathering rock, with or without intermittent diverse soils. Lime rare or absent in the landscape

Depth: >= 450 mm and < 750 mm

Clay: < 15%

Geology Classification (1:1M) according to Cape Farm Mapper:

Code: Dc
Lithostratigraphic: CERES SUBGROUP
Lithology: Mudrock, shale, siltstone, feldspathic arenite and wacke
UQ Geology: 872
UQ SACS NO: 120

Mean Annual Run-off according to Cape Farm Mapper:

mm/year 25.99
:

SWSA Surface Water according to Cape Farm Mapper:

Name: Outeniqua
Priority: National
MAP Max (mm): 1283.56
MAP Min (mm): 492.61
MAP Mean (mm): 813.35

Catchments: Quaternary according to Cape Farm Mapper:

Catchment ID: K60E
Area (Ha): 11759.4

Catchments: Tertiary according to Cape Farm Mapper:

Catchment ID: K60
Area (Ha): 126460.56

Catchments: Secondary according to Cape Farm Mapper:

Catchment ID: K6
Area (Ha): 126460.56

Catchments: Primary according to Cape Farm Mapper:

Catchment ID: K
Area (Ha): 713993.69

As stated in the Estuarine and Plant Species study, while a temporary disturbance to biota will occur, the scale of this disturbance is negligible and is expected to recover after a relatively short time-period. The structure will not affect RQOs for water quality, quantity, habitat and biota.

6. Heritage Resources

6.1.	Was a specialist study conducted? NID was submitted. Response to NID available as Appendix E1	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
N/A

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
The area is situated adjacent to the Plettenberg Bay Angling Club, where diverse economic activities, and recreation takes place. Land use of surrounding area is a mix agriculture and tourism.	
8.2.	Explain the socio-economic value/contribution of the proposed development.
Protection and management of the coastline, in this case the Keurbooms river, will ensure current and future economic activities, in form of tourism, recreation and agriculture downstream.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
N/A	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
Noise can be expected during construction phase but will not be a problem during operational phase. No affects are expected on human health. No affect expected visually, as plants expected to re-establish itself on constructed areas.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
Only one site and property as preference. Eroded embankment that needs to be stabilized.	
Provide a description of any other property and site alternatives investigated.	
N/A	
Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.	
Erosion is taking place on this particular embankment. Stabilization of this specific embankment will reduce erosion and promote natural function of river.	
Provide a full description of the process followed to reach the preferred alternative within the site.	
Erosion is taking place on this particular embankment. Stabilization of this specific embankment will reduce erosion and promote natural function of river.	
Provide a detailed motivation if no property and site alternatives were considered.	
Erosion is taking place on this particular embankment. Stabilization of this specific embankment will reduce erosion and promote natural function of river.	
List the positive and negative impacts that the property and site alternatives will have on the environment.	
N/A	
1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred activity alternative.	
As stated above.	
Provide a description of any other activity alternatives investigated.	
N/A	
Provide a motivation for the preferred activity alternative.	
As stated above.	
Provide a detailed motivation if no activity alternatives exist.	
There is only one activity being assessed. No other activity alternatives can exist in this case.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
N/A	

1.3.	Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts
------	--

Provide a description of the preferred design or layout alternative.

The stabilization activities will occur along a section of the embankment of the Keurbooms River (approximately 55 metres), south of the Plettenberg Bay Angling Club, Western Cape – GPS Coordinates: 34° 0'17.20"S 23°23'55.62"E.

Option 2 is most recommended by the specialist as it is consistent with other bank stabilization structures that have been implemented at other locations in the estuary and entails reprofiling the bank (1.3 m horizontal to 1 m vertical) using sandbags (800 mm x 500 mm x 170 mm).and covering these with a 0.3 m x 3.0 m reno mattress (Estuarine and Plant Species – Specialist Assessment(April, 2024) Appendix) Please see Figure 1 below.

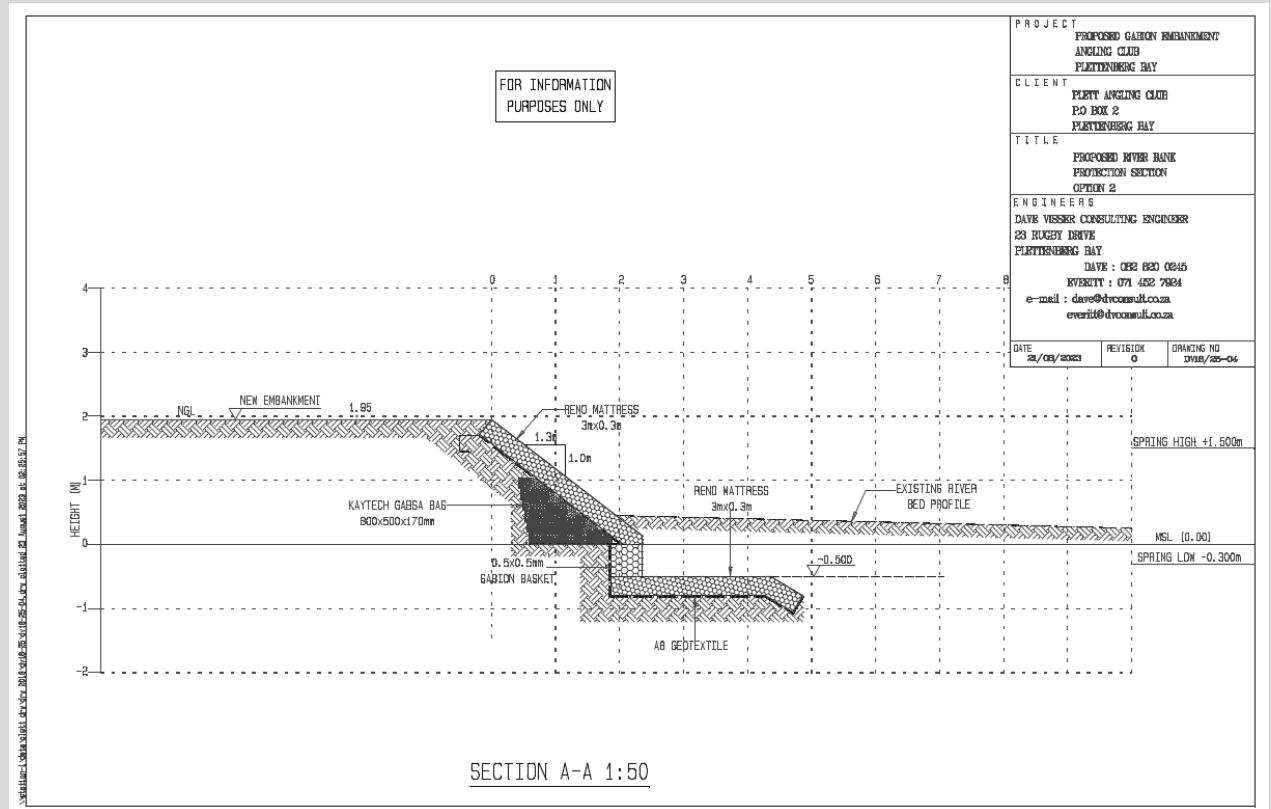


Figure 1 : Option 2 – preferred alternative

Provide a description of any other design or layout alternatives investigated.

All three options require the construction of a 3 m reno mattress that will be placed approximately 1 m below the existing bed profile of the estuary and will extend approximately 3 m into the estuary. This will prevent undermining the embankment.

Alternative 1: Option 1: Construction of stepped gabions over a geotextile layer (see figure 2 below)

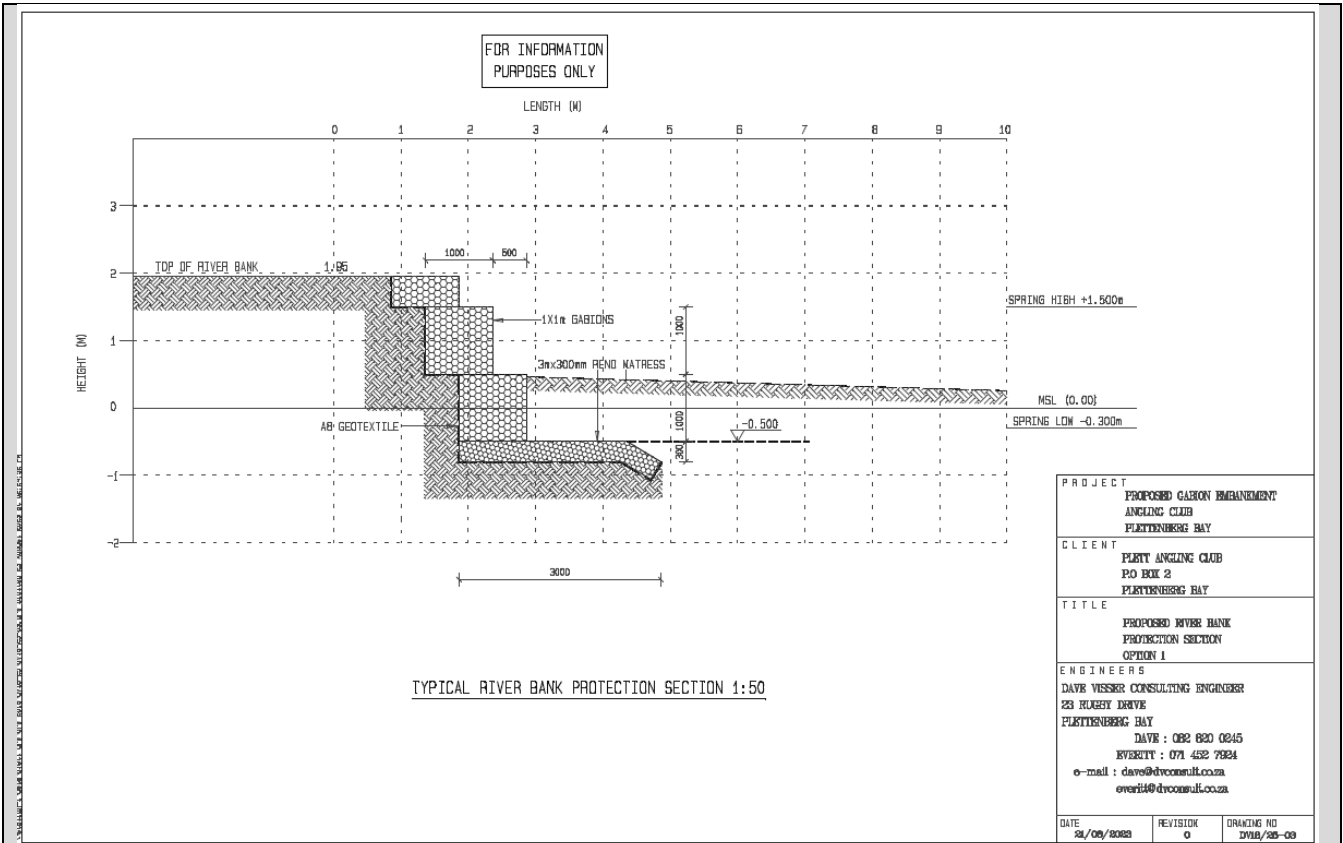


Figure 2 : Option 1

Alternative 2: Option 3: Reprofilling the bank (1.3 m horizontal to 1 m vertical) using larger, heavy duty geotextile sandbags (2 m x 1.9 m x 0.65m) which will remain uncovered (see figure 3 below.)

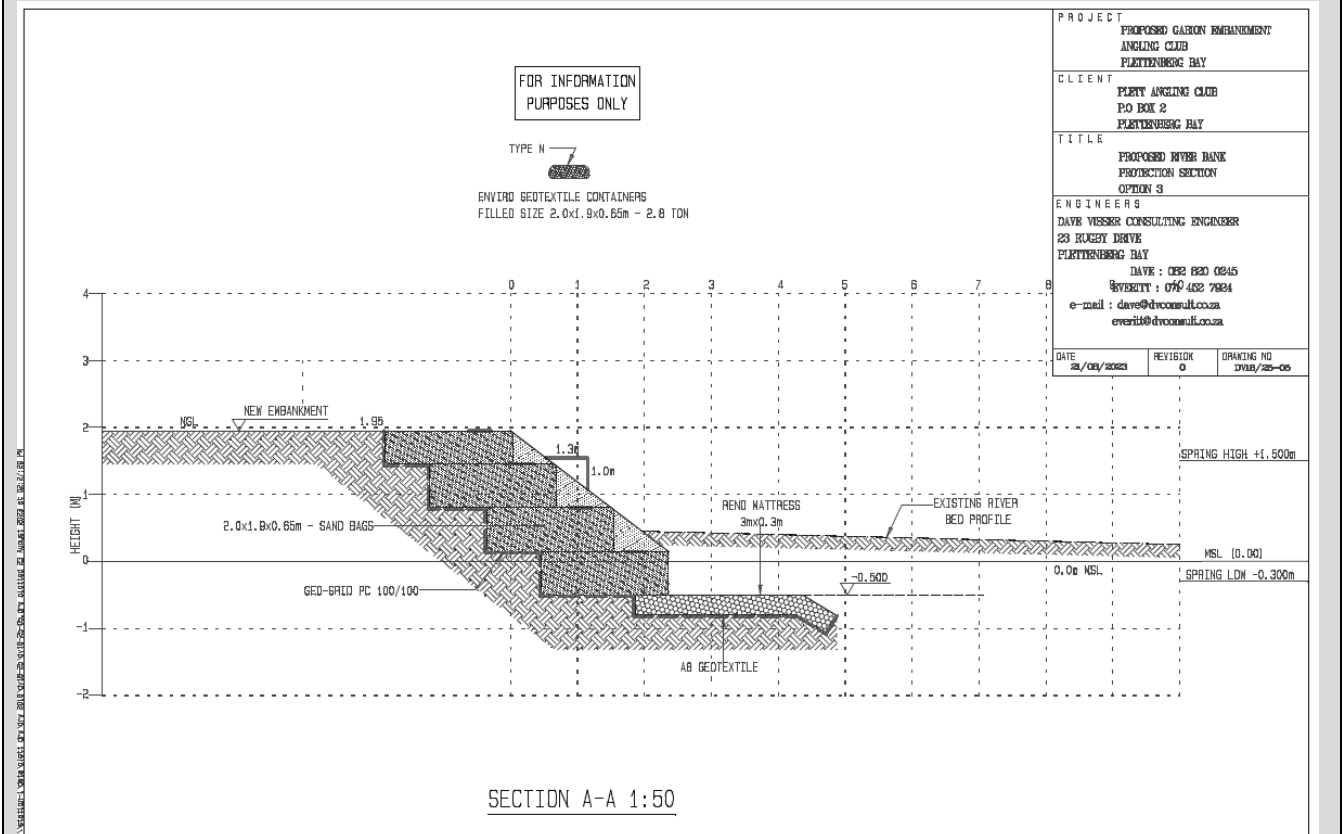


Figure 3 : Option 3

Provide a motivation for the preferred design or layout alternative.

The Estuarine and Plants species Assessment (April 2024), notes from a historical perspective, similar bank stabilisation structures have been implemented at other locations along the estuary bank. This author has had experience with the San Marino Estate and the Silverstreams River Estate, both of which occur along the eastern bank of the estuary. In both these cases, a sloped reno mattress stabilisation structure, similar to Option 2 was implemented - in combination with the construction of floating jetties. In both cases, the reno mattress replaced a pre-existing vertical wooden bank stabilisation structure. The Silverstreams River Estate bank stabilisation commenced in the beginning of 2019 and was completed in the same year. The bank stabilisation (and jetty construction) has not had a serious impact on *Z. capensis* beds which are still present post construction.

The reno mattress will extend into the bed of the estuary and construction will therefore result in initial disturbance of inter- and subtidal habitat, including loss of *Z. capensis*. Based on experience from similar structures, the bed is however expected to re-establish over most of the reno mattress over time and it is likely that *Z. capensis* will also re-establish.

The sloping profile of Option 2 and the porous nature of the reno mattress revetment will improve the ability of the bank to absorb and dissipate the energy associated with large flooding events in comparison to the vertical profile of Option 1 and the less porous Option 3. Furthermore, this construction provides a longer-term solution to stabilizing the bank against flooding events and persistent tidal flow, due to a reduced risk of structural failure.

All proposed options are likely to be effective in stabilizing the estuary bank. There is a higher risk of failure for Option 3 (i.e. geotextile bags may become weathered or physically punctured/torn over time) resulting in a slightly lower positive impact rating.

Impacts for all three options are minor although Option 2 has slightly lower impacts due to its more natural profile (compared to Option 1) and because spaces in between the rocks packed in the reno mattress offers better potential habitat options for macroinvertebrates (compared to Option 3).

Option 2 has the least impact on estuarine fauna.

Of the three proposed alternatives, Option 2 is most recommended by the water and biodiversity specialist as it is consistent with other bank stabilization structures that have been implemented at other locations in the estuary.

Provide a detailed motivation if no design or layout alternatives exist.

N/A

List the positive and negative impacts that the design alternatives will have on the environment.

Positive:

- Strong stabilization of embankment to prevent future erosion and promote function of river, with minimal impact which will be mitigated during construction phase, to allow for reestablishment of vegetation loss.
- The Knysna seahorse (*Hippocampus capensis*) occurs in the Keurbooms estuaries and recent studies indicate that the species also use artificial habitats (including reno mattress) extensively and that constructed artificial habitats such as marinas and boat harbours using reno mattresses within the estuaries have increased population numbers and increased the range of the species. The *Hippocampus capensis* can also tolerate a wide range of environmental conditions.

Negative:

Loss of vegetation. However, the specialist states in the estuarine and plant species reports that the proposed activity will not have an irreversible effect on Eelgrass (*Zostera capensis*), which is important given the Red List status of this plant and is present on site. This species is represented elsewhere in the estuary (therefore it has a low irreplaceability rating at the site location).

1.4.

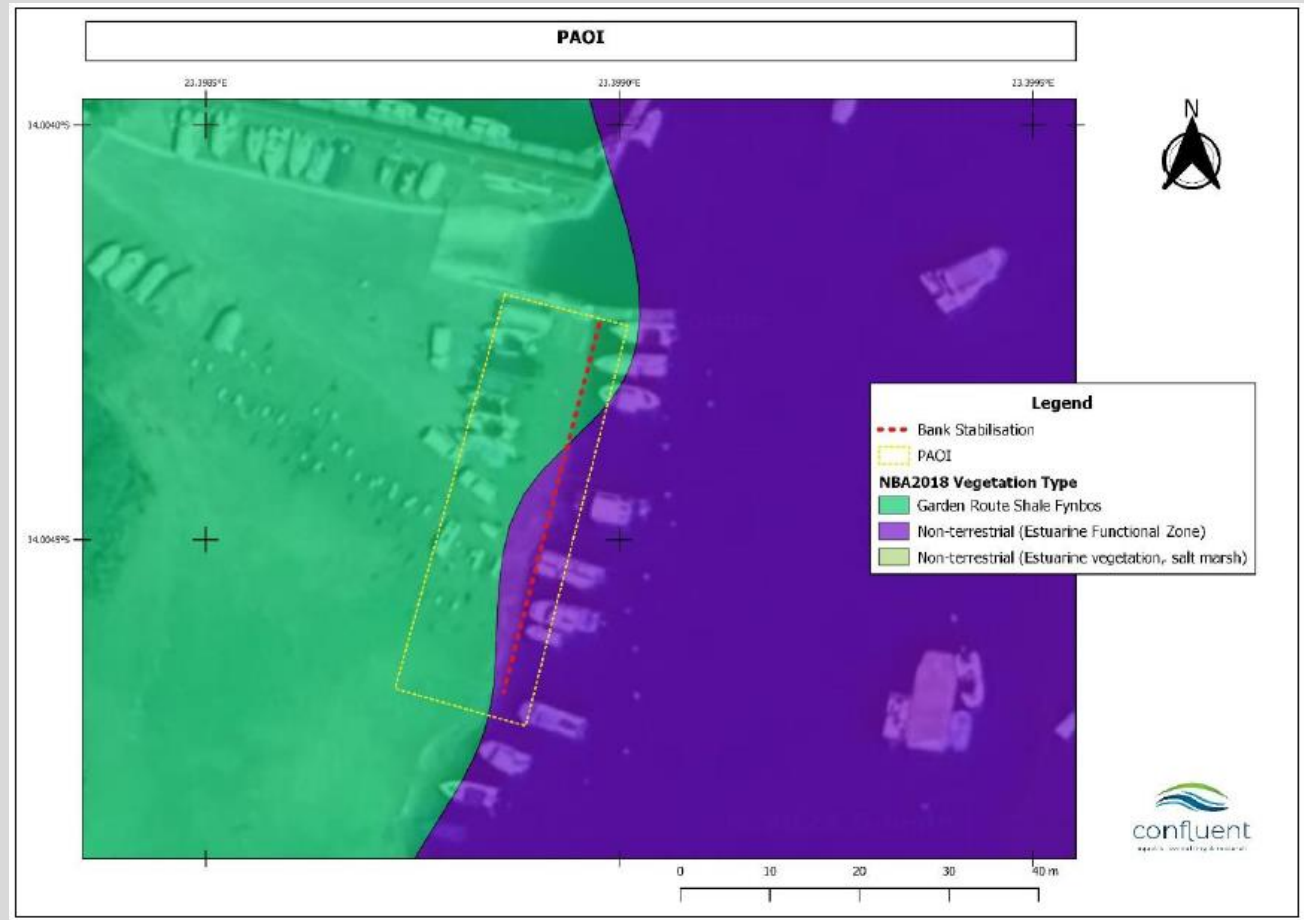
Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred technology alternative:	
N/A	
Provide a description of any other technology alternatives investigated.	
N/A	
Provide a motivation for the preferred technology alternative.	
N/A	
Provide a detailed motivation if no alternatives exist.	
N/A	
List the positive and negative impacts that the technology alternatives will have on the environment.	
N/A	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
N/A	
Provide a description of any other operational alternatives investigated.	
N/A	
Provide a motivation for the preferred operational alternative.	
N/A	
Provide a detailed motivation if no alternatives exist.	
N/A	
List the positive and negative impacts that the operational alternatives will have on the environment.	
N/A	
1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
<p>Not stabilizing the embankment will inevitably lead to more erosion, due to more frequent storm surges and high tides, affecting the natural functions of the river and possible damage of property.</p> <p>According to the specialist as stated in Estuarine and Plant assessment (April 2024), impacts associated with the No-Go option are minor due to continued active erosion of the bank which can affect the quality of supra- and intertidal habitat.</p> <p>Active erosion of the bank leads to a minor sedimentation impact under the No-Go option.</p> <p>There have been a number of incidents of serious bank erosion related to flooding events in the past and the risk of bank erosion associated with the No-Go option therefore represents a similar impact.</p> <p>Impacts for the No-Go option is also minor given that ongoing erosion of the bank will result in sub-optimal habitat.</p>	
1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
N/A	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
<p>There is just one location which is the embankment area that has been eroded by storm surges and high tides.</p> <p>Water and biodiversity specialist has stated the reasons Option 2 is the preferred in the Estuarine and Plant Assessment (April 2024) as it is a similar structure used before which have proved successful. Option 2 allows for likely re-establishment of intertidal and subtidal habitat and <i>Z. capensis</i> initially disturbed during construction phase. The sloping profile of Option 2 and the porous nature of the reno mattress revetment will improve the ability of the bank to absorb and dissipate the energy associated with large flooding events Furthermore, this construction provides a longer-term solution to stabilizing the bank against flooding events and persistent tidal flow, due to a reduced risk of structural failure. Option 2 has slightly lower impacts due to its more natural profile and has least impact on estuarine fauna.</p> <p>Of the three proposed alternatives, Option 2 is most recommended as it is consistent with other bank stabilization structures that have been implemented at other locations in the estuary.</p>	

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).

Only area as mapped out in Figure 9 in Appendix G will be disturbed. See below. Any area beyond that will be marked as no-go areas during construction phase. This will be ensured by putting up droppers with construction netting keeping workers out of area beyond.



3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

Criteria are ascribed for each predicted impact. These include the intensity (size or degree scale), which also includes the type of impact, being either a positive or negative impact; the duration (temporal scale); and the extent (spatial scale), as well as the probability (likelihood). The methodology is quantitative, whereby professional judgement is used to identify a rating for each criterion based on a seven-point scale (Table 1) and the significance is auto-generated using a spreadsheet through application of the calculations.

For each predicted impact, certain criteria are applied to establish the likely significance of the impact, firstly in the case of no mitigation being applied and then with the most effective mitigation measure(s) in place.

These criteria include the intensity (size or degree scale), which also includes the nature of impact, being either a positive or negative impact; the duration (temporal scale); and the extent (spatial scale). These numerical ratings are used in an equation whereby the consequence of the impact can be calculated. Consequence is calculated as follows:

Consequence = type x (intensity + duration + extent)

To calculate the significance of an impact, the probability (or likelihood) of that impact occurring is applied to the consequence.

Significance = consequence x probability

Depending on the numerical result, the impact would fall into a significance category as negligible, minor, moderate or major, and the type would be either positive or negative.

Table 1: Assessment criteria for the evaluation of impacts

Criteria	Numeric Rating	Category	Description
Duration	1	Immediate	Impact will self-remedy immediately
	2	Brief	Impact will not last longer than 1 year
	3	Short term	Impact will last between 1 and 5 years
	4	Medium term	Impact will last between 5 and 10 years
	5	Long term	Impact will last between 10 and 15 years
	6	On-going	Impact will last between 15 and 20 years
	7	Permanent	Impact may be permanent, or in excess of 20years
Extent	1	Very limited	Limited to specific isolated parts of the site
	2	Limited	Limited to the site and its immediatesurroundings
	3	Local	Extending across the site and to nearbysettlements
	4	Municipal area	Impacts felt at a municipal level
	5	Regional	Impacts felt at a regional level
	6	National	Impacts felt at a national level
	7	International	Impacts felt at an international level
Intensity	1	Negligible	Natural and/ or social functions and/ orprocesses are negligibly altered
	2	Very low	Natural and/ or social functions and/ orprocesses are slightly altered
	3	Low	Natural and/ or social functions and/ orprocesses are somewhat altered
	4	Moderate	Natural and/ or social functions and/ orprocesses are moderately altered
	5	High	Natural and/ or social functions and/ orprocesses are notably altered
	6	Very high	Natural and/ or social functions and/ orprocesses are majorly altered
	7	Extremely high	Natural and/ or social functions and/ orprocesses are severely altered
P r o b a	1	Highly unlikely /None	Expected never to happen
	2	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
	3	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is apossibility that the impact will occur

	4	Probable	Has occurred here or elsewhere and could therefore occur
	5	Likely	The impact may occur
	6	Almost certain /Highly probable	It is most likely that the impact will occur
	7	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur

When assessing impacts, broader considerations are also considered. These include the level of confidence in the assessment rating; the reversibility of the impact; and the irreplaceability of the resource as set out in (Table 2, Table 3, and Table 4), respectively.

Table 2: Definition of confidence ratings.

Category	Description
Low	Judgement is based on intuition
Medium	Determination is based on common sense and general knowledge
High	Substantive supportive data exists to verify the assessment

Table 3: Definition of reversibility ratings.

Category	Description
Low	The affected environment will not be able to recover from the impact - permanently modified
Medium	The affected environment will only recover from the impact with significant intervention
High	The affected environment will be able to recover from the impact

Table 4: Definition of irreplaceability ratings.

Category	Description
Low	The resource is not damaged irreparably or is not scarce
Medium	The resource is damaged irreparably but is represented elsewhere

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Alternative:	
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Disturbance of estuarine habitat and biota caused by placement of sandbags and reno mattresses.
Nature of impact:	The eroded embankment will be replaced by either of the three alternative options.
Extent and duration of impact:	Unlikely to be permanent, Recovery will occur short term (1-5years)
Consequence of impact or risk:	Natural and/ or social functions and/ or processes are somewhat altered, but vegetation will reestablish.
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High

Indirect impacts:	Temporary loss of Eelgrass (<i>Zostera capensis</i>) at construction area
Cumulative impact prior to mitigation:	Low cumulative impact. While the construction phase will result in an initial minor disturbance to estuarine habitat, this is unlikely to be permanent and there is strong evidence to suggest that recovery will occur in the short term (1 to 5 years) and that estuarine fauna utilise artificial habitat.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>A comprehensive method statement must be drawn up which provides a clear step-by-step plan of the sequence of construction activities that will be undertaken.</p> <p>The method statement should follow a phased approach with the aim of minimizing the length of time that excavated bed or banks are exposed to fluctuating tide levels.</p> <p>Working areas must be clearly demarcated and disturbance (i.e. trampling, smothering etc.) of estuarine habitat outside of these demarcated areas must be minimized as far as is possible.</p> <p><i>Zostera capensis</i> occurring within the construction footprint must be rescued and kept on the site to be planted in any disturbance buffer (no wider than 2m) later during the phase.</p>
Residual impacts:	The reno mattress will extend into the bed of the estuary and construction will therefore result in initial disturbance of inter- and subtidal habitat, including loss of <i>Z. capensis</i> . Based on experience from similar structures, the bed is however expected to re-establish over most of the reno mattress over time and it is likely that <i>Z. capensis</i> will also re-establish.
Cumulative impact post mitigation:	While a temporary disturbance to biota will occur, the scale of this disturbance is negligible and is expected to recover after a relatively short time period. The structure will not affect RQOs for water quality, quantity, habitat, and biota.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Alternative:	
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Sedimentation of estuary caused by the excavation of the bed and banks of the estuary.
Nature of impact:	The eroded embankment requires the excavation of a level platform to 1 m below the existing estuary bed profile. This excavation will need to extend approximately 3 m into the estuary.
Extent and duration of impact:	Very limited. Brief.
Consequence of impact or risk:	Excavation of the estuary bed is likely to result in the mobilization of sand and sediment.
Probability of occurrence:	High (certain)

Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Can potentially smother in-stream habitats. Active erosion of the bank leads to a minor sedimentation impact under the No-Go option
Cumulative impact prior to mitigation:	Low cumulative impact. Can potentially smother in-stream habitats.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>Excavations should take place during low tide to minimize the mobilization and transport of high volumes of sediment into the estuary.</p> <p>Excavation of the estuary bed and placement of sandbags and reno mattress should take place systematically (i.e. one section at a time) to avoid exposing sections of excavated bed or banks to fluctuating tide levels. The excavation of a section of the bed and placement of stabilising materials should ideally be completed within a single low tide cycle, before moving onto the next section.</p> <p>Excavation of the bank and placement of sandbags therefore needs to be planned according to the time provided by the low tide cycle.</p> <p>Construction activities should be timed to avoid periods of high rainfall and should be avoided during wet weather conditions.</p> <p>Construction activities should also be timed in relation to potential rainfall occurring higher up in the Keurbooms river catchment to mitigate against the effects of flooding in the estuary.</p> <p>Silt barriers must be placed around the working area to limit the migration of sediment from the construction area.</p>
Residual impacts:	None
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

Alternative:	
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Impairment of water quality caused by the operation of heavy machinery operating within the bed and banks of the estuary.
Nature of impact:	Vehicles and heavy machinery will be required to construct the bank stabilization structure and will need to be refueled and maintained at regular intervals. Leaks of hydrocarbon contaminants (i.e. fuel, oil, grease etc.) may occur which could pollute the estuary.
Extent and duration of impact:	Limited. Short term.

Consequence of impact or risk:	Pollution of the estuary.
Probability of occurrence:	Unlikely with mitigation measure in place.
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Leaks of hydrocarbon contaminants (i.e. fuel, oil, grease etc.) may occur which could pollute the estuary
Cumulative impact prior to mitigation:	Possible pollution.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>All vehicles/machinery should be readily serviced and inspected for leaks. Vehicles/Machinery needing repairs should not be used for construction at the site until repaired and fully operational.</p> <p>Any work or maintenance on the vehicles/machinery should be done far away from the watercourse, preferably in a work yard or on a concrete surface.</p> <p>Refueling of vehicles/machinery must take place away from the estuary and on a paved surface to prevent seepage in the event of a spill.</p> <p>All vehicles/machinery should be parked off-site, and away from the edge of the watercourse when not in use.</p>
Residual impacts:	None
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Disturbance / removal of topsoil
Nature of impact:	Disturbance of topsoil, potential soil erosion and the loss of topsoil
Extent and duration of impact:	Very limited. Brief
Consequence of impact or risk:	Possible loss of topsoil.
Probability of occurrence:	Likely, but impact can be mitigated.
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Loss of topsoil without mitigation
Cumulative impact prior to mitigation:	Loss of topsoil without mitigation
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>The stockpiling of topsoil for use in rehabilitation is required.</p> <p>Stockpiles must not exceed 1.5m in height, must be covered with shade cloth or similar, to prevent erosion.</p>
Residual impacts:	None
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Waste pollution
Nature of impact:	Pollution caused by waste generated by the construction process.
Extent and duration of impact:	Very limited. Brief
Consequence of impact or risk:	Pollution of river
Probability of occurrence:	Rare with mitigation
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Pollution of river
Cumulative impact prior to mitigation:	Pollution of river and ocean
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>All construction waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials should be supported.</p> <p>All construction waste materials must be collected and disposed of at a suitable waste facility.</p> <p>No dumping of construction material in any unlicensed facility or sensitive areas may take place.</p> <p>The buffer and river area must be monitored on a weekly basis to clean-up any waste that may have been blown from the construction site; and</p> <p>Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding environment.</p>
Residual impacts:	None
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Noise pollution
Nature of impact:	Noise caused by machinery and staff
Extent and duration of impact:	Limited. Brief
Consequence of impact or risk:	Nuisance Plett Angling club patrons and neighbours.
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Nuisance Plett Angling club patrons and neighbours.
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Low
Degree to which the impact can be mitigated:	High

Proposed mitigation:	Construction activities must only take place during normal working times between 07:00-17:00 on weekdays. Machinery may be fitted with silences to dampen noise. Staff must be reminded that noise levels must be kept low.
Residual impacts:	None
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor) Some extent of noise pollution during construction is expected; however, with mitigation the impact will be reduced.

PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Visual impact
Nature of impact:	Visual & aesthetic consequences of the proposed project
Extent and duration of impact:	Limited. Short term.
Consequence of impact or risk:	Temporary visual impact
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	None
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Due to the proposed stabilization of embankment, temporary construction would be inevitable. Shade cloth around construction site. Ensure site is neat and tidy at all times
Residual impacts:	None
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor) As construction is temporary and the preferred design will allow for reestablishment of habitats and vegetation, reducing visual impact.

PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	Employment, no risk
Nature of impact:	Empowerment of the local community members living in the area relating to temporary employment opportunities
Extent and duration of impact:	Local. Short term.
Consequence of impact or risk:	Temporary employment
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	M/A
Indirect impacts:	Temporary income generation for local community
Cumulative impact prior to mitigation:	N/A

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Due to the proposed stabilization of embankment, temporary construction would be inevitable. Shade cloth around construction site. Ensure site is neat and tidy at all times
Residual impacts:	N/A
Cumulative impact post mitigation:	Minor upliftment for the local community.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Due to the proposed development being on a small-scale, there is a low difference in impacts between without mitigation and with mitigation. However, as the impact would be positive for the local community to be employed during construction, mitigation is recommended to ensure this occurs.

OPERATIONAL PHASE	
Potential impact and risk:	Impact of bank stabilization structure on downstream bank erosion
Nature of impact:	Hydrological armouring of stream banks (e.g. wooden retaining wall, rip rap or reno mattress constructions) is a common technique used to stabilise banks for erosion protection. They can cause problems further downstream in that these hardened structures tend to increase the speed of water flow along an armoured reach, as the water has no points of friction to come up against and nothing to slow it down.
Extent and duration of impact:	Local. Ongoing.
Consequence of impact or risk:	Erosion downstream
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	This additional strength of flow can cause problems further downstream, as water is deflected off the hardened surface and directed at other points of the riverbank.
Cumulative impact prior to mitigation:	Erosion downstream
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The transition from the bank stabilisation structure to the remaining natural channel bank must be smooth so that no nick point develops along the channel bank which could lead to unanticipated erosion downstream of the structure. In other words, the southern end of the bank stabilisation structure must "tie-in" to the natural contour of the remaining unprotected channel bank. The structure must be routinely inspected to ensure that the integrity of the structure is sound and that it is not causing erosion of the channel further

	downstream. Any obvious signs of erosion must be immediately attended to.
Residual impacts:	The increased strength and speed of the water can increase erosive forces at these new locations, the result of which is the necessity of installing additional armouring, which merely moves the problem further down the stream. The sloping profile of Option 2 and the porous nature of the reno mattress revetment will improve the ability of the bank to absorb and dissipate the energy associated with large flooding events in comparison to the vertical profile of Option 1 and the less porous Option 3.
Cumulative impact post mitigation:	This construction provides a longer-term solution to stabilizing the bank against flooding events and persistent tidal flow, due to a reduced risk of structural failure
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

OPERATIONAL PHASE	
Potential impact and risk:	Impact of structure on stabilising the estuary bank
Nature of impact:	Stabilization of embankment
Extent and duration of impact:	Very limited. Permanent.
Consequence of impact or risk:	All proposed options are likely to be effective in stabilising the estuary bank. There is a higher risk of failure for Option 3 (i.e. geotextile bags may become weathered or physically punctured/torn over time) resulting in a slightly lower positive impact rating. The No-Go option represents a continued minor negative impact
Probability of occurrence:	High. Likely
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Risk of failure of stabilisation technique – mainly possible for Option 3
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The bank stabilisation structure must be routinely inspected and maintained (particularly after flood events) to ensure that the structure does not fail.
Residual impacts:	Stabilization of embankment an ongoing requirement. The stabilisation of the banks will prevent the degradation of the mapped CBA area and will also promote the natural function of the bank as further degradation will be prevented.
Cumulative impact post mitigation:	Increased bank stabilisation results in further confinement of the channel and concentration of flows which may then lead to erosion along remaining unprotected banks. Stabilisation of the banks is therefore expected to be an ongoing requirement in the future. Future residential/urban development along the banks must be set back an appropriate distance from the banks and must maintain natural riparian and estuarine vegetation wherever possible.

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)
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OPERATIONAL PHASE	
Potential impact and risk:	Impact of artificial habitat (reno mattress) on estuarine fauna
Nature of impact:	Reno mattress will essentially replace the existing eroded estuary bank and a thin section of inter-tidal mud/sand bank.
Extent and duration of impact:	Very limited. Permanent.
Consequence of impact or risk:	All proposed options are likely to be effective in stabilising the estuary bank. There is a higher risk of failure for Option 3 (i.e. geotextile bags may become weathered or physically punctured/torn over time) resulting in a slightly lower positive impact rating. The No-Go option represents a continued minor negative impact
Probability of occurrence:	Very limited. Permanent.
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	This will alter habitat for burrowing benthic macroinvertebrates.
Cumulative impact prior to mitigation:	The modification to habitat should however not have any negative impact on the potential occurrence of <i>H. capensis</i> given its known utilisation of artificial reno mattress habitat.
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>Preference should be given to the option that has the least impact on estuarine fauna (i.e. Option 2).</p> <p>Revegetation of substrates using rescued plant material in areas of temporary disturbance following the construction phase is an essential part of concluding the construction phase of the project. The following is a description of transplanting methods that could be used:</p> <ul style="list-style-type: none"> - Bundles of shoots with an attached rhizome segment can be tied together and anchored into the sediment (using a metal anchor); or - Shoots and associated rhizome structures can be bound to elongated stones using biodegradable thread (e.g. cotton or hemp), which are then buried in the sediment."
Residual impacts:	None
Cumulative impact post mitigation:	This section of the estuary is unlikely to be heavily utilised by larger vertebrate estuarine fauna due to the pre-existing high frequency of boat traffic. Impacts for all three options are minor although Option 2 has slightly lower impacts due to its more natural profile (compared to Option 1) and because spaces in between the rocks packed in the reno

	mattress offers better potential habitat options for macroinvertebrates (compared to Option 3). Impacts for the No-Go option are also minor given that ongoing erosion of the bank will result in sub-optimal habitat.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (Minor)

DECOMMISSIONING AND CLOSURE PHASE N/A	
Potential impact and risk:	
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.
<p>Terrestrial Biodiversity Special Assessment (April,2024)</p> <p>The sensitivity of the terrestrial biodiversity theme for the site is confirmed as Low for the following reasons:</p> <ul style="list-style-type: none"> • Terrestrial vegetation has been completely transformed and no fynbos representing the Garden Route Shale Fynbos vegetation type persists here, nor does any other naturally occurring vegetation type. • The proposed activity will not affect terrestrial vegetation that is integral to maintaining ecological function and integrity of the FEPA sub-catchment. • The project area is located in the outer-most extent of the Outeniqua SWSA and no modifications to natural vegetation will occur that will affect the ability of the area to continue to produce high volumes of good quality water. • The streambank stabilisation is unlikely to have any detrimental consequences or effects for the Garden Route National Park buffer within which it falls. 	

- The site is included in the National Protected Area Expansion Strategy (NPAES), and this is likely because the site is part of a critical biodiversity area (CBA 1: Estuaries) and is located just south of the Keurbooms River Nature Reserve. However, the proposed stabilisation of the banks does not compromise the NPAES strategy, nor does it negatively

impact the nearby existing protected areas. In fact, the stabilisation of the banks will prevent the degradation of the mapped CBA area and will also promote the natural function of the bank as further degradation will be prevented.

Estuarine and Plant Species – Specialist Assessment (April,2024):

Given the high conservation status and ecological importance of the Keurbooms Estuary (as indicated by NFEPA, the Western Cape Spatial Biodiversity Plan and the desktop eco-classification of estuaries of South Africa) and the confirmed presence (i.e., *Z. capensis* and *H. capensis*) and likely habitat suitability (i.e., *Cotula myriophylloides*) for and of IUCN Red Listed species it is important that any development is planned and conducted in a sensitive manner.

While the construction phase will result in an initial minor disturbance to estuarine habitat, this is unlikely to be permanent and there is strong evidence to suggest that recovery will occur in the short term (1 to 5 years) and that estuarine fauna utilise artificial habitat. The fact that identical activities have been approved and implemented successfully at other properties along the estuary – all of which are associated with abundant eelgrass and associated faunal communities - provides further support to this view. Overall, the ecological condition of the estuary is unlikely to be negatively impacted and the proposed bank stabilisation and associated activities are aligned to the various management objectives stipulated in estuarine management and national and provincial conservation plans, which are summarised as follows:

- The structure is intended to rehabilitate an eroded section of the channel and will result in negligible to minor impacts to the estuary. The proposal is therefore aligned to CBA management objectives.
- Given the high conservation status and ecological importance of the Keurbooms Estuary (as indicated by NFEPA, the Western Cape Spatial Biodiversity Plan and the desktop eco-classification of estuaries of South Africa) and the confirmed presence (i.e., *Z. capensis* and *H. capensis*) and likely habitat suitability (i.e., *Cotula myriophylloides*) for and of IUCN Red Listed species it is important that any development is planned and conducted in a sensitive manner.
- While the construction phase will result in an initial minor disturbance to estuarine habitat, this is unlikely to be permanent and there is strong evidence to suggest that recovery will occur in the short term (1 to 5 years) and that estuarine fauna utilise artificial habitat. The fact that identical activities have been approved and implemented successfully at other properties along the estuary – all of which are associated with abundant eelgrass and associated faunal communities - provides further support to this view. Overall, the ecological condition of the estuary is unlikely to be negatively impacted and the proposed bank stabilisation and associated activities are aligned to the various management objectives stipulated in estuarine management and national and provincial conservation plans, which are summarised as follows:
- The structure is intended to rehabilitate an eroded section of the channel and will result in negligible to minor impacts to the estuary. The proposal is therefore aligned to CBA management objectives.

Animal Species Assessment (April,2024):

- Due to the transformed nature of the habitat, the limited extent and unlikely habitat for the SCC, the PAOI is determined to have a low sensitivity for terrestrial animal species.

- The proposed streambank stabilisation will have no impact on terrestrial animal SCC and therefore a Compliance Statement is issued, with no additional conditions.

2. List the impact management measures that were identified by all Specialist that will be included in the EMP

- A comprehensive method statement must be drawn up which provides a clear step by step plan of the sequence of construction activities that will be undertaken.
- The method statement should follow a phased approach with the aim of minimising the length of time that excavated bed or banks are exposed to fluctuating tide levels.
- Working areas must be clearly demarcated and disturbance (i.e. trampling, smothering etc.) of estuarine habitat outside of these demarcated areas must be minimised as far as is possible.
- *Zostera capensis* and occurring within the construction footprint must be rescued and kept on the site to be planted in any disturbance buffer (no wider than 2m) later during the phase
- Excavations should take place during low tide to minimise the mobilisation and transport of high volumes of sediment into the estuary.
- Excavation of the estuary bed and placement of sandbags and reno mattress should take place systematically (i.e. one section at a time) to avoid exposing sections of excavated bed or banks to fluctuating tide levels. The excavation of a section of the bed and placement of stabilising materials should ideally be completed within a single low tide cycle, before moving onto the next section. Excavation of the bank and placement of sandbags therefore needs to be planned according to the time provided by the low tide cycle.
- Construction activities should be timed to avoid periods of high rainfall and should be avoided during wet weather conditions.
- Construction activities should also be timed in relation to potential rainfall occurring higher up in the Keurbooms river catchment to mitigate against the effects of flooding in the estuary.
- Silt barriers must be placed around the working area to limit the migration of sediment from the construction area.
- All vehicles/machinery should be readily serviced and inspected for leaks. Vehicles/Machinery needing repairs should not be used for construction at the site until repaired and fully operational.
- Any work or maintenance on the vehicles/machinery should be done far away from the watercourse, preferably in a work yard or on a concrete surface.
- Refuelling of vehicles/machinery must take place away from the estuary and on a paved surface to prevent seepage in the event of a spill.
- All vehicles/machinery should be parked off-site, and away from the edge of the watercourse when not in use.
- Given the high conservation status and ecological importance of the Keurbooms Estuary (as indicated by NFEPA, the Western Cape Spatial Biodiversity Plan and the desktop eco-classification of estuaries of South Africa) and the confirmed presence (i.e., *Z. capensis* and *H. capensis*) and likely habitat suitability (i.e., *Cotula myriophylloides*) for and of IUCN Red Listed species it is important that any development is planned and conducted in a sensitive manner.
- While the construction phase will result in an initial minor disturbance to estuarine habitat, this is unlikely to be permanent and there is strong evidence to suggest that recovery will occur in the short term (1 to 5 years) and that estuarine fauna utilise artificial habitat. The fact that identical activities have been approved and implemented successfully at other properties along the estuary – all of which are associated with abundant eelgrass and associated faunal communities - provides further support to this view. Overall, the ecological condition of the estuary is unlikely to be negatively impacted and the proposed bank stabilisation and associated activities are aligned to the various management objectives stipulated in estuarine management and national and provincial conservation plans, which are summarised as follows:

	<ul style="list-style-type: none"> The structure is intended to rehabilitate an eroded section of the channel and will result in negligible to minor impacts to the estuary. The proposal is therefore aligned to CBA management objectives. The bank stabilisation structure must be routinely inspected and maintained (particularly after flood events) to ensure that the structure does not fail. Preference should be given to the option that has the least impact on estuarine fauna (i.e. Option 2). Revegetation of substrates using rescued plant material in areas of temporary disturbance following the construction phase is an essential part of concluding the construction phase of the project. The following is a description of transplanting methods that could be used: <ul style="list-style-type: none"> Bundles of shoots with an attached rhizome segment can be tied together and anchored into the sediment (using a metal anchor); or Shoots and associated rhizome structures can be bound to elongated stones using biodegradable thread (e.g. cotton or hemp), which are then buried in the sediment."
3.	List the specialist investigations and the impact management measures that will not be implemented and provide an explanation as to why these measures will not be implemented.
	N/A
4.	Explain how the proposed development will impact the surrounding communities.
	Little impact on community. Area is adjacent to Plettenberg Bay Angling club. Stabilization will protect embankment and prevent any damage to property which might occur during high tides and storm surges.
5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.
	Yes, impacts of climate change have been considered, and it is believed that the stabilisation of the embankment will protect property against possible events as a result of climate change, like extreme high tides and storm surges as was experienced along the South African coast in 2023.
6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
	N/A
7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.
	Mitigation mentioned in point 2 above will be included in EMPr and to ensure it is implemented during construction and operational phases.
8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
	<p>The mitigation hierarchy has been applied.</p> <ul style="list-style-type: none"> Stabilizing the embankment cannot be avoided as it will lead to further erosion of embankment and impact on river downstream. Only one site exist Impacts can be minimized through choosing the best design option (Option 2 according to specialist) and following the strict mitigation measures as proposed by specialist during construction phase. The area in the river will restore itself and vegetation will reestablish naturally. No offsets required.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
	Minimal impacts are expected, of which most can be managed through mitigation measures implemented during the construction and operational phase as prescribed by specialist. The stabilization of embankment will be beneficial as to reduce erosion, improve protection of property against extreme weather events as a result of climate change, and possible allow for establishment of new habitats.
1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)



1.3. Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

Positive

- Reduce erosion
- Promote natural functions of river
- Protection of embankment and property against severe weather events

Negative

- Temporary transformed natural habitats. Will restore itself'
- Temporary loss of estuarine vegetation. Will reestablish itself.

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1. Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr

According to the specialist study, Estuarine and plant assessment, April 2024, impact of construction will be minimal and if mitigation measures recommended are implemented, the impacts are very likely reversible. Discussed in impact assessments in Section H, point 4.

2.2. Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

All recommendations made by specialist must be written into EMPr to ensure minimal impact is experienced with a high expectancy or restring and reestablishing.

2.3. Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.

The proposed development should be authorised as it will promote natural functions of the river, reduce erosion, and impact is minimal, after which the habitat and vegetation will restore itself.

2.4. Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.

Estuarine and Plant Assessment was done in July 2023
 Terrestrial Biodiversity Assessment was done in March 2024
 Animal Assessment was done in March 2024

The dynamic nature of estuaries means that the structure of physical habitat and associated estuarine fauna and flora can change rapidly in response to tidal and hydrological (e.g. flooding events) influences.

The assessments are based on single site visits and represents a 'snapshot' in time assessments can vary if site visits were conducted at different times.

2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.
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Ten (10) years

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.

Some water will be used through the construction phase, but mitigation measures will be written into EMPR to avoid waste. No water required during operational phase.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.

Normal waste measurement will be written into EMPR which will stipulate waste management using the waste hierarchy during construction phase. All waste, building rubble and recycling will be removed from site to licensed facilities.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
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N/A

SECTION K: DECLARATIONS


DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I, CHARLES VAREAN WEBSTER, ID number 6201165075084, in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
 - o meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
 - o meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
 - o costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
 - o costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
 - o Legitimate costs in respect of specialist(s) reviews; and
 - o the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.


Signature of the Applicant: _____ Date: 18/6/2024
Plettenberg Bay Angling + Boating Club
Name of company (if applicable): _____

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (“EAP”)

I ...Samantha Teeluckdhari....., EAP Registration number ...2023/6443..... as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

S. Teeluckdhari

27/06/2024

Signature of the EAP:

Date:

Eco Route Environmental Consultancy

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

I, EAP Registration number as the appointed Review EAP hereby declare/affirm that:

- I have reviewed all the work produced by the EAP;
- I have reviewed the correctness of the information provided as part of this Report;
- I meet all of the general requirements of EAPs as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST – TO BE PROVIDED IN FBAR

Note: Duplicate this section where there is more than one specialist.

I, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the “Review Specialist”) that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

I, as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s):
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):