



AMENDED DRAFT BASIC ASSESSMENT REPORT

PROPOSED MUIZENBERG BEACHFRONT REFURBISHMENT, MUIZENBERG, CAPE TOWN

DEA&DP REF NO.: 16/3/3/1/A2/22/3014/23

APPLICANT

CITY OF CAPE TOWN: COASTAL
MANAGEMENT BRANCH

MAY 2023

AMENDED DRAFT REPORT FOR PUBLIC PARTICIPATION

17 MAY TO 15 JUNE 2023

Written comments should be submitted to the
Environmental Assessment Practitioner,
Tarryn Solomon of Infinity Environmental, at the
details below or online at

www.infinityenv.co.za

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REPORT DETAILS



AMENDED DRAFT BASIC ASSESSMENT REPORT

Report title:	Amended Draft Basic Assessment Report: Proposed Muizenberg Beachfront Refurbishment, Muizenberg, Cape Town
Date:	May 2023
Prepared for:	City of Cape Town: Coastal Management Branch
Prepared by:	Infinity Environmental (Pty) Ltd. 1 st Floor Collingwood Building, Black River Park 2 Fir Street, Observatory 7925 Tel: 021 834 1602 Email: info@infinityenv.co.za
Purpose of report:	In accordance with the Environmental Impact Assessment Regulations, the purpose of the Basic Assessment Report is to: <ul style="list-style-type: none"> - Present the proposed project and the need for the project; - Describe the affected environment at a sufficient level of detail to facilitate informed decision making; - Provide an overview of the BA Process being followed, including public consultation; - Assess the predicted positive and negative impacts of the project on the environment; - Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project; - Provide an Environmental Management Programme (EMPr) for the detailed design and construction phases of the project. <p>This amended draft Basic Assessment Report is being made public for a 30-day commenting period, prior to being submitted to the environmental authorities for a decision.</p>
Citation:	Infinity Environmental, 2023. Amended Draft Basic Assessment Report: Proposed Muizenberg Beachfront Refurbishment, Muizenberg, Cape Town
Version History:	First issued: March 2023 The version: May 2023
Author (Environmental Assessment Practitioner)	Tarryn Solomon B.Sc. Environmental and Water Science (+15 years' experience) E.A.P. Registration Number: 2019/1671
Assisted by:	Tom Smyth B.Sc. (Hons) Biology B.Sc. Biology and Ocean & Atmospheric Sciences Kirsten Barratt LLM Environmental Law LLB B.Sc. Marine Biology and Ocean Atmospheric Sciences
Internal review:	Jeremy Rose B.Sc. Environmental and Geographical Science E.A.P. Registration Number: 2019/1116

EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

The City of Cape Town (CoCT) intends to refurbish the Muizenberg Beachfront area, as the current coastal infrastructure and services present on the beachfront are in a state of decline and showing signs of failure. The CoCT's Coastal Management Branch has appointed Infinity Environmental (Pty) Ltd as the Environmental Assessment Practitioner (EAP) to carry out a Basic Assessment Report (BAR) for the proposed refurbishment.

Muizenberg, as a coastal destination place, is one of the most visited recreational beaches in Cape Town. The beach is also one of Cape Town's top 20 international attractions and draws many foreign and local visitors daily. It is therefore crucial that this popular beachfront location is maintained and improved in order to accommodate this large amount of people and to keep Muizenberg as a place that can be used and enjoyed by all.

There is also the need to protect the area from the increased effects of climate change, which will include amplified wave action due to sea level rise and more frequent storm surges. The current wooden revetment, concrete seawalls, and stone steps (the Point) are not expected to withstand these changes and are already failing in places because they have passed their design life. These features need to be refurbished to keep the area safe for the use of which it was intended.

PROJECT OVERVIEW

The refurbishment of the Muizenberg Beachfront area is an intricate project that comprises of several components. The project can be distinguished by two parts – (1) the replacement of the coastal defence structures and (2) the refurbishment of the public space and facilities landwards of the coastal defence structures. It must be noted that the project's development proposal has changed extensively since its inception and the initial public engagement held in 2022, largely due to public comment. The following has been included in the design –

- (1) **Coastal defence structures:** The degraded wooden revetment, concrete seawalls, and the Point will be replaced with a new coastal defence structure (a sand-coloured, exposed aggregate finish concrete stepped revetment with smooth edges) and an accompanying 3m wide promenade with a universal access ramp. This has changed from the original design of grey concrete with a sharp-edged step. The promenade will also be concrete as this is necessary to effectively mitigate the risks associated with climate change induced sea level rise. Areas landwards of the promenade will be paved using clay segmented pavers, rather than concrete.
- (2) **Parking areas:** The gravel parking area will be formalised with the same clay pavers as the current main parking facility (instead of concrete). "Formalising" involves resurfacing, soft landscaping, making it pedestrian friendly, demarcating clear parking bays, and adding aerial lighting.
- (3) **Ablution facility:** The existing ablution facility will be demolished and rebuilt (in the same architectural style) just landwards of the coastal defence structures and out of the littoral active zone where it is being undermined by sustained wave action. The design will include universal access toilets/family changing rooms and wheelchair accessible showers. Note that the location has changed since the original inception design from the north-west corner of the site to the central plaza.
- (4) **Pergola:** The pergola will be demolished and rebuilt further inland to allow for the installation of the new coastal defence structures and will maintain its current design and details (thus conserving the heritage design and aesthetic features).

- (5) **Playground:** The current playground will be replaced with a new “kelp forest” theme. This has been modified to reflect the local coastal environment.
- (6) **Paved areas:** There will be repairs to existing walkways. The planned concrete surfaces landwards of the proposed promenade will be surfaced with clay pavers matching the existing colours and style.
- (7) **Station forecourt:** There will be a refurbishment to the station forecourt which will make it more pedestrian friendly. This will be done with the same clay pavers as the parking facility and walkways.
- (8) **Services:** The underground sewer and stormwater pipes will be realigned where needed. Capacity will be maintained and not upgraded.
- (9) **Soft landscaping:** Locally indigenous vegetation will be incorporated into the landscaping design, as well as grassy areas comprising of a coastal grass species. Some artificial grass will be used. Further emphasis has been placed on using indigenous vegetation.
- (10) **Colourful beach huts:** All eight beach huts will be relocated to the central plaza, as opposed to being split on either side of the main plaza as originally planned.
- (11) **Buildings:** The existing NGO buildings will remain in place and not be demolished. Waves for Change will move to a newly constructed building near the northern corner of the rationalised parking area. The current Waves for Change building will be modified for accessibility.



Figure 1: Landscape Plan for the proposed refurbishment of the Muizenberg Beachfront area. Refer to Appendix B1.1 for a larger-scale drawing.

Importantly, the refurbishment is designed to withstand the increasing effects of climate change, such as rising sea levels, increased wave action, and higher storm surges. In its current state, the existing coastal defence structures are not expected to withstand the expected wave impacts and related scour to the toe of the structure, which will lead to failure of the coastal defences and/or damage due to overtopping under higher water levels. Robust coastal infrastructure, informed by coastal modelling and other site investigations, is required to ensure that the beachfront, and the urban areas and supporting infrastructure behind it, are maintained and physically protected to preserve the precinct.

CHANGES MADE TO THE DBAR (INCLUDED IN THIS AMENDED DBAR)

The following changes have been made to the draft BAR since its initial publication in March 2023. The changes are summarised below:

- Addition of a specialist Heritage Impact Assessment (HIA) for the section of work area that falls below the highwater mark (as requested by South African Heritage Resource Agency). The findings of this report have been incorporated throughout the amended dBAR.
- Addition of the recommendations from the HIA into the EMPr (Appendix H).
- Adjustments to the proposed stormwater pipeline realignment at the Point. Appendix B1.8 has been updated to reflect this change.
- Clarification on the use of a modular pre-cast removeable/retractable design of the concrete stepped revetment structure. Additional clarification on the size of the pre-cast modules (many small pre-cast modules will be used).
- Correction under Section C (2) to note that Section 63 of the NEM: ICMA was considered. Comments from the relevant authority (DEADP: CM) are included in a new appendix – Appendix E14.
- Formatting edits to Figure 1.
- Edits to Figure 3 and Figure 4 (along with Appendices B1.2 and B1.3) for clarity.

In addition, a comments and response table, capturing comments received and responses thereto on the draft BAR, has been included under Appendix F of the amended draft BAR.

PROJECT MOTIVATION

The Muizenberg Beachfront has been extensively developed from the late 19th century onwards to facilitate public use of the area. The existing infrastructure present on the beachfront has passed its design lifespan and is currently failing, which is why there is the need for the refurbishment. There have been small-scale maintenance attempts over the years, but nothing has been an effective long-term solution to the problems arising from the failing infrastructure.

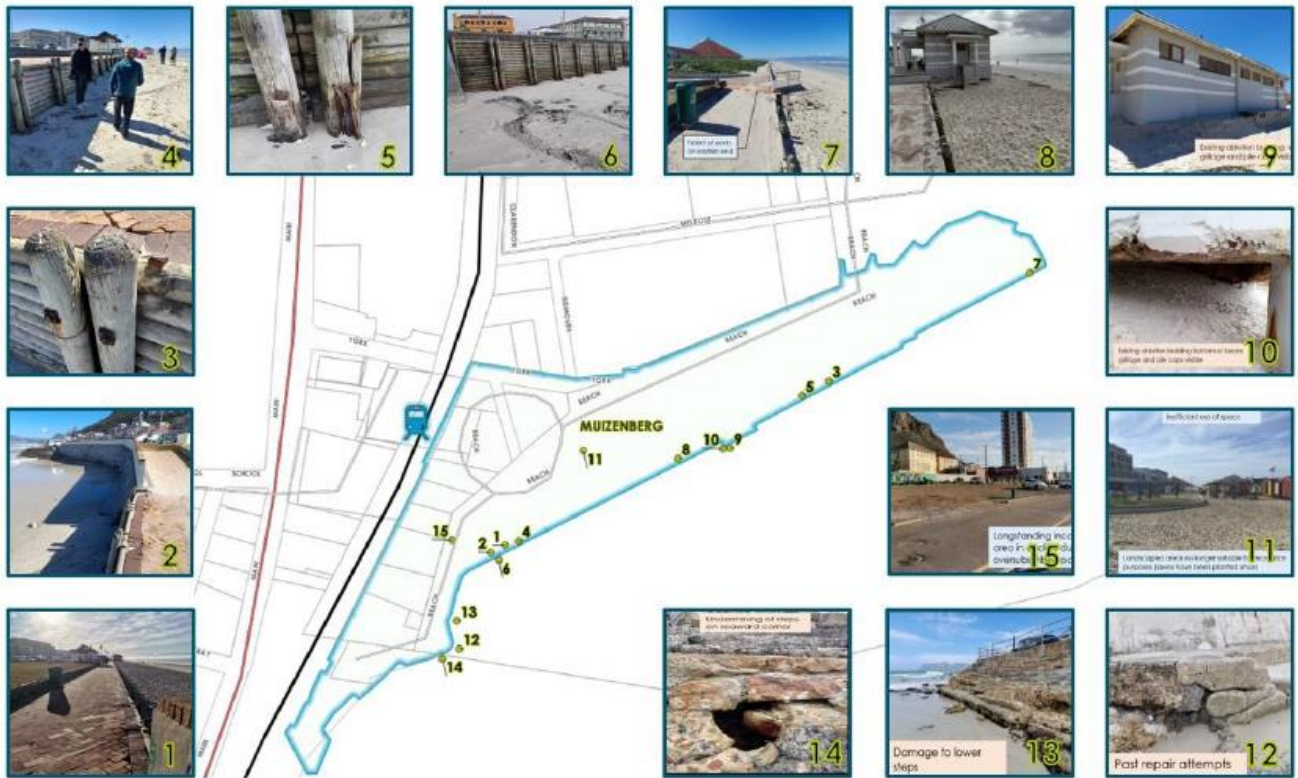


Figure 2: Condition of existing infrastructure

As climate change is expected to worsen, it is imperative that the beachfront area has a strong coastal defence structure that is able to withstand increased wave action. In addition, features, such as the current ablution building, need to be demolished and rebuilt out of the littoral active zone where they are currently being undermined.

Furthermore, there are underdeveloped parts of the precinct (such as the gravel parking facility) that need attention. Overuse has caused these features to degrade which leaves them in great need of refurbishment. The maintenance and “sense of place” of the area is failing, as well as becoming a safety concern. In its current state, this infrastructure is not expected to withstand the increasing effects of climate change-associated sea level rise.

LEGISLATIVE REQUIREMENTS

The proposed refurbishment involves various listed activities in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended by GNR 326 of 2017) and the National Environmental Management Act 107 of 1998 (NEMA). These activities are –

Listed Activity	Description
Activity number 15	Development of structures in the coastal public property where the development footprint is greater than 50 square metres (m ²).
Activity number 19A	Infilling or depositing of any material of more than 5 cubic metres (m ³), or the dredging excavation, removal, or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 5 m ³ from the seashore, the littoral active zone, an estuary, 100m inland of the highwater mark of the sea or an estuary, or the sea.
Activity number 52	Expansion of structures in the coastal public property where the development footprint will be increased by more than 50 m ² .

In terms of the EIA Regulations, the proposed refurbishment requires an Environmental Authorisation from the Department of Environmental Affairs and Development Planning (DEA&DP), and therefore a Basic Assessment (BA) must be undertaken by an EAP. The key stages in the BA process are shown below –



Section 63 of the National Environmental Management: Integrated Coastal Management Act 24 of 2008 (which reads: “where an environmental authorisation in terms of Chapter 5 of the National Environmental Management Act is required for coastal activities, the competent authority must take into account all relevant factors”) has also been complied with.

Furthermore, Section 34 of the National Heritage Resources Act 25 of 1999 was triggered in that the proposed refurbishment will require the demolition of structures that are older than 60 years.

RECEIVING ENVIRONMENT

- Coastal environment:** Currently the coastal defence structures consist of a wooden revetment, stone stepped terrace (Surfers' Corner), and two sections concrete seawall (on either side of the stepped terrace). The ablation block is built in the littoral active zone, seaward of the existing coastal defence structures. Both the ablation block and Surfers' Corner stepped terrace have sustained significant damage as a result of constant wave action. Surfers' Corner steps currently divide the beach (that was historically one) into two individual beaches.
- Groundwater:** The groundwater table and seepage levels in the project area are notably high. The proposed project area is not situated on any aquifers.
- Biodiversity:** The site has been extensively developed since the late 19th century as a popular public beach destination. As a result, there is no naturally occurring indigenous vegetation remaining at the site.
- Geographical aspects:** The Muizenberg beachfront has a rich history. Associated with this history are numerous significant geographical features in the area. The most notable are the colourful beach huts, Surfers' Corner stone stepped terrace, ablation building, pergola, and central plaza area.
- Historical and cultural context (sense of place)** The Muizenberg beachfront is a vibrant and diverse community, serving a combination of locals and tourists alike. In recent years it has become known for its diversity and surf culture. The numerous geographical features mentioned above have further contributed to Muizenberg's unique culture and sense of place.

In terms of heritage value, a specialist heritage impact assessment concluded that the work area has a very low archaeological potential. A programme of archaeological monitoring will accompany all works conducted below the highwater mark (on the beach). See the EMPr for further details.

- **Socio-economic context:** The Muizenberg beachfront has a high density of tourism related businesses such as restaurants, accommodation and surf equipment rental shops. These businesses rely on the area's popularity with recreational activities such as surfing, events and content creation. The continued economic success of the area is heavily reliant on public perception of the beach quality and surrounding public amenities, as this is the main attraction to the area.

NEED AND DESIRABILITY

Addressing the need and desirability of a development is a way of ensuring sustainable development. The need and desirability of the project are considered in this BA in terms of its level of fit to spatial planning and policy, its social context and social impacts, and its response to the principles of environmental management, including the mitigation of environmental impacts of the development.

Development must be ecologically sustainable and socially and economically justifiable. The PRDW studies concluded that, in summary, a stepped concrete revetment and a 3m wide concrete promenade (along with the associated sub-terrain scour protection structures) will be necessary to effectively withstand sea level rise and associated risks over the next 50 years (which is the design life of the coastal defence structures).

The project is in line with the 2014 Western Cape Provincial Spatial Development Framework in that it enhances the urban space economy, effectively utilises resources, and provides for sustainable settlement. It is also in line with the City of Cape Town Five-year Integrated Development Plan (2022 – 2027) because it feeds into the IDPs plans for economic growth; public space, environment, and amenities; transport; and becoming a resilient city.

The City of Cape Town's Municipal Spatial Development Framework sets out three spatial strategies: (1) building an inclusive, integrated, vibrant city (2) manage urban growth and create a balance between urban development and environmental protection (3) plan for employment and improve access to economic opportunities. The proposed development fits all three spatial strategies.

The draft Southern Integrated District Spatial Development Framework and Environmental Management Framework (May 2022) was also used, and the proposed development is in line with it. In addition, the development is in line with the City of Cape Town Southern District Spatial Development Plan (2012 – 2022).

Various other coastal planning frameworks have been used to inform the project, such as the Integrated Coastal Management Policy, the City of Cape Town Coastal Management Programme, and the Coastal Economic and Spatial Framework for Cape Town.

PURPOSE OF THIS REPORT

The purpose of the EIA regulations is to "regulate the procedure and criteria as contemplated in Chapter 5 of [NEMA] relating to the preparation, evaluation, submission, processing, and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to the environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environment impacts, and for matters pertaining thereto". The purpose of this report is to do the following –

- Confirm the specific project details.
- Set out the legislative, policy, and guidelines/protocols landscape.
- Identify applicable listed activities.
- Provide for the planning context and need and desirability.
- Illustrate the public participation process.
- Describe the receiving environment.
- Discuss alternatives and methodology.
- Discuss findings and provide for impact management and mitigation measures.
- Provide recommendations.

IMPACT ASSESSMENT

Various specialist studies were conducted to inform this BAR. These are listed below –

Specialist Study or Investigations	Conducted by
Muizenberg Beachfront Upgrade Geotechnical Investigation Report	HHO Consulting Engineers
Muizenberg Beachfront Upgrade – Specialist Coastal Modelling – Wave Refraction and Sediment Transport Modelling Report	PRDW Consulting Port and Coastal Engineers
Muizenberg Beachfront Upgrade – Specialist Coastal Modelling – Wave Overtopping and Reflection Modelling Report	PRDW Consulting Port and Coastal Engineers
Socio-Economic Impact Study	Urban-Econ Development Economics
Heritage Impact Assessment	ACO Associates CC
Traffic Impact Statement	HHO Consulting Engineers

The table below summarised the overall significance of the impacts assessed, following the implementation of the recommended mitigation and management measures.

	Alternative 1 (preferred)		Alternative 2 (No-Go area)	
	Without mitigation	With mitigation	Without mitigation	With mitigation
PLANNING AND DESIGN PHASES				
Impacts on sediment dynamics	Low negative	Low negative	No impact	No impact
Impact on wave dynamics	Low negative	Low negative	No impact	No impact
Impact on sense of place and visual character	Medium negative	Low negative	No impact	No impact
Socio-economic impacts	Medium positive	Medium positive	Medium negative	Medium negative
Traffic impacts	Low negative	Very low negative	No impact	No impact
CONSTRUCTION PHASE				
Access to beach	Medium negative	Low negative	No impact	No impact
Archaeological disturbance/destruction	Low Negative	Low Negative	No impact	No impact
Noise and vibration	Low to medium negative	Low negative	No impact	No impact
Waste generation	Low to medium negative	Low negative	No impact	No impact
Dust generation	Low negative	Very low negative	No impact	No impact
Visual	Low negative	Very low negative	No impact	No impact
Pollution of soils, seawater, and groundwater	Medium negative	Low negative	No impact	No impact
Traffic	Medium negative	Low negative	No impact	No impact
Temporary job creation	Medium positive	Medium positive	Medium negative	Medium negative

The No-Go alternative is the option of not implementing the proposed development and is the benchmark against which the impact of the proposed developments were assessed. The No-Go would entail the site staying as it currently is and no refurbishment taking place (ie: the status quo remains).

Retaining the status quo would result in the loss of opportunity to improve the socio-economic benefits and growth within the Muizenberg area. It will also result in the high-cost of unavoidable future emergency repair interventions to the current coastal infrastructure, should it not be refurbished.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the specialist inputs and the other factors considered in this BAR, it is recommended that the proposed activity **receive Environmental Authorisation**. The activity maximises economic benefits and implements key design considerations, while also aiming to protect the area from the increase effects of climate change and therefore ensuring safety to its users.

It is also recommended that a suitably qualified and experienced environmental control officer monitor adherence to the Environmental Authorisation and Environmental Management Programme.

PUBLIC PARTICIPATION

Potential interested and affected parties were identified, including immediately adjacent landowners and occupiers, ward councillors, municipal officials, relevant state departments and organs of state. In addition, all I&APs registered as part of the pre-application consultation were informed of the publication of the draft BAR. Notification letters were emailed, or hand delivered to all identified interested and affected parties informing them of the proposal and the opportunity to comment on the draft Basic Assessment Report. Advertisements were also placed in the *False Bay Echo* and put up on the site.

The draft BAR has been revised and an amended draft BAR is now being made available for a 30-day review period. We invite all registered Interested and Affected Parties and any members of the public who feel they are affected by or have an interest in the proposed project, to comment on the amended draft Basic Assessment Report

A 30-day public participation process will end on 15 June 2023.

Interested and affected parties are invited to review the pre-application draft Basic Assessment Report, and **comment** using any of the following methods:



Online at www.infinityenv.co.za/muizenberg



By email to muizenberg@infinityenv.co.za



By post to Infinity Environmental, Suite 17,
Private Bag X11, Mowbray 7705



The 30-day commenting period will start on 17 May 2023 and end on 15 June 2023.

For more information, to comment, or to arrange alternative ways of participating, please contact the Environmental Assessment Practitioner, Tarryn Solomon of Infinity Environmental, at the details above.

PROCESSING PERSONAL INFORMATION

We are required by the EIA Regulations, GNR 326 of 2017 and the National Environmental Management Act to maintain a register of interested and affected parties including people who have commented, attended meetings, or requested registration. This requires us to collect and process certain personal information as defined in the Protection of Personal Information Act, 2013. The following personal information has been collected for the purpose of public participation from identified I&APs and will be collected from anyone who comments or registers:

- Name, contact details and address;
- A copy of any comments submitted; and
- Details of any interest declared in the granting or refusal of the application.

Should you register and/or comment, your name and your comments will be included in published documents. Your contact details, address, and interest declaration will be provided to the competent authority and must also be provided to any appellants in the event that the environmental authorisation is appealed in terms of the Appeal Regulations, GNR 993 of 2014. Personal information will be stored by Infinity Environmental (Pty) Ltd at 2 Fir Street, Observatory 7925, and on a password-secured cloud storage system which may include servers outside the Republic of South Africa. You may at any time request access to or rectify this personal information by contacting us on info@infinityenv.co.za.

Visit www.infinityenv.co.za/legal to view our Privacy Policy

REPORT OVERVIEW

	Executive Summary
Section A	Administrative Details
Section B	Confirmation of specific project details
Section C	Legislation, policies and guidelines or protocols
Section D	Applicable listed activities
Section E	Planning context and need and desirability
Section F	Public participation
Section G	Description of the receiving environment
Section H	Alternatives, methodology and assessment of alternatives
Section I	Findings, impact management and mitigation measures
Section J	General
Declarations	
Appendices	

ABBREVIATIONS

ha	Hectare
m ²	Square metre
BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
DEA&DP	Western Cape Department of Environmental Affairs and Development Planning
DWS	National Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations, 2014, as amended by GN R 326 of 7 April 2017
EMPr	Environmental Management Programme
ESA	Ecological Support Area
I&AP	Interested and Affected Party
NEMA	National Environmental Management Act (107 of 1998, as amended)
NEMBA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NHRA	National Heritage Resources Act (Act 25 of 1999)
NWA	National Water Act (Act No. 36 of 1998)
SDF	Spatial Development Framework
ToR	Terms of Reference

Summary of how the requirements of Appendix 1 of the 2014 NEMA EIA Regulations (GN R 326, as amended) are met by this Basic Assessment Report

Appendix 1 requirement	Section of BAR
1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include-	
(a) details of – i. the EAP who prepared the report; and ii. the expertise of the EAP, including a curriculum vitae;	A <i>EAP is EAPASA-registered</i>
(b) the location of the activity, including (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	B - 4.6 B - 4.4 B - 4.7
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity (iii) is to be undertaken;	Appendix B1
(d) a description of the scope of the proposed activity, including (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	D B - 4.4
(e) a description of the policy and legislative context within which the development is proposed including- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments	E
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	E, H Appendix K
(g) a motivation for the preferred site, activity and technology alternative;	H
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including – (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix;	H and I

(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including– (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	I
(j) an assessment of each identified potentially significant impact and risk, including– (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	I
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	I
(l) an environmental impact statement which contains– (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	J Appendix B2 J
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	J - 2.1
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	J - 2.2
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	J - 2.4
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	J - 2.3
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	J - 2.5
(r) an undertaking under oath or affirmation by the EAP in relation to– (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) 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	K
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	n/a
(t) any specific information that may be required by the competent authority; and	n/a
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	n/a



FORM NO. BAR10/2019

BASIC ASSESSMENT REPORT

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

NOVEMBER 2019

(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 Muizenberg Beachfront Refurbishment: Erven 87374-RE, 87114-RE, 87143, 87142-RE, 87141-RE, 87140-RE, 87139-RE, 87138, 87137, 87158-RE, 87135-RE, 87134-RE, 87144, 87155-RE and 87130 Muizenberg, Cape Town.

The Muizenberg Beachfront is a coastal destination place and one of the most-visited recreational beaches in Cape Town. It is also one of Cape Town's top 20 international attractions, bringing in many foreign visitors locals alike.

The public coastal infrastructure and services at Muizenberg are in a state of decline. The wooden revetment, concrete seawalls, and Surfers' Corner stone steps ("the Point") have passed their design lives and are showing signs of failure. Minor urgent repairs have been conducted where possible,

although these are just short-term solutions and repairs are not sufficient to maintain the long-term structural integrity of the existing coastal protection structures. Additionally, there are longstanding incomplete components of the precinct such as the existing informal gravel parking areas that are in need of maintenance due to heavy use. In general, maintenance and sense of place is failing (vegetation missing or eroded, old worn down playground, etc) which places the economic and social value of the space at risk. Recent efforts (such as the re-planting of lawns) have been met with a positive reaction by the public, highlighting the value of this beachfront refurbishment project.

The proposed Muizenberg Beachfront Refurbishment prioritises the proactive replacement of the old wooden revetment, concrete seawalls, and degraded stone steps as these structures have passed their design life and are beginning to fail. It is proposed that these existing coastal defence structures be replaced with a stepped concrete revetment coastal protection structure in order to provide effective coastal protection from climate change-induced sea level rise, whilst also improving public coastal access. This will serve to support and protect the local socio-economic environment going forward. Secondary to coastal protection is the extension of the project scope landward to include the refurbishment of the hard and soft landscaping and buildings, as well as the optimisation and formalisation of the existing parking areas.

The refurbishment is designed to withstand the increasing effects of climate change, such as rising sea-levels, increased wave action, storm related scour, and higher storm surges. Additionally, the concrete stepped revetment and promenade is robustly designed to deal with storm overtopping. A modular pre-cast design that can be moved (albeit with significant effort) will be used for the main (straight) section of the promenade. This will minimize construction time and ensure the stepped revetment/promenade can be shifted or receded in order to cope with any extreme unpredictable sea-level rise related complications. In its current state, the existing coastal defence structure is not expected to withstand the expected wave impacts and related scour to the toe of the structure, which will lead to failure of the coastal defences and/or damage due to overtopping under higher water levels. Robust coastal infrastructure, informed by coastal modelling and other site investigations, is required to ensure that the beachfront, and the urban areas and supporting infrastructure behind it, are maintained and physically protected to preserve the precinct. To improve resilience, the existing ablution building, located on the beach, within the wave run-up and littoral active zone, will also be demolished and retreated to a protected location, landward of the proposed stepped revetment.

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. 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.
4. All applicable sections of this BAR must be completed.
5. 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.
6. This BAR is current as of **November 2019**. 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/eadp> to check for the latest version of this BAR.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.

14. 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

<p>CAPE TOWN OFFICE: REGION 1 and REGION 2</p> <p>(Region 1: City of Cape Town, West Coast District) (Region 2: Cape Winelands District & Overberg District)</p>	<p>GEORGE OFFICE: REGION 3</p> <p>(Central Karoo District & Garden Route District)</p>
<p>BAR must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000</p> <p>Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town</p> <p>Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372</p>	<p>BAR must be sent to the following details:</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> <p>Registry Office 4th Floor, York Park Building 93 York Street George</p> <p>Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650</p>

MAPS:

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.	
Locality Map:	The scale of the locality map must be at least 1:50 000.

	<p>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.</p> <p>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. • 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;

	<ul style="list-style-type: none"> ○ 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

DFFE:	Department of Forestry, Fisheries and the Environment
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	N/A
	Appendix A3:	Map with the GPS co-ordinates for linear activities	N/A
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	
	Appendix E3:	Final Comment from the DWS	
	Appendix E4:	Comment from the DEA: Oceans and Coast	
	Appendix E5:	Comment from the DAFF	
	Appendix E6:	Comment from WCG: Transport and Public Works	
	Appendix E7:	Comment from WCG: DoA	

	Appendix E8:	Comment from WCG: DHS	
	Appendix E9:	Comment from WCG: DoH	
	Appendix E10:	Comment from DEA&DP: Pollution Management	
	Appendix E11:	Comment from DEA&DP: Waste Management	
	Appendix E12:	Comment from DEA&DP: Biodiversity	
	Appendix E13:	Comment from DEA&DP: Air Quality	
	Appendix E14:	Comment from DEA&DP: Coastal Management	✓
	Appendix E15:	Comment from the local authority	✓
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management)	N/A
	Appendix E17:	Comment from the District Municipality	N/A
	Appendix E18:	Copy of an exemption notice	
	Appendix E19:	Pre-approval for the reclamation of land	
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	
	Appendix E21:	Proof of land use rights	
	Appendix E22:	Proof of public participation agreement for linear activities	
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:	Environmental Management Programme		✓
Appendix I:	Screening tool report		✓
Appendix J:	The impact and risk assessment for each alternative		

<p>Appendix K:</p>	<p>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</p>	<p>✓</p>
<p>Appendix L:</p>	<p>Site Sensitivity Verification Report</p>	<p>✓</p>

SECTION A: ADMINISTRATIVE DETAILS

	CAPE TOWN OFFICE:		GEORGE OFFICE:						
Highlight the Departmental Region in which the intended application will fall	REGION 1 (City of Cape Town, West Coast District)	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (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:	City of Cape Town: Coastal Management Branch, Environmental Management Department, Directorate: Spatial Planning and Environment Rameez Fataar City of Cape Town Metropolitan Municipality 16th Floor, 4 Bay Side, Tower Block, Civic Centre, 12 Hertzog Boulevard, Cape Town 8000 <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"></td> <td style="border: none;">Postal code:</td> </tr> <tr> <td>(021) 400 4095</td> <td style="border: none;">Cell: -</td> </tr> <tr> <td>Rameez.Fataar@capetown.gov.za</td> <td style="border: none;">Fax: ()</td> </tr> </table>				Postal code:	(021) 400 4095	Cell: -	Rameez.Fataar@capetown.gov.za	Fax: ()
	Postal code:								
(021) 400 4095	Cell: -								
Rameez.Fataar@capetown.gov.za	Fax: ()								
Company of EAP: EAP name: Postal address: Telephone: E-mail: Qualifications: EAPASA registration no:	Infinity Environmental (Pty) Ltd Tarryn Solomon Suite 17, Private Bag X11 Mowbray (021) 834 1602 tarryn@infinityenv.co.za B.Sc. Environmental and Water Science 2019/1671								
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:	City of Cape Town: Coastal Management Branch, Environmental Management Department, Directorate: Spatial Planning and Environment Rameez Fataar 16th Floor, 4 Bay Side, Tower Block, Civic Centre, 12 Hertzog Boulevard, Cape Town <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"></td> <td style="border: none;">Postal code: 8000</td> </tr> <tr> <td>(021) 400 4095</td> <td style="border: none;">Cell: -</td> </tr> <tr> <td>Rameez.Fataar@capetown.gov.za</td> <td style="border: none;">Fax: ()</td> </tr> </table>				Postal code: 8000	(021) 400 4095	Cell: -	Rameez.Fataar@capetown.gov.za	Fax: ()
	Postal code: 8000								
(021) 400 4095	Cell: -								
Rameez.Fataar@capetown.gov.za	Fax: ()								
Name of Person in control of the land:	City of Cape Town: Coastal Management Branch, Environmental Management Department, Directorate: Spatial Planning and Environment Rameez Fataar								

Name of contact person for person in control of the land: Postal address:	16th Floor, 4 Bay Side, Tower Block, Civic Centre, 12 Hertzog Boulevard, Cape Town	
Telephone:	(021) 400 4095	(021) 400 4095
E-mail:	Rameez.Fataar@capetown.gov.za	

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall:	City of Cape Town: Environmental Resource Management - Southern District	
Contact person:	Andy Greenwood	
Postal address:	Plessey Building, c/o Main and Victoria Roads	
		Postal code: 7801
Telephone	(021) 444 2612	Cell:
E-mail:	Andy.Greenwood@capetown.gov.za	Fax: ()

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

1.	Is the proposed development (please tick):	New	Expansion ✓	(expansion)
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2. Is the proposed site(s) a brownfield or greenfield site? Please explain.

The proposed site is a brownfield site. The proposed development constitutes a refurbishment of the Muizenberg Beachfront, a site which has been extensively developed since the late 19th century. There are currently structures present on the site which need to be refurbished/replaced (and in some cases moved) to withstand the effects of climate change induced sea level rise (and induced increased wave action, higher storm surge, and resulting storm erosion at the toe of the structure), such as the old wooden revetment, stone steps, and concrete seawalls. Structures such as the current abluion facility and the colourful beach huts will be retreated landward to allow for the installation of the new coastal defence structure. Existing infrastructure such as the two NGO buildings, the playground and landscaping will be refurbished. A new NGO building will be built on previously developed areas further inland.

The primary purpose of the project is to protect the Muizenberg beachfront area from climate change induced sea-level rise, increased wave action, and high storm surge (and resulting storm erosion at the toe of the structure). Secondary to coastal protection is the extension of the project landward to refurbish and upgrade hard and soft landscaping elements of the area as described above, whilst still preserving the authentic character of Muizenberg.

Within the proposed project area there are currently existing buildings, several colourful beach huts, a paved brick recreational area, a wooden revetment wall (and promenade) along the edge of the beachfront, and various parking areas. There is no undisturbed natural space left in the project

(approximately 3.1m above mean sea level [MSL]). Landward of the main promenade is an area covered by a combination of open lawns, paved areas, a sandy play area, planters, and walkways. There are also minor canopy/pergola structures and planters in open areas located landward of the current promenade. The entire ablution building is built on the beach, seaward of the current coastal protection structures. Only the gable/pergola structure (which was added in the 1990s) attached to it is landward of the wooden revetment. This building is being undercut as a result of its location in the littoral active zone and resultant constant wave action washing sand out from underneath it (**Figure 1**). There are two similar buildings landward of the promenade currently used by the Shark Spotters and Waves for Change organisations. Two sets of four beach huts that serve as change rooms are situated landward of the promenade on either side of the existing ablution building. The road leading into the Muizenberg beachfront is paved and has formalised parking on both sides.

The Surfers' Corner area (the southwestern most part of the site) currently consists of two sections of vertical concrete gravity retaining seawall (60m and 45m in length) along with a 31m long stone stepped terrace/seawall section with a top level of 4.5m above MSL (referred to as "the point"). The two concrete retaining walls connect the stepped terrace section to the St James walkway (60m section) and the main section of the promenade (45m section) respectively. The point is built out of sandstone blocks with general fill material. This fill material has been washed out from parts of the steps, leaving cavities under the steps and compromising the structural integrity in parts. This is caused by the age and resultant deteriorating state of the structure, leaving it vulnerable to persistent wave action removing more material. Note that although current damage to the stone steps is as a result of age, increased scour due to higher wave action in future will further exasperate the problem. A large informal gravel parking lot located landward of the point has been severely degraded as a result of over use due to Muizenberg's popularity and lack of available parking. Two sewer lines run into the corner and a large stormwater pipeline runs parallel to the wooden revetment, just landward of the promenade.

Both the wooden revetment, degraded Surfer's Corner stone steps, and concrete seawalls have passed their design lives and are beginning to fail. In addition to the general breakdown of the visible coastal protection structures, scour protection structures that were installed under the beach sand are exposed in various places, posing a risk to public safety and showing that the current infrastructure is no longer serving its purpose. The existing scour protection consists of rock-filled wire and gabion baskets which have corroded and are damaged in several locations. Repairs have been attempted multiple times but have not been effective long-term solutions in maintaining the structural integrity of the promenade against wave action and general age-related degradation.

The current location and condition of "the Point" steps, within the littoral active and inter-tidal zones, where it is exposed to direct wave impact is not a long-term sustainable location for the headland structure. If left as is, "the Point" would degrade further, leading to ongoing costly unsustainable repair work, and further isolating the beaches on either side of the headland structure ("the Point"). Furthermore, due to climate change-induced sea level rise, increased water levels and wave heights are expected at the coastal defence structures of the Muizenberg beachfront. Given the current state of the coastal defences, the existing coastal defence structure is not expected to withstand the expected wave impacts and related scour to the toe of the structures, which will lead to failure of the coastal defences and damage due to overtopping under higher water levels.

Given the context outlined above, the City of Cape Town Spatial Planning and Environment Directorate has proposed the proactive replacement of the coastal protection structures and a refurbishment to the Muizenberg Beachfront area. This proposed refurbishment encompasses both the coastal public infrastructure and services at the Muizenberg Beachfront.

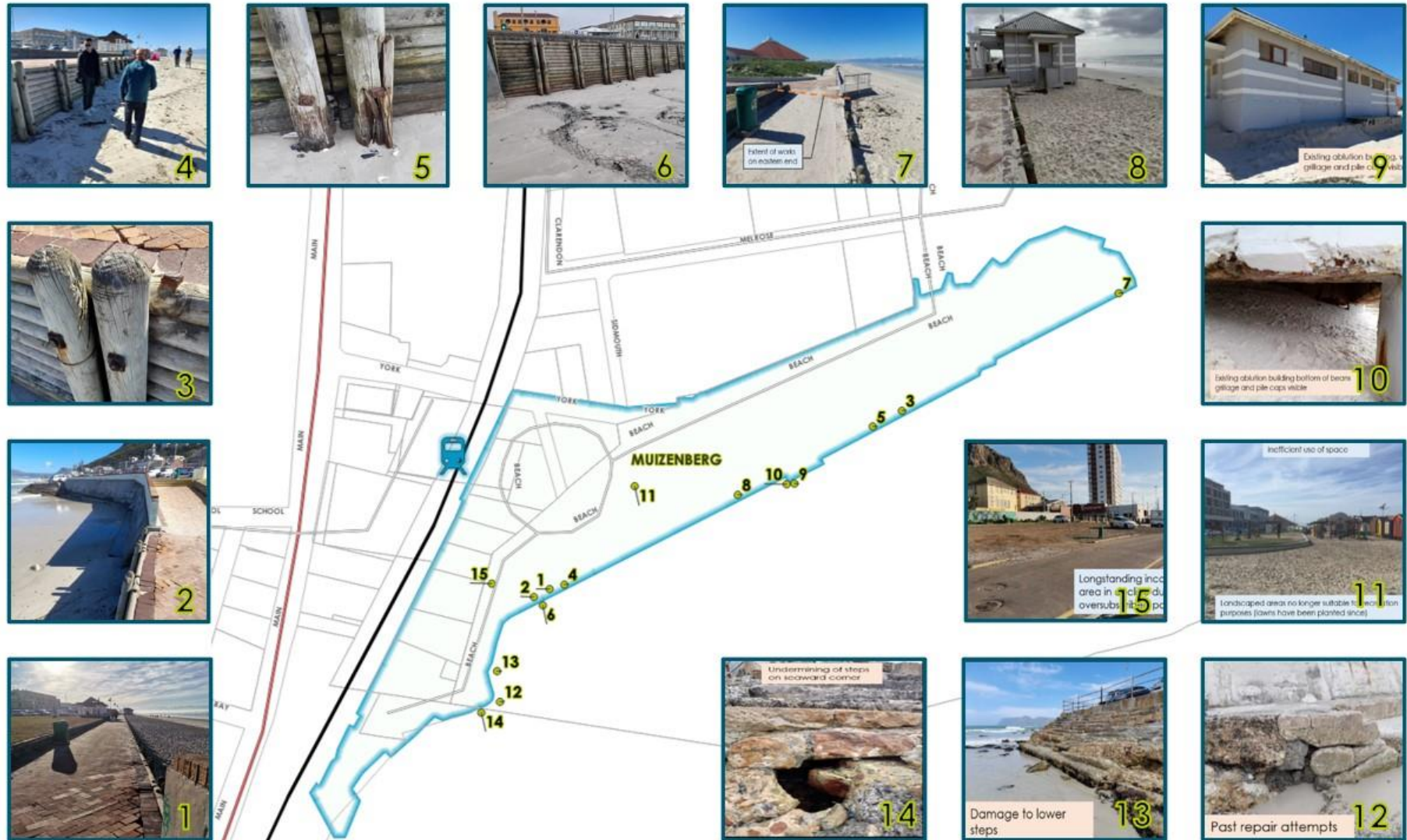


Figure 1: Condition of existing infrastructure

DEVELOPMENT PROPOSAL

The proposed Muizenberg Beachfront refurbishment is a multifaceted project, comprising several (partially separate) components. These can be distinguished into two parts – (1) The replacement of the existing coastal defence structures (The wooden revetment, concrete seawalls, Surfers' Corner stone steps, and accompanying promenade) with a new coastal defence structure (and promenade) designed to withstand the impacts of climate change induced sea level rise and protect landward infrastructure in the area; (2) The refurbishment of the public space and facilities landwards of the coastal defence structures. The new coastal defence structure will comprise a concrete stepped revetment and 3m wide promenade. It will replace the entire length of the old coastal defence structures. The use of concrete is necessary in order to sustain the harsh marine conditions and expected increase in wave energy in future and to provide long-term robust coastal defence infrastructure.



**Figure 2: Landscape Plan for the proposed refurbishment of the Muizenberg Beachfront area
Refer to Appendix B1.1 for a larger-scale drawing.**

To mitigate the visual impact of introducing concrete, a sand-coloured exposed aggregate finish will be used for the promenade and stepped revetment as opposed to a typical grey concrete finish. This will provide a more natural earthy gravel look and feel, tying into the exposed aggregate concrete used in the beachfront area. Areas landward of the 3m wide concrete promenade will be surfaced with segmented clay pavers similar to the existing landward spaces.

The new coastal defence structure and associated promenade will provide effective protection from the impacts of climate change induced sea level rise whilst also improving universal access to the beach and surrounding amenities. The central promenade will have a universal access ramp onto the beach to allow for greater inclusion and eased adaptive beach and surfing opportunities. The ablutions, showers, play area and entire promenade will be universally accessible. Additionally, a universal access ramp connecting the western parking lot to the promenade will be installed.

Concrete Stepped Revetment

The stepped revetment will provide a combination of general beach access steps, generous seating steps and larger open seating spaces, as well as the widened promenade. The stepped revetment provides the required coastal protection, recreational seating area as well as beach access along its length (Figure 3, 4). The main promenade will be set back two meters landward from the existing promenade. The alignment of the Point (corner) steps area will also be retreated landward of the existing alignment. Retreating the Point steps widens the beach at this, connecting the two beaches as it once was prior to the construction of the Point.

A modular pre-cast design has been used for the main (straight) section of the stepped revetment/promenade. The pre-cast concrete stepped revetment blocks have been designed in a way that allows them to be retreated or removed completely if necessary. While it is currently not predicted that any retreating or removal of the revetment/promenade will be necessary in the foreseeable future, this mobile design accounts for all future unpredictable possibilities. Additionally, the use of precast "modules" will minimize construction time along the main beachfront area, helping to prevent unnecessarily long inconvenience to the public. The Point section will be cast on site, thus will not be moveable due to various engineering and design-related complexities.

The concrete promenade and stepped revetment will include the following design features:

- The layout of the steps in the corner areas will have a round and smooth corner design as opposed to the jagged step widenings originally proposed.
- A fine, exposed aggregate surface finish and sandstone/light brown colour will be used as a concrete finish.
- The universal beach access ramp will be positioned at the central plaza and will be wide enough to allow easy deployment of a beach access mat.
- Seating steps of 0.5m (height) x 1.0m (width) will be implemented along the main longitudinal promenade area.
- Seven flights of 5m wide general beach access steps (0.167m x 0.333m) with handrails will be implemented. These will be incorporated into the stepped revetment and spread along the length of the beach.
- Large sandstone blocks from the historic corner steps will be reclaimed and incorporated as steps into the landscaping where applicable.
- The stepped revetment will be designed in such a way that the block units are removable and reusable in the future, if required.
- Articulated concrete black mattresses will be used for scour protection (to protect the toe of the structure). These scour protection structures are not expected to be exposed as they will be buried below the modelled storm erosion levels.

parking areas. All parking will remain free of charge. The total number of parking bays in the precinct will remain very similar, although a few parking bays may be lost in one area and added in another.

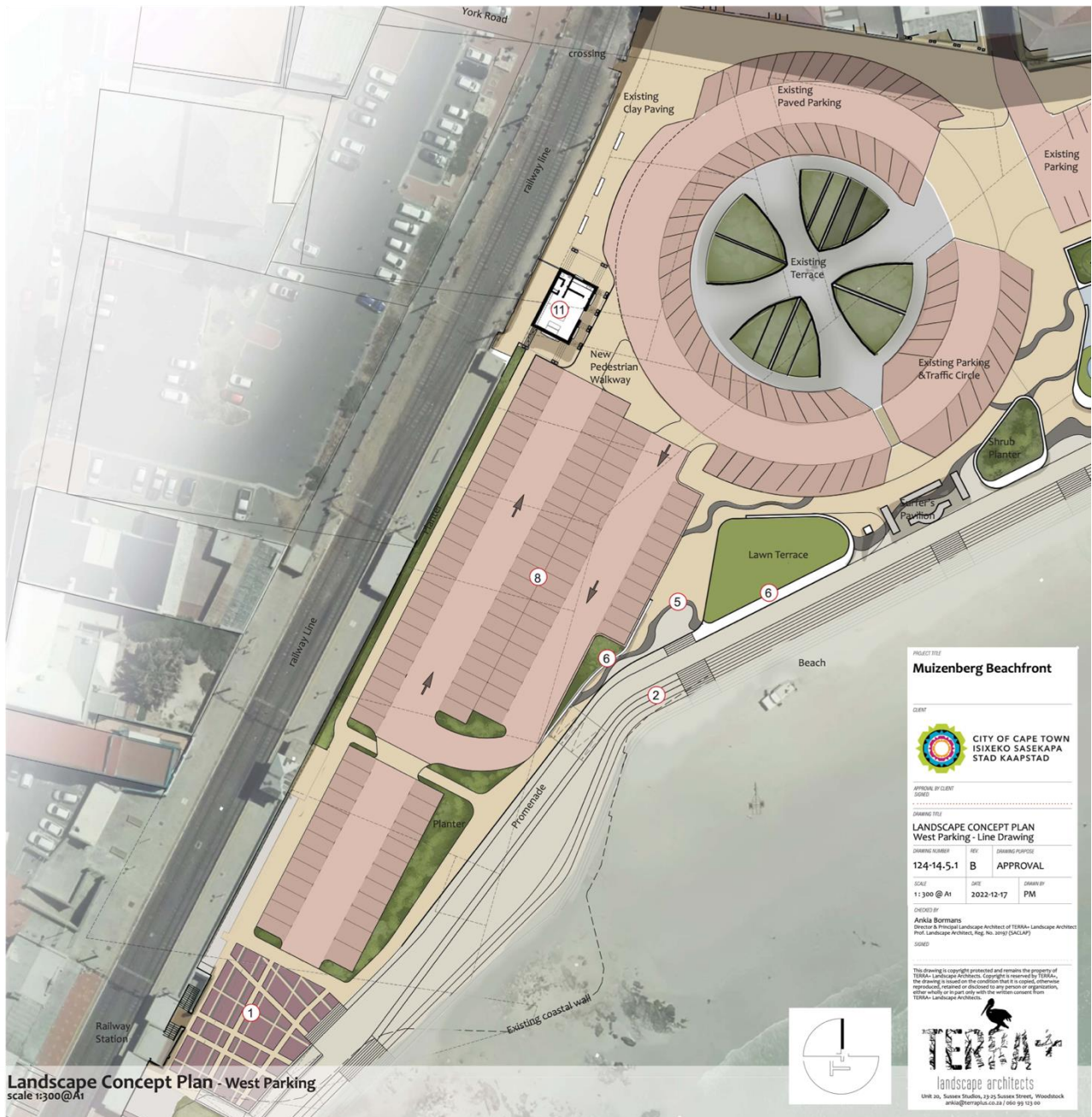


Figure 5: Proposed plan of the formalised western parking area and station forecourt area. Refer to Appendix B1.4 for a larger-scale drawing.

The station forecourt

The station forecourt on the east side of the railway line will be upgraded (Figure 5). New paved surfaces will provide a welcoming and safe pedestrian space and enhance the context of the historic railway station building. Paving patterns will complement existing and new alignments of the building and coastal steps and provide clear distinction between the pedestrian and vehicular zones. Lighting and street furniture will be added to the new paved grid.

Playground

The proposed project includes the refurbishment of the playground and surrounding landscape areas (Figure 6). The playground will include the following:

- Sandstone or Granite Boulders: Placed within planted 'dune'. For seating, pathway through vegetation, hopping and local material interest.
- Low Coastal/ Dune Vegetation: Mixed succulent ground cover and ornamental dune grasses.
- Artificial Lawn: 'Long blade' lawn to provide a soft and cooler surface. This also decreases irrigation requirements.
- Rubber Play Surfaces: Shades of blue and 'sand' colour rubber matting, to recommended safety thickness standards. These will be UV and weather resistant.
- Tinted in-situ cast concrete surface: Brushed concrete with tinted beige colour.
- Stone insets: Sandstone or granite stone laid flat into surface of artificial lawn or concrete. For steppingstones, and playful materials.
- Timber or Concrete 'Logs': Steppingstone logs placed at differing heights.
- 'Octopus' activity gym: Combination of netting, and log poles for climbing, balancing, pulling, swinging, hanging.
- 'Sea anemone' activity gym: Combination of log poles, custom made platform, tube slide, for crawling, sliding, exploring, viewing, climbing.
- 'Kelp forest': Combination of vertical log poles and netting.
- 'Sea Turtles': Sculptural objects for sitting, riding.

Due to the prevailing South-Easter wind, the design team had to choose between a visual linkage to the beach so that parents can observe children, or that parents seated in the playground could observe the sea and have wind shelter. The safety aspect of the visual linkage was prioritised. Note that the height of landscaping elements will be refined during the final design phases to further optimise view corridors. To prevent corrosion, steel use will be minimised, and corrosion resistant materials will be used where required.

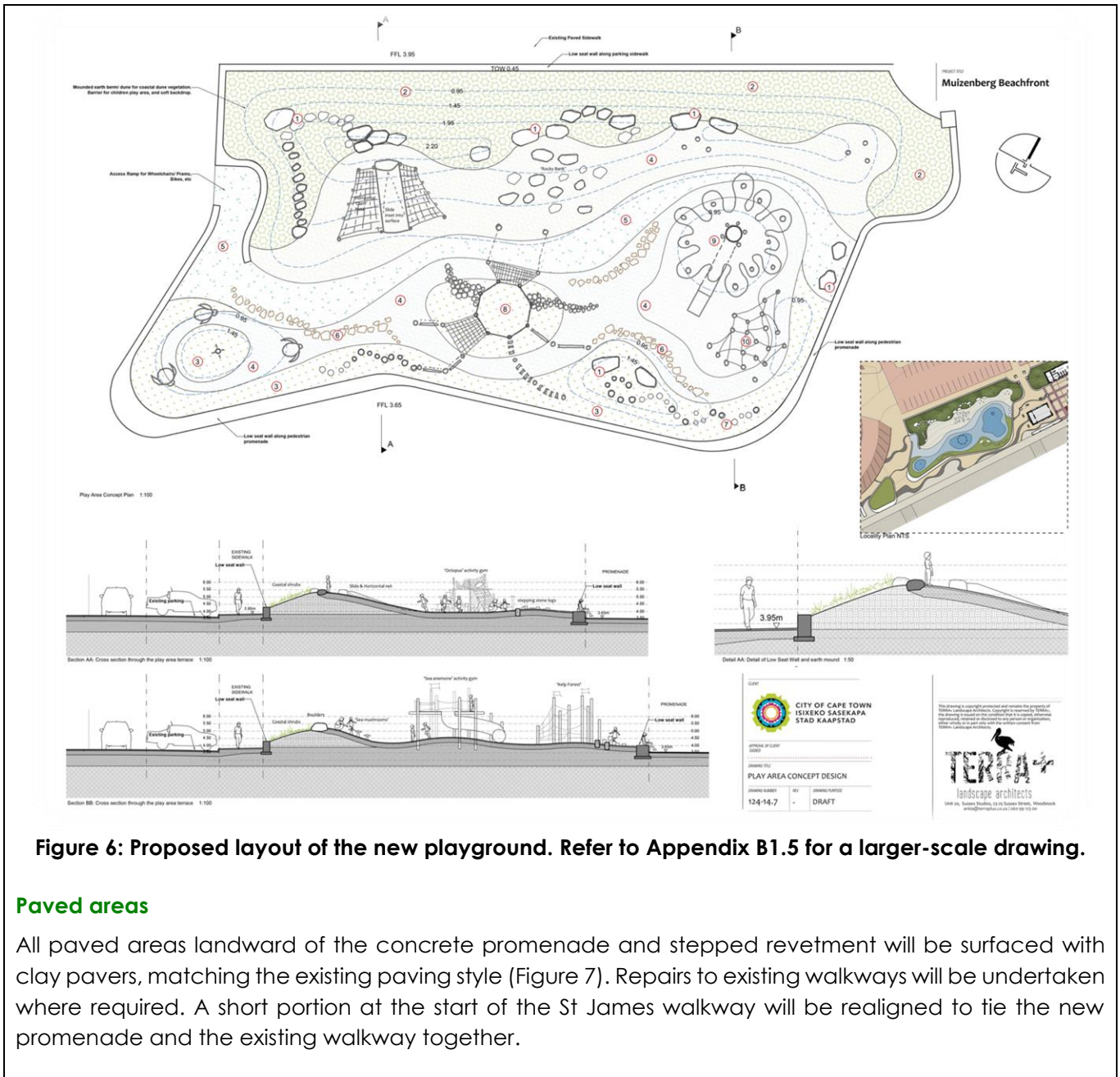


Figure 6: Proposed layout of the new playground. Refer to Appendix B1.5 for a larger-scale drawing.

Paved areas

All paved areas landward of the concrete promenade and stepped revetment will be surfaced with clay pavers, matching the existing paving style (Figure 7). Repairs to existing walkways will be undertaken where required. A short portion at the start of the St James walkway will be realigned to tie the new promenade and the existing walkway together.

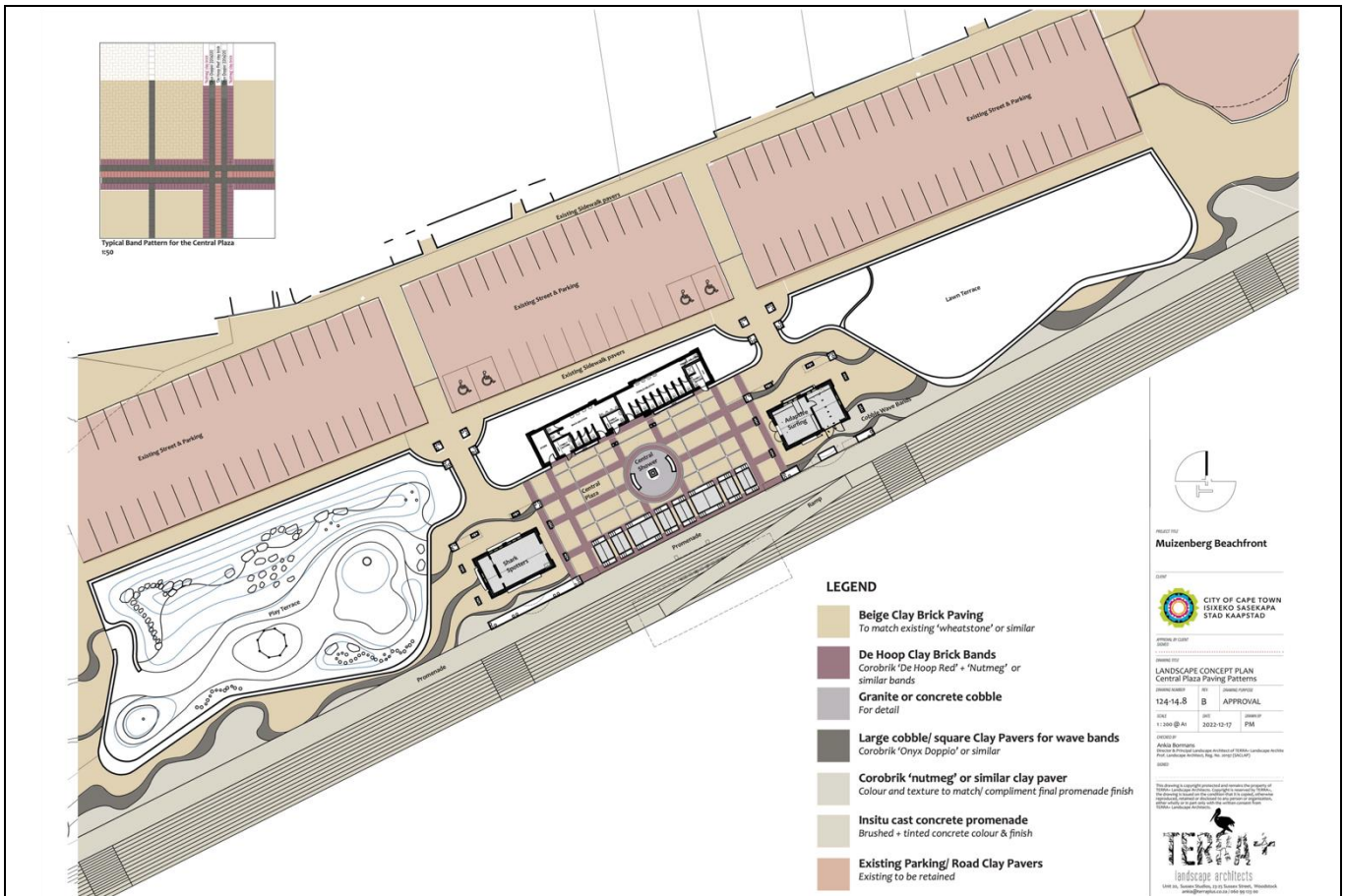


Figure 7: Proposed paving patterns of the central plaza area. Refer to Appendix B1.6 for a larger-scale drawing.

Soft landscaping

The soft landscaping of the area will also be refurbished. This includes the incorporation of locally indigenous vegetation and grassy areas in the project area. Lawn and indigenous vegetation will be planted as trees are not climatically suited to harsh coastal environments. Lawn areas will be kept to a minimum in order to reduce irrigation and maintenance requirements. Any lawn areas included will comprise of hardy indigenous coastal grass species that will be able to endure the harsh coastal climate of Muizenberg. Stormwater runoff will be directed into the planted areas for irrigation where possible. There will also be automatic irrigation for when there is not sufficient runoff.

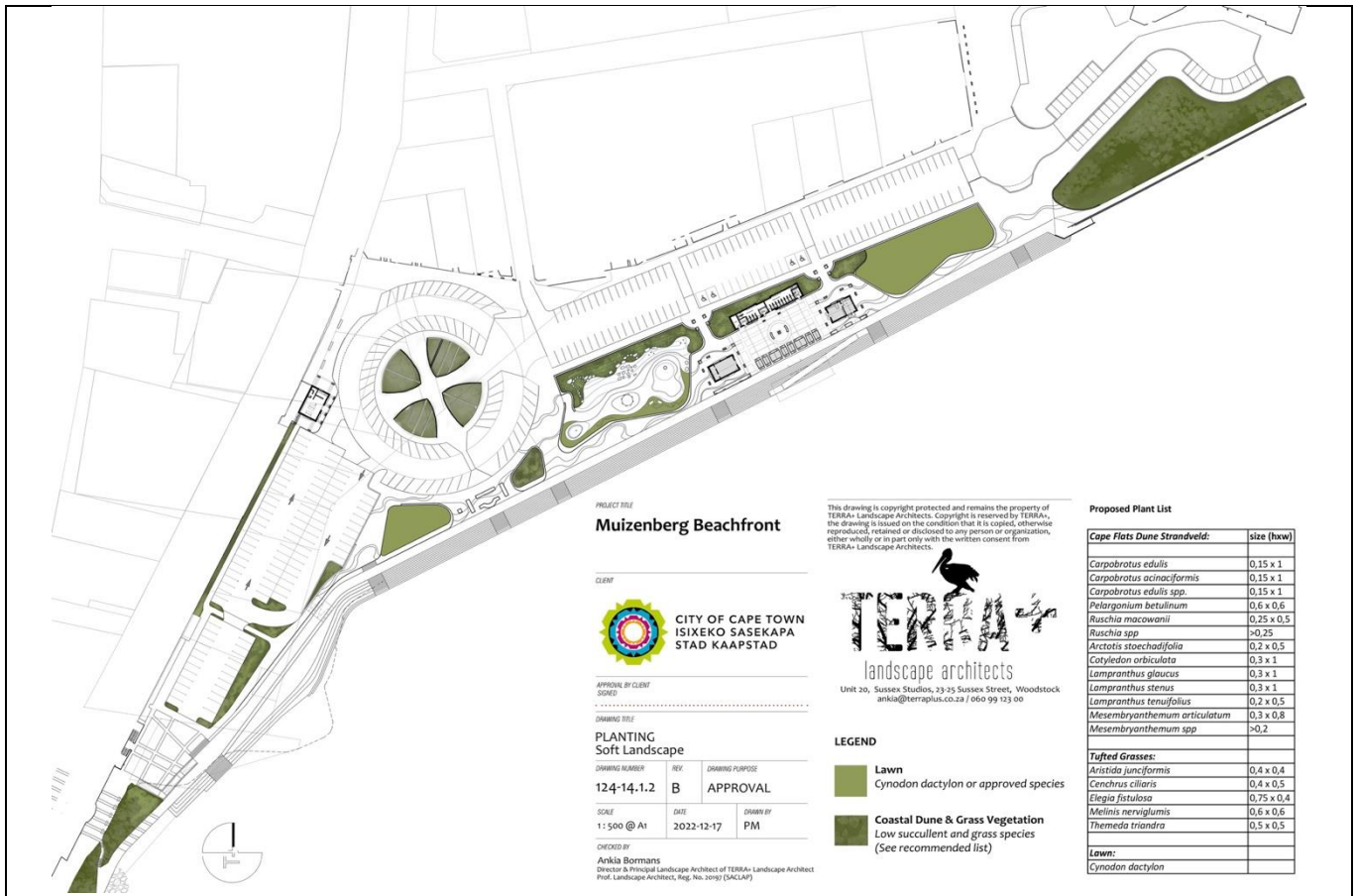


Figure 8: Proposed layout of the soft landscaping across the proposed Muizenberg Beachfront area. Refer to Annexure B1.7 for a larger-scale drawing.

Colourful beach huts

The City of Cape Town acknowledges the character value of the colourful beach huts and intends to keep all eight huts in the main beachfront area. They will be relocated in the refurbishment as their current location interferes with the construction of the proposed stepped revetment and promenade. All eight beach huts will be centrally located along the promenade, where they will act as a wind break to the central shower area. Their arrangement will follow the historical rhythm of small-small-large, as historically constructed and recently implemented at St James. The beach huts will be accessible from the shower plaza and the beach in order to create an inviting environment on both sides of the beach huts. Doors will have internal locks to ensure user safety.

Ablution facility

The proposed refurbishment will demolish the existing ablution building and construct a new ablution building landward of the proposed coastal defence structures. It will be located at the central shower plaza but will be shifted landwards of the shower area to be protected by the proposed stepped revetment. The design shall maintain the existing architectural style and include universal access toilets/family changing rooms. The outside showers will be wheelchair accessible, and the ablution building will include a dedicated wheelchair accessible shower. A bench will be provided along the outside of the building for general use. Mosaic artwork will be incorporated into the ablution building interior as well as on the outdoor shower and other landscaping elements where applicable.

It is necessary to relocate the ablution building as it is currently built seaward of the coastal defence structures and is being damaged by sustained wave action as a result of being in the littoral active zone. Attempting to protect the building in its current location would result in the loss of beach around the building and negatively affect sediment dynamics in the area.

Pergola

Due to the alignment and setback of the proposed coastal defence structure (stepped revetment) and promenade, the pergola structure close to the corner will be demolished and rebuilt (like for like) a few meters landward of the current location. Details and design of the pergola will be maintained, conserving the heritage design and aesthetic features.

Buildings

The two existing small buildings (currently used by Shark Spotters and Waves for Change) in the central shower area will remain in place. The building currently in use by the Waves for Change NGO will be adapted to be used by an NGO that will provide universal beach access and adaptive surfing opportunities. This building will be used as it is near the universal beach access ramp and can be used to store necessary accessibility equipment such as the beach access mats. The Waves for Change NGO will move to a newly constructed building near the northern corner of the newly rationalized western parking area (by the main circle).

Services

The proposed refurbishment includes the realignment of underground sewer and storm water pipelines where needed. This is not an upgrade to service capacity in the area; the realignment of these services is required to enable the construction of the proposed coastal defence structures. This includes the realignment of 65m of the DN375 and 90m of the DN300 gravity sewer pipelines (currently located next to the concrete seawalls and in the stone steps in the South-West corner of the site), as well as the lengthening and realignment of a portion of the DN675 stormwater outlet. The function of these pipelines will remain the same following the refurbishment.

The refurbishment will add area lighting to the proposed formalised parking areas and along the promenade. Service connections to the new ablution and NGO buildings will also be included in the project.

See Appendix B1.8 for details on present and proposed area lighting across the sight. See Appendix B1.9 for a full schematic of the existing and proposed service layouts.

Central Plaza

The central plaza area will be shifted a few meters landward to allow for the installation of the new coastal defence structure. The key features of the plaza, such as the showers, open space, and unique paving patterns will be retained.

See Figures 2 and 7, and Appendix B1.10 for details on the layout of the central plaza.

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.
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The site is currently accessible from all sides and this situation will continue following the proposed refurbishment. At present, the site can be accessed from Beach Road (from the northern side), from Muizenberg Beach (from the southern side), from the Muizenberg Pavilion (from the eastern side), and from the area around the railway line (from the western side). This will remain unchanged following the refurbishment. Universal accessibility will be improved following refurbishment as a result of added wheelchair ramps that link all sections of the precinct (such as the road to the promenade and the promenade to the beach).

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:			
	Erf 87374-RE	C016000700087375000000000RE		
	Erf 87114-RE	C016000700087114000000000RE		
	Erf 87143	C0160007000871430000000000		
	Erf 87142-RE	C016000700087142000000000RE		
	Erf 87141-RE	C016000700087141000000000RE		
	Erf 87140-RE	C016000700087140000000000RE		
	Erf 87139-RE	C016000700087139000000000RE		
	Erf 87138	C0160007000871380000000000		
	Erf 87137	C0160007000871370000000000		
	Erf 87158-RE	C016000700087158000000000RE		
	Erf 87135-RE	C016000700087135000000000RE		
	Erf 87134-RE	C016000700087134000000000RE		
	Erf 87144	C0160007000871440000000000		
	Erf 87155-RE	C016000700087155000000000RE		
	Erf 87130	C0160007000871300000000000		
4.7.	Coordinates of the proposed site(s) for all alternatives:			
	Latitude (S)	34°	06'	29.7"
	Longitude (E)	18°	28'	13.7"

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. Please note that this requirement is not applicable to the project. See Appendix E14, comment form DEA&DP: Coastal Management	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.	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.
City of Cape Town Municipal Planning By-law (2016, as amended)

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
<p>Various spatial planning policies and frameworks were considered in determination of the need and desirability of the proposed development. These are listed below, but please see section E of this report for an overview of how the proposed activity complies with these policies –</p> <ul style="list-style-type: none"> • Western Cape Provincial Spatial Development Framework. • Western Cape Provincial Coastal Management Programme 2022-2027. • City of Cape Town Municipal Spatial Development Framework. • Draft Southern Integrated District Spatial Development Framework and Environmental Management Framework. • City of Cape Town Southern District Spatial Development Plan. • City of Cape Town Integrated Coastal Management Policy. • City of Cape Town Coastal Management Programme. • Coastal Economic and Spatial Strategic Framework for Cape Town.

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.
<p>DEA&DP Guideline on Public Participation (2013) and Department of Environmental Affairs Public Participation Guidelines in terms of NEMA EIA Regulations (2017)</p> <p>These guidelines were considered in the determination of appropriate public participation strategies. All public participation requirements as stipulated in the EIA regulations will be met.</p> <p>DEA&DP Guideline on Alternatives (2013)</p>

This guideline informed the consideration of alternatives and the determination that no feasible and reasonable alternatives beyond the proposed refurbishment, and the no-go option, exist.

DEA&DP Guidelines on Need and Desirability (2013) and Department of Environmental Affairs Guideline on Need and Desirability (2014)

These guidelines informed the completion of section E of this report.

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

The Protocols for the Assessment and Minimum Report Content Requirements for Environmental Themes (GN 320 of 2020) came into effect on 9 May 2020. These protocols mandate site sensitivity verification for identified themes on the site based on the National Environmental Screening Tool Report. The themes included for the subject site are –

- **Agricultural theme:** high sensitivity
- **Animal species theme:** medium sensitivity
- **Aquatic biodiversity theme:** very high sensitivity
- **Archaeological and cultural heritage theme:** very high sensitivity
- **Civil aviation theme:** high sensitivity
- **Defence theme:** medium sensitivity
- **Palaeontology theme:** medium sensitivity
- **Plant species theme:** medium sensitivity
- **Terrestrial biodiversity theme:** very high sensitivity

In terms of the Protocols, the themes above require a site sensitivity verification followed by specialist assessments of the confirmed sensitivities. The table below provides an overview of the site sensitivity as verified by the environmental assessment practitioner and confirms the assessment(s) which have been undertaken. **Appendix L: Site Sensitivity Verification Report** was submitted to the competent authority with the application for environmental authorisation.

THEME / ASSESSMENT	SITE SENSITIVITY VERIFICATION	OUTCOME
<p>Agricultural Theme Classified as high sensitivity due to a moderate-high land capability rating in terms of the National Land Capability dataset that takes climate and soil type into account.</p>	<p>The entire site is completely developed and not appropriate for any kind of agricultural use. Almost all of the entire site is covered in concrete/paving material (only other sections are gravel or grass). The site is also located on the beachfront which is not conducive for farming.</p>	<p>A specialist study is not required.</p>
<p>Animal Species Theme Classified as medium sensitivity due to the apparent presence of the arachnid <i>Erigonops littoralis</i>.</p>	<p>The site is already heavily developed and therefore there is no added threat to this species as a result of the planned refurbishment.</p>	<p>A specialist study is not required.</p>

<p>Aquatic Biodiversity Theme Classified as very high sensitivity because the site is considered a strategic water source area, a wetland/estuary, and a priority freshwater ecosystem area.</p>	<p>The site is relatively close to Zandvlei and Zeekoevlei which is why “wetlands and estuaries” are flagged. These sites are 1.3km and 5.2km away respectively and neither wetland will be affected by the project. In addition, the entire project area is developed and there are no freshwater resources present. Therefore, the classification of “strategic water source area” and “freshwater ecosystem priority area quinary catchment” is not accurate.</p>	<p>A specialist study is not required.</p>
<p>Archaeological and Cultural Heritage Theme Classified as very high sensitivity due to being within 2km of a grade II heritage site (train station).</p>	<p>The Muizenberg Train station is not included in this project. The City of Cape Town's Heritage Branch had completed and submitted a Notice of Intent to Develop to Heritage Western Cape in March 2020. A comment from HWC was received confirming that no heritage studies were required as the proposal would not impact any heritage resources. On further review of the development proposal in late 2022, a second NID was submitted based on some aspects of the development proposal not being contained in the 2020 NID submission. The outcome of the 2023 submission requested a Heritage Impact Assessment (HIA) with additional studies be undertaken. In response to the comment, the City of Cape Town requested that HWC review their comment considering the previous response in 2020. HWC responded accordingly noting the following: <i>“The 2023 application is substantially in accordance with that of the 2020 with the addition of the removal of ad-hoc structures deemed to be not conservation worthy. These structures will require the submission of a Section 34 application as they are older than 60 years.”</i> They also advised that the applicant withdraw the 2023 NID application by formal letter to HWC, which was duly undertaken, rendering the 2023 request for an HIA void and the 2020 comment still valid and actionable. The Section 34 application is currently being undertaken by the City of Cape</p>	<p>A specialist study is not required (for this reason).</p>

	<p>Town for the demolition of the ablution facility.</p> <p>Following a meeting with the South African Heritage Resources Agency (SAHRA) in April 2023, an HIA was requested for the portion of the work area that falls below the highwater mark.</p>	<p>A specialist HIA including a maritime archaeological impact assessment was conducted. Findings are included within this BAR.</p>
<p>Civil Aviation Theme: Half of the development is classified as high sensitivity due to being partially covered by "dangerous and restricted airspace". The other half is classified as medium sensitivity for being between 15km and 35km away from a major civil aviation aerodrome and a civil aviation radar.</p>	<p>The classification of dangerous and restricted airspace is probably because of the South African National Defence Force base in Simon's Town. This airspace is used for military aircraft operations and training. The refurbishment is unlikely to impact on radar functionality or be an obstacle for air traffic as all proposed structures are below the height of surrounding buildings.</p>	<p>A specialist study is not required.</p>
<p>Defence Theme Classified as medium sensitivity due to being a "military and defence site".</p>	<p>The location of the abovementioned Simon's Town base is likely why there's a high defence theme. This will not impact the base.</p>	<p>A specialist study is not required.</p>
<p>Palaeontology Theme Classified as medium to low sensitivity due to potentially containing features with medium and low palaeontology sensitivity.</p>	<p>The screening tool does not provide metadata indicating the reasons for such classifications. Considering the fact that the site has already been extensively developed, and this project is a redevelopment (not expansion), it is not feasible that there are any intact fossils in the area that would not have been destroyed or lost during previous construction.</p>	<p>A specialist study is not required.</p>
<p>Plant Species Theme Classified as medium sensitivity due to the apparent presence of 39 species of medium sensitivity flora and the presence of 1 low sensitivity flora.</p>	<p>As the site is already heavily developed and commercialised, it is not possible for these plants to exist at the project site. The only patches of vegetation in the area are planted lawn and raised plant beds. The site visit confirmed this (see photos of the area for further confirmation).</p>	<p>A specialist study is not required.</p>
<p>Terrestrial Biodiversity Theme Classified as very high sensitivity due to the</p>	<p>As discussed in the plant species theme, there is no natural vegetation left in the area, thus there is no critically endangered ecosystem left to be</p>	<p>A specialist study is not required.</p>

<p>apparent presence of FEPA sub catchments and a critically endangered ecosystem.</p>	<p>disturbed by the proposed project. Additionally, there are no freshwater systems within the project area. Considering all of this, there is no reason for the site to have any terrestrial biodiversity sensitivity.</p>	
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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.
<p>Activity number 15</p>	<p>Activity number 15</p> <p>The development of structures in the coastal public property where the development footprint is bigger than 50 square meters, excluding –</p> <p>(i) the development of structures within existing ports or harbours that will not increase the development footprint of the port or harbour'</p> <p>(ii) the development of a port or harbour, in which case activity 26 of Listing Notice 2 of 2014 applies;</p> <p>(iii) the development of temporary structures within the beach zone where such structures will be removed within 6 weeks of the commencement of development and where coral or indigenous vegetation will not be cleared; or</p> <p>(iv) activities listed in activity 14 of Listing Notice 2 of 2014, in which case that activity applies.</p>	<p>The refurbishment involves the demolition and redevelopment of structures (such as the current ablation facility) in an area greater than 50 m² in the coastal public property, as well as the construction of new buildings (such as the new ablation facility and NGO building) greater than 50m² in the coastal public property.</p>
<p>Activity number 19A</p>	<p>Activity number 19A</p> <p>The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from –</p> <p>(i) the seashore;</p>	<p>A temporary sea wall (or temporary berm) will be built during the construction phase of the proposed project. This temporary sea wall will be required to provide temporary coastal protections (and hold back the sea and allow for dewatering to take place). This</p>

	<p>(ii) the littoral active zone, an estuary, or a distance of 100 meters inland of the highwater mark of the sea or an estuary, whichever distance is greater; or</p> <p>(iii) the sea: -</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal, or moving –</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>where such development is related to the development or a port or harbour, in which case activity 26 of Listing Notice 2 of 2014 applies.</p>	<p>is necessary to ensure the stepped revetment can be safely constructed, and to the required quality. This will occur on the beach on the seaward side of the proposed revetment steps and the new promenade, which would therefore move sand onto the beach. Furthermore, sand will be moved during the construction of the foundation of the revetment steps.</p>
<p>Activity number 52</p>	<p>Activity number 52</p> <p>The expansion of structures in the coastal public property where the development footprint will be increased by more than 50 square meters, excluding such expansions within existing ports or harbours where there will be no increase in the development footprint or the port or harbour and excluding activities listed in activity 23 of Listing Notice 3 of 2014, in which case that activity applies.</p>	<p>While most of the development will take place within the site's existing developed footprint, there will be some features that will be moved from their original locations. These areas will be greater than 50m². Such areas include the refurbishment of the parking facility, the realignment of the promenade with existing walkways, the reconstruction of the current promenade, the reconstruction of the new ablution facility, and the construction of scour protection which will be seaward of the existing footprint (under the sand).</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</p>

		which the applicable listed activity relates.
<p>Note:</p> <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 refurbishment will occur within the development footprint of the current development will not encroach on any undeveloped land. As this is a refurbishment to existing failing and incomplete infrastructure, there is no preferred alternative. The proposed development will: (1) replace the existing aging coastal defence structures that have passed their design lives and are starting to fail (in order to protect the area from the increasing effects of climate change); (2) complete the incomplete aspects of the precinct; (3) ensure the area is safe for public use and increase the general appeal. Please see section B (4.4) for a detailed description of the preferred development (as changed after initial public comment).</p> <p>The refurbished design will replace the old wooden seawall with a new stepped concrete revetment that is strong enough to withstand continuous wave action. This revetment will have a universal access ramp to better access to the beach, as well as a promenade. The main (straight) section of the stepped concrete revetment and accompanying promenade will precast in many small sections off site. This is done for two reasons: simplifying on-site construction logistics (and thus minimizing public disturbance), and to make the new promenade/stepped revetment retractable or removable if the need arises in future as a result of unforeseen sea-level rise related complications. Note that this is only true for the main straight section of the proposed p and revetment, not the "Point" area (this are must be cast on site due to various complexities associated with the design). The "Point" will be demolished to connect Muizenberg's rocky beach</p>	

with the sandy beach (as it once was, prior to construction of the "Point"). The new promenade and stepped revetment (in place of the "Point") will join onto the St. James walkway, providing a pedestrian link from Muizenberg to Fish Hoek. In addition, the current ablution facility will be demolished and rebuilt further inland (it is subject to wave action in its current location) and it will be built in the same architectural style as the current ablution facility to preserve its cultural and heritage integrity. The colourful beach huts and the pergola will also be moved further back as their current locations would interfere with the construction of the proposed new coastal defence structures. The same number of beach huts will be located in the central area of the main promenade and the pergola structure will be reconstructed like for like, a few meters landward of the current position.

Secondary to the need to refurbish the area to protect it against the increased effects of climate change is the need to complete the incomplete aspects of the precinct, such as the existing gravel parking lot (which will be paved in the same style as the current parking facility). This development will only occur on land already used for parking and no new land will be incorporated into the parking facility. This therefore also cannot occur on an alternative site.

The old playground will be upgraded. Furthermore, indigenous vegetation will be used to landscape the area.

See the "Proposed development" subheading under Section B (4.4) for the detailed description.

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.
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The property is currently zoned as follows –

- Erf 87374-RE:** Open Space 2: Public Open Space
- Erf 87114-RE:** Transport 1: Transport Use
- ERF 87143:** Transport 2: Public Road and Public Parking
- Erf 87142-RE:** General Residential 4
- Erf 87141-RE:** General Residential 4
- Erf 87140-RE:** General Residential 4
- Erf 87139-RE:** General Residential 4
- Erf 87138:** General Residential 4
- Erf 87137:** General Residential 4
- Erf 87158-RE:** General Residential 4
- Erf 87135-RE:** General Residential 5
- Erf 87134-RE:** General Residential 4
- Erf 87144:** Open Space 2: Public Open Space / Transport 1: Transport Use
- Erf 87155-RE:** Transport 1: Transport Use
- Erf 87130:** Transport 1: Transport Use

General residential 4 zones promote higher-density residential development, including blocks of flats of medium height and floor space. The dominant use is intended to be residential, but limited mixed-use development is possible. The gravel parking area is currently zoned general residential 4 (despite it currently being used for parking) and it will need to be rezoned. However, despite being rezoned, the land use (i.e.: parking) will remain the same and will not change following the Muizenberg Beachfront refurbishment.

	<p>Much of the site is public open space. The City of Cape Town's Zoning Scheme defines public open space as "land which is designated as public open space, under the ownership of the City or other organ of state, with or without access control, and which is set aside for the public as an open space for recreation or outdoor sport, including a park, playground, public or urban square, picnic area, public garden, nature area; and includes ancillary buildings, infrastructure and uses". In terms of the Municipal Planning By-Laws (2015), the primary use for this type of property is public open space and environmental conservation use, and permitted activities on such property includes, <i>inter alia</i>, tourist facilities.</p> <p>The proposed refurbishment includes a playground and ablution facility, which is in line with the zoning of the area as public open space (as it is a facility for visitors to use). The land use will not change.</p>
3.	<p>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.</p>
	<p>There are no conflicts envisioned at this time due to the nature of the development being consistent with the existing land uses. There are no expected conflicts with the rezoning as it is in line with the Municipal Planning By-Laws (2015).</p>
4.	<p>Explain how the proposed development will be in line with the following?</p>
4.1	<p>The Provincial Spatial Development Framework.</p>
	<p>Urban Space Economy</p> <p>The Muizenberg Beachfront is situated in an urban area and therefore the concept of the Urban Space Economy is important. According to the 2014 Western Cape Provincial Spatial Development Framework (PSDF), the beachfront is part of the Cape Metro, which is recognised as an important part of the Western Cape economy and contributes approximately 85% of the province's GDP. Tourism (based in settlements and along regional tour routes, as well as themed and focused outdoor activities) is an important part of the Cape Metro's GDP generating capacity, as the Western Cape is a prominent tourism destination. The PSDF states that there is a need to "reinforce the Cape Metro as the province's economic engine" and enhancing tourism is one such method to do so. The PSDF also states that the "integrity of the province's natural and built environments is also of critical importance to the further development of tourism, as the Western Cape's tourism economy is nature and heritage based and built on a foundation of a high-quality and unique environment". The proposed refurbishment of the Muizenberg Beachfront will provide a high-quality environment, encouraging more people to frequent the area, and thus enhancing tourism. Muizenberg can be said to be a unique environment, and attracting people to the area would positively affect the province's GDP. The proposed refurbishment will also protect the "integrity" of the environment, which is specifically stated in the PSDF as being important, by protecting the area against climate change induced sea level rise.</p> <p>One of the key concepts of the urban space economy is to "regenerate and revitalise existing economic nodes". The various beachfront businesses (including, but not limited to, restaurants, retailers, and surf schools) classify the area as an economic node. The PSDF also states that there's a need to target existing economic assets to lever the regeneration and revitalisation of urban economics. The proposed refurbishment will have this effect.</p> <p>The PSDF aims to "open up opportunities in the urban space economy". An increase of tourists (as well as locals) to the Muizenberg Beachfront area will have a positive effect on the beachfront businesses of the area. The PSDF further notes that, even though the private sector is the main driver</p>

of economic growth, the government is primarily responsible for determining where this growth must take place. The City of Cape Town's investment in the refurbishment of the Muizenberg Beachfront will allow the growth of the private sector which will facilitate overgrowth. This is in line with the PSDF.

Resources

The PSDF states that inland and coastal water resources should be safeguarded. As the coastal defence infrastructure at the Muizenberg beachfront is in a state of decline and reached the end of its lifespan, it needs to be refurbished in order to be "safeguarded" against the potential effects of climate change. The proposed refurbishment will effectively safeguard the coastline and associated landward infrastructure, aligning with the PSDF.

Ecosystem services should also be protected according to the PSDF. "Ecosystem services" are defined the "many and varied benefits to humans provided by the natural environment and healthy ecosystems". Included in these benefits is the enjoyment that people gain from outdoor time in pleasant natural environments. The accessibility of the natural environment of the Muizenberg Beachfront will be increased through the proposed refurbishment, allowing more people to enjoy the natural environment. Furthermore, the integrity of this environment will be maintained as it would be protected against the potential effects of climate change.

Cultural and scenic assets also need to be safeguarded. The Muizenberg Beachfront can be classified as a scenic asset and it will be safeguarded through the proposed refurbishment, thus being further in line with the PSDF.

Settlement

The PSDF aims to protect, manage, and enhance sense of place, cultural, and scenic landscapes. A "strong sense of place and quality environments within settlements at all scales is increasingly recognised as an essential dimension of sustainable development". This relates to the economic potential associated with tourism. As the Muizenberg Beachfront is a tourist destination, the proposed refurbishment, which will increase the economic potential associated with tourism, will enhance its sense of place. The refurbishment will also maintain the current cultural and scenic assets of the area as much as possible. The characteristic features of the current Muizenberg Beachfront will be incorporated in the new design, such as the colourful beach huts and the ablution facility that will be built in the same style as the current one (which is planned to be demolished during the refurbishment).

Further developments along the coast should not "compromise ecological integrity, tourism potential, and landscape character" and "development should be contained within a limited footprint". The development footprint of the Muizenberg Beachfront will not extend beyond the original developed area, thereby being "contained within a limited footprint". This footprint will therefore not compromise ecological integrity, tourism potential, or the landscape character to an extent greater than how these factors have already been impacted by the previous development. While the foundation of the stepped revetment will extend onto the beach during the construction phase, this disturbance will be of a temporary nature.

The PSDF states that development should "ensure public access to aquatic assets and acknowledge the importance of coastlines in contributing to the sense of place". The stepped revetment and universal access ramps will increase accessibility to the beachfront therefore ensuring access to the coastline for the public.

Provincial Coastal Management Programme

This project is also aligned with the Western Cape Provincial Coastal Management Programme 2022-2027 in the following priority areas: Social and economic development; facilitation of coastal access; climate change – planning for resilient communities; and finally, natural and cultural heritage resource management.

4.2 The Integrated Development Plan of the local municipality.

The **City of Cape Town Five-Year Integrated Development Plan (2022 – 2027)** contains various implementation plans to be initiated within a five-year period. The relevant plans are discussed below–

Economic growth

The objective of this plan is to increase jobs and investment in the Cape Town economy. Jobs will be created during the development's construction phase through the construction work. Jobs will likely be created after the construction phase as the beachfront businesses will likely increase their hiring capacity to support the increased amount of people coming to the area. See Section G (8.2) for further details on the economic benefits of this project for the Muizenberg Beachfront.

Public space, environment, and amenities

The IDP states that the City is committed to “protecting, restoring, and managing its natural areas to ensure their long-term sustainability”. It further recognises that its “green infrastructure is important to Cape Town's resilience to climate changes”. The aim of the proposed refurbishment is to protect the area and its infrastructure against the increased effects of climate change, which directly aligns to the IDP.

Objective 10 speaks to clean and healthy waterways and beaches, and states that the City will “restore and improve priority coastal infrastructure and ecological processes, with a focus on improving resilience to climate change impacts”. As stated above, this is exactly what the refurbishment proposes to do. The City's coastal infrastructure initiative recognises that “maintaining, managing, and developing key coastal infrastructure is crucial to protect the City and private property, ensure a high-quality coastal environment, and provide public access to the coastline”.

Objective 11 concerns quality safe parks and recreation facilities supported by community partnerships and states that the City will “design and manage quality public spaces and facilities where communities can gather to learn, collaborate, and relax in a safe and welcoming place”. The refurbishment has the effect of managing a public space where community members can gather. It also has an emphasis of safety, as the refurbishment will reinforce failing structures, as well as allow for security services to be on the site.

Transport

Objective 13 provides for safe and quality roads for pedestrians, cyclists, and vehicles. The promenade has been designed with NMT in mind, promoting further public access to the muizenberg beach front by means other than driving. Additionally, a taxi/bus drop off area is included in the project to promote further public access options to the area. The existing Golden Arrow bus stop at the circle adjacent to the railway line shall be maintained. Finally, the forecourt of the station is being refurbished, making the currently run-down area in front of the Muizenberg Train Station more attractive to the public. Defining pedestrian and vehicle circulation routes and raised pedestrian crossings in the existing informal parking area and around the main circle

reduces pedestrian-vehicle conflicts, increasing safety, making the area more pedestrian oriented.

A resilient city

The City proposes to “adapt basic services infrastructure in response to climate change”. As stated above, the proposed refurbishment is in response to the increased risk of climate change.

City of Cape Town Integrated Coastal Management Policy

The City’s coastline provides the communities and visitors to Cape Town with a multitude of social and economic benefits and opportunities, as well as essential ecosystem goods and services. The City’s coast is, and must remain, a common asset belonging and accessible to all. Climate change induced sea level rise is a major threat to coastlines globally. In addition to having passed their design lives, the current Muizenberg Beachfront coastal defence structures were not designed with the impacts of future sea level rise in mind. This leaves the Muizenberg Beachfront vulnerable to the risks associated with sea level rise, necessitating the replacement of the current coastal defence structures. By ensuring the beachfront is prepared for projected higher sea levels in the years to come, the City is fulfilling its duty to protect the public and support the local economy.

The Integrated Coastal Management Policy contains various coastal policy principles, as the coastal environment is a “shared asset held in trust for the common good of all, equitable and ease of public access to coastal areas and associated opportunities for the entire coastline is central to this value”. The proposed new stepped revetment will join onto the St. James walkway, further promoting NMT by providing a pedestrian link from Muizenberg to Fish Hoek. “Economic and social development opportunities must be optimised to the benefit, and in the interest of, all residents” and the “development of coastal economic and social opportunities must be undertaken in a manner than does not, harm, or degrade the coastal environment or its ability to cope with climate risks in the future”. The proposed refurbishment is to the benefit of the public, as it will ensure the Muizenberg beachfront is equipped with the necessary infrastructure to safely “cope with climate risks in the future”.

The policy also contains certain policy directive details. The highlighted directive details are –

1. Common Asset: The City will “manage the coastline at all times in the best interests of all and not to the sole benefit of interest of individuals or groups”, and “in all decisions relating to the development of the coast, careful consideration will be given to protecting and preserving unique heritage sites, consistent with the City’s policies and national law”. The Muizenberg Beachfront has some heritage value, which will be maintained through actions such as incorporating the colourful beach huts in the new design and designing the new ablution facility in the same way as the current ablution facility.

2. Access: A core principle to the City must be “equitable access to the coast while ensuring that this access is regulated, organised, and controlled in a manner that does not detract from or negatively impact on the coastal environment while also ensuring ease of access for all”. In this regard, The City will “apply an integrated approach, where sea defence mechanisms are required, to ensure that access and the amenity value of the coast is retained and promoted and “ensure that formalised public access points are appropriately distributed along the length of the coastline to facilitate public access for all residents”. The proposed refurbishment does this by providing for a stepped revetment, which includes a central universal access ramp, to allow for access to the beach. The proposed new stepped revetment will join onto the St. James walkway,

further promoting NMT by providing a pedestrian link from Muizenberg to Fish Hoek, as already discussed.

3. Optimise Economic and Social Opportunities: The City aims to “invest in appropriate infrastructure that supports a wide range of economic and social development activities and opportunities”, as well as the “rectification of historically made inappropriate planning decisions through appropriate regulations, strategies, and building codes”. The current failed state of the Muizenberg Beachfront can be said to be a historically made inappropriate planning decision, as it will not withstand the effects of climate change. The proposed refurbishment is a way which the City can “invest in appropriate infrastructure” as it will be reinforced to withstand sea-level rise and increased storm surges. This, in turn, positively impacts a wide range of economic and social development activities and opportunities by increasing the economic activity in the area.

4. Coastal Recreation: Coastal recreation is “one of the largest social activities in Cape Town”. Therefore, the City wishes to “promote and support coastal recreation by maintaining, investing in, and developing infrastructure and services that facilitate appropriate coastal recreation opportunities”. The proposed refurbishment will have the effect of maintaining infrastructure which facilitates coastal recreation opportunities, as it will provide better access to the coast as well as protect against the effects of climate change.

5. Heritage, Identity, and Sense of Place: The City aims to “take into account architecture, colour, form, and position when considering coastal development opportunities” and “ensure that any future coastal defences for the protection of private and public properties and City infrastructure are strategically managed by the City in the interests of Cape Town and its residents”. This will be done during the proposed refurbishment by ensuring that the integrity of the current ablution facility is maintained when the new ablution facility is constructed, and by incorporating the colourful beach huts into the new design. The association of the Surfers' Corner masonry steps with the character and sense of place of the Muizenberg Beachfront is noted by the City, however due to sustained damage as a result of wave action, and the fact this structure has passed its design life, replacement is the only option. The new stepped revetment seeks to embody the character of the old Surfers' Corner steps.

6. Risk Management and Mitigation: The policy states that “natural systems such as wind, wave action, long shore sand transport, erosion and accretion, and storm action are powerful systems that must inform and guide coastal development and ancillary opportunities”. In this regard, the City will “require all new coastal developments and changes to existing developments to incorporate mitigation of and/or adaptation to coastal climate change impacts as part of their approval process”. The ultimate aim of the Muizenberg Beachfront refurbishment is to protect the area against the effects of climate change. The refurbishment is a mitigation factor.

City of Cape Town Coastal Management Programme

The coastal management programme is an extensive document, but specifically mentioned the Muizenberg Beachfront in various senses, beginning with how the beachfront contributes to the City's “sense of place”. The proposed refurbishment aligns with the programme in the following ways –

- The programme acknowledges the threats of sea-level rise in coastal areas, as well as the possibility of big wave events in False Bay which can cause considerable amounts of damage. As stated above, the ultimate aim of the proposed refurbishment is to mitigate

against the effects of climate change in the area, which include sea-level rise and big wave events.

- The programme lists Muizenberg as having an aggregate risk of two in terms of features and characteristics of the beach. This includes risks caused by wave-run up, wave set-up, nature of the coastline, and the extent of development in the area. Given this risk profile, the proactive refurbishment of the coastal defence infrastructure at the Muizenberg Beachfront aligns with the programme.
- The programme notes that the City of Cape Town will –
 - “Ensure that any future coastal defences for the protection of private and public properties and City infrastructure are strategically managed by the City in the interests of Cape Town and its residents”.
 - “Undertake a broadly consultative process with the public when deciding on sea-defence interventions.”
 - “Require all new coastal developments and changes to existing developments to incorporate mitigation of and/or adaptation to coastal climate change impacts as part of their approval process.”
 - “Favour soft engineering approaches over hard engineering approaches, where possible””

The above listed points have been incorporated into the proposed Muizenberg Beachfront refurbishment, and therefore the refurbishment is consistent with this program.

Coastal Economic and Spatial Strategic Framework for Cape Town

This framework recognises the opportunity of increased focus and investment by the City into its coastline, and how this will release significant untapped social and economic opportunities and the associated virtuous cycles of benefit related to private investment, job creation, and economic stimulation. The proposed refurbishment will encourage economic opportunities along the coastline (i.e.: the Muizenberg Beachfront), thereby increasing the economic activity of the area.

The framework suggests various spatial and economic development plans for the coasts. These include–

1. Accessing the coast economically and spatially as a single linear connected space: The proposed new stepped revetment will join onto the St. James walkway, further promoting NMT by providing a pedestrian link from Muizenberg to Fish Hoek

2. Identity public development opportunities and linked private sector economic opportunities: The proposed refurbishment is a public development opportunity which links to private sector economic opportunities, as the economic activity of the various businesses along the beachfront will increase will an increase of people to the area.

3. Identify new public access opportunities, walkways, and cycle paths with a focus on linking the coast linearly: The new concrete stepped revetment and promenade will serve pedestrians and cyclists alike. It joins onto the St. James walkway, further promoting NMT by providing a pedestrian link from Muizenberg to Fish Hoek.

4. Access and make recommendations with regards to the formalising the marine and coastal eco-tourism industry as a core part of the tourist experience and the spin-off economic potential of eco-tourism hubs: The proposed refurbishment will encourage eco-tourism as it will attract more

people to the area, as well as have the effect of creating “eco-tourism hubs” because the economic activity of the surrounding businesses will also increase.

4.3. The Spatial Development Framework of the local municipality.

The **City of Cape Town's Municipal Spatial Development Framework (MSDF)** is relevant to the proposed development. The MSDF describes “coastal nodes” as being “typically destination-type places that are areas of attraction on the coast and within the growing denser parts of the city”. It continues to state that “existing future coastal nodes include a range of functions from businesses, social facilities, and residential developments and that “coastal nodes are usually associated with forms of development that support their function as a point of attraction, without detracting from it”. Furthermore, these nodes should make responsible use of the social and economic benefits of the coasts and public access must be preserved or actively enhanced. The Muizenberg Beachfront has been identified specifically as an area for intensified use.

The proposed refurbishment to the Muizenberg Beachfront will only further intensify its use and enjoyment, as well as increase its social and economic benefits. The stepped revetment and universal access ramp, as well as the refurbished promenade, will assist with access to the beach, which will increase its use and enjoyment. Other aspects of the proposed development, such as the playground, will also increase use and enjoyment. In terms of social and economic benefits, more people will be attracted to the area which will increase economic activity for the beachside businesses. To prevent detracting from this coastal node, special care has been taken to ensure the character of the Muizenberg Beachfront is preserved whilst also providing the necessary infrastructure to the area.

The MSDF contains 3 spatial strategies: 1) building an inclusive, integrated, vibrant city 2) manage urban growth and create a balance between urban development and environmental protection 3) plan for employment and improve access to economic opportunities. These are discussed independently below.

1. Building an inclusive, integrated, vibrant city

An “inclusive” city means a city for everyone. This includes people with disabilities, who will have access to the Muizenberg Beachfront due to the universal access ramp included in the refurbishment design.

This spatial strategy includes “identifying, conserving, and managing the heritage resources, cultural landscapes, scenic routes, and destination places fundamental to Cape Town's unique sense of place in line with legal requirements, including those of the National Heritage Resources Act”. The Muizenberg Beachfront has both heritage and scenic aspects and is considered a destination place. The proposed development will keep in the character of the current Muizenberg Beachfront by incorporating the colourful beach huts into the design, as well as designing the new ablution facility in the same way as the current ablution facility. This will preserve the heritage and scenic aspects of the area.

This spatial strategy also includes “maintaining and creating quality, safe open space systems and public spaces, utilising partnerships and commitments from both the public and private sector to optimise existing facilities, while strategically locating new ones”. The current state of the Muizenberg Beachfront is unsafe. The infrastructure has surpassed its lifespan and is beginning to fail. Furthermore, in its current state, it will not be able to withstand the effects of climate change, including sea level rise and increased storm surges. Concrete will make the existing structures safer,

thus contributing to a “quality, safe open space” system. It is also clear that the proposed development will “optimise existing facilities” as it is a refurbishment of current infrastructure.

2. Manage urban growth, and create a balance between urban development and environmental protection

The MSDF states that “the City actively promotes an urban form with higher densities and mixed land use patterns within an urban inner core, supported by an extensive and efficient bus rapid transport and rail network”. Muizenberg beach can be accessed by bus and by train, and the proposed development will not detract from this. Furthermore, this spatial strategy aims to “support social justice by enhancing access for all citizens to a quality open space network, offering community, recreational, non-motorised transport, and economic opportunities”. All citizens will be able to access the Muizenberg Beachfront, be it by bus, train, or car. Included in the designs is a refurbishment of the current parking facility, which will allow for more visitors to the area (thereby enhancing access).

The MSDF further states that another imperative of this spatial strategy is “making more efficient use of non-renewable resources, such as land”. The proposed development makes more efficient use of land through the nature of the refurbishment. No new land is going to be used for the development as it is an already developed site that will simply be refurbished and upgraded. This uses the land more efficiently.

The proposed development also avoids and appropriately manages any “negative development impact on natural resources, considering their finite nature and the costs relating to rehabilitating or mitigating degraded natural areas”. The refurbishment is occurring in an area that is already developed and will not take up any more space in the natural environment (save for the foundation of the stepped revetment which will be temporary). Furthermore, the proposed development has the effect of preserving the natural environment, as it will be able to withstand the effects of climate change, such as sea level rise and increased storm surges.

3. Plan for employment and improve access to economic opportunities

Spatial strategy 3 states the imperative to create and attract “job-rich investment that will ensure integrated, sustainable communities by providing new and maintaining existing infrastructure”. Firstly, the Muizenberg Beachfront refurbishment will have the effect of attracting “job-rich investment” to the area, as the area will increase in value as a tourist (and local) attraction and therefore increase the economic activity of the area. Jobs will also be created in the short-term during the construction phase. Secondly, the refurbishment has the effect of “maintaining existing infrastructure” as it proposes to fix the problems that the current infrastructure is experiencing and refurbish it to a state that is able to withstand the effects of climate change.

This spatial strategy also aims to “facilitate economic growth and respond appropriately to the spatial needs of the economic sectors that are attracted to and operate in Cape Town”. The proposed development facilitates economic growth as it will attract more people to the area, thereby increasing its economic potential.

The **draft Southern Integrated District Spatial Development Framework and Environmental Management Framework (May 2022)** is also applicable to this development. However, it should be noted that this is a draft as the final adopted version has not been made public yet. The draft framework identifies Muizenberg as an “area exposed to coastal processes” and states the following –

1. Development or land uses should not create adverse effects on the functioning of coastal processes.
2. Prohibit major new urban development infrastructure and bulk services investment in coastal areas that are vulnerable to exposure from coastal processes.
3. Redevelopment (intensification) and new urban development proposed in these areas should reflect consideration to potential flood risks and include mitigation measures where necessary.
4. Where development proposed in these areas requires new or amended land use rights, the desirability of which is guided by this district plan and relevant policy, such development should reflect consideration of potential flood/inundation risks and include mitigation measures as may be deemed necessary by the relevant decision maker.

The Muizenberg Beachfront Refurbishment is in line with all the above. It will not have adverse effects on coastal processes as no new development will take place in the coastal zone (save for the foundation of the stepped revetment which is temporary). The proposed development is not a "major new urban development" as it is largely a refurbishment. It can be classified as a "redevelopment" that "reflects consideration to potential flood risks" and "includes mitigation measures where necessary". The refurbishment aims to reinforce the current revetment by introducing concrete so that it will withstand the rise in sea level and increased storm surges (both of which are flood risks). It is a mitigation measure. Finally, while no land rights are required to be amended, the proposed development still takes into account flood/inundation risks and includes mitigation measures, as already described.

The draft framework also speaks about the importance of "connector routes" for non-motorised transport. One such route is the promenade from Muizenberg (Sunrise Circle) to Fish Hoek. The proposed refurbishment aims to refurbish the current promenade, thus making it more accessible to all. The new promenade and stepped revetment joins onto the St. James walkway, providing a pedestrian link from Muizenberg to Fish Hoek. In this way, the development "aims to contribute to the enhancement of the route". Public and private investment in these metro attraction routes should be supported so that it becomes an attractive regional recreation and tourism destination, and the proposed refurbishment does this by upgrading the area to be more attractive to people. Furthermore, the framework specifically states that these routes must be "carefully planned into the future to avoid predicted sea-level rise and related impacts". The proposed development of the promenade does just this, as it is refurbishing existing structures to make them stronger to withstand the effects of climate change. Lastly, it is stated that "in instances of existing infrastructure in high coastal risk areas which are critical to wider urban functioning and/or recreation and tourism value of metro significance, then careful consideration should be given to how (re)development of this infrastructure can enhance further recreation and tourism value while also playing an important role in protection against predicted sea level rise risk impacts". The existing infrastructure of the Muizenberg Beachfront is going to be refurbished (i.e.: redeveloped) to enhance recreation and tourism, as well as protect against the effects of sea-level rise and increased storm surges.

The Muizenberg Beachfront is also classified as a coastal based destination place, and it is stated that the primary reason for it being a destination place must be protected. Any appropriate development must interface with the surrounding areas, and the proposed refurbishment does this by keeping with the character of the current infrastructure. The proposed refurbishment also "supports and encourages recreational and tourism opportunities" while "restricting development within existing development areas" because the development will only occur on a previously developed site and will support and encourage recreational and tourism opportunities by making

the area more accessible to all. The draft framework explicitly makes provision for the “redevelopment and upgrading and management of destination places” and specifically mentions “pathways”. The refurbishment to the promenade falls under this provision. Levels of public accessibility are improved within the area, as the promenade will be accessible to all, including those with disabilities as there will be a universal access ramp included.

The development of Muizenberg as a major destination place should be supported. Any recreation or tourism related redevelopment must consolidate coastal protection, which the proposed development does by reinforcing the stepped revetment against the effects of climate change. The new promenade and stepped revetment joins onto the St. James walkway, providing a pedestrian link from Muizenberg to Fish Hoek.

Finally, the **City of Cape Town Southern District Spatial Development Plan (2012 – 2022)** is applicable. The plan identifies Muizenberg as a “coastal jewel” and provides that areas such as Muizenberg that can “accommodate large numbers of people need to be supported”. Furthermore, Muizenberg is classified as a “coastal-based destination place” and the plan states accordingly that the guidelines for coastal-based destination places promote “greater recreational and tourism opportunities at these key high visitor number destination places, and particularly where potential exists for significant improvement”. In this regard, the plan specifically earmarks the Muizenberg Beachfront as an area with high potential for improvement that could be targeted for increased recreational and tourism activities. Given that the proposed refurbishment will promote the area as a recreational and tourism destination, it is strongly aligned with the plan.

The plan also states that “inappropriate development in the past and continued development pressure into coastal areas considered to be at high risk of flooding and inundation due to sea storm surges, predicted climate changes, and sea level rise” are concerns. One of the aims of the proposed refurbishment is to reinforce the coastal defence infrastructure and therefore mitigate against the potential impacts of climate change, which includes sea-level rise and increased storm surges. Furthermore, the current abutment block is being moved landwards to reduce the risk of the building being impacted by rising sea levels.

4.4. The Environmental Management Framework applicable to the area.

A draft environmental management framework (EMF) is included in the **draft Southern Integrated District Spatial Development Framework and Environmental management Framework**. This has largely been discussed above.

A draft EMF relevant to Muizenberg is also encompassed in the City of Cape Town Southern District Spatial Development plan (2012 – 2022). This draft EMF identified environmental impact management zones (EIMZ) and environmental management guidelines for these zones which should be taken into consideration during development planning.

From the map provided, it can be seen that the Muizenberg Beachfront site is encompassed in the environmental impact management coastal and dune zone. The development of “public open spaces with appropriate low impact recreation activities” are listed as activities which may not have significant impacts on the coastal protection zone. The proposed refurbishment effectively refurbishes public spaces around the beachfront area and will promote the recreational use of the area. The impact on the coastal protection zone will be minimal as the area is already largely developed.

The development of pedestrian walkways and trails are listed as activities which may have a "significant impact". However, this is unlikely to be the case during the refurbishment of the Muizenberg Beachfront as the proposed construction of the promenade will be replacing an existing structure.

The Muizenberg Beachfront also likely falls into the cultural and recreational resources zone. This draft EMF requires that developments in this zone comply with relevant guidelines and regulations and that Heritage Western Cape is notified of any proposed development. Heritage Western Cape has been notified of this proposed refurbishment.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
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The proposed site is low in biodiversity as it has been previously development. Therefore, no relevant authorities or specialist were needed for the proposed refurbishment.

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
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The Western Cape Biodiversity Spatial Plan identifies a province-wide network of critical biodiversity areas and ecological support areas intended to achieve national biodiversity targets and minimise conflicts with other land uses. Th City of Cape Town's Biodiversity Network is included in the plan, although it is based on a separate biodiversity planning assessment.

The Cape Town Biodiversity Network Map aims to guide sustainable development by providing a synthesis of biodiversity information to decision-makers. This map indicates areas of land as well as aquatic features that must be safeguarded in their natural state if biodiversity is to persist and ecosystems are to continue functioning. The main map categories are Critical Biodiversity Areas, Ecological Support Areas, Other Natural Remaining Areas, and No Natural Remaining Areas. The first two mentioned categories represent biodiversity priority areas that should be maintained in a natural to near-natural state. The last two mentioned categories are not considered as priority areas and a loss of biodiversity within these areas may be acceptable.

South Africa is well known for its rich marine biodiversity and diverse coastal environment, being the place where the cold Benguela and warm Agulhas currents mix. In 2004, the Table Mountain National Park Marine Protected Area was pronounced to help ensure that the commercial and recreational use of the ocean is sustainable. This area includes approximately 1 000m² of the sea and the coastline around the Cape Peninsula from Moullie Point in the north to Muizenberg in the South. This environment needs to be protected, but it should also be noted that it should be enjoyed by the residents of South Africa, as well as visitors.

The Table Mountain National Park Marine Protected Area is adjacent to the proposed site. It supports a rich biodiversity of marine species and is also a culturally significant area as it contains fish traps, numerous wrecks, and traditional fishing communities. While the site itself it not in the marine protected area, it influences the area as the refurbishment will allow for greater use and enjoyment of the marine protected area by allowing more people to frequent the area and providing for a higher quality environment for when they do so.

<p>There will be no development in the Table Mountain National Park Marine Protected area as it is the refurbishment of existing structures and will not occur in the area itself. That being said, it will likely enhance the accessibility of the marine protected area.</p>	
7.	<p>Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.</p>
<p>The proposed development site is on the Muizenberg Beachfront and therefore in the coastal public property. However, given that the development is a refurbishment and not a new development, it will not exceed the current development footprint and the land uses of the area will not change following the refurbishment.</p>	
8.	<p>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.</p>
<p>The Screening Tool Report submitted with the Application Form has not changed.</p> <p>Please see Appendix I.</p>	
9.	<p>Explain how the proposed development will optimise vacant land available within an urban area.</p>
<p>While the proposed development is within the urban area, it is not on vacant land as it constitutes a refurbishment of current structures.</p> <p>The only portion of the site that could be considered "vacant" is the existing gravel parking area on the western side of the site. The western gravel parking area will be paved to match the existing parking facilities and optimise the number of cars that can be parked in the area. No new land will be used for parking. The parking area in the east corner of the site (next to the pavilion) is currently surfaced, but will be resurfaced with clay pavers when it is restructured and optimised.</p>	
10.	<p>Explain how the proposed development will optimise the use of existing resources and infrastructure.</p>
<p>The proposed development constitutes a refurbishment of the existing resources and infrastructure on the site. The primary purpose of the refurbishment is to protect the site's infrastructure from the increasing effects of climate change, such as sea-level rise and increased storm surges (which will increase wave action and scour at the toe of the structure during storm events in the area). The old wooden revetment, Surfers' Corner stone steps, and concrete seawalls will be replaced with a robust concrete stepped revetment and the existing ablution facility will be demolished and moved further inland (to prevent the infrastructure against increased wave action). The promenade will also be refurbished in the same way and for the same reason.</p> <p>Secondary to the purpose of protecting the beachfront from the effects of climate change is the purpose of making the area more user-friendly. This will be done by ensuring universal access to the ablutions, formalising the existing gravel parking lot, replacing the rundown playground, and linking the new promenade to the St. James walkway.</p> <p>The proposed refurbishment will also have the effect of attracting more tourists and locals to the area. This further utilises existing resources and infrastructure by increasing the use and enjoyment of the area, as well as boosting the economic activity.</p>	

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).
<p>The necessary services are available and have been provided for in planning. The current status quo of services in the area will be maintained. Service capacity will not be expanded.</p>	
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.
<p>Please see Appendix K attached to this BAR.</p>	

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.

Not applicable.

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

PRE-APPLICATION PUBLIC PARTICIPATION

Below is a summary of the engagement process completed to date:

An initial public participation process was initiated in August 2022. A background information document was compiled for distribution to identified interested and affected parties (I&APs) to inform them of the project background, project proposal, the environmental process, how to participate in the engagement process. The document invited the public to attend an Open Day, on 7 September 2022, where project information would be on display and the City officials would be available to answer questions and discuss inputs.

A 30-day commenting period was provided to the public to submit comments on the available information and the opportunity register as an interested and affected party. The commenting period commenced on 25 August 2022 and ended on 26 September 2022.

A comprehensive I&AP database was compiled, including:

- Municipal councillors and rate payers' organisations
- Organs of state
- Organisations utilising the beach
- Other identified potential organisations
- Adjacent business and residents (directly abutting the project area)

The methods were utilised to notify identified I&APs:

- Newspaper advertisement: *False Bay Echo*, published on Thursday, 25 August 2022
- Site Notices placed within the project area
- Email notifications (information recorded on the database)
- Distribution of the information documents to adjacent business and beach users, additional information documents were also placed at the NGO offices for pass byers.
- The City of Cape Town had also place the contents of the information document on their social media platforms.
- Information available during the public participation was electronically accessible on the following website link: (www.infinityenv.co.za/muizenbergbeachfront)

(See Appendix F for the detailed engagement process undertaken)

APPLICATION PUBLIC PARTICIPATION PROCESS

Below is a summary of the current application public participation undertaken:

The publication of the draft BAR was undertaken as indicated in the application form. The following process was completed, as per Regulation 41.

- Site notices of regulated size were erected along the site boundary where accessible to the public.
- Notifications were given to
 - a) persons in control of and occupiers of the land adjacent.
 - b) municipal councillor of the ward and any organisation of rate payers.
 - c) the municipality and organs of state which has jurisdiction in the area.
 - d) persons registered in the database of interested and affected parties during the pre-application.
- A Media notice was placed in the local newspaper (False Bay Echo).
- A copy of the dBAR was placed in Muizenberg Library.
- The dBAR was also made accessible on Infinity Environmental website (www.infinityenv.co.za/muizenberg)
- Comments were accepted via a website form, email, fax and by post to Suite 17, Private Bag X11, Mowbray, 7705.

Following the public comment period on the draft BAR, this amended draft BAR has been revised to largely include the Maritime Archeological HIA requested by SAHRA. The following public participation process is underway:

- Registered I&APs have been informed of the availability of the amended draft BAR for a comment period commencing on 17 May and ending on 15 June 2023.
- Comments received during this comment period will be responded to and incorporated in the final BAR submitted to the competent authority for a decision.

Confirmation and proofs will be provided to the competent authority on submission of the Basic Assessment Report for decision.

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

The following State Departments were consulted on the draft BAR:

Organ of state	Department or Directorate	Contact Person	Email
Western Cape Government	Planning and Building Development Management	Shameema h Heugh	shameemah.heugh@westerncape.gov.za
Western Cape Government	Department of Environmental Affairs and Development Planning: Development Facilitation Unit	Adri La Meyer	adri.lameyer@westerncape.gov.za

Western Cape Government	Department of Environmental Affairs and Development Planning: Development Facilitation Unit	Thea Jordan	thea.jordan@westerncape.gov.za
Western Cape Government	Department of Environmental Affairs and Development Planning: Waste Management	Saliem Haider	Saliem.Haider@westerncape.gov.za
Western Cape Government	Department of Environmental Affairs and Development: Pollution and Chemicals	Catherine Warr (née Bill)	Catherine.Warr@westerncape.gov.za
Western Cape Government	Department of Environmental Affairs and Development Planning: Biodiversity and Coastal Management.	leptieshaam Bekko	leptieshaam Bekko.westerncape.gov.za
Western Cape Government	Department of Environmental Affairs and Development Planning: Biodiversity and Coastal Management.	Marlene Laros	Marlene.Laros.westerncape.gov.za
Heritage Western Cape	Assistant Director: Professional Services	Waseefa Dhansay	waseefa.dhansay@westerncape.gov.za
Department of Forestry, Fisheries, and the Environment	Specialised Production: Environmental Officer	Azrah Essop	AEssop@dfef.gov.za
Department of Forestry, Fisheries, and the Environment	Chief Directorate - Integrated Environmental Authorisations	Sabelo Malaza	Smalaza@environment.gov.za
Department of Water and Sanitation		M Noqamza	noqhamzam@dwes.gov.za
Cape Nature	Conservation Manager	Helene van der Westhuyzen	hvdwesthuzen@capenature.co.za
Cape Nature	Landscape Conservation Intelligence Management Unit	Ismat Adams	iadams@capenature.co.za
South African National Biodiversity Institute	Curator of Kirstenbosch National Botanical Garden	Werner Voigt	w.voigt@sanbi.org.za
PRASA	Programme Head: Programmes Management Unit	Moseli Ntsiki	moseli.ntsiki@prasa.com
PRASA	Regional Rail Planner	Duma Goso	duma.goso@prasa.com
City of Cape Town	Environment and Heritage Resource Management	Andywood Greenwood	Andy.Greenwood@capetown.gov.za
City of Cape Town	Area Manager	Jade Oliver	jade.oliver@capetown.gov.za
City of Cape Town	District Engineer	Brendon Fortuin	brendon.fortuin@capetown.gov.za
City of Cape Town	Senior Professional Officer	Talcott Present	Talcott.present@capetown.gov.za
City of Cape Town	Transport (NMT)	Elias Tukashe	elias.tukashe@capetown.gov.za
City of Cape Town	Universal Access and Non-motorised Transport Section	Tenus Kok	teuns.kok@capetown.gov.za
City of Cape Town	Transport	Pierre Maritz	pierre.maritz@capetown.gov.za
City of Cape Town	Regional Operations Manager	Yusuf Ebrahim	yusuf.ebrahim@capetown.gov.za

City of Cape Town	Manager: Stormwater and Sustainability	Abdulla Parker	abdulla.parker@capetown.gov.za
City of Cape Town	Engineer	Andrew Taylor	andrew.taylor@capetown.gov.za
City of Cape Town	Recreation and Parks Development	David Curran	david.curran@capetown.gov.za)
City of Cape Town	Head: Facility Management and PMO	Zeenat Arieff	zeenat.ariEFF@capetown.gov.za
City of Cape Town	Recreation and Parks Development	Joy de Morney	joy.demorney@capetown.gov.za
City of Cape Town	Public Lighting Development	Shaun Kemp	<u>shaun.kemp@capetown.gov.za</u>
City of Cape Town	Coastal Management	Natalie Newman	natalie.newman@capetown.gov.za

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

Not Applicable.

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

To be confirmed on completion of the public participation process.

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.

Below is summary of the comments.

- The view that the intervention focusses heavily on making more parking instead of improving the area for users.
 - The demolition and moving of the ablution and shower facilities.
 - The aesthetic, heritage and history of the area potentially being lost though the upgrade.
 - Insufficient consideration being given to the design of the proposed new sea stairs and promenade.
 - The appropriateness of the design and landscaping language (too much concrete and not enough natural vegetation).
 - The lack of baseline information available.
- There is an overall desire for the character, charm, and broad appeal of Muizenberg to be retained.
 - Many people are concerned that the proposed upgrade will change the feel and character of Muizenberg.

Based on the comments received, the following changes have been considered within the current proposal (and reflected in the draft BAR)

- (1) **Coastal defence structures:** The degraded wooden seawall and Point (including the stone steps and concrete seawalls) will be replaced with a new coastal defence structure (a sand-coloured, exposed aggregate finish concrete stepped revetment with smooth bends in the layout of the corner area) and a 3m wide promenade with a universal access ramp. This has changed from the original design of grey concrete with a sharp/jagged design in the layout of the corner area. The promenade will also be concrete as this is necessary to effectively mitigate the risks associated with climate change induced sea level rise. Areas landwards of the promenade will now be paved using clay segmented pavers, and not concrete.
- (2) **Parking areas:** The existing gravel parking area will be formalised with the same segmented clay pavers as the current main parking facility (instead of concrete or asphalt). "Formalising" involves resurfacing, soft landscaping, making it pedestrian friendly, demarcating parking bays, and adding area lighting and supporting services.
- (3) **Ablution facility:** The existing ablution facility will be demolished and rebuilt (in the same architectural style) just landwards of the coastal defence structures and out of the littoral active zone where it is currently being undermined by sustained wave action. The design will include universal access toilets/family changing rooms and wheelchair accessible showers. Note that the location has changed since the original inception design from the north-east corner of the site to the central plaza.
- (4) **Pergola:** The pergola will be demolished and rebuilt further inland to allow for the installation of the new coastal defence structures and will maintain its current design and details (thus conserving the heritage design an aesthetic features).
- (5) **Playground:** The current playground will be replaced with a new "kelp forest" theme. This as been modified to reflect the local coastal environment.
- (6) **Paved areas:** There will be repairs to existing walkways. The planned concrete surfaces landwards of the proposed promenade will be surfaced with segmented clay pavers matching the existing colours and style.
- (7) **Station forecourt:** There will be a refurbishment to the station forecourt which will make it more pedestrian friendly. This will be done with the same segmented clay pavers as the parking facility and walkways.

- (8) **Services:** The underground sewer and stormwater pipes will be realigned where needed. Capacity will be maintained and not upgraded.
- (9) **Soft landscaping:** Locally indigenous vegetation will be incorporated into the landscaping design, as well as grassy areas comprising of a coastal grass species. Some artificial grass will be used. Further emphasis has been placed on using indigenous vegetation.
- (10) **Colourful beach huts:** All eight beach huts will be relocated to the central plaza, as opposed to being split on either side of the main plaza as originally planned. This will provide wind shelter to the central plaza and ablution node, whilst also ensuring the huts are accessible from both sides (the promenade and central node sides).
- (11) **Buildings:** The two existing NGO buildings will remain in place and not be demolished. Waves for Change will move to a newly constructed building near the northern corner of the rationalised parking area. The current Waves for Change building will be modified to serve as a storage area for the universal beach access mats and other adaptive surfing/ beach access equipment. The building will provide opportunities for NGO's providing adaptive surfing and beach access services. This particular building will be re-purposed for this as it is centrally located and near the universal beach access ramp.
- (12) **Central Plaza:** The central plaza area will be shifted a few meters landward to allow for the installation of the new coastal defence structure. The key features of the plaza, such as the showers, open space, and unique paving patterns will be retained.

Comments on the draft BAR

- Addition of a specialist Heritage Impact Assessment (HIA) for the section of work area that falls below the highwater mark (as requested by SAHRA). The findings of this report have been incorporated throughout the amended dBAR.
- Clarity with regard to informal trading
- General comments on the proposal aspects
- Coastal Management Policy reference

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.		
A groundwater specialist study was not required for this development proposal. A geotechnical investigation conducted by HHO Consulting Engineers informed the design development, and aspects of the below information are sourced from this report.			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
The proposed development is not located above any aquifer. It has therefore not influenced the proposed development.			
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.		
The geotechnical investigation led by HHO Consulting Engineers included the use of excavated trial pits and drilled boreholes to determine water table levels at key points around the project site.			

The following is a summary of the findings from specific locations tested for groundwater seepage and water table levels:

Eight trial pits and four boreholes were used to record groundwater seepage levels along the proposed concrete stepped revetment footprint. The trial pits found groundwater seepage levels between 0.6m to 1.5m below existing ground levels. The boreholes found water rest levels to be between 2.1m and 3.2m below existing ground level. Site survey data was used to establish precise ground levels above sea level at each investigation point. Following this, a reduced ground water seepage of 1.0m to 1.5m above mean sea level was inferred to exist at the site.

No groundwater was recorded within the test pits excavated in the informal parking area (western gravel parking area). Borehole data suggests the groundwater level is slightly higher in the informal parking area than the ground water levels of the promenade area – 1.0m to 2.0m above mean sea level.

No groundwater was recorded within the test pits excavated around the area of the planned ablution building, but a water rest level recorded in the nearest borehole suggests a groundwater table elevation of approximately 2,0m to 3m above mean sea level exists at the locality of the new ablutions.

The high groundwater table and seepage were not deemed a hazard or fatal flaw by the consulting specialist. However the report notes the need for appropriate measures to be implemented where excavations extend below the water table. Where excavations extend below the groundwater table, control of the groundwater seepage and/or de-watering will be necessary. Note that much of the seepage encountered is likely seawater.

2. Surface water

2.1.	Was a specialist study conducted?	YES	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Not applicable as the proposed development is not anticipated to impact on any surface water resources.			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
Not applicable.			

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES ✓	NO
3.2.	Provide the name and/or company who conducted the specialist study.		
<p>PRDW Consulting Port and Coastal Engineers compiled two reports to inform the design of the Muizenberg Beachfront Upgrade:</p> <p>“Muizenberg Beachfront Upgrade – Specialist Coastal Modelling - Wave Refraction and Sediment Transport Modelling Report” (August 2022)</p>			

"Muizenberg Beachfront Upgrade – Specialist Coastal Modelling - Wave Overtopping and Reflection Modelling Report" (November 2022)	
3.3.	<p>Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.</p> <p>Section 63 of the ICMA states that “where an environmental authorisation in terms of Chapter 5 of the National Environmental Management Act is required for coastal activities, the competent authority must take into account all relevant factors”. It then goes on to list such factors to be taken into account. It should be noted that these factors are not a closed list, but only the listed factors will be discussed in this report.</p> <p>(a) Representations made by the applicant and by interested and affected parties</p> <p>The Muizenberg community and several other stakeholders were consulted during the feasibility and preliminary design process. Their comments and concerns were incorporated into various design changes that will be used in the final design, and have been recorded and captured in this report and its relevant appendices.</p> <p>(b) Extent to which the applicant has in the past complied with similar authorisations</p> <p>The City of Cape Town (the applicant) has, in the past, been granted various other similar authorisations to develop coastal infrastructure, such as in the Sea Point and Strand areas. In both of those cases, the City complied with their authorisations.</p> <p>(c) Whether the coastal public property, the coastal protection zone, or coastal land access will be affected, and if so, the extent to which the proposed development or activity is consistent with the purpose for establishing and protecting those areas</p> <p>Coastal public property is extensively defined in section 7 of the ICMA and includes “the seashore”. The stepped revetment and its foundation will be on the seashore, but is not expected to have a negative effect on the area (see PRDW specialist study below). The proposed development will also be situated in the coastal protection zone, as it is within 100m of the high-water mark. This is also not expected to be affected. The proposed refurbishment has the effect of enhancing the coastal access land of Muizenberg Beachfront because it will allow for better access to the beach in the form of a stepped revetment and universal access ramp. Furthermore, the revetment will be made from concrete, further reinforcing the coastal infrastructure against the effects of increased wave action due to climate change.</p> <p>(d) Estuarine management plans, coastal management programmes, coastal management lines, and coastal management objectives applicable in the area</p> <p>1. Zandvlei Estuarine Management Plan – Zandvlei is the closest estuary to the proposed site, but is not on the site itself. The Estuarine Management Plan dated 2018 does not include any measures relevant to the Muizenberg beachfront area.</p> <p>2. City of Cape Town Coastal Management Programme – This management programme states that Muizenberg Corner “provides a sense of cultural diversity and coastal recreation” and is an example of where communities from across the cultural, social, and economic spectrums coverage and interact. It is a place where “on any given day, individuals from across Cape Town’s diverse social and economic groups interact and share a common space through simple recreation”. This identity needs to be enhanced and protected, and one such way to do so would be to refurbish the coastal infrastructure. Firstly, the area will be able to be used by current and future generations as it will be better protected against the effects of climate change. Secondly, the use and enjoyment of the</p>

area will be increased through the added additions of the refurbishment (as discussed above). This will continue to attract people to the area.

3. Coastal management lines – a coastal management line was promulgated in terms of section 25 of the ICMA on 19 March 2021. The project site lies seaward of this line, which is intended to provide for the control of inappropriate development inconsistent with coastal management objectives. As the proposed activities are refurbishment-related and intended to improve coastal protection, they are in line with the intentions of the coastal management line determination.

4. Coastal Management Objectives – The City of Cape Town Integrated Coastal Management Policy sets various coastal management objectives. These include supporting economic and social opportunities, reducing coastal risk to provide for safety, and enhancing the rights of access and enjoyment of the coast for all people and managing the coast in the best interests of all communities. The proposed refurbishment does this by providing better access to the beachfront to allow for more people to use and enjoy it, as well as reinforce coastal structures against climate change so that they can be enjoyed by future generations.

(e) The socio-economic impact if the activity (i) is authorised, or (ii) is not authorised.

The proposed refurbishment will have the effect of creating jobs in the short-term (construction phase) and the long-term (operational phase), as discussed in this report. Furthermore, it will have the effect of increasing property values around the area as the beachfront will become a more popular attraction. None of these will occur if the development is not authorised. Please also refer to the extensive socio-economic report compiled by Urban Econ as part of the background investigations for this project.

(g) Likely impact of coastal environmental processes of the proposed activity

The proposed stepped revetment will be exposed to wave action. Its materials and design have been selected to mitigate the effects of coastal processes both on the site itself and on the urban area landward of the site.

(h) Whether the development or activity (i) is situated within the coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations (ii) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established (iii) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated (iv) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment than cannot satisfactorily be mitigated, (v) is likely to be significantly damaged or prejudiced by dynamic coastal processes, (vi) would substantially prejudice the achievement of any coastal management objective, or (vii) would be contrary to the interests of the whole community

The proposed development is not inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations as the refurbishment will reinforce the coastal infrastructure to withstand the effects of climate change so that it can be enjoyed in the future. It will not cause irreversible or long-lasting adverse effects to any aspect of the coastal environment (see PRDW study below). Lastly, the refurbishment is in the interests of the whole community for the reasons set out in the socio-economic section of this report.

(i) Whether the very nature of the proposed activity or development requires it to be located within the coastal public property, the coastal protection zone, or coastal access land

<p>As the proposed development is the refurbishment of coastal protection and coastal access infrastructure, the very nature of the proposed activity requires it to be located within the coastal public property and the coastal protection zone.</p>	
<p>(j) Whether the proposed activity or development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land, or a coastal protected area</p> <p>The proposed development will provide important services to the public by providing for long-term access to the beachfront area, thereby allowing more people to use and enjoy it.</p>	
<p>(k) The objects of this Act, where applicable</p> <p>The refurbishment is in line with the object of preserving, extending, and enhancing the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations. The refurbishment is necessary to protect failing coastal infrastructure against the effects of climate change so that the area can be enjoyed by current and future generations.</p>	
3.4.	<p>Explain how estuary management plans (if applicable) has influenced the proposed development.</p>
<p>Not applicable.</p>	
3.5.	<p>Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.</p>
<p>All land units included in the proposed Muizenberg Beachfront refurbishment project fall either partially or entirely within 100 meters of the highwater mark. This means the entire project area is classified as a “coastal protection zone” under section 16(e) of the Integrated Coastal Management Action (2008). As the primary objective of this project is the replacement of the existing coastal protection structures (that fall within the littoral active zone at the top of the beach), the area is also considered a coastal risk zone. The new coastal defence structures will be subjected to heavy wear as a result of scour and wave action. As a result of climate change induced sea level rise, these ocean-induced stresses on the coastal defence structures will magnify in years to come. This will include higher and stronger storm surge, as well as deeper scour levels and stronger wave action.</p> <p>A two part study on ocean dynamics at Muizenberg beach was undertaken by PRDW Coastal Engineers in order to ensure the new coastal defence structures are designed to effectively minimize the effects of climate change on the Muizenberg Beachfront area, and to withstand the resultant harsh projected future ocean conditions. The first study focused on wave and sediment transport modelling, while the second study focused on wave overtopping and reflection. In summary, these specialist studies concluded that a stepped concrete revetment and 3 meter wide concrete promenade (along with associated sub-terrain scour protection structures) will be necessary to effectively withstand sea-level rise and associated risks over the next 50 years (the design life of the coastal defence structures).</p> <p>The sediment transport modelling report (August 2022) informed the design of the scour protection structures that will be installed – the sleeping rock revetment in the South-West corner and the scour protection structure that will be installed along the length of the new concrete stepped revetment. These scour protection structures will be installed under the sand, at an appropriate depth to</p>	

prevent accidental exposure and ensuing damage. The wave reflection and overtopping report (November 2022) informed the appropriate dimensions of the concrete stepped revetment (and promenade) needed to effectively counteract the effects of sea-level rise over the next 50 years and minimize the risk of potential flooding to the precinct. Although overtopping was assessed in detail, the structure is not intended to negate the overtopping – it is designed to remain stable under storm overtopping conditions with little to no damage. This has informed drainage design and landside material and design choices of the new structures that will be constructed. Additionally, both studies were used to ensure there will be no negative impacts on sediment or wave dynamics as a result of the new coastal defence structures. Below are summaries of the relevant sections of the two specialist coastal modelling reports:

Impacts on sediment dynamics:

The proposed stepped revetment is a replacement of the existing seawall, and approximately follows the same footprint and alignment on the main beach area, where both the existing and proposed structures are shore-parallel and located at the back of the beach. Neither is expected to interrupt the longshore sand transport processes. An exception to this is the existing ablation facility which extends onto the beach seaward of the existing seawall. The proposed removal of this structure (existing ablation building) from the littoral active zone will reduce any existing impact on the longshore sand transport, although this is expected to be minimal since no significant effect can be observed on the present-day shoreline. Furthermore, since the proposed seawall approximately follows the footprint of the existing structure, it also does not pose any additional reduction in sand available for cross-shore transport processes.

The proposed layout of the stepped revetment presents a departure (landward retreat) from the layout of the existing seawall in the Surfer's Corner area. The existing Surfer's Corner is a short abutment which extends to a depth of approximately 0 m MSL (middle of intertidal zone). The longshore transport modelling presented in Section 7.3.4 (PRDW, 2022) shows the longshore gross sediment transport to be mainly limited to depths deeper than 0 m MSL. This implies that the existing abutment does not present a significant interruption of longshore transport processes (other than physical access barrier), and its removal is not expected to significantly alter the longshore transport sediment budget.

Impacts on wave dynamics:

The existing abutment (the "point" steps and concrete seawalls), which has a near-vertical wall oblique to the main beach causes some wave reflection, which is expected to be responsible for the locally lower beach levels at the western end of the main beach. The proposed new coastal protection structure is a stepped revetment, which is expected to be less reflective than a vertical wall. Furthermore, the layout of the proposed stepped revetment is less oblique to the wave direction and is set back further landward than the existing wall. Considering these two factors, the wave reflections with the new proposed stepped revetment are expected to be lower than those of the existing Surfer's Corner.

The full 3D wave overtopping and flooding assessment investigated this, and found that for all the scenarios modelled it can be seen that the wave reflection coefficients for the existing seawall and proposed revetment are nearly identical. This corresponds to the overtopping results which showed marginal differences between the two structures.

Overall, the results agree that the changes in wave reflection between the existing seawall and proposed revetment are very minor, and the potential impact on surfing conditions would be negligible.

It should be noted that, during construction, temporary berms will likely be built seaward of the existing sea wall to serve as temporary coastal protection, any effect on the nearshore hydrodynamics caused during the construction is limited to the construction duration and to the area of work. Work will be executed in a sequence and thus only portions of the beach will be affected at a time and not the entire beachfront at once. Any effects are thus temporary in nature.

Scour protection:

Estimates of the local scour at the proposed structure were derived from three empirical equations and cross-shore storm erosion modelling. It is recommended that the minimum (deepest) scour level from the four methods should be used for design. The predicted 475-year minimum scour level ranges between -0.2 to +0.2 m MSL for 2026, and deepens -0.2 to 0.0 m MSL for 2046 and -0.7 to -0.6 m MSL for 2076. For the 100-year return period, the minimum scour levels are approximately 0.1 m higher. The design process considered these levels and time horizons in the scour protection design (including adaptive design approaches), and considered a proposed additional 0.5 m localised scour allowance for uncertainties in the methodologies and unquantified 2D effects.

Coastal protection:

An advanced 3D wave model (MIKE 3) was used to assess the overtopping and resultant flooding for the project at the proposed levels and analyse the changes in wave reflection between the existing seawall and proposed revetment, and the potential impact on surfing conditions.

Before using advanced 3D wave modelling, simplified models (Numerical flumes) were used to test the sensitivity of the results to the climate change projection, a raised crest level for adaptive design and a comparison of the existing seawall to the proposed revetment.

When comparing the low emissions climate change scenario projection (SSP1-2.6) to the high emissions climate change scenario projection (SSP5-8.5), the overtopping rates were modestly lower (on average 7% lower for 2046, and 32% lower for 2076) due to a lower still water depth and less eroded profile.

Relative to the existing seawall, the proposed revetment showed a small (< 7 %) increase in overtopping discharge.

The results informed the selection of four scenarios for the full domain (3D) simulations to quantify the overtopping and resultant flooding along the full length of the proposed revetment under the most conservative climate change projection (SSP5-8.5). These full domain simulations led to the following conclusions (the "EurOtop" European standards for coastal flooding were used as a baseline for interpretation of results):

- For the proposed revetment 1-year storm events present no hazard to vehicles or pedestrians along any of the sections. A 100-year event during 2046 is hazardous to pedestrians, while a 100-year event during 2076 becomes hazardous to vehicles along Sections 1 to 3.
- At the eastern end of the proposed revetment, the relatively larger overtopping rates, combined with lower infrastructure levels and an unobstructed pathway, causes a weak spot resulting in increased flooding behind the promenade. The maximum water depths are typically associated with locations where waves runup against the seaward faces of structures (e.g., central shower plaza area).

- For a 1-year event in 2026 only the seaward edge of the promenade was inundated. For an increase in climate change horizon (2046) most of the promenade was overtopped, while the parking areas and most of the elevated lawns and vegetated areas remained dry.
- For the 100-year events most of the parking areas were inundated, with only the more elevated western areas remaining dry. For an increased climate change horizon (2046 to 2076) the flooding extent and severity is generally worse, except at Surfers Corner where the contour plots show a slightly more landward flood line for the 2046 scenario, demonstrating the non-linearity of overtopping processes in a complex 3D environment.
- The current speeds were the strongest where the waves overtop the promenade without obstructions (e.g., buildings, steps or slopes). Similar to the overtopping and water depths, an increase in storm severity (1-year to 100-year) or climate change horizon (2026/2046 to 2076) typically resulted in increased current speeds, except for Surfers Corner where maximum current speeds reduced from 2046 to 2076 – analogous to the maximum water depths.

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO ✓
4.2.	Provide the name and/or company who conducted the specialist studies.		
Not applicable.			
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>According to vegetation maps, the natural vegetation was once a mix of Cape Flats Sand Fynbos, Cape Flats Dune Strandveld, and Cape Seashore Vegetation. As the site has been heavily developed since the late 19th century, none of the natural vegetation remains in the project area.</p> <p>As the site is a brownfield site and there is no natural vegetation remaining in the project area, the proposed development has not been impacted by specific local biodiversity-related concerns.</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.		
This is not relevant as the site has been developed and is not indicative of the natural environment.			
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.		
<p>The site is not located within a Critical Biodiversity Area, an Ecological Support Area, or Other Natural Area as demarcated by the Western Cape Biodiversity Spatial Plan. The Table Mountain National Park Marine Protected Area is adjacent to the proposed site, although it will not be affected.</p>			
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 proposed development is not located in a protected area.	
4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
<p>The proposed site has been heavily developed and is highly frequented by visitors, leaving little natural fauna remaining in the area.</p> <p>The Table Mountain National Park Marine Protected Area is adjacent to the project site. As this project is a refurbishment, it will be replacing existing infrastructure, thus will not have any new impacts on fauna occurring in the Marine Protect Area</p>	

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.	
<p>The Muizenberg beachfront has a rich history. Associated with this history are numerous significant geographical features in the area. The most notable are the colourful beach huts, Surfers' Corner stone stepped terrace, ablution building, pergola, and central plaza area.</p> <p>The ablution building and pergola will be demolished and rebuilt landward of their current locations. Their design language and style will be preserved when they are rebuilt to ensure it is only their location that changes, and that the physical features of these structures remains. The showers in the central plaza will be shifted a few meters landward. Additionally, all eight colourful beach huts will be moved to the sea-side of the central plaza area. The relocation/rebuilding of these structures is necessary in order to successfully install the new coastal defence structures. In order to preserve the geographic features of Muizenberg, the design team has maintained the architectural styles and physical characteristics of these buildings.</p> <p>The proposed new concrete stepped revetment will change the appearance of the Muizenberg Beachfront. In order to successfully serve as a coastal defence structure, the new stepped revetment and promenade must be concrete. Significant effort has been put in to ensure the new stepped revetment will fit in with the character of the beachfront (see Section B (4.4)) whilst still serving its primary purpose of coastal protection.</p> <p>Additionally, the Surfers Corner masonry stepped terrace section will be removed as it has passed its design life and is beginning to fail. The current Surfers Corner steps jut out as a sort of point into the intertidal zone; the new stepped revetment will be receded and will not extend out like the old steps. This is necessary to protect the new revetment from the harsh wave action and scour levels that the old Surfers' Corner steps faced as a result of protruding into the active littoral zone. It will be aligned with the rest of the stepped revetment, with a smooth curve preserving the non-linear character of the old Surfers' Corner.</p>	

6. Heritage Resources

6.1.	Was a specialist study conducted?	YES ✓	NO
6.2.	Provide the name and/or company who conducted the specialist study.		

John Gribble - ACO Associates CC. An HIA on the section of the proposed work area that falls below the highwater mark (SAHRA jurisdiction).

The City of Cape Town: Environmental Resource Management Branch (c/o Mr Philip Smith, Heritage Officer) completed a Notice of Intent to Develop in 2020, which largely forms the bases of the heritage aspects considered within this report (everything above the highwater mark).

6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.
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The City of Cape Town's Heritage Branch completed and submitted a Notice of Intent to Develop to Heritage Western Cape in March 2020. A comment from HWC was received confirming that no heritage studies were required, as the proposal would not impact any heritage resources.

On further review of the development proposal in late 2022, a second NID was submitted based on certain aspects of the development proposal not being contained in the 2020 NID submission. The outcome of the 2023 submission requested a Heritage Impact Assessment (HIA) with additional studies be undertaken. In response to the comment, the City of Cape Town requested that HWC review their comment considering the previous response in 2020. HWC responded accordingly noting the following: "The 2023 application is substantially in accordance with that of the 2020 with the addition of the removal of ad-hoc structures deemed to be not conservation worthy. These structures will require the submission of a Section 34 application as they are older than 60 years." They also advised that the applicant withdraw the 2023 NID application by formal letter to HWC, which was duly undertaken, rendering the 2023 request for an HIA void and the 2020 comment still valid and actionable. The Section 34 application is currently being undertaken by the City of Cape Town for the demolition of the ablution facility.

As the project does not change the character of the site, which remains a beachfront resort to be upgraded, section 38(1)@ is not applicable. As the site to be rezoned is less than 10 000 m2 in extent, section 38(1)(d) is not applicable. Nevertheless, the original NID that was submitted and duly supported by HWC in April 2020 did include the full extent of the project site.

Please see **Appendix E1** (*Notice of Intent, 2020, Heritage Western Cape (HWC) 2020 response, HWC 2023 response and HWC Retraction response*).

The South African Heritage Resources Agency (SAHRA) requested that a Heritage Impact Assessment (HIA) be conducted for the proposed section of work area that is located below the highwater mark (the entire work area on the actual beach). Note that this HIA included a maritime archaeological impacts assessment (AIA), see Appendix G. The term HIA refers to the entire specialist assessment that was conducted by the specialist.

The HIA considered the potential for maritime archaeological resources in the study area, and for artefacts associated with the Battle of Muizenberg (1795). The potential for archaeological artefactual overspill from a number of important historical sites in the vicinity of the Study Area was also considered, these being the Posthuys and a now demolished VOC powder magazine on the Sandown-on-Sea site. Lastly, based on evidence from elsewhere on the western seaboard of False Bay sand material noted during a site visit undertaken for this assessment, the potential for the presence of pre-colonial shell midden material within the Study Area was considered.

It appears that there is very limited potential for the presence of historical material related to the shipping casualties in the immediate vicinity of the Study Area, or from the Battle of Muizenberg. There is also some, albeit low, potential for overspill of archaeological material from nearby heritage sites in the beach sands of the Study Area. Overall, the maritime and general archaeological potential and significance of the Study Area is assessed is low, but cannot be ruled out.

In respect of pre-colonial coastal archaeological sites or material, the western end of the Study Area has some potential particularly under the area of reclaim that is the Point. Any pre-colonial archaeological site or material that was present in this area is likely to have been heavily impacted by the historical use of the site, but there may still be traces of such material remaining. The pre-colonial archaeological potential and significance of the Study Area is assessed to be low.

The proposed works in the Study Area are likely to disturb or destroy any archaeological material present but, the significance of impacts is assessed to be low.

Ordinarily in an area with such low archaeological potential, no formal archaeological programme of mitigation would be proposed. In this case, however, the proximity to the Study Area of a number of important historical sites and a number of shipwrecks, its involvement in the Battle of Muizenberg, and the possible presence of pre-colonial archaeological material suggests that some form of mitigation is required.

It is recommended, therefore that a programme of archaeological monitoring accompanies the works to be undertaken in the Study Area. It is further recommended that the archaeologist must be appointed before any work in the Study Area commences.

Should archaeological material be encountered during the works in the Study Area, the archaeologist must assess the find and determine the need for further mitigation.

If human remains are uncovered on site, work must cease immediately, the remains must be left in place and made safe, and the project archaeologist and HWC must be notified in order for the significance of the material to be assessed and a decision taken as to how to deal with it.

Provided the mitigation measures recommended above are implemented, the proposed work in the Study Area is considered acceptable.

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.

The proposed refurbishment will be undertaken in an area that forms the setting to a group of streetscapes with unique features and characteristics of the area which create a unique identity and sense of place. This has been considered in the design proposals associated with the new infrastructure associated with the refurbishments being proposed.

Special care has been taken to use a sand-coloured exposed aggregate concrete finish for the stepped revetment and promenade to minimize negative impacts on the aesthetic of the area. Aside from the concrete revetment (necessary for coastal protection), the rest of the planned infrastructure maintains the current design language of the area. For example, the ablution building will be reconstructed in the same architectural style as the current ablutions, and the colourful

beach huts will be kept in the central plaza area. Segmented clay pavers are also being used for the formalisation of the western parking area, and special care has been taken to ensure the same patterns are used as in the current paved parking areas. Additionally, mosaic artworks will be incorporated on the outdoor showers, the interior of the ablutions, and landscape elements where applicable.

Furthermore, Section 6 above, describes the consultation process with Heritage Western Cape in determining whether potential heritage resources are affected by the proposed refurbishment.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
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Muizenberg belongs to Ward 64 of the City of Cape Town and has an approximate population of 27 993 people living in 11 422 households (census 2011). 64% of the population is in the age range of 18 to 64, with the median age being 39 years old (1.4 x the figure in the Western Cape). 52% of the population is female, with 48% of the population male.

Muizenberg is a predominantly white area (64% of the population identify as white). 17% of the population is coloured, 14% is black, 2% is Indian or Asian, and 4% identify as other. English is the most widely spoken home language (75%), followed by Afrikaans (12%). 76.1% of the population of Muizenberg were born in South Africa (most being born in the Western Cape) and 84.6% of residents are South African citizens.

As stated above, there are 11 422 households in Muizenberg. Only 59.7% of these households are fully owned or being paid off. These households are mostly male headed (61%). The average household income is R230 700 per year.

Municipal services in Muizenberg are relatively good. 97.9% of households receive water from a regional or local service provider, 99.1% of households have access to flush or chemical toilets, and 98.5% of households are getting refuse disposal from a local authority or private company. 77.4% of households have internet access.

Only 66.1% of people in Muizenberg are employed, with an average personal annual income of R117 000. 75% of residents have completed matric.

8.2.	Explain the socio-economic value/contribution of the proposed development.
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A socio-economic impact study was undertaken by Urban-Econ Development Economists during the inception stage of the project. This study focused on determining the social and economic impact of a do-nothing approach with regards to the coastal defence and landside infrastructure on the local Muizenberg communities and economy, as well as the expected benefits of executing the project and who would directly benefit from the project.

The study found that the proposed upgrade of to the Muizenberg Beachfront is essential for the sustainable growth of tourism and the protection of public and private infrastructure and assets in the area. It goes on to say the beachfront has significant untapped economic potential and latent heritage and social capital, making it an important shared asset. The upgrade would unlock the beachfront's under-utilised potential, improving investment attractiveness and supporting the local

economy. Conversely, it was found that failure to pursue the upgrade would have a negative impact on local tourism and property sectors, with long-term reductions in property values and increasing climate-change-driven risks. The City of Cape Town has a responsibility in ensuring that all can benefit from what the Muizenberg Beachfront has to offer, and by investing in this refurbishment project, this responsibility is being upheld.

The study concluded that the “proposed upgrade would result in significant and measurable positive impacts on production, employment, worker income, and Gross Domestic Product” and recommended that the “proposed upgrades be undertaken based on their contribution to the local economy”.

These findings are supported by the City of Cape Town's frameworks and programmes that highlight Muizenberg as a key area for coastal tourism:

- The City of Cape Town's tourism database lists Muizenberg as a “major attraction”
- City's Coastal Management Programme states the area provides a sense of cultural diversity and coastal recreation
- The City's Spatial Development Framework describes the beachfront as an anchoring metro-significant mixed-use coastal tourism development node
- The 2019 Tourism Development Framework lists improvements to beaches (such as Muizenberg) as a priority initiative that is critically important for sustainable tourism growth

Further specific details about key upgrades and socio-economic benefits are listed below:

- The installation of the new coastal defence structures at the Muizenberg Beachfront offers numerous benefits to the local community, businesses and environment. The stepped revetment will ensure that local businesses are protected from future impacts of sea level rise can continue to operate and grow, providing jobs and economic opportunities for local residents. The improved safety and stability of the beachfront will attract more visitors, providing an additional boost to local businesses.
- The refurbished promenade and upgraded public facilities will improve the overall appeal of the beachfront area, attracting more visitors. This will stimulate economic activity in the area, particularly in the hospitality and tourism sectors. The formalisation of the western parking area will provide clear demarcation of pedestrian and vehicle space, improving safety and contributing to a more family friendly environment. Additionally, the western parking area is planned with secondary alternate uses in mind, such as night markets and other events that boost local tourism. The proposed playground upgrade will further boost the attractiveness of the precinct to families with young children.

The focus on accessibility provisions of this project also increases the attractiveness of the Muizenberg Beachfront to the public. This will further boost public enjoyment and visitation of the area. The inclusion of a new NGO building to allow for increased accessibility to beach-related activities, such as beach access mats and adaptive surfing programs, will also contribute to public use of the area.

8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
<p>The primary purpose of the proposed refurbishment is the protection of the beachfront amenities and business from the future impacts of climate change by installing new coastal defence structures (full replacement of existing coastal defence structures). The protection of businesses and local public infrastructure in itself is addressing a key need of the community by ensuring the public space remains safe for years to come.</p> <p>Secondary to coastal protection, the opportunity will be taken to upgrade infrastructure landward of the proposed stepped revetment to further address the needs of the community and promote economic development of the area. As mentioned in section 8.3, the refurbishment will greatly improve accessibility (beach access ramp, universally accessible toilets and shower, wider promenade for ease of use with wheelchair). The addition of an extra NGO building will further promote social development and accessibility. It is envisioned the NGO building currently used by the Waves for Change NGO can be used by another NGO with a special focus on wheelchair-accessible beach activities, such as adaptive surfing programs. This building is in the perfect location for easy storage and deployment of beach access mats to further aid in beach accessibility. The Waves for Change Program will remain in the precinct, moving to the planned new NGO building next to the newly optimised parking area and main circle. By ensuring the Muizenberg Beachfront remains an attractive locality for business investment, it also ensure the existing range of Corporate Social Investment initiatives by local businesses and by Non-Profit Organisations that supports community development will be maintained. Additionally, the forecast economic benefits of the area will likely lead to the expansion of current Corporate Social Investment initiatives (as well as the development of new ones). Existing Corporate Social Investment and NGO projects at the Muizenberg Beachfront includes providing opportunities for hundreds of community members to participate in adaptive surfing, swimming lessons, beach clean-ups and surf therapy.</p>	
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.
<p>The proposed refurbishment is in an urban developed area of Muizenberg. No significant impacts on people's health or well-being are expected. The replacement of the failing old wooden sea wall and Surfers' Corner steps (and exposed scour protection infrastructure) would benefit the public by improving public safety of the Muizenberg beachfront. This project also reduces the City's risk to public liability claims due to injuries caused by aging infrastructure. Additionally, the addition of area lighting to the entire area is expected to improve night-time safety of the vicinity. The additional NGO building would promote additional social upliftment and development programs, which would have an overall positive impact on the health and well-being of the community.</p> <p>During the construction phase of the project, dust, noise and vibrations can be expected in the Muizenberg Beachfront Area. Additionally, temporary barriers or berms will be installed on the sand in order to keep the required work areas dry for the installation of the new concrete stepped revetment. Special care will be taken to ensure construction is phased strategically so as to maintain access to parts of the beach and parking at all times. These impacts will be monitored and mitigation measures are proposed in the Construction Environmental Management Plan.</p> <p>The proposed new infrastructure will cover a very similar footprint to the old infrastructure, meaning once constructed, it will not negatively impact the sense of place or visual characteristic of the</p>	

area. Special care has been taken to use a sand coloured concrete for the stepped revetment and promenade to minimize negative impacts on the aesthetic of the area. Aside from the concrete revetment (necessary for coastal protection), the rest of the planned infrastructure maintains the current design language of the area. For example, the ablution building will be reconstructed in the same architectural style as the current ablutions, and the colourful beach huts will be kept in the vicinity. Clay pavers are also being used for the formalisation of the western parking area, and special care has been taken to ensure the same patterns are used as in the current paved parking 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.	
<p>The preferred (and only) property and site alternative is the current proposed site at the Muizenberg Beachfront. This is because the proposed development constitutes the replacement of the failing coastal defence structures that have passed their design life. The proposed new coastal defence structure is necessary to protect the area from the effects of sea level rise. The refurbishment of the aged infrastructure landward of the revetment will be conducted in the same project.</p> <p>The erven used for the proposed refurbishment are –</p> <ul style="list-style-type: none"> Erf 87374-RE: Open Space 2: Public Open Space Erf 87114-RE: Transport 1: Transport Use ERF 87143: Transport 2: Public Road and Public Parking Erf 87142-RE: General Residential 4 Erf 87141-RE: General Residential 4 Erf 87140-RE: General Residential 4 Erf 87139-RE: General Residential 4 Erf 87138: General Residential 4 Erf 87137: General Residential 4 Erf 87158-RE: General Residential 4 Erf 87135-RE: General Residential 5 Erf 87134-RE: General Residential 4 Erf 87144: Open Space 2: Public Open Space / Transport 1: Transport Use Erf 87155-RE: Transport 1: Transport Use Erf 87130: Transport 1: Transport Use <p>The site is approximately 26 834m² in extent.</p>	
Provide a description of any other property and site alternatives investigated.	
<p>Other property and site alternatives were not investigated because the proposed development is a refurbishment of existing infrastructure as described above.</p>	

<p>Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.</p>
<p>Not applicable, see response above.</p>
<p>Provide a full description of the process followed to reach the preferred alternative within the site.</p>
<p>Not applicable, see response above.</p> <p>Provide a detailed motivation if no property and site alternatives were considered.</p> <p>The primary purpose of the refurbishment is to replace the existing coastal protection structures at the Muizenberg beachfront that have pasted their design life and are starting to fail. The proposed design takes into account the effect of sea level rise and related increased wave action, resulting scour and other effects, to ensure a robust coastal protection solution is provided. The current coastal defence structures have passed their design lives and have begun to fail, necessitating this refurbishment project. Small-scale repairs have been attempted, although this has not proved to be a successful solution to prevent further degradation of the existing coastal defence structures. In addition to the failing wooden seawall, stone steps, and concrete seawalls, the old ablution building (built within the littoral active zone) is being undercut due to persistent wave action. As a result, it will be demolished and rebuilt a few meters landward (in the same central plaza area that it currently is). This will also make space for the installation of the new concrete stepped revetment. By implementing these aspects of the project, the primary objective of protection coastal public infrastructure and surrounding private properties and businesses in achieved.</p> <p>Public infrastructure landward of the old wooden sea wall has suffered from a lack of sufficient maintenance and development in some cases (such as the informal western gravel parking area). As such, the secondary objective of this project seeks use the opportunity to also upgrade these public amenities. This will result in increased accessibility and public enjoyment of the area, leading economic growth of the area in the future.</p> <p>Based on the above summary, it is evident that this project is essential and must be carried out at the Muizenberg Beachfront.</p>
<p>List the positive and negative impacts that the property and site alternatives will have on the environment.</p>
<p>The proposed refurbishment will have the following positive impacts:</p> <ul style="list-style-type: none"> • Increased use and enjoyment of the Muizenberg Beachfront as a result of the following facilities: <ul style="list-style-type: none"> ○ Increased accessibility (universal access to the beach and surrounding amenities) ○ A new playground ○ Formalised parking areas ○ Extra-wide promenade which can better facilitate used for walking, running, and other forms of non-motorised transport (and will provide a link from Muizenberg to the St. James walkway) ○ A stepped revetment to sit on and easily access the beach at all water and sand levels • Traffic flow:

- A traffic impact statement was required as part of the rezoning and consolidation application.
 - The assessment provided an overview of the transport related impacts with regards to the rezoning of the existing erven. The report further elaborated on the proposed parking layout, vehicle access and circulation as well as the current state of the public transport services and non-motorised transport facilities.
 - The report noted that the existing erven will be rezoned as “Transport Zone 2”. Therefore, no new trips will be generated as part of the rezoning application. For this reason, the report did not focus on trip generation and trip distribution as users of the proposed formalised parking facility will be pass-by traffic, traffic which is already on the road network.
 - It was found that the proposed parking layout will provide improved access and circulation to the parking area. The number of parking bays is sufficient for the purpose of this study and the vehicle traffic within the study area will not be impacted negatively as a result of the formalisation of the parking area.
 - NMT facilities are essential at the beachfront and the proposed upgrade will provide sufficient pedestrian walkways along the promenade and thereby minimise the conflict between vehicles and pedestrians.
 - In summary, the proposed formalisation of the parking area should have minimal impact on the local road network from a traffic operations perspective. It is also noted that the formalisation will have a positive impact on pedestrian movements and a marginal impact on parking provision.
- Increased tourism and associated economic growth
 - Employment creation (during the construction and operational phase)
 - Improved coastal protection and increased climate change resilience which will preserve the area and maintain its economic and social value
 - Increased support for beachfront NGOs (with the additional proposed NGO building)

The proposed refurbishment may have the following negative impacts –

- Potential disruption of the area during the construction phase, which could inconvenience visitors and local residents, and may affect businesses operating in the area. This includes noise and dust pollution.
- Less beach area will be available during construction. As it is phased, the impact will be minimized and temporary.
- There may be traffic impacts on the area during the construction phase.
- During construction, there is potential for any undiscovered archaeological material located on the beach (below the highwater mark) to be disturbed or destroyed. The specialist study concluded the risk and significance of this is low. Steps to minimize risk of this have been included in the EMPr.

There are concerns that the proposed refurbishment will have a negative impact on the beachfront's character and “sense of place”. All new buildings will be built in the same architectural style and character as the current buildings. The planned formalisation of the gravel parking area will use the same patterns and clay pavers as the current formal parking areas to ensure the character of the area is maintained. The concrete promenade is also highlighted by the public as changing the “sense of place”, although there is no other option due to the risks associated with sea level rise that the Muizenberg beachfront will continue to face. The promenade design has been modified to include a sand-coloured exposed aggregate finish to mitigate the effects of the concrete-look.

1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred activity alternative.	
There is no activity alternative, for the reasons outlined in the Section 1.1 above. The preferred activity is the current proposal of the refurbishment of the Muizenberg Beachfront.	
Provide a description of any other activity alternatives investigated.	
Please see the response above.	
Provide a motivation for the preferred activity alternative.	
Please see the response above.	
Provide a detailed motivation if no activity alternatives exist.	
For the same reason as to why there is no site alternative, there is no activity alternative.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
Please see the response given above in Section 1.1 for the site alternative positive and negative impacts.	
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.	
<p>Based on the City of Cape Town's Landscape Master Plan from the Feasibility Design (January 2022), two proposed Landscape options (Option A and B) were presented to the public for comment (and further investigated by the project team).</p> <p>Following public comments and further work by the design team, a combination of these two options was used as a base, and the landscape layout was further modified. A notable difference between Option A and Option B was the location of the new ablution building and the presence or absence of a third proposed NGO building.</p> <p>Public opinion strongly opposed the relocation of the ablution block away from the current central shower plaza. This was accommodated, and the new ablution block is proposed to be built landward of the central shower plaza. The area initially envisioned for the proposed relocated ablution building in Option B (near the railway) is being proposed as a new NGO building. This building will house the Waves for Change NGO, allowing a new NGO focused on improving beach accessibility to use the existing Waves for Change building located next to the planned universal beach access ramp from the central plaza.</p> <p>Both options A and B proposed removing the beach huts from their current clusters near the central plaza area. The public was not supportive of this, and the plans have been revised to retain all eight beach huts near the central plaza area.</p> <p>The skate park that was proposed to use the current central shower plaza area in both Option A and Option B has now been removed from the design. Public comment noted this would not be practical</p>	

<p>due to noise as well as sand inhibiting effective use of rideable surfaces at such close proximity to the beach. The public also highlighted the importance of the central area as meeting place and desired location for outdoor showers. Alternate areas for a skate park were investigated by the design team, but no practical options were found for inclusion in this project.</p> <p>Finally, both Option A and Option B included a squared off and angular design for the concrete stepped revetment in the “point” area. Public comment noted this was not in line with the character of Muizenberg. The design of the stepped revetment has since been comprehensively modified to reflect Muizenberg’s character and “sense of place”. For a detailed final design summary that has incorporated all changes since public comment, please see the subheading “Development proposal” in Section B (4.4) of this document.</p>	
<p>Provide a description of any other design or layout alternatives investigated.</p>	
<p>The preferred design described above is a combination of previous options. It is now the only preferred proposed design.</p>	
<p>Provide a motivation for the preferred design or layout alternative.</p>	
<p>The preferred design was adapted to incorporate public input and further insight from the design team.</p>	
<p>Provide a detailed motivation if no design or layout alternatives exist.</p>	
<p>As discussed above, two layout alternatives were initially proposed. Following public comment, these designs were merged and further changes were added to the final layout to optimize the outcomes of refurbishment for all parties involved.</p>	
<p>List the positive and negative impacts that the design alternatives will have on the environment.</p>	
<p>There are no design alternatives (as discussed above).</p>	
1.4.	<p>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.</p>
<p>Provide a description of the preferred technology alternative:</p>	
<p>This is not applicable to the proposed refurbishment.</p>	
<p>Provide a description of any other technology alternatives investigated.</p>	
<p>This is not applicable to the proposed refurbishment.</p>	
<p>Provide a motivation for the preferred technology alternative.</p>	
<p>This is not applicable to the proposed refurbishment.</p>	

Provide a detailed motivation if no alternatives exist.	
This is not applicable to the proposed refurbishment.	
List the positive and negative impacts that the technology alternatives will have on the environment.	
This is not applicable to the proposed refurbishment.	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
The proposed activities are limited to conceptual design, detailed design, and construction phases, and are not anticipated to have significant operational alternatives.	
Provide a description of any other operational alternatives investigated.	
Operational alternatives are not applicable to the proposed refurbishment.	
Provide a motivation for the preferred operational alternative.	
Operational alternatives are not applicable to the proposed refurbishment.	
Provide a detailed motivation if no alternatives exist.	
The proposed activities are limited to conceptual design, detailed design, and construction phases, and are not anticipated to have significant operational alternatives.	
List the positive and negative impacts that the operational alternatives will have on the environment.	
<p>The impacts of this project on the surrounding environment have been discussed in detail in Section H (1.1). Below is a brief overview of the impacts associated with the proposed project:</p> <p>The project will effectively achieve the ultimate goal of replacing the existing coastal defence structures and mitigate the effects of climate change induced sea level rise on the Muizenberg Beachfront precinct. This protects both private and public property, protecting and supporting the local tourism and small business economy for years to come. Additionally, the area will benefit from upgraded public amenities such as formalised parking, new ablution facilities, a playground (all of which focus on providing universal access). This will further boost the economic activity in the area as it draws more visitors to the area. Disruptions to traffic and general public use of the Muizenberg Beachfront area during construction are the main disadvantages of this project. These will be temporary in nature and will not be relevant after construction.</p>	
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.	
The No-Go alternative is the option of not implementing the proposed development and is the benchmark against which the impacts of the proposed development can be evaluated. In this alternative, the site would stay as it currently is and the refurbishment would not take place (i.e.: status	

quo remains). Leaving the site as is would entail the infrastructure remaining as is, as described in Section B (4.4) under the "Current site description" subheading. A brief overview of the infrastructure that would remain is presented below:

- The current coastal defence structures that are past their design lives and beginning to fail
- Ablution building currently being undercut due to its location in the littoral active zone. As a result, it is exposed to wave-action and scouring.
- Landward infrastructure that has not been maintained adequately as a result of budget cuts and lack of clear maintenance plans
- Incomplete sections of the area (such as the over-used and degraded gravel parking area)

A socio-economic impact study was undertaken by Urban-Econ Development Economists during the inception stage of the project. This study focused on determining the social and economic impact of a do-nothing approach with regards to the coastal defence and landside infrastructure on the local Muizenberg communities and economy, as well as the expected benefits of executing the project and who would directly benefit from the project

According to this assessment, the No-Go alternative would be very costly to the area. It was found that the No-Go option would lead to a significant drop in surrounding property value (-R 55 million) and a resultant drop in property rates and taxes (-R 0.48 million annually) collected by the government. Additionally, this would lead to a loss of at least 50 jobs in the tourism sector and a loss of approximately R 47 million of economic activity. In addition to the high economic costs of not implementing this project, the No-go option would negatively affect accessibility, public amenity availability, business development opportunity, and public perception of the area. Should the no-go option be selected, damage will occur to the existing coastal defence structures, which will lead to costly and inappropriate emergency coastal protection structures, that will require expensive maintenance work and lead to the eventual replacement of the coastal protection infrastructure, but at a higher total cost to the city and loss to the area as a whole. Finally, leaving the site as is would leave it in a state that is not aligned with planning frameworks on National, Provincial, City or Area/suburb scales. For all these reasons, the No-go alternative is not a viable option for the Muizenberg Beachfront refurbishment project.

1.7.	Provide and 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.
<p>The only alternative is the No-go option, which refers to not proceeding with the proposed use of the site. This option would have severe consequences for the precinct in both the short and long term, as described above. Any other proposed use of the site would not align with current land use and would fail to maintain the vibrant and unique character of Muizenberg that has been developed over many years.</p>	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
<p>There is no preferred alternative to this project. The preferred (and only) location of this project is within the currently planned development footprint - the Muizenberg Beachfront area.</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).

“No-go” areas will only be temporarily implemented in certain parts of the Muizenberg Beachfront during construction. A phased approach to construction will be taken in order to ensure the entire beachfront and surroundings is not closed off at the same time. See the EMPr for more detail on the phased construction plan and temporary “no-go” areas.

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.

This section outlines the impact assessment methodology, based on the DEAT 2006 Guideline on Assessment of Alternatives and Impacts.

Impacts are defined as the changes in an environmental parameter that result from undertaking an activity. The change is the difference between the effect on the environmental parameter where the activity is undertaken compared to that where the activity is not undertaken. Impacts occur over a specific period and within a defined area.

Impacts may occur during the construction, operation, and decommissioning phases of the development. They may be direct, indirect and/or cumulative in nature.

- Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation, or maintenance of an activity and are generally obvious and quantifiable.
- Indirect impacts of an activity and indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- Cumulative impacts, in relation to an activity, mean the past, current, and reasonably foreseeable future impacts of an activity, considered together with the impacts of activities associated with that activity, that in itself might not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.

In order to identify potential impacts (both positive and negative) the nature of the proposed projects is interrogated so that the impacts associated with the projects can be assessed. The process of identification and assessment of impacts included:

1. Determining the current environmental conditions in sufficient detail so that there is a baseline against which the impacts can be identified and measured, including by:
 - a. Determination of site conditions via a visual inspection;
 - b. Review of recent and historical aerial imagery; and
 - c. Specialist assessments as required.

2. Determining the future changes to the environment that will occur if the activity does not proceed, based on knowledge of local conditions, trends, and processes and on specialist assessment.
3. Developing and understanding of the activity in sufficient detail to understand its consequence.
4. The determination of significant impacts which are likely to occur if the activity is undertaken.

As per the DEAT Guidelines, the following criteria have been applied to the prediction and assessment of impacts. Potential impacts are rated in terms of their:

- **Spatial extent** (the size of the area that will be affected by the impact)
 - Immediate (site only)
 - Local (< 2km from the site)
 - Regional (within 30km of the site)
 - National
 - International
- **Intensity** (the anticipated severity of the impact)
 - High (severe alteration of natural systems, patterns, or processes)
 - Medium (notable alteration of natural systems, patterns, or processes)
 - Low (negligible alteration of natural systems, patterns, or processes)
- **Duration** (the timeframe during which the impact will be experienced)
 - Temporary (less than 1 year)
 - Short term (1 to 6 years)
 - Medium term (6 to 15 years)
 - Long term (the impact will cease after operational life of the activity)
 - Permanent (reversal will not occur in such a way or in such a time span that the impact can be considered transient)
- **Reversibility** (the extent to which the impacts will be reversible when the project has reached the end of its life cycle)
 - High reversibility of impacts (impact is highly reversible at end of project life)
 - Moderate reversibility of impacts
 - Low reversibility of impacts
 - Impacts are non-reversible (impacts is permanent)
- **Irreplaceability of resources lost** (the degree to which the impact causes irreplaceable loss of resources)
 - High irreplaceability of resources (the project will destroy unique resources that cannot be replaced)
 - Moderate irreplaceability of resources.
 - Low irreplaceability of resources
 - Resources are replaceable (the affected resource is easy to replace/rehabilitate)

Using the criteria above, the impacts are further assessed in terms of the following:

- **Probability** (the probability of the impact occurring)
 - Improbable

- Unlikely
 - Probable
 - Very likely
- **Significance** (will the impact cause notable alteration of the environment?)
 - Low to very low (the impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making)
 - Medium (the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence of the decision-making if not mitigated)
 - High (the impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making).
 - **Status** (whether the impact on the overall environment will be...)
 - Positive – environment will benefit from the impact
 - Negative – environment will be adversely affected by the impact
 - Neutral – environment will not be affected
 - **Confidence** (the degree of confidence in predictions based on available information and specialist knowledge)
 - Low
 - Medium
 - High

Impact mitigation measures have been incorporated into the EMP, which includes where appropriate:

- Standards for measuring and monitoring mitigatory measures and enhances, and a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness; and
- Mitigation and management measures to avoid or reduce negative impacts.

Other aspects taken into consideration in the assessment of impact significance are:

- Impacts are evaluated for the construction and operation phases of the development.
- Impacts are evaluated with and without mitigation, stating the effectiveness of mitigation measures to reduce the significance of a particular impact.
- The impact evaluation takes into consideration the cumulative effects associated with this and other projects which are either developed in the process of being developed in the local area.

The impact assessment attempts to qualify the magnitude of potential impacts (direct and cumulative) and outline the rationale used. Where appropriate, national standards are used as a measure of the level of impact.

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:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	IMPACTS ON SEDIMENT DYNAMICS	
Nature of impact:	Impact on sediment dynamic associated with the refurbishment / upgrading of the existing seawall with a stepped revetment.	None.
Extent and duration of impact:	Local and permanent	Not Applicable
Consequence of impact or risk:	<p>As discussed in Section G: 3.5 of the this report, the outcome / findings and recommendations of the sediment transport modelling study, has informed the design of the scour protection structures that will be installed – the sleeping rock revetment in the South-West corner and the scour protection structure that will be installed along the length of the new concrete stepped revetment.</p> <p>Furthermore, the wave reflection and overtopping report (November 2022) informed the appropriate dimensions of the concrete stepped revetment (and promenade) needed to effectively counteract the effects of sea-level rise over the next 50 years and minimize the risk of potential flooding to the precinct.</p> <p>Additionally, both studies were used to ensure there will be no negative impacts on sediment or wave dynamics as a result of the new coastal defence structures.</p> <p>These aspects have been considered and incorporated in the current coastal protection design.</p>	Not Applicable
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	None anticipated	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable
Degree to which the impact can be avoided:	Cannot be avoided	Not Applicable
Degree to which the impact can be managed:	Can be managed	Not Applicable
Degree to which the impact can be mitigated:	Can be mitigation	Not Applicable
Proposed mitigation:	No mitigation is required, as the current design proposal have taken into account findings of the relevant specialist study.	Not Applicable
Residual impacts:	Low negative	Not Applicable
Cumulative impact post mitigation:	Low negative	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	IMPACTS ON WAVE DYNAMICS	
Nature of impact:	Impact on the wave dynamics as a result of the design of the proposed new stepped revetment.	None
Extent and duration of impact:	Local, permanent	Not Applicable
Consequence of impact or risk:	<p>The existing abutment, which has a near-vertical wall oblique to the main beach causes some wave reflection, which is expected to be responsible for the locally lower beach levels at the western end of the main beach.</p> <p>The proposed new coastal protection structure is a stepped revetment, which is expected to be less reflective than a vertical wall.</p>	Although not strictly an impact, the no-go alternative involves an opportunity cost associated with not enabling development on a suitable site.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
	<p>Furthermore, the layout of the proposed stepped revetment is less oblique to the wave direction and is set back further landward than the existing wall.</p> <p>Considering these two factors, the wave reflections with the new proposed stepped revetment are expected to be lower than those of the existing Surfer's Corner.</p>	
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable
Degree to which the impact can be reversed:	Non-reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impacts.	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable
Degree to which the impact can be avoided:	Low negative	Not Applicable
Degree to which the impact can be managed:	Low negative	Not Applicable
Degree to which the impact can be mitigated:	Low negative	Not Applicable
Proposed mitigation:	No mitigation is required, as the current design proposals have taken into account findings of the relevant specialist study.	Not Applicable
Residual impacts:	None.	Not Applicable
Cumulative impact post mitigation:	No cumulative impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low negative	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk: IMPACT ON SENSE OF PLACE AND VISUAL CHARACTER		
Nature of impact:	The proposed refurbishment will be undertaken in an area that forms the setting to a group of streetscapes with unique features and characteristics of the area which create a specific identity and sense of place.	None
Extent and duration of impact:	Local, permanent	Not Applicable
Consequence of impact or risk:	The potential loss of sense of place and visual characteristic.	Although not strictly an impact, the no-go alternative involves an opportunity cost associated with not enabling development on a suitable site.
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	Low irreplaceability of resources	Not Applicable
Degree to which the impact can be reversed:	Non-reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impacts.	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium negative	Not Applicable
Degree to which the impact can be avoided:	Low (-)	Not Applicable
Degree to which the impact can be managed:	Low (-)	Not Applicable
Degree to which the impact can be mitigated:	Low (-).	Not Applicable
Proposed mitigation:	The proposed new infrastructure will cover a very similar footprint to the old infrastructure, meaning once constructed, it will not negatively impact the sense of place or visual characteristic of the area. Special care has been taken to use a sand coloured exposed aggregate concrete for the stepped revetment and promenade to minimize negative impacts on the aesthetic of the area. Aside from the concrete revetment (necessary for coastal protection), the rest	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
	of the planned infrastructure maintains the current design language of the area. For example, the ablution building will be reconstructed in the same architectural style as the current ablutions, and the colourful beach huts will be kept in the vicinity. Clay pavers are also being used for the formalisation of the western parking area, and special care has been taken to ensure the same patterns are used as in the current paved parking areas.	
Residual impacts:	None.	Not Applicable
Cumulative impact post mitigation:	No cumulative impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	SOCIO-ECONOMIC IMPACTS	
Nature of impact:	The proposed refurbishments is anticipated to have positive socio-economic impacts.	None
Extent and duration of impact:	Regional, permanent	Not Applicable
Consequence of impact or risk:	<p>A socio-economic impact study was undertaken by Urban-Econ Development Economists during the inception stage of the project.</p> <p>The study found that the proposed upgrade of to the Muizenberg Beachfront is essential for the sustainable growth of tourism and the protection of public and private infrastructure and assets in the area.</p> <p>The study concluded that the “proposed upgrade would result is significant and measurable positive impacts on production, employment, worker income, and Gross Domestic Product” and</p>	<p>The socio-economic study undertaken focused on determining the social and economic impact of a do-nothing approach with regards to the coastal defence and landside infrastructure on the local Muizenberg communities and economy, as well as the expected benefits of executing the project and who would directly benefit from the project.</p> <p>It was found that failure to pursue the upgrade would have a negative impact on local tourism and property sectors,</p>

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
	<p>recommended that the "proposed upgrades be undertaken based on their contribution to the local economy".</p> <p>Further specific details about key upgrades and socio-economic benefits are listed below:</p> <ul style="list-style-type: none"> • The installation of the new coastal defence structures at the Muizenberg Beachfront offers numerous benefits to the local community, businesses and environment. The stepped revetment will ensure that local businesses are protected from future impacts of sea level rise can continue to operate and grow, providing jobs and economic opportunities for local residents. The improved safety and stability of the beachfront will attract more visitors, providing an additional boost to local businesses. • The refurbished promenade and upgraded public facilities will improve the overall appeal of the beachfront area, attracting more visitors. This will stimulate economic activity in the area, particularly in the hospitality and tourism sectors. The formalisation of the western parking area will provide clear demarcation of pedestrian and vehicle space, improving safety and contributing to a more family friendly environment. Additionally, the western parking area is planned with secondary alternate uses in mind, such as night markets and other events that boost local tourism. The proposed playground upgrade will further boost the attractiveness of the precinct to families with young children. <p>The focus on accessibility provisions of this project also increases the attractiveness of the Muizenberg Beachfront to the public. This will further boost public enjoyment and visitation of the area. The inclusion of a new NGO building to allow for increased accessibility to beach- related activities, such as beach access mats and</p>	<p>with long-term reductions in property values and increasing climate-change-driven risks.</p>

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
	adaptive surfing programs, will also contribute to public use of the area.	
Probability of occurrence:	Very Likely	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource	Not Applicable
Degree to which the impact can be reversed:	Non-reversible	Not Applicable
Indirect impacts:	Indirect impacts include downstream positive socioeconomic outcomes for regional users, as well as increased economic activity in the area.	Not Applicable
Cumulative impact prior to mitigation:	None	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High positive	Not Applicable
Degree to which the impact can be avoided:	Not Applicable.	Not Applicable
Degree to which the impact can be managed:	Not Applicable.	Not Applicable
Degree to which the impact can be mitigated:	Not Applicable.	Not Applicable
Proposed mitigation:	No mitigation, the proposed refurbishment it is expected to have positive socio-economic impacts, on production, employment, worker income, Gross Domestic Product.	Not Applicable
Residual impacts:	None.	Not Applicable
Cumulative impact post mitigation:	No cumulative impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High positive	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk: TRAFFIC IMPACTS		
Nature of impact:	The proposed refurbishment will have potential impacts on traffic management.	None
Extent and duration of impact:	Local, permanent	Not Applicable
Consequence of impact or risk:	<p>A traffic impact statement was undertaken, discussing the proposed parking layout, vehicle access and circulation as well as the current state of the public transport services and non-motorised transport facilities. It was found that proposed parking layout will provide improved access and circulation to the parking area. The number of parking bays is sufficient for the purpose of this study and the vehicle traffic within the study area will not be impacted negatively as a result of the formalisation of the parking area.</p> <p>NMT facilities are essential at the beachfront and the proposed upgrade will provide sufficient pedestrian walkways along the promenade and thereby minimise the conflict between vehicles and pedestrians</p>	Although not strictly an impact, the no-go alternative involves an opportunity cost associated with not enabling formalisation of the parking area.
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	Low irreplaceability of resources	Not Applicable
Degree to which the impact can be reversed:	Non-reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impacts.	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium negative	Not Applicable
Degree to which the impact can be avoided:	Low (-)	Not Applicable
Degree to which the impact can be managed:	Low (-)	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Degree to which the impact can be mitigated:	Low (-).	Not Applicable
Proposed mitigation:	<p>In summary, the proposed formalisation of the parking area should have minimal impact on the local road network from a traffic operations perspective. It is also noted that the formalisation will have a positive impact on pedestrian movements and a marginal impact on parking provision.</p> <p>The TIS did not find any impacts that will need mitigation of completion of construction. The TIS concluded the formalisation of the western parking area will positively impact flow of traffic at the Muizenberg Beachfront.</p>	Not Applicable
Residual impacts:	None.	Not Applicable
Cumulative impact post mitigation:	No cumulative impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	None.

CONSTRUCTION PHASE IMPACTS

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
CONSTRUCTION PHASE		
Potential impact and risk:	IMPACT ON ACCESS TO BEACH	
Nature of impact:	The proposed construction works will require that parts of the beach where construction occur, to be closed-off to public access.	None, as no construction will take place.
Extent and duration of impact:	Immediate surroundings, short term (for the duration of the construction phase)	Not Applicable
Consequence of impact or risk:	Access to the parts of the beach under construction work will be closed-off temporarily. This will result in disruption of the area during the construction phase, which could inconvenience visitors and local residents, and may affect businesses operating in the area. The presence of temporary berms on the closed portion on the beach may temporarily affect wave dynamics in the near shore (as a result of wave reflection).	Not Applicable
Probability of occurrence:	Very likely	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium negative	Not Applicable
Degree to which the impact can be avoided:	Cannot be avoided	Not Applicable
Degree to which the impact can be managed:	Can be managed	Not Applicable
Degree to which the impact can be mitigated:	Can be mitigation	Not Applicable
Proposed mitigation:	Special care will be taken to ensure construction is phased strategically so as to maintain access to parts of the beach and	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
CONSTRUCTION PHASE		
	parking at all times. These impacts will be monitored and mitigation measures are proposed in the Construction Management Plan of the Environmental Management Programme. This includes a detailed phase plan and a proactive communication process and signage for alternative access routes, where possible.	
Residual impacts:	Disrupted beach access is inevitable with the nature of the proposed refurbishment and associated construction activities, but the implementation of management and mitigation as set out in the EMP will ensure that impacts are limited as far as possible.	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	CONSTRUCTION-PHASE ARCHAEOLOGICAL DISTURBANCE/DESTRUCTION	
Nature of impact:	The proposed construction works in the Study Area are likely to disturb or destroy any archaeological material present.	None
Extent and duration of impact:	Immediate surroundings, short term (for the duration of the construction phase)	Not Applicable
Consequence of impact or risk:	Disturbance or destroy any archaeological material present.	Not Applicable
Probability of occurrence:	Very likely	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	Moderate irreplaceably of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation	Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
(e.g. Low, Medium, Medium-High, High, or Very-High)		
Degree to which the impact can be avoided:	Cannot be avoided	Not Applicable
Degree to which the impact can be managed:	Can be managed	Not Applicable
Degree to which the impact can be mitigated:	Can be mitigation	Not Applicable
Proposed mitigation:	A programme of archaeological monitoring accompanies the works to be undertaken in the Study Area. It is further recommended that the archaeologist must be appointed before any work in the Study Area commences.	Not Applicable
Residual impacts:	No Residual impact	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	CONSTRUCTION-PHASE NOISE AND VIBRATION IMPACT	
Nature of impact:	Noise and vibration are to be expected during the construction of the proposed development. Noise is generated by machinery and plant, while vibration is likely during demolitions of structures being re-constructed.	None
Extent and duration of impact:	Immediate surroundings, short term (for the duration of the construction phase)	Not Applicable
Consequence of impact or risk:	Noise nuisance and vibration experienced by neighbouring residents and businesses.	Not Applicable
Probability of occurrence:	Very likely	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium negative	Not Applicable
Degree to which the impact can be avoided:	Cannot be avoided	Not Applicable
Degree to which the impact can be managed:	Can be managed	Not Applicable
Degree to which the impact can be mitigated:	Can be mitigation	Not Applicable
Proposed mitigation:	Proposed noise management measures are stipulated in the EMPr, and include <ul style="list-style-type: none"> • Restriction of working hours in line with municipal and provincial requirements • Use of machinery in good working order 	Not Applicable
Residual impacts:	Noise and vibration are inevitable during construction activities, but the implementation of management and mitigation as set out in the EMPr will ensure that impacts are limited to normal working hours.	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	CONSTRUCTION-PHASE WASTE GENERATION IMPACTS	

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Nature of impact:	Construction activities generate a variety of waste materials, including rubble and spoil, general wastes, and hazardous wastes.	None
Extent and duration of impact:	Local and short term	Not Applicable
Consequence of impact or risk:	Waste generated from construction activity may accumulate as debris and construction material on the site and surrounds. If not adequately managed, the waste will also result in adverse environmental impacts such as foul odours, destruction of habitat, visual discomfort, contamination of soil and water resources, and health related impacts.	Not Applicable
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium negative	Not Applicable
Degree to which the impact can be avoided:	Moderate to high	Not Applicable
Degree to which the impact can be managed:	High	Not Applicable
Degree to which the impact can be mitigated:	Low	Not Applicable
Proposed mitigation:	<p>The primary mitigation for these construction-related impacts is the effective minimisation of their effects through implementation and monitoring of the Construction Environmental Management Plan in the EMPr.</p> <p>The EMPr includes management measures and outcomes for each of these impacts, as well as providing for environmental awareness training of construction personnel.</p>	Not Applicable
Residual impacts:	Possible dust nuisance for short periods during high wind conditions.	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low negative	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	CONSTRUCTION-PHASE DUST IMPACTS	
Nature of impact:	Dust generation due to construction activities	None
Extent and duration of impact:	Local and short term	Not Applicable
Consequence of impact or risk:	Movement of machinery, vehicles and other construction activities on site could result in the emission of dust during construction works. Dust can reduce visibility and could also affect neighbouring properties, beach uses and adjacent businesses if the generation of dust is excessive and there are no mitigation measures implemented	Not Applicable
Probability of occurrence:	Moderate	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impacts	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable
Degree to which the impact can be avoided:	Moderate to high	Not Applicable
Degree to which the impact can be managed:	High	Not Applicable
Degree to which the impact can be mitigated:	Low	Not Applicable
Proposed mitigation:	Implementation of management measures as set out in the construction EMP, which include dust suppression measures and stabilisation requirements.	Not Applicable
Residual impacts:	Possible dust nuisance for short periods during high wind conditions.	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low negative	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk: CONSTRUCTION-PHASE VISUAL IMPACTS		
Nature of impact:	Aesthetic impacts of construction activities	None
Extent and duration of impact:	Local and short term	Not Applicable
Consequence of impact or risk:	The presence of construction equipment and materials will alter the site visually during the construction phase.	Not Applicable
Probability of occurrence:	Very likely	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No irreplaceable loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impacts for short-term construction impacts	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable
Degree to which the impact can be avoided:	Cannot be avoided	Not Applicable
Degree to which the impact can be managed:	Construction-phase impacts can be managed through implementation of the EMPr.	Not Applicable
Degree to which the impact can be mitigated:	Construction-phase impacts can be mitigated through implementation of the EMPr.	Not Applicable
Proposed mitigation:	The EMPr includes mitigation measures for the construction phase, including visual screening of the site.	Not Applicable
Residual impacts:	Temporary visual impacts will remain during the construction phase.	Not Applicable
Cumulative impact post mitigation:	Very Low negative	Not Applicable

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low negative	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk: CONSTRUCTION-PHASE POLLUTION OF SOILS, SEA WATER AND GROUNDWATER		
Nature of impact:	There is a potential risk of pollution from construction activities on the surrounding environment.	None
Extent and duration of impact:	Local and short term	Not Applicable
Consequence of impact or risk:	Pollution of the surround environment as a result of the contamination of soil and water sources through spillage of concrete and cement, or spillage of chemicals, oils, fuels sewage (relocation of services) solid waste and litter.	Not Applicable
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	No indirect impacts	Not Applicable
Cumulative impact prior to mitigation:	Low negative	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low negative	Not Applicable
Degree to which the impact can be avoided:	Moderate to high	Not Applicable
Degree to which the impact can be managed:	High	Not Applicable
Degree to which the impact can be mitigated:	Low	Not Applicable
Proposed mitigation:	The EMPr includes detailed mitigation measures for the construction phase.	Not Applicable
Residual impacts:	None.	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low negative	None.

Alternative:	Proposed development (Preferred alternative)	No-Go Alternative
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Potential impact and risk:	CONSTRUCTION-PHASE TEMPORARY JOB CREATION	
Nature of impact:	Creation of temporary employment in the construction sector during the construction phase is expected. This will have the added benefit of skills development. The City of Cape Town requires that construction projects as far as possible utilise labour from the local market. Employment opportunities will also be generated indirectly from material suppliers.	Should the no-go alternative be authorised, no jobs will be created from the construction activities.
Extent and duration of impact:	Local and short term	Not Applicable
Consequence of impact or risk:	In the construction phase, direct economic impacts in the form of temporary employment, and indirect impacts due to the capital investment are anticipated. Financial benefit for locals.	Although not strictly an impact, the no-go alternative involves an opportunity cost associated with not enabling development on a suitable site.
Probability of occurrence:	Probable	Not Applicable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources.	Not Applicable
Degree to which the impact can be reversed:	Reversible	Not Applicable
Indirect impacts:	Indirect employment creation is anticipated in the materials, manufacturing and transport sectors.	Not Applicable
Cumulative impact prior to mitigation:	No cumulative impact	Not Applicable
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium Positive	Not Applicable
Degree to which the impact can be avoided:	Not Applicable	Not Applicable
Degree to which the impact can be managed:	Not Applicable	Not Applicable
Degree to which the impact can be mitigated:	Not Applicable	Not Applicable
Proposed mitigation:	No mitigation required – positive impact	Not Applicable
Residual impacts:	Creation of temporary employment	Not Applicable
Cumulative impact post mitigation:	No cumulative Impact	Not Applicable
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium Positive	None.

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.

Specialist Coastal Modelling, compiled by PRDW Consulting Port and Coastal Engineers

PRDW Consulting Port and Coastal Engineers compiled two reports to inform the design of the Muizenberg Beachfront Upgrade:

“Muizenberg Beachfront Upgrade – Specialist Coastal Modelling - Wave Refraction and Sediment Transport Modelling Report” (August 2022)

“Muizenberg Beachfront Upgrade – Specialist Coastal Modelling - Wave Overtopping and Reflection Modelling Report” (November 2022)

The two part study on ocean dynamics at Muizenberg beach was undertaken by PRDW Coastal Engineers in order to ensure the new coastal defence structures are designed to effectively minimize the effects of climate change on the Muizenberg Beachfront area, and to withstand the resultant harsh projected future ocean conditions. The first study focused on wave and sediment transport modelling, while the second study focused on wave overtopping and reflection. In summary, these specialist studies concluded that a stepped concrete revetment and 3 meter wide concrete promenade (along with associated sub-terrain scour protection structures) will be necessary to effectively withstand sea-level rise and associated risks over the next 50 years (the design life of the coastal defence structures).

The sediment transport modelling report (August 2022) informed the design of the scour protection structures that will be installed – the sleeping rock revetment in the South-West corner and the scour protection structure that will be installed along the length of the new concrete stepped revetment. These scour protection structures will be installed under the sand, at an appropriate depth to prevent accidental exposure and ensuing damage. The wave reflection and overtopping report (November 2022) informed the appropriate dimensions of the concrete stepped revetment (and promenade) needed to effectively counteract the effects of sea-level rise over the next 50 years and minimize the risk of potential flooding to the precinct. Additionally, both studies were used to ensure there will be no negative impacts on sediment or wave dynamics as a result of the new coastal defence structures. Below are summaries of the relevant sections of the two specialist coastal modelling reports:

Impacts on sediment dynamics:

The proposed stepped revetment is an upgrade to the existing seawall, and approximately follows the same footprint on the main beach area, where both the existing and proposed structures are shore parallel and located at the back of the beach. Neither is expected to interrupt the longshore sand transport processes. An exception to this is the existing ablation facility which extends onto the beach seaward of the existing seawall. The proposed removal of this structure (existing ablation building) from the littoral active zone will reduce any existing impact on the longshore sand transport, although this is expected to be minimal since no significant effect can be observed on the present-day shoreline. Furthermore, since the proposed seawall approximately follows the footprint of the existing structure, it also does not pose any additional reduction in sand available for cross-shore transport processes.

The proposed layout of the stepped revetment presents a departure (landward retreat) from the layout of the existing seawall in the Surfer's Corner area. The existing Surfer's Corner is a short abutment which extends to a depth of approximately 0 m MSL (middle of intertidal zone). The longshore transport modelling presented in Section 7.3.4 (PRDW, 2022) shows the longshore gross sediment transport to be mainly limited to depths deeper than 0 m MSL. This implies that the existing abutment does not present a significant interruption of longshore transport processes (other than physical access barrier), and its removal is not expected to significantly alter the longshore transport sediment budget.

Impacts on wave dynamics:

The existing abutment, which has a near-vertical wall oblique to the main beach causes some wave reflection, which is expected to be responsible for the locally lower beach levels at the western end of the main beach. The proposed new coastal protection structure is a stepped revetment, which is expected to be less reflective than a vertical wall. Furthermore, the layout of the proposed stepped revetment is less oblique to the wave direction and is set back further landward than the existing wall. Considering these two factors, the wave reflections with the new proposed stepped revetment are expected to be lower than those of the existing Surfer's Corner.

The full 3D wave overtopping and flooding assessment investigated this, and found that for all the scenarios modelled it can be seen that the wave reflection coefficients for the existing seawall and proposed revetment are nearly identical. This corresponds to the overtopping results which showed marginal differences between the two structures.

Overall, the results agree that the changes in wave reflection between the existing seawall and proposed revetment are very minor, and the potential impact on surfing conditions would be negligible.

It should be noted that, during construction, temporary berms will likely be built seaward of the existing sea wall to serve as temporary coastal protection, any effect on the nearshore hydrodynamics caused during the construction is limited to the construction duration and to the area of work. Work will be executed in a sequence and thus only portions of the beach will be affected at a time and not the entire beachfront at once. Any effects are thus temporary of nature.

Scour protection:

Estimates of the local scour at the proposed structure were derived from three empirical equations and cross-shore storm erosion modelling. It is recommended that the minimum (deepest) scour level from the four methods should be used for design. The predicted 475-year minimum scour level ranges between -0.2 to +0.2 m MSL for 2026, and deepens -0.2 to 0.0 m MSL for 2046 and -0.7 to -0.6 m MSL for 2076. For the 100-year return period, the minimum scour levels are approximately 0.1 m higher. The design process should consider these levels and time horizons in the scour protection design (including adaptive design approaches), and consider a proposed additional 0.5 m localised scour allowance for uncertainties in the methodologies and unquantified 2D effects.

Coastal protection:

An advanced 3D wave model (MIKE 3) was used to assess the overtopping and resultant flooding for the project at the proposed levels and analyse the changes in wave reflection between the existing seawall and proposed revetment, and the potential impact on surfing conditions.

Before using advanced 3D wave modelling, simplified models (Numerical flumes) were used to test the sensitivity of the results to the climate change projection, a raised crest level for adaptive design and a comparison of the existing seawall to the proposed revetment.

When comparing the low emissions climate change scenario projection (SSP1-2.6) to the high emissions climate change scenario projection (SSP5-8.5), the overtopping rates were modestly lower (on average 7% lower for 2046, and 32% lower for 2076) due to a lower still water depth and less eroded profile.

Relative to the existing seawall, the proposed revetment showed a small (< 7 %) increase in overtopping discharge. Although overtopping was assessed in detail, the structure is not intended to negate the overtopping – it is designed to remain stable under storm overtopping conditions with little to no damage. This has informed drainage design and landside material and design choices of the new structures that will be constructed.

The results informed the selection of four scenarios for the full domain (3D) simulations to quantify the overtopping and resultant flooding along the full length of the proposed revetment under the most conservative climate change projection (SSP5-8.5). These full domain simulations led to the following conclusions (the “EurOtop” European standards for coastal flooding were used as a baseline for interpretation of results):

- For the proposed revetment 1-year storm events present no hazard to vehicles or pedestrians along any of the sections. A 100-year event during 2046 is hazardous to pedestrians, while a 100-year event during 2076 becomes hazardous to vehicles along Sections 1 to 3.
- At the eastern end of the proposed revetment, the relatively larger overtopping rates, combined with lower infrastructure levels and an unobstructed pathway, causes a weak spot resulting in increased flooding behind the promenade. The maximum water depths are typically associated with locations where waves runup against the seaward faces of structures (e.g., central shower plaza area).
- For a 1-year event in 2026 only the seaward edge of the promenade was inundated. For an increase in climate change horizon (2046) most of the promenade was overtopped, while the parking areas and most of the elevated lawns and vegetated areas remained dry.
- For the 100-year events most of the parking areas were inundated, with only the more elevated western areas remaining dry. For an increased climate change horizon (2046 to 2076) the flooding extent and severity is generally worse, except at Surfers Corner where the contour plots show a slightly more landward flood line for the 2046 scenario, demonstrating the non-linearity of overtopping processes in a complex 3D environment.
- The current speeds were the strongest where the waves overtop the promenade without obstructions (e.g., buildings, steps or slopes). Similar to the overtopping and water depths, an increase in storm severity (1-year to 100-year) or climate change horizon (2026/2046 to 2076) typically resulted in increased current speeds, except for Surfers Corner where maximum current speeds reduced from 2046 to 2076 – analogous to the maximum water depths.

These coastal modelling studies were used to inform the design of the project. As such, the project has been designed to avoid any significant impacts on ocean dynamics. These studies were used to ensure the new coastal defence structures are designed to effectively cope with all sea-level rise associated risks, and that the Muizenberg Beachfront will be protected throughout the full

design life of the new stepped revetment (50 years). Furthermore, although overtopping was assessed in detail, the structure is not intended to negate overtopping, but to remain stable under storm overtopping conditions with no to minimal damage, informing drainage design and landside material and design choices, as opposed to the existing structures. Increasing crest height of the coastal protection structures would negatively impact views and lead to damming of overtopping water, which will not be able to drain. The design incorporates a general seaward run-off design to ensure overtopping water returns to the ocean. Finally, note that even though the proposed design considers and allows for the effects of climate change, it cannot negate the overall effect of sea level rise and the eventual wide-spread reduction of beach width due to long term sea level rise that could be encountered across the city and country.

Socio-economic Impact Study

A socio-economic impact study was undertaken by Urban-Econ Development Economists during the inception stage of the project. This study focused on determining the social and economic impact of a do-nothing approach with regards to the coastal defence and landside infrastructure on the local Muizenberg communities and economy, as well as the expected benefits of executing the project and who would directly benefit from the project.

The study found that the proposed upgrade of to the Muizenberg Beachfront is essential for the sustainable growth of tourism and the protection of public and private infrastructure and assets in the area. It goes on to say the beachfront has significant untapped economic potential and latent heritage and social capital, making it an important shared asset. The upgrade would unlock the beachfront's under-utilised potential, improving investment attractiveness and supporting the local economy. Conversely, it was found that failure to pursue the upgrade would have a negative impact on local tourism and property sectors, with long-term reductions in property values and increasing climate-change-driven risks. The City of Cape Town has a responsibility in ensuring that all can benefit from what the Muizenberg Beachfront has to offer, and by investing in this refurbishment project, this responsibility is being upheld

The study concluded that the "proposed upgrade would result is significant and measurable positive impacts on production, employment, worker income, and Gross Domestic Product" and recommended that the "proposed upgrades be undertaken based on their contribution to the local economy".

These findings are supported by the City of Cape Town's frameworks and programmes that highlight Muizenberg as a key area for coastal tourism:

- The City of Cape Town's tourism database lists Muizenberg as a "major attraction"
- City's Coastal Management Programme states the area provides a sense of cultural diversity and coastal recreation
- The City's Spatial Development Framework describes the beachfront as an anchoring metro-significant mixed-use coastal tourism development node
- The 2019 Tourism Development Framework lists improvements to beaches (such as Muizenberg) as a priority initiative that is critically important for sustainable tourism growth

This study was also conducted during the design early design phases of the project. It concluded that the Muizenberg Beachfront upgrade will protect the local economy and promote future economic growth. The findings strongly supported proceeding with the project.

Traffic Impact Statement

A traffic impact statement was required as part of the rezoning and consolidation application. The assessment provided an overview of the transport related impacts with regards to the rezoning of the existing erven. The report further elaborated on the proposed parking layout, vehicle access and circulation as well as the current state of the public transport services and non-motorised transport facilities.

The report noted that the existing erven will be rezoned as "Transport Zone 2". Therefore, no new trips will be generated as part of the rezoning application. For this reason, the report did not focus on trip generation and trip distribution as users of the proposed formalised parking facility will be pass-by traffic, traffic which is already on the road network.

It was found that the proposed parking layout will provide improved access and circulation to the parking area. The number of parking bays is sufficient for the purpose of this study and the vehicle traffic within the study area will not be impacted negatively as a result of the formalisation of the parking area.

NMT facilities are essential at the beachfront and the proposed upgrade will provide sufficient pedestrian walkways along the promenade and thereby minimise the conflict between vehicles and pedestrians.

In summary, the proposed formalisation of the parking area should have minimal impact on the local road network from a traffic operations perspective. It is also noted that the formalisation will have a positive impact on pedestrian movements and a marginal impact on parking provision.

The TIS did not find any impacts that will need mitigation of completion of construction. The TIS concluded the formalisation of the western parking area will positively impact flow of traffic at the Muizenberg Beachfront.

Heritage impact Assessment

The HIA considered the potential for maritime archaeological resources in the Study Area, and for artefacts associated with the Battle of Muizenberg (1795). The potential for archaeological artefactual overspill from a number of important historical sites in the vicinity of the Study Area was also considered, these being the Posthuys and a now demolished VOC powder magazine on the Sandown-on-Sea site. Lastly, based on evidence from elsewhere on the western seaboard of False Bay sand material noted during a site visit undertaken for this assessment, the potential for the presence of pre-colonial shell midden material within the Study Area was considered.

It appears that there is very limited potential for the presence of historical material related to the shipping casualties in the immediate vicinity of the Study Area, or from the Battle of Muizenberg. There is also some, albeit low, potential for overspill of archaeological material from nearby heritage sites in the beach sands of the Study Area. Overall, the maritime and general archaeological potential and significance of the Study Area is assessed is low, but cannot be ruled out.

In respect of pre-colonial coastal archaeological sites or material, the western end of the Study Area has some potential particularly under the area of reclaim that is the Point. Any pre-colonial archaeological site or material that was present in this area is likely to have been heavily impacted by the historical use of the site, but there may still be traces of such material remaining. The pre-colonial archaeological potential and significance of the Study Area is assessed to be low.

The proposed works in the Study Area are likely to disturb or destroy any archaeological material present, but the significance of impacts is assessed to be low.

Ordinarily in an area with such low archaeological potential, no formal archaeological programme of mitigation would be proposed. In this case, however, the proximity to the Study Area of a number of important historical sites and a number of shipwrecks, its involvement in the Battle of Muizenberg, and the possible presence of pre-colonial archaeological material suggests that some form of mitigation is required.

It is recommended, therefore that a programme of archaeological monitoring accompanies the works to be undertaken in the Study Area. It is further recommended that the archaeologist must be appointed before any work in the Study Area commences.

Should archaeological material be encountered during the works in the Study Area, the archaeologist must assess the find and determine the need for further mitigation.

If human remains are uncovered on site, work must cease immediately, the remains must be left in place and made safe, and the project archaeologist and HWC must be notified in order for the significance of the material to be assessed and a decision taken as to how to deal with it.

Provided the mitigation measures recommended above are implemented, the proposed work is considered acceptable.

The HIA recommended certain mitigation measures for impacts that have been included in the EMP. The HIA concluded that work can go ahead and that any possible impacts will be low.

2.	List the impact management measures that were identified by all Specialist that will be included in the EMP
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The specialist studies listed above were conducted prior to and during the design phase of this project. This was done to ensure the final project design already accounted for many of the potential impacts it could have had (had these studies not been conducted). As a result, there are very few remaining impact management measures that have been identified by specialist studies. The only two exceptions to this was the geotechnical report and the HIA. The geotechnical report noted the high water table in the project area. For obvious reasons, this impact could not simply be eliminated during the design phase. See below for details:

- The geotechnical report notes the need for appropriate measures to be implemented where excavations extend below the water table. Where excavations extend below the groundwater table, control of the groundwater seepage and/or de-watering will be necessary. This recommendation has been considered and documented in the in the Construction Management Plan of the Environmental Management Programme.

The HIA noted that the proposed works on the beach front would likely disturb or destroy any archaeological material present, but that the significance of this impact was deemed to be low. See below for management details:

- It is recommended that a programme of archaeological monitoring accompanies the works to be undertaken in the Study Area. It is further recommended that the archaeologist must be appointed before any work in the Study Area commences.
- Should archaeological material be encountered during the works in the Study Area, the archaeologist must assess the find and determine the need for further mitigation.
- If human remains are uncovered on site, work must cease immediately, the remains must be left in place and made safe, and the project archaeologist and HWC must be notified in order for the significance of the material to be assessed and a decision taken as to how to deal with it.
- Provided the mitigation measures recommended above are implemented, the proposed work is considered acceptable.

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.
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No impact management measures were recommended that will not be implemented.

4.	Explain how the proposed development will impact the surrounding communities.
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The proposed development will have negative impacts on the surrounding community during the construction phase. These impacts, which include noise, vibration, dust, traffic disturbance and visual nuisance, are typical of construction and can be mitigated and managed as set out in the construction section of the environmental management programme. Temporary employment is anticipated to be created during the construction phase of the development. Additionally, there will be temporary impacts on available beach area during construction and possible local impact on waves in the nearshore of the closed area due to temporary berms necessary for construction.

Positive socioeconomic impacts are anticipated to accrue to both the future, and current surrounding communities who frequent the beach and local businesses. The improved safety and stability of the beachfront will attract more visitors, providing an additional boost to local businesses. Furthermore, the primary purpose of the proposed refurbishment is the protection of the beachfront amenities and business from the impacts of climate change by installing new coastal defence structures. The protection of businesses and local public infrastructure is addressing a key need of the community by ensuring the public space remains safe for years to come.

Traffic impacts are expected during the construction phase of the development. These impacts will be managed as documented in the EMP.

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.
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The primary purpose of the refurbishment is to replace the existing coastal protection structures that have passed their design life and are starting to fail. The proposed design considers and allows for the impact of climate change and the related effect on the beach and structures and are robustly designed accordingly. The new concrete stepped revetment will serve to effectively shield both private and public property from the major impacts of sea-level rise. This will protect and support local tourism and small businesses for years to come.

Specialist coastal modelling was undertaken to ensure the new coastal defence structures are designed to effectively mitigate the effects of climate change on the Muizenberg Beachfront area, and to withstand the harsh expected future ocean conditions. This bolstered coastal protection and increased climate change resilience will preserve the area and maintain its economic and social value going forward.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
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There are no conflicting recommendations between specialists.

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.
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The findings of the coastal dynamic studies have been considered in the conceptual designs and assessed for the proposed development.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
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The development proposal, and the alternatives considered, must be consistent with the principles of environmental management as codified in the National Environmental Management Act. These principles include the following:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.
- Sustainable development requires the consideration of all relevant factors including [...] that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Environmental impact assessment addresses the latter principle of the management of environmental impacts through the mitigation hierarchy (Figure 9) Simply put, impacts must be 'avoided, or, where they cannot be altogether avoided, are minimised and remedied.'

The DEA 2013 guideline on Need and Desirability formalises this hierarchy as follows:

- Firstly, alternatives must be investigated to avoid negative impacts altogether.
- Secondly, after it has been found that the negative impacts cannot be avoided, alternatives must be investigated to reduce (mitigate and manage) unavoidable negative impact.
- Thirdly, alternatives must be investigated to remediate (rehabilitate and restore)
- Fourthly, unavoidable impact that remain after mitigation and remediation must be compensated for through investigating options to offset the negative impacts.
- While throughout, alternatives must be investigated to optimise positive impact.

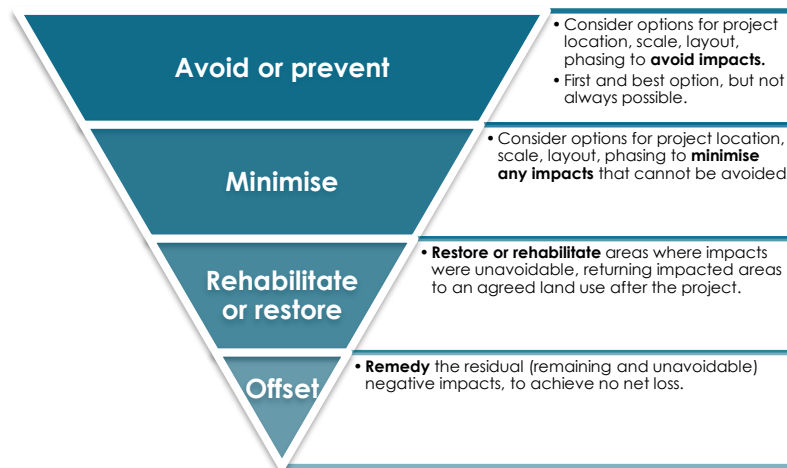


Figure 9. Mitigation hierarchy (based on DEA 2013 guideline on Need and Desirability)

The negative impacts associated with the proposed development cannot be entirely avoided, since they include construction-related impacts such as noise, dust and vibration, as well as traffic during the construction and the operational phases. These impacts can however be effectively minimised through the mitigation measures set out in this report and in the EMPr.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	<p>Provide a summary of the key findings of the EIA.</p> <p>As the proposed project consists of the replacement of essential coastal infrastructure as well as the refurbishment of public infrastructure in the Muizenberg beachfront area, there are far fewer impacts than a completely new development. This project had an extensive planning phase, with specialist reports being used to maximize the benefits of this project whilst mitigating negative impacts as much as possible. Sense of place and visual character, and constructed related disturbances have been rated as negative impacts however, the design this proposals have been carefully and thoroughly considered in the concept plans presented and documented in this report, minimizes the potential negative impacts on the aesthetic of the area . A brief overview of key impacts and findings can be found below:</p> <p>Sediment dynamics: Since the proposed seawall approximately follows the footprint of the existing structure, it does not pose any additional reduction in sand available for cross-shore transport processes. The proposed removal of the existing abutment building from the littoral active zone will reduce any existing impact on the longshore sand transport. Furthermore, the removal of the Surfers' Corner stone steps is not expected to significantly alter the longshore transport sediment budget either.</p> <p>The current design proposals have taken into account findings of Sediment Modelling.</p> <p>Wave dynamics: The existing abutment, which has a near-vertical wall oblique to the main beach causes some wave reflection, which is expected to be responsible for the locally lower beach levels at the western end of the main beach. The proposed new coastal protection structure is a stepped</p>
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revetment, which is expected to be less reflective than a vertical wall. Furthermore, the layout of the proposed stepped revetment is less oblique to the wave direction and is set back further landward than the existing wall. Considering these two factors, the wave reflections with the new proposed stepped revetment are expected to be lower than those of the existing Surfer's Corner.

The current design proposals have taken into account findings of Wave Dynamic Modelling.

Sense of place and visual character:

The proposed refurbishment will be undertaken in an area that forms the setting to a group of streetscapes with unique features and characteristics of the area which create a unique identity and sense of place. This has been considered in the design proposals associated with the new infrastructure associated with the refurbishments being proposed.

There are concerns that the proposed refurbishment will have a negative impact on the beachfront's character and "sense of place". All new buildings will be built in the same architectural style and character as the current buildings. The planned formalisation of the gravel parking area will use the same patterns and clay pavers as the current formal parking areas to ensure the character of the area is maintained. The concrete promenade is also highlighted by the public as changing the "sense of place", although there is no other option due to the risks associated with sea level rise that the Muizenberg beachfront will continue to face. The promenade design has been modified to include a sand-coloured exposed aggregate finish to mitigate the effects of the concrete-look.

Special care has been taken in designing this refurbishment to ensure there is not a negative impact on Muizenberg's sense of place. Public comments have also been taken into account to further protect the areas character.

Socio-economic impacts:

The study on socio economic impacts concluded that the "proposed upgrade would result in significant and measurable positive impacts on production, employment, worker income, and Gross Domestic Product" and recommended that the "proposed upgrades be undertaken based on their contribution to the local economy".

The economy of the area is expected to benefit greatly in the long run.

Traffic impacts:

The proposed formalisation of the parking area should have minimal impact on the local road network from a traffic operations perspective. It is also noted that the formalisation will have a positive impact on pedestrian movements and a marginal impact on parking provision.

Little to no impact on traffic volume in the area. Positive impact on traffic flow in parking areas.

Construction related impacts:

The proposed development will have negative impacts on the surrounding community during the construction phase. These impacts, which include noise, vibration, dust, closed portions of the beach, traffic disturbance and visual nuisance, are typical of construction and can be mitigated and managed as set out in the construction section of the environmental management programme (See Appendix H: EMPr). Additionally, the presence of temporary berms on the closed portion on the beach may temporarily affect wave dynamics in the near shore (as a result of wave

reflection). Temporary employment is anticipated to be created during the construction phase of the development.

Access to the parts of the beach under construction work will be closed-off temporarily. This will result in disruption of the area during the construction phase, which could inconvenience visitors and local residents, and may affect businesses operating in the area. The presence of temporary berms on the closed portion on the beach may temporarily affect wave dynamics in the near shore (as a result of wave reflection). Special care will be taken to ensure construction is phased strategically so as to maintain access to parts of the beach and parking at all times. These impacts will be monitored and mitigation measures are proposed in the Construction Management Plan of the Environmental Management Programme. This includes a detailed phase plan and a proactive communication process and signage for alternative access routes, where possible.

Construction on the beach (below the highwater mark) has the potential to disturb or destroy undiscovered objects of archaeological significance that may be buried under the sand. This impact was deemed low by the heritage specialist. The EMPr (Appendix H) includes steps to mitigate to minimize any construction related impact on the aforementioned heritage/archaeological aspect of the project area.

Please see 1.3 below for a summary of the key impacts.

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)

Appendix B2 includes a sensitivity map as required, but no sensitivities or buffers have been identified on the site.

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.

	Alternative 1 (preferred)		Alternative 2: No-go	
	Without mitigation	With mitigation	Without mitigation	With mitigation
PLANNING AND DESIGN PHASES				
Impacts on sediment dynamics	Low negative	Low negative	No impact	No impact
Impacts on wave dynamics	Low negative	Low negative	No impact	No impact
Impact on sense of place and visual character	Medium negative	Low Negative	No impact	No impact
Socio-economic impacts	Medium positive	Medium positive	Medium Negative	Medium Negative
Traffic impacts	Low negative	Very low negative	No impact	No impact
CONSTRUCTION PHASE				
Construction-phase Impact: Access to Beach	Medium negative	Low Negative	No impact	No impact
Construction-phase Archaeological disturbance/destruction	Low Negative	Low Negative		

Construction-phase Impact: Noise and Vibration	Low to Medium negative	Low Negative	No impact	No impact
Construction-phase Impact: Waste Generation	Low to Medium negative	Low Negative	No impact	No impact
Construction-phase Impact: Dust Generation	Low negative	Very Low negative	No impact	No impact
Construction-phase Impact: Visual	Low negative	Very Low negative	No impact	No impact
Construction-phase Impact: pollution of soils, sea water and groundwater	Medium negative	Low negative	No impact	No impact
Construction-phase Impact: Traffic	Medium negative	Low negative	No impact	No impact
Construction-phase Impact: Temporary Job Creation	Medium positive	Medium Positive	Medium Negative	Medium Negative

Summary of impacts associated with Alternative 1:

There are concerns that the proposed refurbishment will have a negative impact the beachfront's character and "sense of place". All new buildings will be built in the same architectural style and character as the current buildings. The planned formalisation of the existing gravel parking area will use the same patterns and clay pavers as the current formal parking areas to ensure the character of the area is maintained. The concrete promenade is also highlighted by the public as changing the "sense of place", although there is no other option due to the risks associated with sea level rise that the Muizenberg beachfront will continue to face. The promenade design has been modified to include a sand-coloured exposed aggregate finish to mitigate the effects of the concrete-look.

These aspects are depicted in the Alternative 1, and have been assessed accordingly. Additionally, the area will benefit from upgraded public amenities such as formalised parking, new ablution facilities, a playground (all of which focus on providing universal access). This will further boost the economic activity in the area as it draws more visitors to the area resulting in positive socio-economic impacts.

The proposed refurbishment may have the following negative impacts –

- Potential disruption of the area during the construction phase, which could inconvenience visitors and local residents, and may affect businesses operating in the area. This includes noise and dust pollution.
- Reduced beach area open to the public as a result of phased construction. This may also temporarily impact the nearshore wave dynamics in the beach sections.
- There may be traffic impacts on the area during the construction phase.
- During construction, there is potential for any undiscovered archaeological material located on the beach (below the highwater mark) to be disturbed or destroyed. The specialist study concluded the risk and significance of this is low.

Summary of impacts associated with Alternative 1: Alternative 2 (No-go)

The No-Go alternative is the option of not implementing the proposed development and is the benchmark against which the impacts of the proposed development was assessed. In this alternative, the site would stay as it currently is and the refurbishment would not take place (i.e.: status quo remains). Leaving the site as is would entail the infrastructure remaining as is.

This would result in a lost opportunity to improve socio-economic benefits and growth within the area. The No-Go option would lead to a lost opportunity to improve loss of at least 50 jobs in the tourism sector and a loss of approximately R 47 million of economic activity. This would also result in extremely high costs of unavoidable future emergency damage repair interventions. Emergency interventions often have short design lives and require ongoing attention (and eventual replacement of infrastructure is unavoidable). When inevitably replacing the defence infrastructure in future, the overall project cost to the City would be far greater. In addition to the high economic costs of not implementing this project, this option would negatively affect accessibility, public amenity availability, business development opportunity, and public perception of the area.

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
Adherence to the environmental management programme and environmental authorisation should be monitored by a suitably qualified and experienced environmental control officer.	
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.
The assessment of construction-phase impacts is conditional on implementation and monitoring of the construction environmental management programme (EMPr).	
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.
<p>Based on the findings of this Basic Assessment, it is the opinion of the EAP that there are no negative impacts associated with the refurbishment that cannot be satisfactorily mitigated to acceptable levels.</p> <p>As mentioned above, the specialist studies listed were conducted in parallel with the conceptual design phase of this project. This was done to ensure the final conceptual design already accounted for many of the potential impacts it could have had (had these studies not been conducted). Additionally, through early engagement with the public on the preliminary conceptual designs, much of the comments raised could be incorporated in the final concept designs, where practical and feasible. Note that following a request by the South African Heritage Resource Association on the 14th of April 2023, a Heritage Impact Assessment was conducted on the section of the work area that falls below the high water mark.</p> <p>The assessed project benefits outweigh negative impacts, and the project is anticipated to address much needed and improved coastal defence structure in order to provide effective protection from climate change-induced sea level rise, whilst also improving public coastal access. The primary purpose of the refurbishment is to replace the existing coastal protection structures that have passed their design life and are starting to fail. The proposed design considers</p>	

and allows for the impact of climate change and the related effect on the beach and structures and are robustly designed accordingly. The protection of businesses and local public infrastructure is addressing a key need of the community by ensuring the public space remains safe for years to come.

The proposed refurbishment is consistent with municipal and provincial planning and will not result in environmental opportunity costs or unacceptable degradation of sensitive natural systems. The socio-economic benefits derived from the Muizenberg Beachfront refurbishment will protect the local economy and promote future economic growth. The new concrete stepped revetment will serve to effectively shield both private and public property from the major impacts of sea-level rise. This will protect and support local tourism and small businesses for years to come.

In order to ensure the effective implementation of the mitigation and management actions, an EMPr has been compiled (see Appendix H). The mitigation measures necessary to ensure that the project is planned and constructed in an environmentally responsible manner are listed in the EMPr. The EMPr is a dynamic document that should be updated regularly and provide clear and implementable measures for the establishment and operation of the proposed development.

Provided that the specified mitigation measures are applied effectively, it is recommended that the project should receive Environmental Authorisation in terms of the 2014 EIA Regulations, as amended, subject to the following conditions:

- That Alternative 1 (preferred and only) be authorised;
- The Environmental Management Programme (EMPr) forming part of this Basic Assessment Report must be implemented during the design and construction phases of the development; and,
- An independent Environmental Control Officer must be appointed for the duration of the construction phase and must carry out the responsibilities of that role as defined in the EMPr.

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
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There are no significant gaps in knowledge. It is assumed that all information provided to the EAP by the Applicant is true and without omission. It is also assumed that all mitigation, management, and monitoring measures prescribed in this Basic Assessment Report and the accompanying Environmental Management Programme will be implemented by the applicant. There are no significant uncertainties.

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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The EA is required for a period of five years, with the activity to be concluded within a further five year period.

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.
During the construction phase non-potable water sources will be used as far as possible, as stipulated in the EMPr.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
Construction-phase waste minimisation and recycling is a requirement of the EMPr.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
Energy efficient measure are being considered in the detailed stages of the project.	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

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

I....., ID numberin 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:
 - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
 - 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 –
 - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
 - Legitimate costs in respect of specialist(s) reviews; and
 - 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: _____

Name of company (if applicable): _____

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (“EAP”)

ITarryn Solomon....., EAPASA Registration number : 2019/1671..... 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;

17 May 2023

Signature of the EAP:

Date:

Infinity Environmental

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Appendix B: Declaration Of Independence

I, John Gribble, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- There are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24(F) of the Act.



Signature of the specialist

ACO Associates cc

Name of company (if applicable):

9 May 2023

Date