



Environmental Management Programme

Proposed Development of the Granger Bay Precinct and Reclamation of Land at the V&A Waterfront in Cape Town, Western Cape

PREPARED IN COMPLIANCE WITH THE REQUIREMENTS
OF THE EIA REGULATIONS, GN 326 OF 2017 AND THE
NATIONAL ENVIRONMENTAL MANAGEMENT ACT, ACT
NO. 107 OF 1998

DEA&DP REF NO. 16/3/3/2/A7/4/3051/25

VERSION: AMENDED DRAFT FOR PUBLIC COMMENT

DATE: JULY 2026

APPLICANT

V&A Waterfront Holdings



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REPORT DETAILS

PROPOSED DEVELOPMENT OF THE GRANGER BAY PRECINCT AND RECLAMATION OF LAND AT THE V&A WATERFRONT IN CAPE TOWN, WESTERN CAPE: ENVIRONMENTAL MANAGEMENT PROGRAMME

APPLICANT

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Report purpose

This Environmental Management Programme is prepared as part of a Scoping and Environmental Impact Assessment in terms of the Environmental Impact Assessment Regulations, 2014 (as amended). It prescribes control methods to mitigate and manage negative environmental impacts and enhance positive impacts associated with the construction and operation of the development and provides a programme for monitoring the performance of personnel in applying such methods.

DOCUMENT CONTROL

Date	Version
18 March 2026	Draft
16 July 2026	Amended Draft

DECLARATION OF EAP'S INDEPENDENCE

I, Jeremy Rose, appointed by the V&A Waterfront Holdings as Environmental Assessment Practitioner for the Environmental Management Programme, hereby declare that the information provided in this report and supporting documentation is complete and correct to the best of my knowledge; that other than fair remuneration for work performed in terms of this application I have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; that I have disclosed, to the Applicant, the specialist(s), 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; that I have ensured that information 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; and that I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.



Jeremy Thembu Rose BSc (Hons), Reg. E.A.P. 2019/1116, Pr.Sci.Nat. 120148, IAIA member 5781
Infinity Environmental (Pty) Ltd: Director & Principal EAP

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RECORD OF REVISIONS

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EMPR OVERVIEW

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1 INTRODUCTION

1.1 Project Background

V&A Waterfront Holdings (Pty) Ltd. proposes to develop the Granger Bay Precinct of the Victoria & Alfred Waterfront for a new mixed-use residential and commercial development, west of Beach Road and north of Granger Bay Boulevard in Cape Town. The proposal includes the reclamation of land from the sea, protected by new coastal defence structures, including two new breakwaters forming a sheltered bay. The proposal would provide for public access along this section of shoreline west of the V&A Waterfront, extending the existing public promenade.

1.2 Project Description

1.2.1 Proposed reclamation of land and new coastal protection structures

The proposed development involves the reclamation of approximately 3.2 hectares of land from Table Bay to accommodate new coastal public amenities and new mixed-use development. * This reclamation will be protected by a new permanent rock revetment and two ('east' and 'west') breakwaters forming a new protected bay approximately three hectares in extent. The west breakwater will extend approximately 90 metres into Table Bay, and the east breakwater approximately 140 metres. A revetment along the new shoreline connecting the two breakwaters will be approximately 540 metres long. New public amenities will include the new bay, providing sheltered waters for boating, kayaking, and swimming. Land-based amenities will include a coastal public walkway, a slipway, a fixed quayside, a landscaped promenade, tidal pools, pedestrian paths and open areas. The proposed revetment and breakwater will be constructed in phases over approximately 3 years.

1.2.2 Mixed-use development

New mixed-use development is proposed on the portion of the site currently located within 100m of the highwater mark, which will accommodate residential, hotel, leisure, and commercial uses, with residential accommodation options such as hotels, serviced apartments, and private apartments. The orientation and massing of buildings will respond to the coastal setting and maximise outward views of the ocean. Approximately 78 000 m² of bulk will be allocated from the existing development rights permitted within the V&A Waterfront. Development rights are already in place for a portion of the Granger Bay precinct not included in this Scoping and EIA.

1.2.3 Public space

New public amenities will include the new bay, providing sheltered waters for boating, kayaking, and swimming. Land-based amenities will include a coastal public walkway, a slipway, a fixed quayside, a landscaped promenade, tidal pools, pedestrian paths, and open areas. This will be accessible to the public in the same way that the other public areas in the Waterfront are open to the public.

* As measured from the current highwater mark of the sea; if measured from the existing cadastral boundary, a total of 3.8 hectares of new land is proposed to be reclaimed, but this includes areas of existing coastal protection infrastructure.

1.2.4 Slipway and Boat Launching Area

A new public slipway is part of the amenities to be provided; due to the importance of this slipway and the fact that access is required throughout the construction period, it is a specific focus of the EMPr.

Location

The proposed slipway will be located at the northeastern end of a new road, establishing a direct vehicular connection from Beach Road to the launching facility. Trailer and vehicular parking will be accommodated on-site within the parking area of a new building adjacent to the slipway, ensuring convenient and efficient access between parking and the launch zone.

Parking

Designated trailer and vehicle bays within a podium parking area will optimise spatial efficiency while also providing parking for visitors and other users. In addition, a parallel stacking lane along the approach road to the slipway will accommodate vehicles queuing to launch watercraft without disrupting primary circulation routes. Overflow parking can be located on Beach Road as is the current practice.

Non-Motorised vessels

Non-motorised vessels, including kayaks and stand-up paddle boards, will be accommodated at a separate launch area, either from an area separate to the slipway or a floating jetty with integrated access steps to ensure ease of use. This separation will reduce congestion at the main slipway and enhance safety and user experience for non-motorised vessel operators. Some storage for kayaks and other non-motorised craft will be provided within the podiums of buildings, positioned in close proximity to the dedicated non-motorised launch area.

Design Informants

The design informants that have determined the location and configuration of the proposed slipway in Granger Bay are based on the principles of providing the existing slipway user groups with an accessible, launching facility that will, in future, be located in a coastal environment favourable for various leisure craft and recreational use of the ocean. It is envisaged that the slipway and the surrounding area will support and encourage small-scale maritime activity, innovation, and the place identity of the V&A Waterfront. To further activate the precinct, ground-floor podium spaces near the slipway are intended to accommodate ocean-related businesses and enterprises, contributing to a vibrant and integrated waterfront environment.

1.2.5 Transport and services

The Granger Bay development will be supported by various transport modes, including MyCiTi, Park & Ride, and micro-mobility services, with enhanced integration between these modes. No major access road or external road network upgrades are required to support the proposed development. Wastewater management, potable water supply, solid waste removal and disposal, and electricity supply will be accommodated within the existing infrastructure capacity.

1.3 Project Implementation and EMPr structure

Coastal protection infrastructure and land reclamation is programmed to be completed prior to any mixed-development development being constructed. Furthermore, while coastal infrastructure will be phased over a period of around 2.5 years, it is not known at the time of writing this EMPr precisely

when the mixed-use aspect of the development will commence, nor how this will be phased. With this in mind, the EMPr has been structured in a way that allows for different aspects of the development to be managed and monitored as and when they become applicable during the project's implementation phase.

Aspects: Two distinct activities are proposed and have informed the structure of this EMPr as detailed in **Figure 2-1**: Activities **above the current highwater mark (HWM)** and activities **below the current highwater mark**. Activities above the HWM largely focus on the construction of the mixed-use component of the project and other activities landward of the HWM, whereas activities below the HWM includes the land reclamation, construction of the revetments and other activities seaward of the HWM.

Implementation phase: The **stage** of the project life cycle, which, by necessity, will be different for different aspects of the project. That is, it is necessary for activities seaward of the HWM to be in the post-construction phase before activities landward of the HWM can be in the construction phase.

Thus, the mitigation measures have been structured in a way that allows for specific aspects of the environmental management programme to be applicable only at the relevant phase of implementation and ensure clarity of responsibilities and ease of auditing.

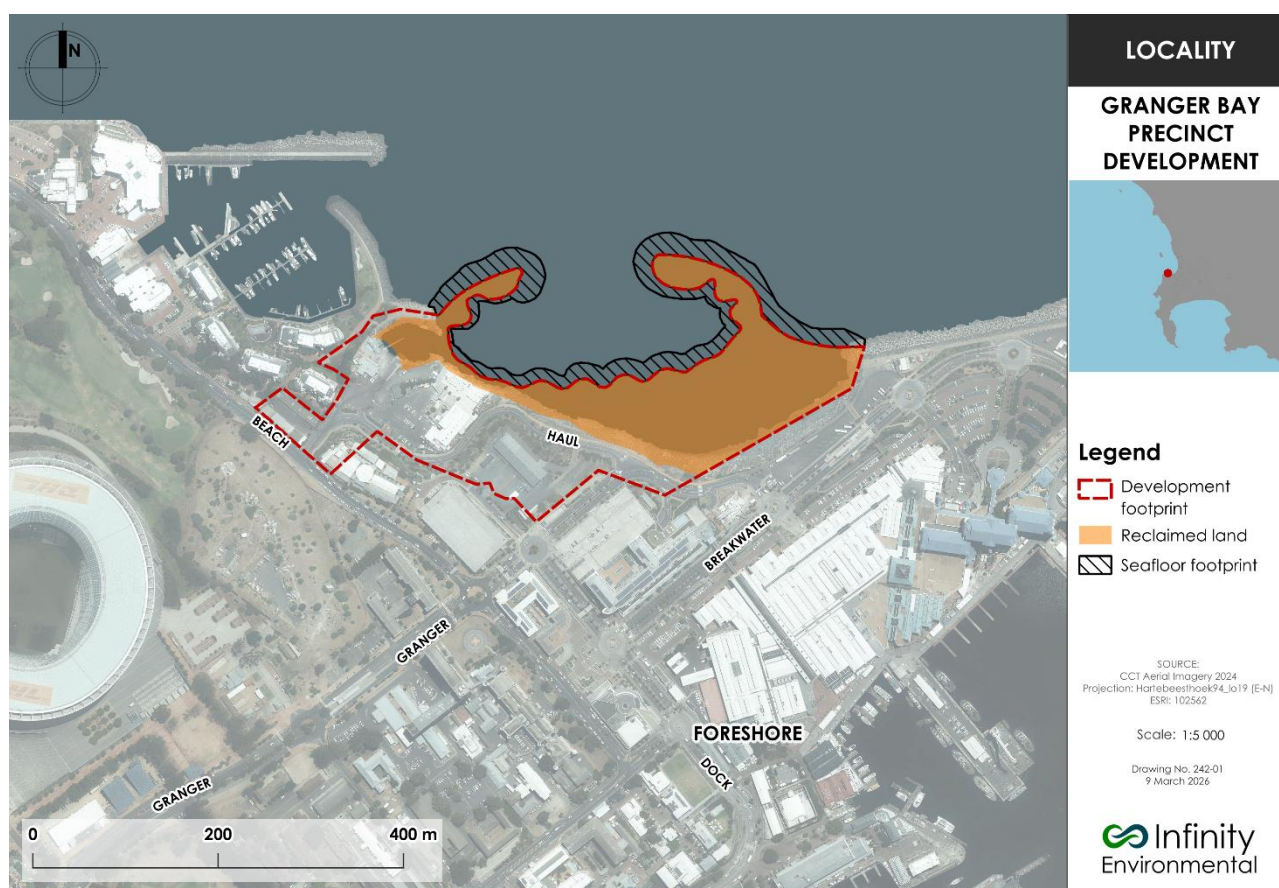


Figure 1-1: Locality map of the site and proposed land reclamation area

1.4 Environmental Sensitivities

1.4.1 Marine biodiversity

Construction will result in the direct loss of artificial rocky shore habitat, specifically that of the Granger Bay dolosse, and adjacent subtidal sandy and reef habitat (NBA 2018 Cape Mixed Shore ecosystem). Soft sediment habitats will be lost, and pelagic open water habitat will be disturbed by the development during both construction and operation.

Specific marine ecosystems are not mapped Figure 1-2 as the entire development footprint falls within marine ecosystems. It is accepted that the loss of habitat cannot be avoided within the development footprint. Mitigation measures to manage the impact of activities associated with the development is included in this EMPr.

1.4.2 Heritage resources

Heritage resources make up the rest of the sensitivities for the site. None of these sensitivities constitute No-Go areas, but they have either been considered as design informants where specific avoidance or compliance is necessary; or where impacts on resources are unavoidable, mitigation measures have been included to minimise and manage the negative impacts of the proposed development on these resources.

1.4.2.1 Visual sensitivities

The Arc of Fire: the historic arc of fire from a gun emplacement at Fort Wynyard, where no buildings may exceed a height of 21.5m in the arc, and buildings of 10 and 16 floors are acceptable outside of the arc (Figure 1-3) is a heritage sensitivity that has informed the design of the proposed development in regard to heights and massing.

Water's edge view: the 30-metre-wide view corridor from the main gun emplacements to the coastline needs to be kept open to ensure a visual linkage between Table Bay and Fort Wynyard.

1.4.2.2 Archaeological sensitivities

Pre-colonial archaeological material could survive under the later landfill along the former coastline within the Granger Bay Land Reclamation project site. Given the rarity of such survivals of pre-colonial material in the developed urban context of this part of the city, the archaeological significance and value of any such sites or materials is likely to be high. There is also potential to find pre-colonial archaeological sites and artefacts, and to recover paleoenvironmental data from submerged, seabed contexts within Table Bay. Consideration should be given to the possibility that at least some shipwrecked vessels are located within the project area, making their exact location unknown. It is possible that unmarked burials could be present in the same areas of the site that may be archaeologically sensitive.

1.4.2.3 Social sensitivity

Many of the fishermen who use the slipway belong to communities who were forcibly removed from Cape Town (District 6, Sea Point) during the Apartheid years and have a long-standing tradition of using the facility to launch their boats. Access to the slipway is regarded as being of high significance to these fishermen (IIIC heritage grading). A new slipway is planned to be constructed to replace the existing slipway (mapped in Figure 1-3), but the transition between the operation of the current and the new slipway needs to be carefully managed, and access for vessels to the ocean needs to be maintained.

1.4.3 Noise environment

The unique nature of the proposed reclamation presents the potential for significant noise disturbance as part of the marine construction activities. Consequently, nearby apartment buildings within the Waterclub Marina have been identified as sensitive noise receptors. Despite this, the noise impact assessment confirms that the adjacent Waterclub Marina is already located within an elevated urban waterfront acoustic environment influenced by existing road traffic, recreational marine activities, harbour operations, helicopter movements and general Waterfront activity. The predicted construction noise impacts are superimposed upon an existing daytime ambient noise climate that is already relatively high.



Figure 1-2: Proposed development superimposed on terrestrial and marine sensitivities (Arrows indicate the direction of the sensitivity)

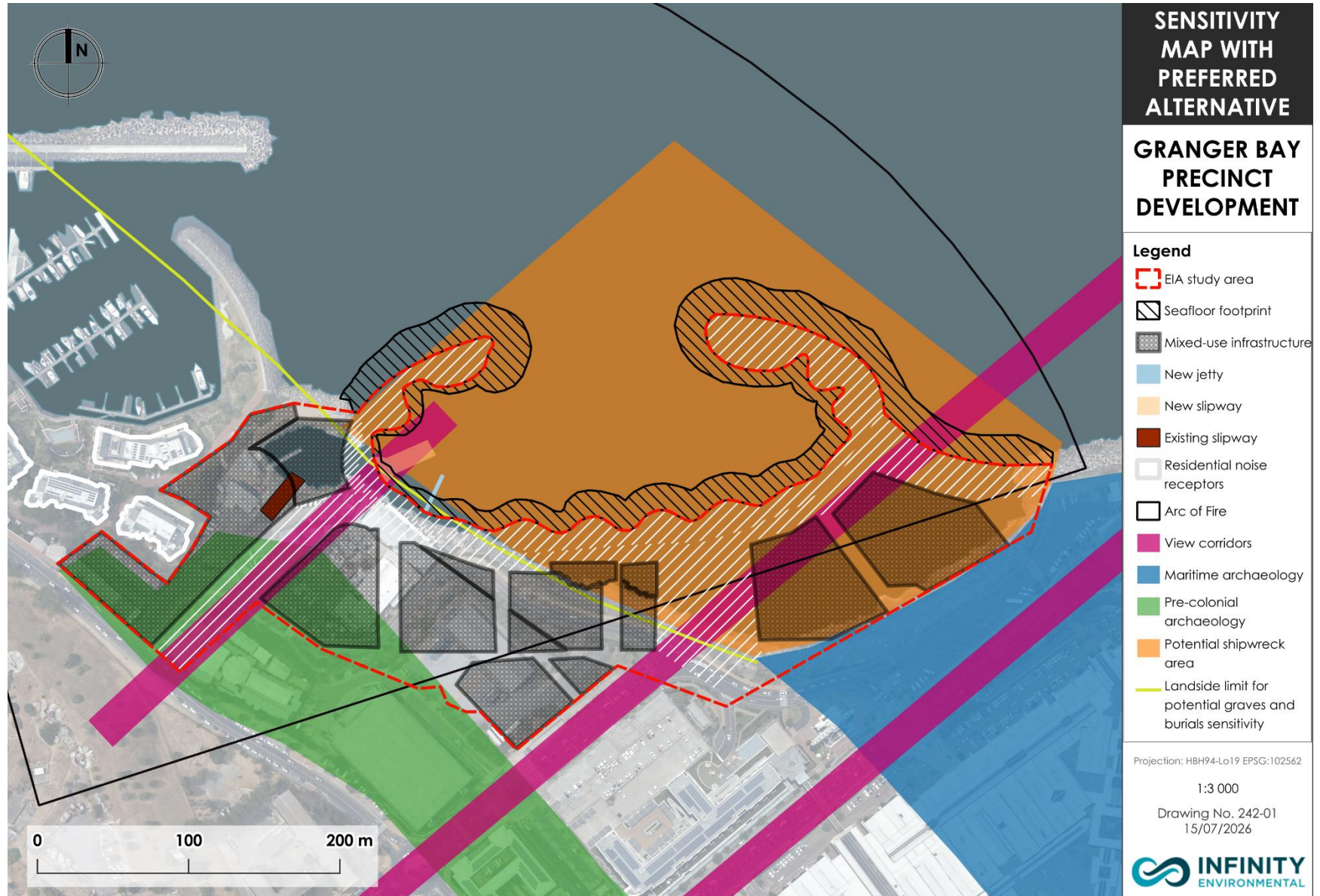


Figure 1-3: Combined map indicating sensitivities, development footprint and construction area.

1.5 Impacts assessed during the EIA

This EMPr gives effect to the mitigation measures prescribed in the environmental impact assessment.

Based on the specialist studies, the following potential direct impacts, as indicated in Table 2 have been identified. Appropriate management and mitigation measures are included within the EMPr (where required) as per the recommendations made in the specialist studies to ensure the potential impacts are adequately mitigated and managed during all phases of the project.

It should be noted that other impacts for which specialist studies were not undertaken but where mitigation or management actions may be required, are also included in the EMPr.

1.5.1 Construction Phase Impacts

Table 1-1. Key impacts and mitigation measures assessed in the EIA

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
MARINE ECOSYSTEM IMPACTS				
Disturbance of intertidal and subtidal artificial habitat: rocky habitat	Essential mitigation measures: - Limiting the duration of construction activities in the coastal zone; and - Constraining the spatial extent of impacts to the minimum required.	Very Low Negative	Very Low Negative	None
Disturbance of intertidal and subtidal artificial habitat: soft sediment habitats		Very Low Negative	Very Low Negative	Neutral
Impacts of construction on West Coast Rock Lobster	Essential mitigation measures: - Constrain spatial extent of impacts to the minimum required. Recommended mitigation measures: - Implement phased removal, and potential translocation of individuals from high-density zones.	Low negative	Low negative	Neutral
Disturbance to pelagic open water habitats	Essential mitigation measures: - Limit duration of construction activities in the coastal zone. - Constrain spatial extent of impacts to the minimum required.	Very Low Negative	Very Low Negative	Neutral
Effects of construction waste generation and disposal on marine ecosystems	- Inform and train all staff about sensitive marine species and the responsible disposal of construction waste. This training must be integrated into toolbox talks or onsite awareness sessions to ensure that waste management practices are understood and followed diligently. Additionally, contractors must prepare a method statement outlining specific waste management procedures, which must be approved by the resident engineer before construction activities commence. - Suitable handling and disposal protocols must be clearly explained, and sign boarded. - Reduce, reuse, recycle. - Waste disposal at licensed landfill sites by qualified contractors is mandatory, with proof of disposal submitted to the appointed Environmental Officer. Waste management certification must be obtained, and detailed records of all stored and disposed waste, including quantity, nature, and fate, must be maintained for auditing purposes.	Medium, negative	Very Low, negative	None

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Enforcement of facility usage and cleanliness is crucial.			
Construction related pollution impacts on marine biota	- Minimise sediment release and spread through phased construction - Use turbidity or silt curtains where feasible - Careful handling and placement of materials, and stabilisation of reclaimed or disturbed areas to ensure impacts remain localised and temporary. - All fuel and oil must be stored with adequate spill protection - No leaking vehicles should be permitted on site. - Intentional disposal of any substance into the aquatic environment is strictly prohibited, while accidental spillage must be prevented, contained and reported immediately.	Low, Negative	Very Low, Negative	Neutral
The effect of increased noise and vibration from construction on marine organisms (invertebrates, fish, birds)	Noise emissions from mobile and fixed equipment should be subject to periodic checks as part of regular maintenance programmes to allow for detection of any unacceptable increases in noise. After mitigation is considered, the impact of noise and vibration on the marine environment is considered insignificant.	Very low, negative	Insignificant, negative	None
Impacts of increased vessel presence on marine mammals	- Vessels used must be driven in a slow and responsible manner, keep gear changes and acceleration to a minimum to minimise rapid changes in noise levels. - A lookout must be kept for dolphins and whales at all times and groups should be avoided where possible. - If any impacts are observed (vessel strike, entanglement, strong avoidance responses) these should be reported to the relevant environmental authority as soon as possible (e.g. DFFE).	Low, negative	Very low, negative	None
Impact of underwater noise on marine mammals	- Before engaging in any rock dumping or similar actions where material is dumped directly into the ocean, ensure that no baleen whales are within ~500 m of the impact site (in the absence of direct measures of sound levels and hearing thresholds, 500 m is widely used as a typical distance for safe avoidance of noise impacts). As far as possible, ensure no dolphins are within 500 m of the impact site. A dedicated marine mammal observer should be used for these phases of work. - Ensure all machinery is in good working order to reduce in-air noise levels and transmission into the marine environment. - Where rock placement/dumping/construction is planned - aim to work from the ocean space backwards towards shore to create a physical barrier to sound in the initial stages of work, then all other fill work will be effectively 'on land'.	Low, negative	Very low, negative	Neutral
Noise and vibration impacts of the reclamation and in-water marine construction of the	Install and maintain a minimum 3 m high temporary noise barrier along the haul road serving the western breakwater construction area for the duration of works	Medium, negative	Low, negative	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
western breakwater, slipway and jetty and associated activities.	on this breakwater only. The barrier should be positioned as close as reasonably practicable to the haul road and active construction activities to maximise acoustic screening of the neighbouring property. - Undertake quarterly environmental noise monitoring during construction of the western breakwater to verify the effectiveness of the proposed mitigation measures, validate the noise model predictions and identify whether any additional practicable mitigation measures are required during construction. Monitoring should be undertaken at representative locations within the Waterclub precinct using the same methodology adopted for the baseline monitoring programme. Where measured noise levels differ materially from the predicted levels, the construction methodology and mitigation measures should be reviewed and, where necessary, additional mitigation implemented. - Pre-construction dilapidation surveys must be undertaken by the contractor for any existing infrastructure at risk from damage from construction activities, prior to the commencement of construction activities. - Avoid unnecessary idling of heavy construction plant and equipment. - Where practicable, avoid the simultaneous operation of multiple high-noise construction activities immediately adjacent to the Waterclub - Scheduling and working hour controls - Equipment and source controls - Marine fauna and underwater noise monitoring - Communication and stakeholder notification - Haul route management These mitigation measures will be detailed in the EMP.			
Noise and vibration impacts of the reclamation and in-water marine construction of the centre revetment and associated activities.	General noise mitigation measures stipulated above.	Low, negative	Very low, negative	Neutral
Noise and vibration impacts of the reclamation and in-water marine construction of the eastern breakwater and associated activities.	General noise mitigation measures stipulated above.	Very low, negative	Very low, negative	Neutral
Noise and vibration impacts of general land-side construction	- Scheduling and working hour controls - Equipment and source controls - Communication and stakeholder notification These mitigation measures will be detailed in the EMP.	Medium, negative	Low to medium, negative	Neutral
Dust impacts	All quarried rock should comply with PRDW's generic rock specification (PRDW 2019) which is based on the Rock Manual (CIRIA et al. 2007) and includes requirements to manage rock cleanliness	Low to medium negative	Low negative	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	(absence of soil or quarry dust), reducing the likelihood of dust generation during rock placement. - Dust suppression using a water bowser shall be implemented at all exposed surfaces during dry, windy conditions. - All site vehicles shall observe a speed limit of 20 km/h on site access tracks and internal haul roads to minimise re-suspension of surface fines. - A construction complaints hotline shall be maintained. All dust-related complaints shall be logged, investigated, and responded to within 48 hours. - All haul trucks transporting fill material shall be covered with tarpaulins or tailgate covers before leaving the loading area and throughout transit along the haul route. Uncovered loads are prohibited. - The haul road within the site boundary and Granger Bay Boulevard adjacent to the site shall be swept and/or watered as required during active haulage periods. - Stockpiles of fine-grained materials (sand, crusher dust, topsoil) shall be covered with geotextile sheeting when not in active use. Cement shall be stored in sealed silos or closed bulk bags only. The stockpile layout shall be approved by the ECO before site establishment. All active stockpiles exceeding 1 m in height shall be enclosed by wind-break fencing (minimum 1.8 m height, 50% porosity) on the upwind sides. - End-tipping operations shall use controlled drop heights to suppress dust at the point of impact. - Haul vehicles shall be maintained to prevent spillage on public roads. Any spillage on public roads shall be cleared within one hour. Vehicles shall not be overloaded beyond manufacturer specifications. - All concrete demolition and saw-cutting operations shall use wet-cutting techniques (water suppression on cutting blade and drill) to prevent generation of airborne dust. - All skip bins and rubble skips shall be covered when filled. - Workers involved in demolition and concrete cutting shall be provided with appropriate respiratory protective equipment in accordance with the Construction Regulations, 2014. - Construction access tracks and internal haul routes shall be water-suppressed or treated with dust binders to minimise re-suspension of surface fines.			
ARCHAEOLOGICAL IMPACTS				
Damage to, or destruction of archaeological sites and/or artefacts	Where new development or earthworks which have the potential to reach the depth of the former, historical land surface are undertaken in the areas indicated in Figure 56, the work is archaeologically monitored.	Medium, Negative	Low, Negative	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	- Should pre-colonial archaeological material be encountered, this will need to be archaeologically assessed by a suitably qualified archaeologist. - In the event of the discovery of human remains, work in the affected area must cease immediately, the find must be made secure but left in situ, and HWC and an archaeologist must be informed so that the find can be assessed and arrangements can be made for its mitigation.			
Impact on maritime archaeology (shipwrecks)	- A geophysical survey of the seabed, (sidescan sonar, multibeam bathymetry and magnetometry), is conducted in the project area prior to any land reclamation activities, to confirm whether there are shipwreck or other heritage sites present. The results of the geophysical survey should be reviewed by a suitably qualified archaeologist. - If a wrecks or wrecks are present in the area SAHRA must be notified immediately, and the site/material must be assessed by a suitably qualified archaeologist, after which a decision can be made about the need for any mitigation measures, which may include site recording, sampling/excavation, and potentially removal and recovery. - Any future excavations within the Granger Bay Land Reclamation precinct through existing landfill, seaward of the historical alignment of the shoreline, to levels that may intersect with the former seabed must be subject to archaeological monitoring, with the necessary contingencies in place to allow the mitigation of shipwreck remains, should they be encountered.	High, Negative	Low, Negative	Neutral
VISUAL IMPACTS				
Visual impacts of construction activities	Standard construction phase mitigation measures include: - Manage stockpile and laydown areas for cleanliness and appearance. - Roof and screen waste areas. - Avoid unnecessary signage or advertisement on site. - Restrict the activities and movement of construction workers and vehicles to the immediate construction site as much as possible; - Ensure that rubble, litter and disused construction materials are managed and removed regularly; - Locate site camps and laydown areas away from visually sensitive receptors such as residences. - Screen site camps and laydown areas with shade cloth or similar, where possible and appropriate.	Medium - High, Negative	Medium, Negative	Neutral
HERITAGE IMPACTS				
Loss of ocean-going user access to the coastline	Prepare a Construction Traffic and Access Management Plan prior to construction commencement that identifies all phases of work likely to affect slipway access,	Medium, negative	Low, negative	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	anticipated duration of any restrictions or closures, and proposed alternative arrangements. - Engage with the slipway operator and relevant local authority before construction commences to agree on acceptable working hours and minimum access requirements that must be maintained throughout construction. - Complete construction, commissioning, and testing of the new slipway to a standard of full equivalent functionality (including launch and retrieval capability, approach, lighting, and associated facilities) and confirm this with a joint inspection before any restriction or closure of the existing slipway is implemented. - Provide advance public notice of any planned slipway closures or restrictions through appropriate channels (signage at the slipway, notice to local boating clubs and harbour users, and municipal or harbour authority communication channels) at least 5 working days before any restriction takes effect. - Minimise the footprint and duration of any construction exclusion zone affecting the slipway approach, launch area, or associated parking and rigging areas; remove temporary obstructions at the end of each working day where practicable. - Ensure construction signage and barriers at the slipway are clearly marked, well-lit, and do not create safety hazards for members of the public navigating around the works area. - Maintain a complaints and grievance register for slipway users and respond to complaints relating to access disruption within 2 working days.			
Loss of pedestrian user access to the coastline	- Phase construction activities so that the existing boardwalks and walkways are only closed off when and where needed for construction activities. - The coastal public walkway / sea park area should be prioritised for completion as soon as the coastal protection infrastructure is completed.	Medium, negative	Medium, negative	Neutral
TRAFFIC IMPACTS				
Traffic Volumes (Trucks and Staff Cars)	- Off-peak scheduling of heavy-vehicle movements. - Advance public notice of road, lane or shoulder closures, with on-site flagmen, barriers and signage compliant with Southern African Road Traffic Signs Manual (SARTSM). - Site traffic-management plan with qualified marshals. - Early liaison with MyCiTi operations to phase any temporary stop or route restrictions and obtain route deviations. - Wheel-wash bays and routine road-sweeping to prevent debris spillage.	High, Negative	Medium, Negative	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	- Condition checks of Granger Bay Boulevard and adjacent intersections along well-used haul routes. - Stakeholder notifications and information boards within the Waterfront precinct.			
Pavement Wear and Dust	- Wheel-wash bays and routine road-sweeping to prevent debris spillage. - Condition checks of Granger Bay Boulevard and adjacent intersections along well-used haul routes. See mitigation measures above - Dust suppression measures.	Medium, Negative	Low, Negative	Neutral
Worker and Public Safety	- Advance public notice of road, lane or shoulder closures, with on-site flagmen, barriers and signage compliant with Southern African Road Traffic Signs Manual (SARTSM). - Site traffic-management plan with qualified marshals.	High, Negative	Medium, Negative	Neutral
Temporary Closures and Diversions	- Advance public notice of road, lane or shoulder closures, with on-site flagmen, barriers and signage compliant with Southern African Road Traffic Signs Manual (SARTSM). - Site traffic-management plan with qualified marshals. - Early liaison with MyCiTi operations to phase any temporary stop or route restrictions and obtain route deviations. - Signalled detours - Night works where feasible [KH1.1] and noise restrictions permit	High, Negative	Low, Negative	Neutral
SOCIO-ECONOMIC IMPACTS				
Temporary stimulation of business production and GDP through construction expenditure	- The developer should encourage the contractor to increase the local procurement practices and promote the employment of people from local communities, as far as feasible, to maximise the benefits to the local economies; - The developer should engage with local authorities and business organisations to investigate the possibility of procuring construction materials, goods and products from local suppliers where feasible.	Medium-High, positive	High, positive	Neutral
Short-term employment creation during the construction phase	- Where feasible, efforts should be made to employ locally to create maximum benefits to the communities. - Sub-contract to local construction companies particularly SMMEs and BBBEE compliant enterprises where possible.	Medium-High, positive	High, positive	Neutral
Short-term increase in household earnings due to construction jobs	- Where possible, local labour should be considered for employment to increase the positive impact on the local economy. - Employ labour-intensive methods in construction where feasible. - Sub-contract to local construction companies first where possible to do so	Medium positive	Medium-high positive	Neutral
Short-term increase in government revenue through construction-related taxes and fees	N/A	Medium positive	Medium positive	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
Temporary disruption to local traffic flow due to construction-related activities	- Comply with traffic regulations and management (such as using flag people) to ensure a minimal impact on traffic. - Compliance with traffic management/control measures included in the Environmental Management Programme (EMPr) for the project.	Medium-high, negative	Medium, negative	Neutral
Short-term environmental nuisance from construction activities including dust, noise and air pollution	- Comply with policies regarding noise and dust regulation methods close to and on roads and other existing infrastructure. - Regularly clean and maintain the construction site to prevent the accumulation of dust.	Medium, negative	Low, negative	Neutral
Visual intrusion during construction impacting scenic and recreational value	- Limit construction footprint - Manage site lighting - Implement Construction EMP visual controls (as per VIA recommendations)	Medium, negative	Low, negative	Neutral
Temporary disruption to recreational boating activities during construction due to limited access and safety concerns	- Schedule construction outside peak boating seasons - Maintain temporary access routes and berthing - Communicate construction schedule in advance	Medium, negative	Low, negative	Neutral
Temporary displacement of marine wildlife due to construction noise and vessel activity, potentially affecting kayak/SUP tourism	- Schedule high-noise construction activities (e.g., rock placement and heavy equipment operation) during daylight hours where feasible to reduce prolonged disturbance. - Ensure that construction activities comply with applicable marine environmental legislation, including the National Environmental Management Act (NEMA), the Integrated Coastal Management Act (ICMA), and the Marine Living Resources Act	Medium negative	Low, negative	Neutral
Temporary disruption to economic activity and informal trading during reclamation	- Maintain some access routes. - Maintain temporary access routes where possible. - Engage affected operators early to identify and address disruption concerns.	Medium negative	Low negative	Neutral
CLIMATE CHANGE RISKS				
Extreme weather conditions delay construction	Not required due to the low significance of the impact.	Very Low, negative	Very Low, negative	N/A
High shear stress impacts delay construction	Not required due to the low significance of the impact.	Low, negative	Low, negative	N/A

1.5.2 Post-Construction Phase Impacts

Table 1-2. Key impacts and mitigation measures assessed in the EIA

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
COASTAL DYNAMIC IMPACTS				
Wave reflections into Table Bay	Not required due to the low significance of the impact.	Low, negative	Low, negative	None
Longshore sediment transport	None required due to insignificance.	Insignificant, negative	Insignificant, negative	Neutral
Short-wave reflections towards the Granger Bay Marina	Not required due to the low significance of the impact.	Very Low, negative	Very Low, negative	None
Long-wave reflections towards the Granger Bay Marina	Not required due to the low significance of the impact.	Very Low, negative	Very Low, negative	None
Short and long wave reflections onto the main Granger Bay Marina breakwater	Not required due to the low significance of the impact.	Insignificant, negative	Insignificant, negative	None
Short and long wave reflections onto the lee Granger Bay Marina breakwater	Regular monitoring of the condition of the breakwater with rehabilitation when necessary.	Very Low, negative	Very Low, negative	None
Impacts on Small Craft Operations	Users made aware of the possible effects that they may encounter, such as appropriate signage near the slipway.	Very Low, negative	Very Low, negative	None
MARINE ECOSYSTEM IMPACTS				
Change in habitat and system function	- The project design must account for potential changes in hydrodynamic function and ensure that resultant local changes in hydrodynamics do not cause significant, ongoing scour of the seabed. - Ensure potential pollution sources (including bilge water and greywater etc.) associated with the development are managed to avoid pollution which may further degrade these habitats.	Low, negative	Very low, negative	None
Loss of rocky shore habitat, introduction of artificial habitat	No practical mitigation possible	Low, negative	Low, negative	None
Impacts on West Coast Rock Lobster over the long term	Not required – positive impact.	Low, positive	Low, positive	None
Increased vessel traffic	- Designate speed-restricted areas within Granger Bay to reduce underwater noise and minimise the risk of vessel strikes on marine fauna. - Follow local legislation and international best-practice guidelines for bilge and greywater discharge, with clear signage and training for all harbour users. - Awareness and reporting: Conduct regular environmental awareness campaigns for vessel operators, and implement a system for reporting marine mammal sightings and pollution events.	Medium, negative	Very low, negative	None
Impacts on marine mammals	Marine mammal monitoring and adaptive management	Medium, negative	Medium, negative	Neutral
VISUAL IMPACTS				
Change in visual character and impact on scenic resources as a result of development, with no development resulting in area being	- The visual intrusion of vehicular roads and parking areas between buildings must be minimised. - Garages on the ground floor, which create 'dead' building frontages, are to be avoided	Medium-High, Negative	Medium, negative	Medium, Negative

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
used for temporary activities including material stockpiling	• Appropriate landscaping measures: » The Guidelines for Landscaping provided in the V&A Urban Design Guideline Document must be followed. » The Development Control Document addresses human-scaled outdoor spaces and routes, with climatic wind shelter and shade, and opportunities for sitting, particularly along the proposed coastal promenade. These must be implemented via an approved landscape plan as part of the SDP approval for these parcels. » Similarly, figures indicate the special treatment of the proposed coastal protection works to ameliorate the visual effect of engineered structures, which can appear visually severe. The engineered straight lines are replaced by way of curved edges, vertical and horizontal undulations, pathways at various levels, landscaping and access to the water's edge with a variety of water activities. These concepts must be implemented. » The design must be subject to an approved landscape plan prepared by a professionally registered landscape architect, as part of the SDP submission stage. » Street furniture, lighting and signage must be designed as part of an integral system and avoid unnecessary visual clutter in the coastal landscape setting. » Rock revetments are visually preferable to 'dolos'. • Further visual review: Given the current lack of detailed architectural and landscaping information relating to the proposed project, it is essential that further visual reviews of the proposals take place at the Site Development Plan stages. These plans must give an indication of architectural concepts and landscape proposals for the development.			
Visual intrusion on Sense of Place	• Interface between The Water Club and Packages 1 and 2 must be articulated as detailed above. • Table Bay views down Granger Bay Boulevard to be considered. • Building forms and finishes designs finalized.	Medium - High, negative	Medium, negative	Low, negative
Light pollution	• Light pollution from outdoor or security lighting must be avoided, and high mast lighting prohibited. Street lights must be fitted with reflectors to avoid light spillage, and low-level lights provided for pedestrian areas. The design must be subject to an approved lighting plan by a professional lighting engineer. • Street furniture, lighting and signage must be designed as part of an integral system	Medium, negative	Low, negative	Low, negative

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
	and avoid unnecessary visual clutter in the coastal landscape setting.			
HERITAGE IMPACTS				
Visual, physical or design implied constraints on pedestrian access to coastline	- Implement designs as per the Urban Design Guidelines, specifically allowing for the continuous coastal walkway along the shoreline. - Make appropriately sensitive provision for the management of building height, massing and edges in relation to the public realm.	High, negative	Low – Medium, negative	Low, negative
TRANSPORT IMPACTS				
Increased Traffic Volumes	- Granger Bay Boulevard Extension as a dual carriageway - Internal road geometry to City guidelines (access spacing, aisle widths) - Cycle/pedestrian network throughout the precinct - Promote TDM (park-and-ride, rail/bus feeders, micromobility, inclusionary housing incentives)	High, negative	Low, negative	Neutral
Intersection Performance and Capacity	Cycle lanes; additional stops, walkable environment	High, negative	Low, negative	Neutral
Access Safety and Local Circulation	Minimum stacking (lanes/setback); crossings	Medium, negative	Very low, negative	Neutral
Impact on non-motorised and PT facility provision	- Granger Bay Boulevard Extension as a dual carriageway - Internal road geometry to City guidelines (access spacing, aisle widths) - Cycle/pedestrian network throughout the precinct - Promote TDM (park-and-ride, rail/bus feeders, micromobility, inclusionary housing incentives)	Medium, negative	Very low, negative	Neutral
SOCIO-ECONOMIC IMPACTS				
Sustained increase in economic output and GDP from ongoing operational activity	The emphasis should be on increasing local procurement practices in terms of sourcing materials locally, hiring local suppliers and services and promoting the employment of people from local communities, as far as feasible to maximise the benefits to the local economies	Medium, positive	High, positive	Neutral
Long-term employment opportunities generated by retail, hospitality and operations	- Where feasible, efforts must be made to employ locally to create maximum benefits to communities in terms of increased employment. - Sub-contract to local construction companies particularly SMMEs and BBBEE compliant enterprises where possible.	Low-medium, positive	High, positive	Neutral
Long-term income streams from stable employment	- Where possible, the local labour supply should be considered for employment opportunities to increase the positive impact on the local and regional area's economies. - SMMEs should be approached to investigate the opportunities for supply inputs required for maintenance and operations of the Data centres, warehousing and logistics operations.	Medium positive	Medium-high positive	Neutral

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
Sustained increase in government revenue through rates, taxes and permits	N/A	Medium positive	Medium positive	Neutral
Increased traffic volumes associated with residential, commercial, and recreational activities within the precinct	Integration with public transport (MyCiTi), promotion of non-motorised transport infrastructure and ongoing traffic management measures.	Low, negative	Low, negative	Neutral
Opportunities for local workforce training and upskilling in urban services	Where feasible, efforts must be employing skilled individuals in the local areas first.	Low positive	Medium positive	Neutral
Permanent change to coastal skyline and visual character due to mixed-use buildings and coastal engineering works	- Landscape Development Plan - Adherence to height limits (21.5m MSL in Arc of Fire)	Medium, positive	Medium – High, positive	Neutral
Improved access to high-quality public spaces and recreational amenities for residents and visitors	Ensure inclusive access, lighting, safety design, and programming to maximise public benefit.	Medium-High positive	High positive	Neutral
Enhanced coastal public access through the development of coastal infrastructure	Develop safe, well-maintained coastal access infrastructure, including accessible pathways, sufficient lighting, safety measures, and the promotion of public use of open spaces	Medium – High, positive	High, positive	Neutral
Increased tourism potential and visitor spending in the area	Improved brand image of Cape Town, increased dwell time, stimulated hospitality sector	Medium-high positive	High positive	Neutral
Increased access to marine infrastructure supporting recreational boating, tourism operators and small marine enterprises	- Promote inclusive access to berthing and marine infrastructure - Enable safe public use	Medium-high positive	High positive	Neutral
Support for long-term wildlife-based marine tourism, particularly kayaking/SUP operators reliant on wildlife sightings	Measures include public education signage, responsible wildlife viewing guidelines, and coordination with local operators to minimize disturbance.	Medium positive	Medium-high positive	Neutral
Long-term integration of reclaimed land into the urban surrounding, improving land use efficiency and coastal access	Prioritise local employment, ensure inclusive coastal access, promote mixed-use development.	Medium-high positive	High positive	Neutral
Enhanced physical and visual access to the coastline, benefiting diverse user groups	Ensure walkways and access points remain open, universally accessible, and well-maintained as public infrastructure	Medium-high, positive	High, positive	Neutral
CLIMATE CHANGE RISKS				
The proposed development prevents high wind speeds and associated storm surge in the area damaging established infrastructure.	None required – positive impact	Medium, positive	Medium, positive	Medium, Negative
The proposed development reduces the risk of the projected increase in sea level, coupled with the high wind speeds and shear stresses experienced,	None required – positive impact	Medium, positive	Medium, positive	Medium, Negative

IMPACT DESCRIPTION	MITIGATION MEASURES	PREFERRED ALTERNATIVE		NO-GO ALTERNATIVE
		WITHOUT MITIGATION	WITH MITIGATION	
increasing the potential for coastal flooding.				
The proposed development reduces the risk of the projected increase in sea level, coupled with the high wind speeds and shear stresses experienced, increasing the potential for coastal erosion	None required – positive impact	Medium, positive	Medium, positive	Low, Negative
Reduced water availability increasing the use of freshwater from aquifers, coupled with the increases in sea level. This increases the potential for groundwater intrusion, and therefore, salinisation. The development will have minimal impact on this regional impact of climate change.	- Rainwater storage for the extended dry period - Greywater recycling programmes.	Low, negative	Low, Positive	Low, Negative
Increased drought susceptibility and extended dry periods may reduce water availability for the development	- Rainwater storage for the extended dry period. - Greywater recycling programmes. - Consideration of alternative water sources should this risk be realized.	Low, negative	Low, negative	Low, Negative
Reduced water availability and increased temperatures in the region may increase the likelihood of fires starting offsite and spreading to Granger Bay, damaging infrastructure	Not required due to the low significance of the impact.	Very low, negative	Very low, negative	None
The reductions in ocean pH and increased sea level and sea temperature, coupled with the high wind speeds already experienced, increasing the potential for, and rate of, physical and chemical corrosion	No specific mitigation measures required.	Low, negative	Low, negative	Low, Negative
The projected increases in mean temperatures and reduced ocean pH increasing the potential for inland chemical corrosion	No specific mitigation measures required.	Low, negative	Low, negative	Low, Negative

2 APPROACH AND STRUCTURE

2.1 Structure of the EMPr

As described in detail in Section 1.3, the EMPr is structured as a set of nested environmental management plans, as shown in

Figure 2-1. Some mitigation measures are specific to certain aspects of the activity (e.g., marine mammal monitoring during marine construction and reclamation), whereas others are applicable to all aspects of the activity (e.g., containment and proper handling of hazardous materials). To avoid duplication, these mitigation measures have been categorised according to their applicability in different tables. Aspects of these will be supplemented by more detailed levels of planning as and when the proposed development is implemented, as indicated.

There may be some overlap between the phases. A decommissioning phase is not included, as it is not anticipated that the proposed infrastructure will be decommissioned.

ASPECT OF ACTIVITY (TABLES)	IMPLEMENTATION PHASE (SECTIONS)		
	SECTION 4: PRE-PLANNING & DESIGN PHASE	SECTION 5: CONSTRUCTION PHASE	SECTION 6: POST- CONSTRUCTION
	TABLE 1: All aspects / General requirements	Table 4-1: PLANNING AND PRE- CONSTRUCTION: ALL ASPECTS	Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS
	TABLE 2: Aspects or infrastructure <u>above</u> the HWM	Table 6-1: POST- CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS	Table 4-2: PLANNING AND PRE- CONSTRUCTION: ASPECTS <u>ABOVE</u> THE HIGH-WATER MARK
TABLE 3: Aspects or infrastructure <u>below</u> the HWM	Table 5-2: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS <u>ABOVE</u> THE HIGH-WATER MARK	Table 6-2: POST- CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS <u>ABOVE</u> THE HIGH-WATER MARK	Table 4-3: PLANNING AND PRE- CONSTRUCTION: ASPECTS <u>BELOW</u> THE HIGH-WATER MARK
	Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS <u>BELOW</u> THE HIGH-WATER MARK	Table 6-3: POST- CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS <u>BELOW</u> THE HIGH-WATER MARK	

Figure 2-1. Schematic of EMPr content and structure

The table below lists the method statements required to be compiled as part of the implementation of the project. These method statements may be prepared subsequent to environmental authorisation. All method statements required for the construction phase of all aspects must be approved by the Engineer.

Table 2-1: Method Statements Required

Method Statement / Management Plan	Relevant Implementation Phase		
	Pre-construction & Planning	Construction	Post-Construction
Lighting Plan	✓		
Construction Phasing Plan	✓		
Construction Management Plan for the New Bay and Slipway	✓		
Landscape Plan(s)	✓		
Demarcation of Working & No-Go Areas		✓	
<i>Communication Plan</i>		✓	
Construction Access and Traffic Management Plan	✓ (high level)	✓ (detailed)	
Spill Prevention, Containment and Response Plan		✓	
Waste Management Plan		✓	
Dust Management Plan		✓	
Site Camp Establishment Method Statement (locational & visual)		✓	
Management of Ocean Access (public, vessels, crafts) & phasing thereof		✓	
Archaeological Monitoring Plan		✓	
Baseline Water Quality Monitoring Programme		✓	
Underwater Noise Management Plan		✓	
Marine Mammal Monitoring Plan		✓	
Vessel Management Plan		✓	
Operational Management Plan for the New Bay and Slipway			✓

2.2 Legislative compliance

A key objective of the EMPr is to satisfy the requirements of Appendix 4 of the amended NEMA EIA Regulations published in Government Notice No. R 326 of 7 April 2017. These regulations prescribe the content of the EMPr and specify the type of supporting information that must accompany the submission of the report to the competent authority. An overview of where the requirements are addressed in this EMPr is presented in Table 2-2 overleaf.

Table 2-2: Compliance with EIA Appendix 4 Requirements

Appendix 4 of EIA Regulations	
1. An EMPr must include- (a) details of-	Annexure 1 of EMPr

Appendix 4 of EIA Regulations	
(i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 1.2 and Section 1.3
c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Figure 1-3
(d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including— (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	All tables in Sections 4, 5 and 6 – 2 nd column.
e) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	All tables in Sections 4, 5 and 6 – 3 rd column.
(f) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	All tables in Sections 4, 5 and 6 – 4 th column.
g) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	All tables in Sections 4, 5 and 6 – 5 th column.
(h) an indication of the persons who will be responsible for the implementation of the impact management actions;	All tables in Sections 4, 5 and 6 – 6 th column.
(i) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	All tables in Sections 4, 5 and 6 – 5 th column.
j) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	All tables in Sections 4, 5 and 6 – 4 th column.
(k) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Sections 4, 5 and 6.
l) an environmental awareness plan describing the manner in which— (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 7
m) any specific information that may be required by the competent authority	Not applicable

2.3 Content of the EMPr

The EMPr includes the findings and recommendations of the EIA Process and specialist studies and/or compliance statements. The EMPr may be updated with additional information or actions during the design, construction, and post-construction phases if applicable. A standardised approach is followed, in which outcomes are set, followed by management actions aimed at achieving the objectives. Management actions are accompanied by monitoring requirements, responsibilities, and targets where applicable. A tabular format is used for ease of reference.

Key terms used in the EMPr include:

- **Impact:** The potential positive or negative impact of the development that needs to be enhanced, mitigated or eliminated (as appropriate) to a desired state
- **Outcomes (objectives):** The desired state after mitigation or management
- **Management Actions:** The actions needed to achieve the objectives of enhancing, mitigating or eliminating impacts; taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.
- **Monitoring:** The key monitoring actions required to check whether the outcomes are being achieved, taking into consideration methodology, frequency and responsibility.

2.4 Overarching objective

The overarching objective, from which the detail contained in this EMPr flows, is **to construct and operate the project in a manner that -**

- **Reduces** the risk of pollution or damage to ground or surface water, ecosystems, soils and air.
- **Minimises** nuisance and disruption to people residing in, working in or moving through the area.
- **Adheres** to all relevant environmental legislation.

2.5 Amendment of this EMPr

- Amendments shall be made as and when required to keep this EMPr up to date, and to provide for adaptive management in support of the management outcomes set out in the approved EMPr and the EIA.
- The EMPr may be amended due to:
 - Legislative changes;
 - Changes to the roles and organisational structure set out in chapter 3;
 - Amendments to the environmental authorisation;
 - Audits of the EMPr carried out in terms of the EIA Regulations;
 - Based on the annual reviews as set out below; or
 - Whenever deemed necessary by the competent authority.
- Amendments will be numbered sequentially (e.g. Amendment 001, Amendment 002, Amendment 003 etc.). The status of a particular page shall be reflected in the appropriate space of each page. Each amendment shall also have an effective date (the date on which the amendment was made).
- Amendments to the impact management **actions** may be effected immediately by the authorisation holder and must be reflected in the next environmental audit report submitted to the competent authority in terms of regulation 34 of the EIA Regulations. The record of revisions must be updated accordingly, and the revision number and status of a particular page shall be reflected in the appropriate space of each page.

- Amendments to the impact management **outcomes** stipulated in this EMPr are subject to an application for amendment to the competent authority, which must be submitted for approval by the authorisation holder and may require public participation. Such an amendment shall only become effective once approved by the competent authority.

2.6 Review of this EMPr

- The EMPr should be reviewed if and when deemed necessary.
- The Authorisation Holder will keep a record of all dates of review, even if review did not necessitate an amendment to the EMPr.
- The review may take the form of an internal audit or may form part of the external audit conducted in terms of regulation 34 of the EIA Regulations.
- The main aims of a review of the EMPr for purposes of a revision will, among other things, be to determine the following:
 - Ability of the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an ongoing basis
 - Conformity and adherence to the minimum legislative requirements;
 - Simplicity and clarity of the content and text; or
 - The incorporation of practical experience gained during implementation.

2.7 Authors of the EMPr

This EMPr has been compiled by the Environmental Assessment Practitioner (EAP) based on best practice environmental management requirements. Details of the EAP who prepared the EMPr are as follows:

Table 2-3: Authors of the EMPr

Authors	Qualification	Professional registrations	Years of experience	Relevant expertise
Jeremy Rose	B.Sc. (Hons) Environmental and Geographical Science	Registered E.A.P. Pr.Sci.Nat.	12+	More than 75 EIAs or EMPrs – Refer to Annexure A.
Kaylyn Heinrich	B.Sc. (Hons) Environmental and Geographical Science	Candidate E.A.P Member of IAIAAs	3+	

Jeremy Rose has 12 years' experience in the field of environmental management and impact assessment and has managed multiple EIAs and Basic Assessments in South Africa. He holds an Honours degree in Environmental and Geographical Science and is an Environmental Assessment Practitioner duly registered with the Environmental Assessment Practitioners Association of South Africa and a professional natural scientist in the field of Environmental Science with the South African Council for Natural Scientific Professions. Kaylyn Heinrich is a registered Candidate E.A.P.

3 PROJECT ROLES AND STRUCTURE

The general roles to be defined are those of the:

- Authorisation holder
- Environmental Control Officer
- Contractor (Principal Contractor / Project Manager); and
- Environmental Auditor

The specific titles referred to may vary, but the intent of this section is to broadly define expectations and responsibilities for key role players in the implementation of the EMPr.

3.1 Authorisation Holder

The holder of the Environmental Authorisation, should it be issued, will be responsible for ensuring that the conditions of such authorisation are fully adhered to. It is expected that the authorisation holder will appoint the Environmental Control Officer and Contractor (or Contractors) during the implementation phase. The responsibility for the implementation of this EMPr lies with the Authorisation Holder. Commonly, responsibilities borne by the Authorisation Holder are delegated to a project manager.

Key responsibilities include ensuring that:

- An ECO is timeously appointed, and remains employed for the duration of the construction phase.
- The ECO is provided with the necessary information in order to adequately undertake their responsibilities.
- This EMPr is included in the contractual agreements with all contractors and subcontractors,
- Method Statements requested by the ECO are provided timeously.
- Corrective action is implemented as required; and
- Appropriate records and information regarding compliance with the EMPr requirements are maintained and made available to the ECO.

3.2 Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed for the duration of the implementation phase of the development to ensure compliance with the EMPr and conditions of the EA. The ECO's role also includes monitoring compliance with other environmental legislation, the monitoring of environmental impacts, and the keeping of accurate records.

The ECO shall update the EMPr when necessary and shall compile a monitoring checklist or protocol based on the EMPr. The ECO's role includes the following aspects:

- Periodic environmental audits during the implementation phase of the proposed project to monitor and record environmental impacts and nonconformances, and to monitor site activities to ensure adherence to the specifications contained in the EMPr, using a monitoring checklist.
- Maintain a record of site visits and audits, a copy of the environmental authorisation (should it be granted) and other permits and licenses, a register of non-conformances, and a copy of previous environmental audits.

- Prior to commencement, the ECO must meet on site with the Contractor representative to confirm designated development and no-go areas and to confirm the method statements required.
- Request, review and approve Method Statements from the contractor and sub-contractors prior to the commencement of the activities concerned.
- Ensure that the contractors and sub-contractors and their employees have received the appropriate environmental awareness training.
- Meet with the contractors to discuss the implementation of this document.
- Identify appropriate corrective measures if transgressions occur.
- Keep a register of monitoring activities and results
- Assist in finding environmentally acceptable solutions to implementation problems.
- Identify and make amendments to the EMPr where appropriate.
- Conduct an environmental inspection on completion of the implementation period and prepare a close-out report.

It is important to note that the weekly monitoring of construction activities below the HWM will be significantly more onerous than the monitoring of construction activities above the HWM. Monitoring of the activities below the HWM require an ECO with the relevant expertise and experience to implement the specialised management actions.

3.3 Contractor

The role of the contractor is as follows:

- The Contractor shall ensure that all employees, contractors and sub-contractors are made aware of the EMPr and their responsibilities.
- Prior to commencement, the Contractor must meet on site with the ECO representative to confirm designated development and no-go areas and to confirm the method statements required.
- Liaise with the ECO and Authorisation Holder (or representative) and ensure that works on site are conducted in an environmentally sensitive manner in accordance with this EMPr.
- Maintain on site a copy of this EMPr and all environmental authorisations and licenses pertinent to the development on site.
- Ensure that all appointed contractors and sub-contractors repair, at their own cost, any environmental damage because of a contravention of the specifications contained in the EMPr, to the satisfaction of the Project Owner's ECO.
- Ensure that all employees (permanent and temporary) and all sub-contractors that work on the site for longer than two days, receive environmental awareness training within one week of being on site.
- Designate an Environmental Officer (or employ a designated suitably qualified individual to fulfil the role of an Environmental Officer) to monitor and report on the daily activities on-site during the implementation period. The Contractor and individual contractors may designate Environmental Officers to liaise with the ECO on environmental matters.

3.4 Environmental Auditor

An independent Environmental Auditor must be appointed for the duration of the implementation phase of the development responsible for assessing the ECO's and subsequently the Contractor's compliance with environmental regulations, policies, and standards as stipulated in the EMPr and ECO Reports.

The Environmental Auditor's role includes the following aspects:

- Periodic environmental audits (biannual) to perform comprehensive audits to evaluate the environmental performance of an organization. This includes site inspections, reviewing documentation (i.e) EMPr, ECO Reports and other documentation contained in the Contractor's file.
- Conducting follow-up audits to ensure that corrective actions have been implemented and to verify ongoing compliance.
- Preparing detailed audit reports that summarize findings, including areas of compliance and non-compliance, and providing actionable recommendations for improvement.

4 PLANNING AND PRE-CONSTRUCTION ACTIVITIES

The outcomes, management measures, and monitoring requirements detailed in this section are applicable only to the pre-construction phase of the proposed development, defined as including the phase of the development before which land clearing, bulk earthworks, the installation of civil services, and the construction of new structures other than those related to the management of the conservation area on the site.

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions		Monitoring Actions	
			Method	Frequency	Responsibility
4.1 Compliance with legislative and other requirements	Construction is conducted in compliance with all relevant legislation and is not in conflict with existing approvals and authorisations.	4.1.1 Confirm prior to commencement of construction that the following requirements in terms of other legislation, as identified in the EIA, have been addressed	Confirm approvals or amendments have been issued.	Prior to first construction contract or where approvals are relevant only to certain precincts on the site, prior to construction in such precincts.	Authorisation holder
		4.1.2 Details of the coastal public open space and access, including the promenade, the public amenities relating to the revetments and bay; and Breakwater Park, and including the related building setbacks, form and massing, must be assessed for each precinct at SDP level for conformity with the indicators, guidelines and controls proposed in this HIA. The necessity for each precinct to be subject to heritage assessment is to be reviewed by HWC.	Confirm correspondence between the authorisation holder and HWC for each precinct as they become ready for implementation.	Prior to first construction contract or where approvals are relevant only to certain precincts on the site, prior to construction in such precincts.	Authorisation holder
		4.1.3 Implement any transport impact mitigation measures required by the local authority in relation to the land use rights drawn on for development.	Confirm either that no additional transport impact mitigation measures are applicable, or that the additional measures required are in progress / implemented.	Prior to first construction contract or where approvals are relevant only to certain precincts on the site, prior to construction in such precincts.	Authorisation holder

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
4.2 Establishing working and no-go areas	Construction activities will be restricted to within the designated areas and any environmentally sensitive areas (no-go areas) will be protected from disturbance.	4.2.1 Demarcation of working areas and no-go areas under the guidance of the ECO.	A method statement for the demarcation of no-go and working areas to be compiled and approved prior to work taking place.	Prior to commencement of construction activities.	Engineer, contractor and ECO.
4.3 Noise and vibration impacts of the reclamation and in-water marine construction.	Adequate planning for, and notification of disturbance from noise and vibration resulting from the reclamation and in-water marine construction is provided to adjacent landowners and tenants. A communication process and structure are established to handle noise and vibration related complaints prior to construction activities commencing.	4.3.1 The Contractor shall establish a mechanism for keeping adjacent landowners informed via reasonable advance notice of particularly noisy activities such as impact piling, mass rock placement events, and compaction operations. 4.3.2 Pre-construction dilapidation surveys must be undertaken by the contractor for any existing infrastructure at risk from damage from construction activities, prior to the commencement of construction activities.	<i>Confirm a communication plan is in place, and regular updates are planned for.</i> <i>Confirm pre-construction dilapidation surveys have been undertaken.</i>	Prior to commencement of construction activities. Prior to commencement of construction activities.	Authorisation holder, Contractor and ECO. Authorisation holder, Engineer and Contractor
4.4 Disruption of ocean economy	Plans are in place for the decommissioning of the existing slipway and the construction of the new slipway, to ensure that the transition entails as little disruption to existing operations as is possible. The slipway operator and relevant local authorities have been consulted in the development of the Construction Traffic and	4.4.1 Prepare a Construction Traffic and Access Management Plan prior to construction commencement that identifies all phases of work likely to affect slipway access, anticipated duration of any restrictions or closures, and proposed alternative arrangements. 4.4.2 Engage with the slipway operator and relevant local authority before construction commences to agree on acceptable working hours and minimum access requirements that must be maintained throughout construction.	Confirm a Construction Traffic and Access Management Plan has been compiled to the satisfaction of the local authority.	Prior to commencement of construction activities.	Authorisation holder, Contractor and ECO.

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
	Access Management Plan. Disruption to economic activity and informal trading during land reclamation activities are managed through consultation with affected stakeholders.	4.4.3 Engage affected operators (commercial, institutional) early to identify and address disruption concerns.			
4.5 Traffic Management Plan	The Construction Traffic and Access Management Plan include the relevant information stipulated by the Traffic Specialist.	4.5.1 In addition to identifying impacts to the existing slipway operations, the Traffic and Access Management Plan should include: » Early liaison with MyCiti operations to phase any temporary stop or route restrictions and obtain route deviations. » Stakeholder notifications and information boards within the Waterfront precinct. » All other required information as per the South African Road Traffic Signs Manual (SARTSM). » <i>Pre-construction and post-construction surveys of public roads along rock haulage routes.</i>	Confirm that a Construction Traffic and Access Management Plan has been compiled to the satisfaction of the relevant local authorities.	Prior to commencement of construction activities.	Authorisation holder, Contractor and ECO.

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
4.6 Temporary economic boost from construction activities.	Conditions are included in contractual documents to prioritise the local economy.	4.6.1 The developer should encourage the contractor to increase the local procurement practices and promote the employment of people from local communities, as far as feasible, to maximise the benefits to the local economies; 4.6.2 The developer should engage with local authorities and business organisations to investigate the possibility of procuring construction materials, goods and products from local suppliers where feasible. 4.6.3 Where feasible, efforts should be made to employ locally to create maximum benefits to the communities. 4.6.4 Sub-contract to local construction companies particularly SMMEs and BBBEE compliant enterprises where possible. 4.6.5 Where possible, local labour should be considered for employment to increase the positive impact on the local economy. 4.6.6 Employ labour-intensive methods in construction where feasible. 4.6.7 Sub-contract to local construction companies first where possible to do so.	Conditions are included in contract documentation, where relevant.	Prior to commencement of construction activities.	Authorisation holder.
4.7 Change in visual character and impact on scenic resources	Design elements must take into consideration public interfaces, landscaping requirements and requirements from previously authorised permits and approvals.	4.7.1 The visual intrusion of vehicular roads and parking areas between buildings must be minimised. 4.7.2 Garages on the ground floor, which create 'dead' building frontages, are to be avoided. 4.7.3 Appropriate landscaping measures: » The Guidelines for Landscaping provided in the V&A Urban Design Guideline Document must be followed.	Precinct Plan and relevant SDPs have been approved by the City of Cape Town.	Prior to commencement of construction activities.	Authorisation holder and Contractor

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
		» The Development Control Document addresses human-scaled outdoor spaces and routes, with climatic wind shelter and shade, and opportunities for sitting, particularly along the proposed coastal promenade. These must be implemented via an approved landscape plan as part of the SDP approval for these parcels. » Similarly, figures indicate the special treatment of the proposed coastal protection works to ameliorate the visual effect of engineered structures, which can appear visually severe. The engineered straight lines are replaced by way of curved edges, vertical and horizontal undulations, pathways at various levels, landscaping and access to the water's edge with a variety of water activities. These concepts must be implemented. » The design must be subject to an approved landscape plan prepared by a professionally registered landscape architect, as part of the SDP submission stage. » Street furniture, lighting and signage must be designed as part of an integral system and avoid unnecessary visual clutter in the coastal landscape setting. » Rock revetments are visually preferable to 'dolos'. This should be used on visible revetment areas. 4.7.4 Further visual review: Given the current level of architectural and landscaping information relating to the proposed project, additional visual information to be provided at the Site Development Plan stages. These plans must give an indication			

Table 4-1: PLANNING AND PRE-CONSTRUCTION: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
		of architectural concepts and landscape proposals for the development.			
4.8 Potential effect of lighting related to sense of place	Light pollution from all sources is minimised as far as possible and aligns with relevant policy and best practice.	4.8.1 Light pollution from outdoor or security lighting must be avoided, and high mast lighting prohibited. Streetlights must be positioned and angled appropriately to avoid light spillage, and low-level lights provided for pedestrian areas. 4.8.2 Street furniture, lighting and signage must be designed as part of an integral system and avoid unnecessary visual clutter in the coastal landscape setting.	Precinct Plan and relevant SDPs have been approved by the City of Cape Town.	Prior to commencement of construction activities.	Authorisation holder and Contractor
4.9 Pedestrian access to the coastline	Ensure that the development facilitates public access to the coastline.	4.9.1 Implement designs as per the Urban Design Guidelines and Phase 2 Development Controls dated September 2025 (or as updated), specifically allowing for the continuous coastal walkway along the shoreline. 4.9.2 Make appropriately sensitive provision for the management of building height, massing and edges in relation to the public realm.	Confirm designs have been approved by the relevant City Departments.	Prior to commencement of construction activities.	Authorisation holder and ECO.

Table 4-2: PLANNING AND PRE-CONSTRUCTION: ASPECTS ABOVE THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
4.10 Compliance with legislative and other requirements	Construction is conducted in compliance with all relevant legislation and is not in conflict with existing approvals and authorisations.	4.10.1 Confirm prior to commencement of construction that the following requirements in terms of other legislation, as identified in the EIA, have been addressed:	Confirm approvals or amendments have been issued.	Prior to first construction contract or where approvals are relevant only to certain precincts on the site, prior to construction in such precincts.	Authorisation holder

Table 4-2: PLANNING AND PRE-CONSTRUCTION: ASPECTS ABOVE THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
4.11 Establishing working and no-go areas	Construction activities will be restricted to within the designated areas & environmentally sensitive areas (no-go areas) will be protected from disturbance.	4.11.1 Demarcation of working areas must be as per Figure 1-3, with no development outside the development footprint.	A method statement for the demarcation of no-go and working areas to be compiled and approved prior to work taking place.	Prior to commencement of construction activities.	Engineer, contractor and ECO.
4.12 Change to Sense of Place, Visual Character and View corridors	Building heights and massing do not compromise existing views of Table Bay. Existing heritage and view controls are complied with.	4.12.1 Implement building heights and massing for land-based development as per the Granger Bay Phase 2 Development Controls document dated September 2025. 4.12.2 Adherence to height limits (21.5m MSL in Arc of Fire) 4.12.3 The proposed buildings in Packages 1 and 2, situated north and north east of The Water Club's Dover Apartment building, should be articulated such that they allow views toward Table Bay and Table Mountain where possible. 4.12.4 The buildings in Packages 13 and 14 should be such that they allow views of Table Bay at the end of Granger Bay Boulevard. 4.12.5 Designs of building forms and finishes finalized and approved.	Confirm the following designs have been approved by the City of Cape Town: » Packages 1 and 2; » Packages 13 and 14; » Architectural designs of all packages.	Prior to commencement of construction activities.	Authorisation holder and ECO.
4.13 Reduced water availability	Increased drought risk has been considered and sustainable building practices have been implemented where feasible.	4.13.1 Rainwater storage should be investigated and implemented where possible. 4.13.2 Greywater recycling programmes should be investigated and implemented where possible. 4.13.3 Consideration of alternative water sources should there be a drought period.	Confirm that sustainability considerations regarding water-saving initiatives have been explored and implemented where feasible.	At building-plan approval stage.	Authorisation holder

Table 4-3: PLANNING AND PRE-CONSTRUCTION: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
4.14 Translocation of West Coast rock lobsters	Translocation of West Coast Rock lobsters must be approved prior to the activity being undertaken.	4.14.1 Acquire a permit in terms of the Marine Living Resources Act, 1998 (No. 18 of 1998) if West Coast rock lobsters are to be translocated as part of the construction phase.	In accordance with permit conditions.	Prior to translocation of lobster individuals.	Authorisation holder and ECO.
		4.14.2 Construction timeline must integrate rock lobster removal to ensure phased disturbance. Pre-removal surveys should be conducted before each phase of construction begins to identify high-density lobster aggregations	<i>A marine biologist must do a field survey to determine high-density lobster locations. Lobsters should be translocated to a different identified suitable habitat.</i>	<i>Prior to the commencement of the different construction phases.</i>	<i>Authorisation holder and ECO.</i>
4.15 Change in marine habitat and system function	The development must be designed in such a way that resultant modelled wave dynamics are not detrimental to the marine environment. <i>Design aspects should promote sustainable building practises and promote biodiversity-friendly elements.</i>	4.15.1 The project design must account for potential changes in hydrodynamic function and ensure that resultant local changes in hydrodynamics do not cause significant, ongoing scour of the seabed.	At the time of writing this EIA and EMPr, the PRDW Wave and Hydrodynamic Modelling Study Report (2025) confirms that no significant changes to hydrodynamics or scour is expected from the development area. It is the opinion of the EAP that this mitigation measure has been complied with.		
		4.15.2 Using locally available aggregates, cement, and cement extenders wherever possible.	Confirm the implementation of mitigation measures proposed, where feasible.	Prior to commencement of construction.	Authorisation Holder and Engineer
		4.15.3 Using low embodied carbon cement extenders, such as fly ash and calcined clay (metakaolin), wherever possible.	<i>Incorporate specific design requirements into contractual documents where required,</i>		
		4.15.4 Using recycled aggregates, wherever possible.			
		4.15.5 Introducing specialised admixtures and element shapes to encourage growth of marine life and the formation of biodiverse marine habitats, wherever possible			

Table 4-3: PLANNING AND PRE-CONSTRUCTION: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
4.16 Access to the ocean and other facilities	Ensuring that minimal public disruption to ocean access and ablation facilities.	4.16.1 The contractor must follow a construction phasing plan that ensures ocean access is always possible. 4.16.2 Schedule construction outside peak boating seasons as far as possible. 4.16.3 Communicate construction schedule in advance to affected stakeholders.	Check that a phasing plan is in place prior to the commencement of construction activities and that it provides for uninterrupted access to a launch site.	Prior to commencement of construction.	Authorisation Holder and ECO
4.17 Management of the slipway and bay area	A management plan for the new bay and slipway is established prior to construction of the coastal infrastructure commencing. The management plan has been developed after consultation with the relevant authorities.	4.17.1 Engagements must, at a minimum, be held with the following authorities to inform the management of the new bay area: » Transnet National Ports Authority » DFFE: Oceans & Coasts 4.17.2 Management plans for the bay and new slipway have been approved by the relevant authorities.	Confirm that management plans for the slipway and new bay have been confirmed. Confirm that the relevant authorities have been consulted and agreed to a management plan. Written evidence must be provided in this regard (meeting minutes, email communication, etc.)	Prior to commencement of construction.	Authorisation holder and ECO.
4.18 Impact on maritime archaeology (shipwrecks)	Maritime archaeological finds are proactively identified prior to coastal construction commencing. Any identified maritime archaeological remains are reported to a suitably qualified archaeologist immediately for guidance on next steps.	4.18.1 A geophysical survey of the seabed, (sidescan sonar, multibeam bathymetry and magnetometry), is conducted in the project area prior to any land reclamation activities, to confirm whether there are shipwreck or other heritage sites present. The results of the geophysical survey should be reviewed by a suitably qualified archaeologist. 4.18.2 If wrecks are present in the area SAHRA must be notified immediately, and the site/material must be assessed by a suitably qualified archaeologist, after which a decision can be made about the need for any mitigation measures, which may include site recording.	Check that a geophysical survey of the seabed has been conducted.	Prior to commencement of construction.	Authorisation holder and ECO.

Table 4-3: PLANNING AND PRE-CONSTRUCTION: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		<i>sampling/excavation, and potentially removal and recovery.</i>			
4.19 Pre-construction survey of the Waterclub Marina lee breakwater	Condition baseline is established for the lee breakwater of the Waterclub Marina.	4.19.1 Prior to the commencement of construction of the new western breakwater, all known technical data and information relating to the condition of the existing breakwater should be made available to the V&A Waterfront and a baseline study be undertaken to establish its pre-construction condition, against which any future change identified during periodic monitoring can be assessed.	Confirm technical information is available and a baseline assessment has been undertaken.	Once-off, prior to construction.	Authorisation holder

5 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

The outcomes, management measures, and monitoring requirements detailed in this section are applicable to the construction phase of the proposed activity.

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
5.1 Interruption of access to the slipway and associated impacts on public use and recreational boating activities during construction.	Public access to and use of the slipway is continued throughout the construction period. Slipway access at the new slipway is possible with full equivalent functionality before closure of the existing slipway. Any planned closure or restriction of the existing slipway access is communicated to affected users in advance with sufficient notice. Alternative access arrangements are in place for the duration of any necessary closure.	5.1.1 Prepare a Construction Traffic and Access Management Plan prior to construction commencement that identifies all phases of work likely to affect slipway access, anticipated duration of any restrictions or closures, and proposed alternative arrangements.	ECO site inspections to confirm that access management measures are in place and that any active restrictions are consistent with the approved Construction Traffic and Access Management Plan.	Weekly	ECO
		5.1.2 Engage with the slipway operator and relevant local authority before construction commences to agree on minimum access requirements that must be maintained throughout construction.			Authorisation holder
		5.1.3 Complete construction, commissioning, and testing of the new slipway to a standard of full equivalent functionality (including launch and retrieval capability, approach, and lighting) and confirm this with a joint inspection before any restriction or closure of the existing slipway is implemented.	Functionality of new slipway prior to existing slipway closure	Once-off joint inspection before any closure is implemented Reviewed at each site meeting	ECO and Employer's Agent
		5.1.4 Provide reasonable advance public notice of any planned slipway closures or restrictions through appropriate channels (signage at the slipway, notice to local boating clubs and harbour users, and municipal or harbour authority communication channels) before any restriction takes effect.	Complaints and grievance register		
		5.1.5 Minimise the footprint and duration of any construction exclusion zone affecting the slipway approach, launch area, or associated parking and rigging areas;	Thresholds of concern: • Closure or restriction of the existing slipway		

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		remove temporary obstructions at the end of each working day where practicable. 5.1.6 Ensure construction signage and barriers at the slipway are clearly marked, well-lit, and do not create safety hazards for members of the public navigating around the works area. 5.1.7 Maintain a complaints and grievance register for slipway users and respond to complaints relating to access disruption within 2 working days. 5.1.8 Maintain temporary access routes and berthing.	before the new slipway has been confirmed as fully operational following joint inspection. Any unplanned slipway closure not communicated to users at least 5 working days in advance. Any complaint relating to access disruption not resolved within 2 working days		
5.2 Spills of hydrocarbons, chemicals, or other hazardous substances during construction, and associated impacts on water quality, marine life, and habitat	The marine environment, intertidal zone, and seabed within and adjacent to the works area are not contaminated by hydrocarbons or hazardous substances attributable to construction activities. Any spill that occurs is contained, recovered, and remediated before it causes a measurable impact on water quality, marine fauna, or benthic	5.2.1 Prepare and implement a Method Statement for Spill Prevention, Containment, and Response as before any construction commences. The SPCRP must identify all hazardous substances on site, specify containment measures, define roles and responsibilities, and set out step-by-step spill response procedures. 5.2.2 Ensure all refuelling of plant and equipment takes place on shore or on a designated bunded vessel or platform, never directly over open water. Where floating plant must be refuelled at sea, use drip trays, absorbent matting, and a standby spill kit. 5.2.3 Maintain a spill kit at all work locations at all times. Kits must be appropriate for hydrocarbon spills (absorbent booms,	General Regular ECO site inspections of fuel and chemical storage areas, vessels, and in-water plant, with observations and any non-conformances recorded in the site environmental register. Hazardous substance storage and plant condition Visual inspection of bunded storage areas for leaks, containment	Twice weekly during in-water construction Weekly and after significant rainfall	ECO ECO Contractor or

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
	habitat outside the immediate spill location. Water quality parameters, including hydrocarbon concentrations, dissolved oxygen, and pH, return to baseline conditions within an acceptable period following any spill incident. No mortality or sub-lethal harm to listed threatened or protected species, fish, invertebrates, or other marine fauna is attributable to a hydrocarbon or chemical spill from construction activities. No persistent or visible hydrocarbon sheen, slick, or chemical contamination is present in the works area or surrounding marine environment at the conclusion of construction.	pads, and pillows) and inspected and restocked monthly. 5.2.4 Store all fuels, lubricants, hydraulic fluids, and chemicals on shore within bunded storage areas with a containment capacity of 110% of the largest single container, positioned away from stormwater drains and the shoreline. 5.2.5 Inspect all marine plant and equipment — including vessels, dredges, pumps, and hydraulic systems — for leaks or defects before mobilisation and at the start of each working day. Remove any plant found to be leaking from service until repaired. 5.2.6 Maintain an up-to-date register of all hazardous substances on site, including Material Safety Data Sheets (MSDS), quantities stored, and storage locations. Make this register available to the ECO and emergency responders. 5.2.7 Ensure all construction personnel receive spill awareness and response training before commencing work, including recognition of a spill, immediate containment actions, and reporting procedures. 5.2.8 Report any spill reaching the marine environment immediately to the ECO, and notify DFFE and DEA&DP in accordance with Section 30 of NEMA and any applicable conditions of the environmental authorisation. Record all spill incidents in the site environmental register. <u>Additional Adaptive Management Actions required only where a spill incident occurs, to be</u>	integrity, and correct storage. Visual inspection of all marine plant and equipment for fuel, hydraulic fluid, or chemical leaks. Water quality: hydrocarbon and chemical indicators In the event of a suspected or confirmed spill, collect water samples at the spill location, 50 m downcurrent, and at the reference monitoring station for laboratory analysis of Total Petroleum Hydrocarbons (TPH) and relevant chemical parameters. Compare against baseline and applicable water quality guidelines (e.g. SANS or DWAF guidelines for marine receiving environments). Thresholds of concern: Any visible hydrocarbon sheen on the water surface	Immediately following any spill event; again at 24 hours and 7 days post-spill Monthly	ECO or appointed water quality contractor ECO or Contractor

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		<u>implemented as and when required under the guidance of the ECO:</u> 5.2.9 Deploy containment booms immediately upon detection of any hydrocarbon sheen or spill in the water to prevent spread, followed by recovery using absorbent materials or mechanical skimming appropriate to the scale of the spill. 5.2.10 Engage a specialist oil spill response contractor if the volume or extent of a spill exceeds the capacity of the on-site spill kit or cannot be contained within one hour of detection. 5.2.11 Conduct post-spill water quality and marine fauna surveys at the affected location and a reference site following any significant spill, to assess impact and inform the need for further remediation. 5.2.12 Conduct a root cause analysis following any spill incident and revise the Method Statement and relevant operational procedures to prevent recurrence before resuming affected activities.	constitutes an immediate response trigger TPH >0.01 mg/L at the 50 m downcurrent monitoring point Spill kit and response equipment Physical inspection of all on-site spill kits to confirm contents are complete, dry, and within service life		
5.3 Waste generation and disposal	Manage waste in accordance with legislation and best practice methods. Minimise the production of general waste. Prevent pollution or contamination due to improper waste handling or storage on site.	5.3.1 Contractor is to prepare and implement a waste management plan for the construction phase. 5.3.2 A method statement for the management of waste should be prepared by the contractor for review by the ECO and approval by the engineer. 5.3.3 All debris is to be cleared from road surface at minimum daily, particularly during the rainy season 5.3.4 Food waste must be stored in bins or skips that are covered and cannot be accessed by flies or rodents.	Waste removal and disposal to be monitored. Monitor via site audits and record noncompliance and incidents. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	Weekly	Contractor and ECO

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.3.5 Waste should be separated into hazardous, general, and recyclable waste streams, with clearly designated bins and skips for each waste type. 5.3.6 Hazardous wastes, including materials contaminated with oils and hydrocarbons, must be removed from site by a suitably licensed contractor and manifests provided. 5.3.7 Other non-hazardous solid waste (e.g., refuse) to be disposed of at a licensed landfill. 5.3.8 A suitable waste contractor must be appointed to collect waste from site on a regular basis for correct disposal. Proof of disposal (waybills or waste disposal slips) must be retained and kept on file for auditing purposes. 5.3.9 If the volumes of waste stored exceed 80m³ for hazardous waste and/or 100m³ for general waste the National Environmental Management: Waste Act (NEM:WA) National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No. 926 of 29 November 2013 must be adhered to. 5.3.10 All rubble and waste are to be removed from site regularly and completely removed from site at the end of the construction phase. 5.3.11 Designate a waste management area, which should be an area of hardstanding with a roof and sides or consist of separate bins and skips. 5.3.12 Litter and construction waste should be collected on site by the end of each day			

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		and stored in bins, skips, or other suitable storage area. 5.3.13 Suitable handling and disposal protocols must be clearly explained, and sign boarded. 5.3.14 Waste disposal at licensed landfill sites by qualified contractors is mandatory, with proof of disposal submitted to the appointed Environmental Officer. Waste management certification must be obtained, and detailed records of all stored and disposed waste, including quantity, nature, and fate, must be maintained for auditing purposes. 5.3.15 Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Enforcement of facility usage and cleanliness is crucial. 5.3.16 Intentional disposal of any substance into the environment is strictly prohibited, while accidental spillage must be prevented, contained and reported immediately.			
5.4 Noise and vibration	Avoid unnecessary noise generation. Avoid causing a nuisance to adjacent landowners.	5.4.1 <i>Neighbouring landowners shall receive monthly updates, including schedules of any upcoming noisy activities.</i> 5.4.2 <i>A publicly accessible construction noise complaints register shall be maintained by the ECO. All complaints shall be logged, investigated, and responded to within 48 hours. Adaptive management actions shall be implemented in response to valid complaints.</i> 5.4.3 <i>A dedicated construction hotline number shall be prominently displayed on site hoardings and on the V&A Waterfront and project website.</i>	Monitor activities and record and report non-compliance with the management actions. Environmental noise monitoring to verify the effectiveness of the proposed mitigation measures, validate the noise model predictions and identify whether any additional practicable mitigation measures	Ongoing throughout construction Quarterly during construction of the western breakwater	Contractor and ECO. Authorisation holder to appoint suitable specialist

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.4.4 <i>Install and maintain a minimum 3 m high temporary noise barrier along the haul road serving the western breakwater construction area for the duration of works on this breakwater only. The barrier should be positioned as close as reasonably practicable to the haul road and active construction activities to maximise acoustic screening of the neighbouring property.</i> 5.4.5 <i>Functional requirements of the 3m barrier include:</i> » <i>Minimum height of 3 m above the haul road;</i> » <i>Continuous installation with no significant openings at ground level or between adjoining panels;</i> » <i>Adjoining panels should be sealed or overlapped to minimise sound leakage;</i> » <i>The barrier should comprise a temporary acoustic screening system typically having a surface mass of approximately 7–10 kg/m² and an airborne sound insulation performance of approximately Rw 25 dB (or STC 25 equivalent);</i> » <i>The temporary acoustic barrier should be supported by a suitably designed temporary structural system capable of withstanding the anticipated wind loading and construction site conditions. The support system, foundations, ballast and bracing should be designed and certified by a suitably qualified structural engineer.</i> 5.4.6 <i>Avoid unnecessary idling of heavy construction plant and equipment.</i> 5.4.7 <i>Where practicable, avoid the simultaneous operation of multiple high-noise</i>	<i>are required during construction.</i> <i>Maintain complaints register on site. Contractor to investigate and respond to complaints.</i>	Ongoing	Contractor

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		<i>construction activities immediately adjacent to the Waterclub</i>			
5.5 Dust impacts from construction activities	Prevent the introduction and spread of dust from construction activities.	5.5.1 A method statement detailed dust management actions must be prepared by the contractor and submitted to the ECO for review and Engineer to approve.	Review dust management prior to construction commencing	Once-off	ECO and Engineer,
		5.5.2 Dust suppression using a water bowser shall be implemented at all exposed surfaces during dry, windy conditions.	Check that minimal and defined routes are used for access and that unauthorised vehicle access is prevented.	During site inspections	ECO and Contractor
		5.5.3 All site vehicles shall observe a speed limit of 20 km/h on site access tracks and internal haul roads to minimise re-suspension of surface fines.			
		5.5.4 A construction complaints hotline shall be maintained. All dust-related complaints shall be logged, investigated, and responded to within 48 hours.	Monitor activities and record and report non-compliance.	During site inspections	ECO and Contractor
		5.5.5 All haul trucks transporting fill material shall be covered with tarpaulins or tailgate covers before leaving the loading area and throughout transit along the haul route. Uncovered loads are prohibited.			
		5.5.6 The haul road within the site boundary and Granger Bay Boulevard adjacent to the site shall be swept and/or watered as required during active haulage periods.			
		5.5.7 Stockpiles of fine-grained materials (sand, crusher dust, topsoil) shall be covered with geotextile sheeting when not in active use. Cement shall be stored in sealed silos or closed bulk bags only. The stockpile layout shall be approved by the ECO before site establishment. All active stockpiles exceeding 1 m in height shall be enclosed by wind-break fencing (minimum 1.8 m height, 50% porosity) on the upwind sides.			

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.5.8 End-tipping operations shall use controlled drop heights to suppress dust at the point of impact. 5.5.9 Haul vehicles shall be maintained to prevent spillage on public roads. Any spillage on public roads shall be cleared within one hour. Vehicles shall not be overloaded beyond manufacturer specifications. 5.5.10 All concrete demolition and saw-cutting operations shall use wet-cutting techniques (water suppression on cutting blade and drill) to prevent generation of airborne dust. 5.5.11 All skip bins and rubble skips shall be covered when filled. 5.5.12 Workers involved in demolition and concrete cutting shall be provided with appropriate respiratory protective equipment in accordance with the Construction Regulations, 2014. 5.5.13 Construction access tracks and internal haul routes shall be water-suppressed or treated with dust binders to minimise re-suspension of surface fines.			
5.6 Visual impacts of construction activities	Minimise visual disturbance from construction activities.	5.6.1 A method statement site camp establishment and locational and visual management measures for review by the ECO and approval by the Engineer. 5.6.2 Manage stockpile and laydown areas for cleanliness and appearance. 5.6.3 Roof and screen waste areas. 5.6.4 Avoid unnecessary signage or advertisement on site. 5.6.5 Restrict the activities and movement of construction workers and vehicles to the immediate construction site as much as possible;	Review method statement for site camp establishment for locational and visual management measures. Monitor by visual inspections.	Immediately prior to construction Weekly	ECO ECO and Contractor

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.6.6 Ensure that rubble, litter and disused construction materials are managed and removed regularly; 5.6.7 Locate site camps and laydown areas away from visually sensitive receptors such as residences. 5.6.8 Screen site camps and laydown areas with shade cloth or similar, where possible and appropriate. 5.6.9 Regularly clean and maintain the construction site to prevent the accumulation of dust. 5.6.10 Limit construction footprint to minimum area required. 5.6.11 Manage site lighting and only implement the minimum required.			
5.7 Disruption of ocean-going and pedestrian access to the coastline	Access to the ocean for recreational activities or crafts / vessels is not impeded unless required, and sufficient notice is given to the public prior to any closures or restrictions.	5.7.1 Complete construction, commissioning, and testing of the new slipway to a standard of full equivalent functionality (including launch and retrieval capability, approach, lighting, and associated facilities) and confirm this with a joint inspection before any restriction or closure of the existing slipway is implemented.	A joint inspection of the new slipway with the slipway operator and relevant local authorities must take place.	Once-off prior to new slipway operation and existing slipway decommissioning.	ECO, Engineer, Contractor.
		5.7.2 Provide advance public notice of any planned slipway closures or restrictions through appropriate channels (signage at the slipway, notice to local boating clubs and harbour users, and municipal or harbour authority communication channels) at least 5 working days before any restriction takes effect.	Confirm proof of timeous public communications / notifications is provided.	As and when required.	ECO
		5.7.3 Minimise the footprint and duration of any construction exclusion zone affecting the slipway approach, launch area, or associated parking and rigging areas;	A method statement must be compiled	Once-off prior to the slipway and coastal promenade being closed off to the public.	Authorisation holder, Engineer, ECO and Contractor.

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		remove temporary obstructions at the end of each working day where practicable. 5.7.4 Phase construction activities so that the existing boardwalks and walkways are only closed off when and where needed for construction activities. 5.7.5 <i>The coastal public walkway / sea park area should be prioritised for completion to ensure public access.</i> 5.7.6 Ensure construction signage and barriers at the slipway are clearly marked, well-lit, and do not create safety hazards for members of the public navigating around the works area. 5.7.7 Maintain a complaints and grievance register for slipway users and respond to complaints relating to access disruption within 2 working days.	detailing the management of ocean access to the public (including pedestrians, vessels and recreational crafts) during construction. This must include detail on how activities are to be phased. Maintain complaints register on site.		
5.8 Increase in traffic volume due to construction activities.	Increase in traffic is managed in accordance with the relevant regulations.	5.8.1 Off-peak scheduling of heavy-vehicle movements. 5.8.2 Advance public notice of road, lane or shoulder closures, with on-site flagmen, barriers and signage compliant with Southern African Road Traffic Signs Manual (SARTSM). 5.8.3 Implement well-marked detours and providing real-time traffic updates to inform motorists of alternative routes and expected delays. 5.8.4 Site traffic-management plan with qualified marshals. 5.8.5 Early liaison with MyCiti operations to phase any temporary stop or route restrictions and obtain route deviations. 5.8.6 Wheel-wash bays and routine road-sweeping to prevent debris spillage.	Confirm the Construction Traffic and Access Management Plan is implemented. Monitor activities and record and report non-compliance.	Ongoing throughout construction.	Contractor and ECO.

Table 5-1: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.8.7 Condition checks of Granger Bay Boulevard and adjacent intersections along well-used haul routes. 5.8.8 Stakeholder notifications and information boards within the Waterfront precinct. 5.8.9 Night works or off-peak works wherever feasible, <i>in consultation with the City of Cape Town</i>. All relevant approvals must be in place prior to any night works commencing. 5.8.10 Maintain temporary access routes, where possible. Provision should be made for alternative access routes and alternative parking areas, where feasible. 5.8.11 Engage affected operators early to identify and address disruption concerns to traffic flow and parking.			

Table 5-2: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS ABOVE THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
5.9 Noise and vibration impacts of general land-side construction	Avoid unnecessary noise generation. Avoid causing a nuisance to adjacent landowners.	5.9.1 All construction plant shall be equipped with manufacturer-fitted or retrofit silencers and exhaust mufflers. Equipment shall be maintained in good working order and shall be subject to noise compliance checks at commissioning and at monthly intervals.	Monitor activities and record and report non-compliance with the management actions	Ongoing throughout construction.	ECO and contractor.
		5.9.2 Site generators shall be fitted with acoustic enclosures reducing generator noise to a maximum of 70 dB(A) at 7 m. Generators shall be positioned as far as practicable from sensitive receptors.	Maintain complaints register on site. If two or more noise complaints are received, the Contractor must indicate whether the noise generated on site exceeds thresholds		
		5.9.3 Demolition activities using hydraulic breakers shall be phased and limited to maximum two-			

Table 5-2: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS ABOVE THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		hour continuous sessions, with breaks of at least 30 minutes, to avoid prolonged noise exposure to adjacent receptors. 5.9.4 Materials delivery scheduling shall be managed to prevent concentration of heavy vehicle movements during early morning and late afternoon periods. 5.9.5 A dedicated site marshal shall direct and manage delivery vehicles to prevent congestion and unnecessary idling on Granger Bay Boulevard and adjacent roads. 5.9.6 All haul vehicles operating on the site shall observe a speed limit of 20 km/h to reduce tyre and engine noise.	outlined in the Western Cape Noise Control Regulations.		
5.10 Damage to, or destruction of archaeological sites and/or artefacts	Avoid impacts to archaeological finds during earthworks or excavations.	5.10.1 Where new development or earthworks which have the potential to reach the depth of the former, historical land surface are undertaken in the areas indicated in Figure 1-3, the work is to be monitored by a suitably qualified archaeological specialist. 5.10.2 The archaeological specialist is to provide training on how to recognise archaeological site and finds and the appropriate response. Signage with this information must also be clearly displayed. 5.10.3 Should pre-colonial archaeological material be encountered, this must be reported immediately to the appointed archaeologist, who will need to assess the situation. 5.10.4 In the event of the discovery of human remains, work in the affected area must cease immediately, the find must be made secure but left in situ, and HWC and an archaeologist must be informed so that the find can be assessed and arrangements can be made for its mitigation.	Archaeological monitoring visits must be undertaken by the appointed archaeologist. Monitor activities and record and report non-compliance with the management actions	Weekly Ongoing throughout construction.	ECO and Contractor. ECO and Contractor.

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
5.11 Sedimentation, siltation and water quality impacts caused by in-water construction, and associated impacts on marine life, habitat and water quality	Turbidity levels in the marine environment adjacent to and downstream of construction activities remain within acceptable thresholds and do not cause a measurable decline in water quality. Sensitive marine habitats outside the approved project footprint are not permanently smothered, destabilised, or lost as a result of sediment deposition attributable to construction activities. Benthic community composition and diversity in reference areas outside the immediate construction footprint are not significantly altered during or after construction. Marine fauna, including fish,	5.11.1 Establish a baseline survey covering water quality (turbidity, TSS, dissolved oxygen, salinity, pH) at a minimum of one impact site and one reference site before any in-water works commence. This establishes the baseline against which impact management outcomes are assessed.	General Weekly ECO site inspections of in-water works and record observations, trigger level readings, and any non-conformances in the site environmental register. Water Quality Monitor DO, pH, salinity, temperature, and turbidity in water column using a calibrated probe. Monitor at an upcurrent reference site, edge of work zone, and 50m / 200m downcurrent of the works area. Turbidity trigger levels: - Intermediate: >50 NTU above background at 200 m - Major: >100 NTU above background at 200 m. Other thresholds of concern: - DO <6 mg/L - pH outside 7.8–8.3. Silt curtain integrity	Monitor with continuous real-time logging or twice-weekly sampling.	ECO or appointed water quality contractor
		5.11.2 Conduct post-construction marine surveys mirroring the baseline surveys of benthic habitat mapping and community assessments conducted as part of the MIA, at the same impact and reference sites, at intervals of three months, twelve months, and twenty-four months following completion of in-water works, to assess recovery trajectories.			
		5.11.3 Ensure that rock placement for the outer edge of the new revetments and infrastructure meets the specifications set out in Annexure B, with clean, graded rock and sand containing no fine sediments.			
		5.11.4 Delineate and physically mark no-go zones around the works area using buoys or GPS-referenced exclusion boundaries.			
		5.11.5 Install silt curtains (turbidity barriers) of appropriate type and depth (permeable or impermeable depending on tidal regime and current velocity) at the perimeter of all in-water work zones prior to commencement of filling or other sediment-disturbing activities.			
		5.11.6 Maintain and inspect silt curtains daily for damage, displacement, or bypass, particularly following storm events or strong tidal currents. Repair or reposition immediately where integrity is compromised.			

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
	invertebrates, and any listed threatened or protected species, are not subject to chronic or acute impacts from suspended sediment. Sediment dispersion does not encroach outside the works areas without triggering a management response. Water quality parameters — including turbidity, total suspended solids (TSS), dissolved oxygen, and light attenuation — return to baseline conditions within 12 hours following the cessation of in-water works in any given construction phase. No irreversible loss of reef or hard substrate habitat occurs outside the works area.	5.11.7 Ensure all in-water plant and equipment is inspected for fuel and hydraulic fluid leaks before mobilisation to prevent compounding water quality impacts. <u>Additional Adaptive Management Actions required only where there is a measurable and significant negative impact, to be implemented as and when required under the guidance of the ECO:</u> 5.11.8 If monitoring records turbidity exceeding the Intermediate trigger level, immediately reduce the rate or intensity of in-water activities and assess whether the exceedance is attributable to construction. If turbidity exceeds the Major trigger level, suspend all in-water works and implement the STMP emergency response procedure until turbidity returns to below the Intermediate level. 5.11.9 Restrict in-water construction activities to low-energy tidal windows where practicable (slack water periods) to minimise sediment transport distance and plume spread. 5.11.10 Implement progressive construction sequencing to minimise the simultaneous exposure of disturbed sediment areas; complete and stabilise one work zone before opening the next where operationally feasible. 5.11.11 Implement habitat rehabilitation measures in any areas where residual sediment deposition on sensitive habitat is confirmed by post-construction monitoring, in consultation with the relevant authority. This may include mechanical removal of deposited sediment. 5.11.12 Stabilise all reclaimed surfaces and batters as rapidly as possible using appropriate	Visual inspection and physical check for any visible breach, displacement, or significant sediment bypass Plume extent Photographic record of plume extent using drone photography	Daily during in-water works; post-storm Weekly during active filling	ECO or Contractor

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		geotextile, rock armour, or revegetation to prevent ongoing terrestrial runoff and erosion from contributing secondary siltation loads to the marine environment.			
5.12 Marine habitat loss and disturbance	Mortalities of West Coast rock lobster are avoided as far as possible.	5.12.1 Implement phased removal of West Coast rock lobsters, and potential translocation of individuals from high-density zones.	Conditions of the permit for the removal of West Coast rock lobster are complied with.	As and when required	ECO
	Duration and extent of construction activities below the HWM is minimised. All staff are provided environmental awareness training specifically on marine ecosystems.	5.12.2 Limit duration of construction activities in the coastal zone. 5.12.3 Constrain spatial extent of impacts to the minimum required. 5.12.4 Inform and train all staff about sensitive marine species and the responsible disposal of construction waste. This training must be integrated into toolbox talks or onsite awareness sessions to ensure that waste management practices are understood and followed diligently. Additionally, contractors must prepare a method statement outlining specific waste management procedures, which must be approved by the resident engineer before construction activities commence.	Monitor activities and record and report non-compliance with the management actions	Weekly	ECO
5.13 Noise and vibrations	Avoid unnecessary noise generation Avoid causing a nuisance to adjacent landowners	5.13.1 Where rock placement / breakwater construction is planned - aim to work from the ocean space backwards towards shore to create a physical barrier to sound in the initial stages of work, then all other fill work will be effectively 'on land'. 5.13.2 Before engaging in any rock dumping or similar actions where material is dumped directly into the ocean, ensure that no baleen whales are within ~500 m of the impact site (in the absence of direct measures of sound levels and hearing thresholds, 500 m is widely used as a typical distance for safe avoidance	Monitor activities and record and report non-compliance with the management actions. Maintain complaints register on site. If two or more noise complaints are received, the Contractor must indicate whether the noise generated on site exceeds thresholds	Ongoing throughout construction	ECO and contractor

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		of noise impacts). As far as possible, ensure no dolphins are within 500 m of the impact site. A dedicated marine mammal observer should be used for these phases of work. 5.13.3 Ensure all machinery is in good working order to reduce in-air noise levels and transmission into the marine environment. 5.13.4 All marine and reclamation construction activities, including rock placement, compaction, and haul truck deliveries, shall be restricted to permitted working hours as prescribed by PN 200 of 2013: Monday to Friday 07:00–18:00 and Saturday 07:00–14:00 unless written exemption is granted by the local authority and prior notification is given to affected stakeholders. 5.13.5 Impact piling activities (if required) shall be restricted to 08:00-17:00 on weekdays only. 5.13.6 All diesel-powered construction plant and vehicles shall be maintained in accordance with manufacturer specifications and fitted with effective silencers or mufflers. Plant emitting noise above 85 dB(A) at 7 m shall not be used unless no quieter alternative is available. 5.13.7 Where practicable, hydraulic breakers shall be fitted with hydraulic silencing attachments. Rock placement shall use low-drop techniques (reduced fall heights for rock placement from cranes and excavators) to limit impulsive noise from large armour rock deployment. 5.13.8 Where marine piling is required, a soft-start procedure (ramping up hammer energy progressively over a minimum of 20 minutes) shall be implemented at the commencement of each piling session to allow mobile marine	outlined in the Western Cape Noise Control Regulations.		

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		fauna to move away from the noise source before full impact energy is applied. 5.13.9 A qualified Marine Mammal Observer shall be stationed during all impact piling sessions (if required) to monitor for the presence of cetaceans and Cape fur seals within a defined exclusion radius of 500 m. Piling shall not commence if cetaceans are observed within the exclusion zone. 5.13.10 An Underwater Noise Management Plan (UNMP) shall be prepared by a qualified acoustics specialist prior to commencement of any marine piling operations, incorporating exclusion zones, soft-start procedures, monitoring requirements, and mitigation trigger levels. The UNMP shall be submitted to SANParks and DFFE (Oceans & Coasts Branch) for approval prior to implementation. 5.13.11 Marine vessels used for construction support shall be fitted with engine silencers and vibration-dampening mountings where practicable. Engine idling of marine plant for extended periods while not operating shall be prohibited.			
5.14 Impacts of increased vessel presence on marine mammals	Disturbance to marine life from construction vessels is minimised.	5.14.1 Vessels used must be driven in a slow and responsible manner, keep gear changes and acceleration to a minimum to minimise rapid changes in noise levels. 5.14.2 A lookout must be kept for dolphins and whales at all times and groups should be avoided where possible. 5.14.3 If any impacts are observed (vessel strike, entanglement, strong avoidance responses) these should be reported to the relevant environmental authority as soon as possible (e.g. DFFE).	A method statement must be compiled detailing the management of vessels during construction. Confirm the Marine Mammal Monitoring Plan as outlined in Section 8 is implemented by a suitably qualified person.	Once-off prior to any coastal construction taking place that required vessels. Ongoing throughout construction.	Contractor and ECO. ECO

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		5.14.4 Implement the Marine Mammal Monitoring Plan as outlined in Section 8.			
5.15 Traffic Impacts from land reclamation and marine infrastructure	Traffic impact from the transportation of quarried material is minimised.	5.15.1 Rock placement activities shall not commence before 07:30 daily. Peak-hour deliveries (07:00–08:30 and 16:30–18:00) shall be minimised to reduce traffic noise on the haul route.	Confirm the Construction Traffic and Access Management Plan is implemented.	Ongoing throughout construction.	Contractor and ECO.
	Noise from vehicles transporting quarried material is minimised.	5.15.2 Haul trucks shall use only the designated haul route (Granger Bay Boulevard, Helen Suzman Blvd, Buitengracht / M62 to N1 / N7) as prescribed in the Traffic Management Plan. Deviation from the designated route is prohibited.	Monitor activities and record and report non-compliance.	Weekly	ECO
		5.15.3 Haul trucks shall not idle unnecessarily at loading or offloading areas. Truck engines shall be switched off during extended waits.			
		5.15.4 A maximum truck speed of 20 km/h shall be enforced within the site boundary and 30 km/h on the designated haul road adjacent to the OPBC and public areas.			
5.16 Impact on maritime archaeology (shipwrecks)	Avoid impacts to maritime archaeology during land reclamation and coastal construction.	5.16.1 If a wrecks or wrecks are present in the area SAHRA must be notified immediately, and the site/material must be assessed by a suitably qualified archaeologist, after which a decision can be made about the need for any mitigation measures, which may include site recording, sampling/excavation, and potentially removal and recovery.	Survey as specified prior to commencement.	One-off	Archaeologist.
		5.16.2 Any future excavations within the Development of the Granger Bay Precinct and Reclamation of Land at the V&A Waterfront project area through existing landfill, seaward of the historical alignment of the shoreline, to levels that may intersect with the former seabed must be subject to archaeological monitoring, with the	Chance-find procedure with reporting to SAHRA.	Ongoing throughout construction.	ECO and Contractor.
			Archaeological monitoring visits must be undertaken by the appointed archaeologist.	Weekly	ECO and Contractor.

Table 5-3: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
		<i>necessary contingencies in place to allow the mitigation of shipwreck remains, should they be encountered.</i>			

6 POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Table 6-1: POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
6.1 Management of the new bay and slipway	The new bay and slipway are managed in a way that allows public access. Users are made aware of the circulation in the bay and possible navigation difficulty.	6.1.1 Users made aware of the possible effects that they may encounter, such as appropriate signage near the slipway. 6.1.2 Promote inclusive access to berthing and marine infrastructure. 6.1.3 Enable safe public use. 6.1.4 Brochures or digital awareness material (including QR codes) must be provided to promote compliance with MPA rules. 6.1.5 Develop safe, well-maintained coastal access infrastructure, including accessible pathways, sufficient lighting, safety measures, and the promotion of public use of open spaces.	Confirm management of the new bay and slipway has been approved by relevant authorities and is implemented. Should issues arise, ensure that these are handled through the appropriate channels, through consultation with relevant stakeholders and authorities.	In perpetuity	Authorisation holder.
6.2 Monitoring of the existing Waterclub Marina lee breakwater	The existing lee breakwater for the Waterclub Marina should be monitored and repaired, if required.	6.2.1 Monitor the structural integrity of the lee breakwater of the Waterclub Marina and agree with the Waterclub on the implementation of repairs if a suitably qualified person determines these can be attributed to the presence of the new breakwater and not from a pre-existing condition or unrelated storm damage.	Fixed point photography or survey should be done annually at the same time every year, as well as after every major storm event. Should the lee breakwater start to show signs of damage, an independent coastal engineer should be appointed to assess the damage and confirm its cause, as well as the nature and scope of any rehabilitation required.	Annually, and after storm events.	Authorisation holder.
6.3 Stormwater system management	Sources of pollutants within the	6.3.1 The development will increase impervious surfaces and stormwater flows into Table Bay. Both the Marine and Oceanography studies	Confirm litter and gross pollutant traps are	Once-off, stormwater once	Contractor and ECO.

Table 6-1: POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ALL ASPECTS

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
	development area are managed.	identify pollution risks, including litter and sediment transport. To mitigate these risks, litter traps and gross pollutant traps must be installed on all stormwater outlets draining into Table Bay from the development area.	installed on stormwater outlets.	infrastructure upgrades are completed.	

Table 6-2: POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS ABOVE THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
None – all relevant aspects addressed in Table 6-1 above.					

Table 6-3: POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Monitoring Actions		
			Method	Frequency	Responsibility
6.4 Monitor coastal water quality for compatibility with recreational use in accordance with the Recreational Water Quality Monitoring and Management Protocol, included as Annexure 3.	Water quality monitoring sufficient to inform decisions on recreational water use	6.4.1 As specified in the detailed protocol included in Annexure 3.		As specified in the detailed protocol included in Annexure 3.	Authorisation Holder
6.5 Monitor stormwater quality for compliance with national limits	Effective monitoring programme is implemented for stormwater discharges to the coastal environment	6.5.1 Monitor stormwater discharges in line with the ICMA General Discharge Authorisation or applicable Coastal Waters Discharge Permit, for at least the following parameters: » Ammonia (ionised and un-ionised) as N » Nitrate as N » Soap, oil or grease » Total suspended solids » Chemical oxygen demand » Dissolved oxygen » pH » Temperature » Salinity	Collect stormwater samples from each stormwater outfall as described in SANS 5667 and analyse at an accredited laboratory or in situ using a calibrated instrument as applicable. Report to DFFE on compliance with the Special limits set out in GN 2290 of 2022 or revision thereof.	Quarterly for first year Biannually thereafter	Authorisation Holder
6.6 Disturbance to marine habitat and system function	Operation of the bay and associated uses are managed so that potential pollution of the bay area is avoided as far as possible.	6.6.1 Ensure potential pollution sources (including bilge water and greywater etc.) associated with the development are managed to avoid pollution which may further degrade these habitats. 6.6.2 Follow local legislation and international best-practice guidelines for bilge and greywater discharge, with clear signage and training for all vessel users. 6.6.3 Conduct regular environmental awareness campaigns for vessel operators, and	Implement management actions.	In perpetuity	Authorisation holder

Table 6-3: POST-CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN: ASPECTS BELOW THE HIGH-WATER MARK

Environmental aspect or impact	Impact Management Outcomes	Impact Management Actions	Method	Monitoring Actions Frequency	Responsibility
		implement a system for reporting marine mammal sightings and pollution events. 6.6.4 Designate speed-restricted areas within the new bay to reduce underwater noise and minimise the risk of vessel strikes on marine fauna. 6.6.5 Additional measures include public education signage, responsible wildlife viewing guidelines, and coordination with local operators to minimise disturbance.			
6.7 Mud accumulation within the new bay	Long-term mud accumulation within the proposed new bay should be monitored and managed.	6.7.1 <i>Periodic surveys should be undertaken to monitor the accumulation of mud in the proposed new bay, with remedial action to implemented as and when required and subject to any necessary approvals and authorisations.</i>	Bathymetric surveys	As required	Authorisation holder

7 ENVIRONMENTAL AWARENESS TRAINING PLAN

This section outlines the training by which the authorisation holder (via its appointed contractor during the construction phase) will inform its employees of environmental risks and the manner in which risks must be dealt with to avoid pollution or degradation of the environment. It may be adapted as needed to suit the circumstances in which it is implemented.

Course	Required attendees	Presented by	Course content	Timing	Records to be kept
Construction phase Environmental Awareness Training for manager	- Project Manager appointed by the authorisation holder - Principal contractor's contract manager, site agents, and assistant site agents (as applicable) - Contractor's designated environmental officer or SHE representative	ECO	- Overview of environmental authorisations and permits granted - Basic environmental law - Roles of the ECO, authorisation holder, project manager, and contractor - Purpose and content of method statements - Site sensitivities - Management actions and measures for the construction phase as detailed in this EMP - Record keeping requirements - Emergency procedures - Reporting and compliance monitoring	Prior to commencement of construction	- Declaration of adherence to Construction phase EMP, signed by Contractor's representative - Register of attendance
Environmental Awareness Training for site personnel	- All site staff and personnel, including temporary staff and visitors to site - Maximum of 20 attendees at any one session	Contractor's designated environmental officer	Environmental do's and don'ts, including: - Access to work areas, location and identification of no-go areas - Managing animals found on site - Smoking and fires - Storing and handling fuels and oils - Storing and handling chemicals - Management of cement, cement bags, slurry, and wash water - Dust and noise	Before any staff member begins work on site	Register of attendance, identifying all attendees by name and ID number, the topics covered, the presenter, and the date and time.

Course	Required attendees	Presented by	Course content	Timing	Records to be kept
			• Water wastage • Waste management and litter, especially near the ocean. • Waste site management • Ablution facilities • Plant and machinery maintenance and load management • Accident and incident reporting • Identifying sensitive marine species and appropriate responses • Managing of rock placement in the ocean • Spill response in the ocean • Identifying archaeological material and reporting procedure		

8 MARINE MAMMAL MONITORING PLAN

8.1 Introduction

The proposed development will include the reclamation of a portion of Table Bay. Increased vessels, noise, turbidity and pollution during construction may have an impact on marine mammals residing in and around Granger Bay.

8.2 Objectives

To undertake a Before-After Control-Impact type study of the impacts of the land-reclamation project on the resident Heaviside's dolphins and other species in the area through Marine top predator baseline boat and visual surveys and Cetacean Ecology baseline passive acoustic monitoring.



Figure 8-1: Suggested deployment plan for long-term acoustic monitoring of dolphins and whales in Granger Bay and Three Anchor Bay area (Blue-dots: Known locations of Heaviside's dolphins, Red dots: proposed location of hydrophones and Red circles: 200m effective detection radius and 500m maximum detection radius for Heaviside dolphins.

Task	Monitoring Actions	Method	Output
	Method	Frequency	
8.1 Marine top predator boat and visual surveys	8.1.1 Survey impact and surrounding areas to collect data on cetacean, seal, sunfish, and bird species.	Four surveys monthly during in-water construction, commencing at least one month prior to commencement of works	Bi-Monthly report focused on maps of new and total-updated dataset showing species spatial distribution patterns, hotspots, overlap with shipping in a larger spatial area. Summary statistics and figures showing diurnal and monthly sighting rates—identification of high-risk areas/periods.
	8.1.2 Acoustic recordings of species in situ and environment to confirm passive acoustic monitoring species and detection range on PAM equipment.	10-15 samples minimum Four surveys monthly during in-water construction commencing at least one month prior to commencement of works	
	8.1.3 Photographic identification of encountered Heaviside's dolphins. Granger Bay is the effective southernmost limit of the range of this endemic species and is thought to host a resident population. Photo-ID will allow the identification of individuals and confirm numbers, residency and change over time.	Four surveys monthly during in-water construction commencing at least one month prior to commencement of works	
8.2 Cetacean Ecology baseline passive acoustic monitoring	8.2.1 Dolphin monitoring (Heaviside's focus) passive acoustic monitoring for dolphin presence. Location: an array of 4x CPOD Click detecting hydrophones placed across the high-density use area and construction impact site before/ during/ after deployment. Array placement will enable measurement of (potential) changes in habitat use during the construction period.	Continuous monitoring during in-water construction commencing at least one month prior to commencement of works	Bi-Monthly: Focused report providing tabular and visual summaries of temporal presence of animals (whales and dolphins by species, fish sounds by type), anthropogenic sounds and long-term sound scape metrics
	8.2.2 Whale and soundscape monitoring (10% subsampled) passive acoustic monitoring for whales, fish, dolphin ID, human noise and ocean soundscape. Subsampled to 1 min every 10 min (10%).		

9 LIST OF ANNEXURES

Annexure No.	Contents	Revision date	Revised by	Effective Date
1	E.A.P. Curriculum Vitae	19 March 2026	J ROSE	19 March 2026
2	PRDW's Generic Rock Specification	2019	PRDW	19 March 2026
3	Recreational Water Quality Monitoring and Management Protocol	2026	INFINITY	July 2026