

**CEN INTEGRATED ENVIRONMENTAL
MANAGEMENT UNIT**



Environmental and Rural Development Specialist

**DRAFT Basic Assessment Report:
Re-development and landscaping of the
southern portion of the Kings Beach Node
on the Nelson Mandela Bay southern
beachfront (Phase 2)**

Project Title:

DRAFT Basic Assessment Report: redevelopment and landscaping of the southern portion of the Kings Beach Node on the Nelson Mandela Bay southern beachfront (Phase 2)

Project Applicant: Mandela Bay Development Agency

Reference Number: ECM1/LN1&3/M/11-103

Environmental Assessment Practitioner:

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Executive Summary

CEN Integrated Environmental Management Unit was appointed by the Mandela Bay Development Agency to undertake the necessary environmental assessments for the proposed redevelopment and landscaping of the southern portion of the Kings Beach Node on the Nelson Mandela Bay southern beachfront (Phase 2). Activities will take place on Erf 1031, Erf 576 and the Remainder of Erf 575, Humewood (approximate GPS co-ordinates: 33°58'23.17"S 25°38'45.70"E).

This Basic Assessment report is required in terms of Regulation (56) of the Environmental Impact Assessment EIA Regulations (Government Notice R.543 in Government Gazette 33306 of 18 June 2010) and in terms of Chapter 5 of the National Environmental Management Act as amended (Act 107 1998).

1.1 Activity Description

1.1.1 Listed Activities

The following activities have been identified:

No. R. 544	10 December 2010 – Listing 1
Activity number	Activity description
16	Construction or earth moving activities in the littoral active zone or a distance of 100 metres inland of the high-water mark of the sea, in respect of – (iii) embankments; (iv) rock revetments or stabilising structures including stabilising walls; (v) buildings of 50 square metres or more; or (vi) infrastructure covering 50 square metres or more Project activity: building a boardwalk and an artificial wetland within 100 m of the high water mark of the sea

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No. R. 544	10 December 2010 – Listing 1
Activity number	Activity description
17	The planting of vegetation or placing of any material on dunes and exposed sand surfaces, within the littoral active zone for the purpose of preventing the free movement of sand, erosion or accretion, excluding where the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation or where such planting of vegetation or placing of material will occur behind a development setback line. Project activity: dune rehabilitation
18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from: (iv) the littoral active zone or a distance of 100 metres inland of the high-water mark of the sea Project activity: the excavation of material to construct a boardwalk and an artificial wetland within 100 m of the high water mark of the sea
No. R. 546	10 December 2010 – Listing 3
Activity number	Activity description
12	The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation (c) Within the littoral active zone or 100 metres inland from high water mark of the sea Project activity: clearance of dune vegetation to construct a boardwalk

1.1.2 Activity Description

The Kings Beach node falls within the Mandela Bay Development Agency's (MBDA) mandate area which comprises ~1039 ha of land in the Inner Metropolitan Area of the Nelson Mandela Bay Municipality. The role of the MBDA is to re-engineer and revitalize land within its mandate area. A phased plan to redevelop the Kings Beach Node has been proposed – Phase 1 has already commenced. The following activities are proposed for Phase 2 (refer to Figure 1):

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- Construction of 2 access boardwalks to the beach with a viewing deck (there are currently 4 access points at ground level – 2 will remain, and the other 2 will be converted to raised access boardwalks)
- Construction of an artificial wetland to filter and attenuate stormwater prior to it being discharged onto the beach
- Improved stormwater management
- Upgrading the a portion of the existing parking area
- Construction of a skatepark
- Landscaping
- Maintenance and repairs of existing structures and infrastructure



➤ **Figure 1: Site Plan (Source: EARTHWORKS Landscape Architects).**

1.2 Methodology

1.2.1 Compliance with legislated requirements

The Environmental Impact Assessment Regulations (2010) clearly state the requirements that need to be fulfilled by all role-players involved in the Environmental Assessment Process. In this regard, Regulations 21 to 25 list the requirements that an EAP must fulfil in order to compile a comprehensive Basic Assessment Report. To assist with interpretation of these regulations, a set of guidelines was published by the Department of Environmental Affairs. In this regard, Guidelines 3 (General Guide to Environmental Impact Regulations (2006)), 4 (Public Participation) and 5 (Assessment of Alternatives and Impacts) were consulted.

1.3 Identification and Assessment of Alternatives

The methodology described in guidelines published to assist with the interpretation of EIA Regulations was followed to ensure the adequate consideration of alternatives, including the “no development” option. Two site layout and development concept alternatives were considered and assessed, primarily involving disturbance to dunes, layout and positioning of boardwalks, and stormwater management. The preferred option was developed in consultation with WESSA, the Beach Office and the professional project architect and engineer. The “no-development” option was considered as a baseline throughout the prediction and analysis of impacts.

1.4 Prediction and Analysis of Impacts

Impacts were predicted and analysed based on observations made during site visits and discussions with authorities, review of scientific literature, analysis of various Environmental Planning Guidelines (e.g. the East Cape Biodiversity Conservation Plan (2007), the Nelson Mandela Bay Metropolitan Open Space System (2009)), aerial photography interpretation, and comments from Interested and Affected Parties.

1.4.1 Comments from Interested and Affected Parties

All registered Interested and Affected Parties and other stakeholders have been sent a copy of this Executive Summary and notified of the availability of the full Draft Basic Assessment Report. All I&APs have been given a 40 day period to review the draft report and submit comments.

Below is a summary table listing comments raised by registered Interested and Affected Parties in response to the public participation process to date. These have been integral in the assessment of impacts.

Interested and Affected Party	Comment	EAP response
Councillor Dean Biddulph	<ul style="list-style-type: none"> Is there a possibility of re-developing the Kings Beach Lifesaving Club footprint to include a low impact commercial development node? Will such plans require a separate process or can this be included for consideration within the scope of this environmental assessment? 	<ul style="list-style-type: none"> The issue was discussed with the MBDA. There are opportunities for non-permanent structures to be set up and operate.
Kings Beach Surf Life Saving Club	<ul style="list-style-type: none"> Our interest extends to the modification of the dunes and building of a boardwalk within 100 m of the high water mark of the sea and in particular how this will affect sand shift around the Kings Beach Surf Lifesaving clubhouse and access levels to the existing paved courtyard (as well as any drainage requirements). We also need to understand the wider scope implications of the re-development of the parking areas and access to the adjacent grassed areas as well as level changes and any further storm water mitigation activities that may be planned around the skate park. 	<ul style="list-style-type: none"> Dunes will not be modified in the preferred alternative. Two access boardwalks are proposed (refer to Figure 1 in Appendix A for relative positions): One east of the Kings Beach Surf Life Saving Club's launch and access area where the public currently accesses the beach by walking over the dune. The boardwalk will extend from the existing paved areas landwards of the dune to the beach and has been designed to reduce the formation of further blow-outs and also to allow for sand movement beneath the boardwalk. Rehabilitation of the dunes surrounding the boardwalk

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Interested and Affected Party	Comment	EAP response
		<p>will be suggested, as well as a system of long-term adaptive management, where a combination of maintenance (e.g. physically removing accumulated sand) and rehabilitation is suggested until the dune is stabilised. The dune in front of the club is unstable and slumps/shifts over paving and access areas partly because of its instability in this area. Part of the reason for the dune's instability is that people walk over it and trample vegetation, which leads to the formation of blowouts. By limiting foot traffic to a boardwalk and rehabilitating the area around it, it is hoped that the dune will stabilise.</p> <ul style="list-style-type: none"> • The second boardwalk is proposed at the position of the current access boardwalk. The same principles in designing the boardwalk as mentioned for the first boardwalk apply here • The boardwalks should not limit or interfere with access to the existing paved courtyard. • A stormwater management plan has been done by the consulting engineers (BVI) and a tertiary wetland has been designed by the architects. It is proposed to direct stormwater that currently flows directly onto the beach from the surrounding area (including the parking lot) to the tertiary wetland, from where it will slowly permeate into the underlying sandy soils and eventually to the coastal zone. This

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Interested and Affected Party	Comment	EAP response
		<p>should assist in slowing down stormwater flow to the beach and resultant erosion, and improve the quality of stormwater which is currently poor.</p>
Splash Waterworld	<ul style="list-style-type: none"> As per our telephone conversation, I respond with this e-mail regarding the development on Kings Beach, and how it will affect our business. Please keep us informed of the development process that would happen around the Supertube area. 	<ul style="list-style-type: none"> Splash Waterworld has been registered as an I&AP and will be kept informed of the process. The idea of proposed upgrade is to increase public usage of the area which should be a benefit to local businesses
Godfrey Murrell (NMBM Beach Office)	<ul style="list-style-type: none"> Concern raised over boardwalk and dune modification proposal What will be done to protect sand movement? 	<ul style="list-style-type: none"> On-site discussions were held with Mr Murrell and Mr Griffiths of WESSA where they made several recommendations. These were used to guide the alternative proposal which is now the preferred alternative. The dunes will not be modified, and the boardwalk concept has been changed to two access boardwalks with viewing platforms. Recommendations have been included in this report to address sand movement.
Transnet (Primrose Madikizela)	<ul style="list-style-type: none"> Request to be registered as an I&AP 	<ul style="list-style-type: none"> Noted and registered.
Department of Forestry (Theo Stehle)	<ul style="list-style-type: none"> Submitted several comments regarding mostly dune landscaping and modification: There are a few protected trees on the site, viz. white milkwood (<i>Sideroxylon inerme</i>) and red milkwood (<i>Mimusops caffra</i>), which should be retained if possible. They may not be disturbed, damaged, destroyed or felled without a licence from the Forestry office in Port Elizabeth. Any applications should be directed to that office. 	<ul style="list-style-type: none"> The areas where the two access boardwalks are planned have no species that are protected in terms of the NFA. The areas that have been selected are currently used as access paths and are mostly denuded of vegetation apart from some <i>Tetragonia decumbens</i>, <i>Ehrharta villosa</i>, <i>Cyperus natalensis</i> and <i>Ipomea pes-caprae</i> on the outer edges of the current access path.

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Interested and Affected Party	Comment	EAP response
	<ul style="list-style-type: none"> • The landscaping of the strand plant foredune hummocks [according to the classification of Tinley (1985)] is regarded as highly undesirable, and should under no circumstances be allowed. Note is taken of the fact that the dune has apparently been constructed artificially to a certain height in the 1980's, and that the proposal is now to reduce their height to what it had been originally, to <i>inter alia</i> obtain sea-views. However, in this proposal consideration is apparently not given to the fact that foredunes are dynamic wind-shaped structures which are natural features on sandy shores above the high water mark, and that, regardless of how they were originally "constructed artificially", they have since, due to natural physical and biological forces and influences, developed into vegetated foredunes comparable to any such dunes formed by nature. • Attached photographs of these dunes reveal that they are covered with typical indigenous strand vegetation found in the dynamic dune zone, vegetated with littoral species consisting of <i>i.a.</i> <i>Ehrharta villosa</i> ("pypgras"), <i>Ipomoea brasiliensis</i> ("seepatat"), <i>Agropyron distichum</i> (sea wheat), <i>Gazania</i> sp. ("gousblom"). This vegetation is rhizomatous or stoloniferous in nature with the characteristic of the former to continuously grow out above the accumulating sand, thereby forming crested dunes, and binding the sand that is wind-blown inland of the high water mark. Dune growth in this way is a natural process, which has undoubtedly occurred since the original sand dunes were formed artificially. (See photographs). 	<ul style="list-style-type: none"> • Dunes will not be altered in the preferred alternative. • Landscaping will be limited to areas on the landward side of the dunes (i.e. in existing park and pathway areas) • Landscaping on dunes will be limited to rehabilitation of blow-outs that have been caused by current mismanagement and trampling of vegetation. Appropriate vegetation that occurs naturally in dunes will be used for this purpose. • The ecosystem services that the dunes provide is recognized and they will not be interfered with.

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Interested and Affected Party	Comment	EAP response
	<ul style="list-style-type: none"> • It is foolish to interfere with this dynamic semi-stabilised foredune zone, as it is a natural(ised) eco-system that provides services free of charge by providing a natural and resilient buffer that absorbs and dissipates the energy of the sea and wind in a dynamic zone of semi-mobile sand. If this buffer was to be replaced by for example rigid structures like rock or concrete, or artificially stabilised vegetated soil, the energy of waves and wind would “collide” with these inflexible surfaces and create turbulence and eddies producing erosion and undermining of the structures created to protect the inland stable zone against these forces. • In the light of increasing sea-levels through global climate change, it is very important to retain these dynamic buffer zones. They will absorb to some extent the forces exerted by storms. They are periodically eaten into by storm tides, removing sand, but during calm weather and seas they are again brought back to the shore by natural accretion processes. Any artificial interference with this process can only destabilize and disrupt this dynamic equilibrium, to the detriment of the development behind it. • In this regard, reference is also to be made to the CSIR publication “Coastal Dunes of South Africa”, Report No. 109, by Dr. K.L. Tinley, 1985. • A process of colonization with more permanent indigenous dune vegetation consisting of woody shrubs and trees, e.g. <i>Rhus crenata</i> (“duine kraaibessie”), has started in the lee of the dunes as they are currently. These should be encouraged by 	

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Interested and Affected Party	Comment	EAP response
	<p>establishing more of these species. The value of this natural shelter against winds from the sea, should outweigh the need to have a direct line of sight to the sea. The sea can easily be accessed by the accesses provided, and the system of proposed boardwalks along the dunes as they currently are, which is supported, should adequately provide in this need.</p> <ul style="list-style-type: none"> • The proposed landscaping of the dunes will not be permanent, for the natural sand accretion processes will prevail and will naturally revert back to building the dune higher, as has taken place in the past. It appears that the proposal has not considered this aspect. Once the dunes have been landscaped, they will not remain in such a state, and if they are stabilized with too permanent a surface, they will be damaged by the forces of the elements. • In the light of imminent sea-level rises, it would be prudent, and should be enforced by the authorities responsible, to instead of expanding the artificial development in the direction of the sea, withdraw further inland and determine a setback line, as these developments close to the sea are certain to be inundated by the sea in the not too distant future. 	
WESSA (Morgan Griffiths)	<ul style="list-style-type: none"> • Kings Beach was a Blue Flag status beach until end of 2009, when it failed to regain its flag due to deficiencies with the four ablution blocks and significant problems with beach management – largely due to not managing stormwater runoff from the carpark. • My/Blue Flag's interest in this project is to promote the redevelopment up to the 	<ul style="list-style-type: none"> • The Blue Flag Report highlighted problem areas that led to the area losing its Blue Flag status. This information has been relayed to the applicant and will be included as mitigation measures in the assessment report. The project proposal will attempt to assist the beach in regaining Blue Flag status

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Interested and Affected Party	Comment	EAP response
	standards of Blue Flag, so that the NMBM can re-apply, as is apparently its intention. Getting appropriate dune management is also key. As discussed please find attached a Blue Flag Report on some of the issues.	
NMBM Human Settlements Directorate (Schalk Potgieter)	<ul style="list-style-type: none"> • Agree with issues identified in BID • Concern that Phase 1 commenced without an authorisation which may result in non-compliance issues 	<ul style="list-style-type: none"> • Phase 1 did not trigger any listed activities in terms of the EIA Regulations(2010) and therefore did not require and environmental authorization. The matter has been discussed with the NMBM and DEDEA.
CETT comments	<ul style="list-style-type: none"> • Has the Parks Department been consulted? They are responsible for developing open space. • Will viewing decks on the access boardwalks fall in the inundation zone? • How many phases are planned for the greater beachfront development? Why is a piecemeal approach being taken? • Can this assessment deal with the current maintenance problems of the existing boardwalk along the remainder of the beachfront? • What has the original round of public participation covered and what has the response been so far? • Are there opportunities for local economic development in the proposal? 	<ul style="list-style-type: none"> • The Director of Parks, Mr Tsietsi Mokonyane, was sent a copy of the BID and notified via email of the proposed activities. • Yes • This project is not part of the greater Kings Beach Development plan that is proposed on private land and Transnet Land. • Unfortunately the existing boardwalk along the remainder of the beachfront cannot be included in this assessment since it is now within the study domain and is outside of the MBDA's mandate area • The original round of public participation was done in terms of Regulation 54 of the EIA Regulations (2010) and included: <ol style="list-style-type: none"> a. An advert was placed in The Herald and Die Burger b. Two site notices were placed on site c. BIDs were sent to neighbours within 100 m of the site, municipal and government authorities d. The Ward Councillor was

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Interested and Affected Party	Comment	EAP response
		<p>notified</p> <ul style="list-style-type: none"> • A copy of all responses received from Interested and Affected Parties is included in this table and in the section that follows • Yes, there is a possibility that non-permanent structures can be used for local economic development

1.5 Summary of Predicted Impacts

Section D of the Basic Assessment Report details the assessment of impacts. The table below is a summary of predicted impacts in construction and operational phases:

Impact	Construction phase		Operational Phase	
	No-go	Preferred alternative	No-go	Preferred alternative
Coastal ecology/biodiversity	Long term, Low -	Short term, Low -	Long term, Moderate -	Long term, Moderate +
Noise	No impact	Short term, Low -		
Air quality (dust)	No impact	Short term, Low -		
Surface and groundwater impacts (erosion and contamination)	Long term, Moderate -	Long term, Low -		
Stormwater management			Long term, High -	Long term, High+
Sediment dynamics			Long term, High +	Long term, Moderate +
Waste management	No impact	Short term, Low -		
Archaeological impacts	No impact	No impact		

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Impact	Construction phase		Operational Phase	
	No-go	Preferred alternative	No-go	Preferred alternative
Visual Impacts			Long term, Moderate -	Long term, High +
Socio-Economic Impacts (tourism and recreational users)	No impact	Short term, Low -	Long term, High -	Long term, High +
Socio-Economic Impacts (employment opportunities)	Long term, Moderate -	Short term, High +		
<p>Cumulative Impacts: The MBDA has commenced with upgrading a portion of the Kings Beach area which includes the construction of a lake and various landscaping activities (Phase 1). This proposal will build on the efforts made so far in Phase 1 and together will collectively promote improved recreational usage and tourism opportunities of the area. Improved stormwater management will assist in improving water quality that flows to the beach, and should assist in Kings Beach attaining Blue Flag status. This will further aid in increasing tourism potential of the area. Studies to determine the carrying capacity of the southern beaches of Port Elizabeth have shown that only certain beaches are highly used, while others are underutilised (e.g. Kings Beach). Some of the reasons for underutilisation are safety, and lack of facilities. The proposed upgrade will assist in 'spreading out' recreational usage along the beaches, and which will reduce impacts at other beaches that are currently over-utilised.</p>				
			Long term, High - (if the area is not upgraded, a valuable tourist area will be underutilised. If stormwater is not managed, coastal water quality will continue to deteriorate)	Long term, High + (the inclusion of an artificial wetland in the prefer alternative improves stormwater management)

1.5.1 Environmental Impact Statement and Recommendations

This assessment showed that potential negative impacts would be limited to construction phase only (short term), and provided that mitigation measures are implemented, they will be of low significance. Positive operational impacts are:

- improved stormwater managed through the construction of an artificial wetland that will attenuate and filter stormwater prior to it discharging into the surrounding coastal environment,
- improved recreational facilities and aesthetics of an important coastal tourist node that will improve safety and promote utilisation by the public, and
- possibly improved management of dunes by limiting beach access to boardwalks (i.e. reduced trampling of dune vegetation and resultant erosion).

Positive impacts listed above should assist in efforts aimed at Kings Beach attaining Blue Flag status which has obvious socio-economic benefits, mostly related to international tourism.

It is recommended that all mitigation measures contained in the Basic Assessment report be included in an environmental authorisation, should one be issued.

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