edtea
Department :
Economic Development, Tourism and Environmental Affairs
PROVINCE OF KWAZULU-NATAL

	(For official use only)
EIA File Reference Number:	**DM/0033/2014**
NEAS Reference Number:	**KZN/EIA/0001481/2014**
Waste Management Licence Number: (if applicable)	**N/A**
Date Received:	

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Economic Development, Tourism & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Economic Development, Tourism & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Economic Development, Tourism & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	**KZN EDTEA REF NO: DM/0033/2014** **NEAS REF: KZN/EIA/0001481/2014**
File reference number (Waste Management Licence):	**N/A**

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	**Royal HaskoningDHV**		
Physical address:	**RHDHV House,** **6 Payne Street,** **Pinetown,** **3610**		
Postal address:	**PO Box 55,** **Pinetown,** **3600**		
Postal code:	**3600**	**Cell:**	**082 8737 400**
Telephone:	**031 719 5500**	**Fax:**	**031 719 5505**
E-mail:	**tandi.breetzke@rhdhv.com**		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Tandi Breetzke	**BA Hons**	**IAIAsa** **EAPSA**	**13**
Catherine Meyer	**BSc in Biological Science, BSc Hons on Marine Ecology, MSc in Estuarine Ecology**	**-**	**2**
Sharleen Moodley	**BSc Environmental Science, BSc (Hons) in Environmental Management.**	**IAIAsa**	**5**

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
Keith Walters E-scape Environmental Services	**Diploma in Nature Conservation**	**10 years experience in Coastal Management, specifically as a Vegetation and Dune Rehabilitation Specialist**	**Vegetation Assessment (Appendix D)**	**Virginia Airport Proposed widening of informal beach access roadway Vegetation mapping**

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Virginia Beach Proposed Beach Boma

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The proposed project area is located on erf R/3139 Durban North, adjacent to the Beachwood Golf Course and the Virginia Airport, at eThekwini Coastal Access point No.3122.

The project entails the provision of improved access, including related facilities and public amenity, to the coastal zone by the eThekwini Municipality, as required by the NEMA: ICM Act. It includes the construction and installation of necessary infrastructure (parking, electricity, lighting, additional security (fencing), road access, sidewalk, etc. to facilitate the construction of a semi-permanent (temporary) rustic open-air type restaurant or café consisting of temporary benches, containers and tables. The size of the main service structure is estimated at approximately 100m^2 with an additional 400m^2 – 800m^2 for out-door tables and seating. The proposed restaurant or café will be environmentally friendly, and it is envisaged that the lease holder/developer will use natural materials for the temporary structures, and shall adopt an environmentally sensitive approach to operations. EThekwini Municipality intend to make this a requirement of this proposed lease agreement. The restaurant or café will be operated by the successful lease holder following a public tender process. The entire area of upgrade is approximately 1.5ha in extent.

The works will also include the upgrade of the existing public toilets sewage disposal system (repair or replacement of old septic tanks, effluent from which will be disposed of at the Southern Waste Water Treatment Works), the provision of additional parking adjacent to the coast, the widening of the beachfront access road for the provision of parking, installation of additional fencing within the coastal forest to secure the area, dune rehabilitation and the possible rehabilitation of a portion of the existing access track running parallel to the coast.

It is noted that regardless of the success of this application, eThekwini Municipality will be replacing the existing fencing as well as refurbishing the interior of the existing ablutions – neither of which trigger listed activities and require environmental authorisation.

Access to the site will be via Fairway Road, turning eastward onto the un-named beach access road. The current capacity, design and safety of Fairway Road and the beach access road are deemed adequate by eThekwini Municipalities Transport Authority for the anticipated increase in traffic volumes related to the development (Internal Traffic Impact Assessment – Appendix G).

Three alternate layouts are proposed, the preferred layout being the option negotiated internally between the eThekwini Municipality's Coastal and Stormwater Catchment Management and the Environmental Planning and Climate Protection Department.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June2010), Listing Notice 3 (GNR 546, 18June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice) :	Describe each listed activity as per the project description (and not as per wording of the relevant Government Notice)[1]:
GNR 544 (18 June 2010)	9	It is possible that infrastructure for the transport of water, sewage or stormwater may be required to be installed for the proposed development.
	14	The proposed development, once constructed, within the coastal public property, will exceed 50m^2.
	16	The development will exceed 50m^2 and is within 100m of the high water mark.
	17	The proposed development activity will include rehabilitation of the coastal dune vegetation. This activity could possibly be excluded as restoration or maintenance.
	18	The proposed development activity will likely entail the infilling and excavation of materials within 100m of the high-water mark.
	23	The proposed development may trigger this activity depending on the interpretation of undeveloped, vacant or derelict land. The development area is within an urban area, yet under 5ha in size.
	24	The potential development, once completed, may exceed 1000 m^2 in size and while the zoning is currently uncertain (zoned as airport), it is an open space with conservation value.
	37	It is possible that existing infrastructure for the transport of water, sewage or stormwater may be required to be expanded for the proposed development.
	43	The proposed development may require the expansion of existing ablution facilities, within the coastal public property, and may exceed 50m^2.
	45	The proposed development once constructed could be considered as expansion of the current buildings within the coastal public property, and may exceed 50m^2 in total (point V).
GNR 546 (18 June 2010)	19	The widening or the lengthening of the existing road may trigger this activity.

[1] Please note that this description should not be a repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description, i.e. describe the components of the desired development

4. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Layout Alternative 1 (A1) (Preferred Alternative):

Please see attached Option 1 (in Appendix A1).

- This option includes the consolidation of the proposed upgrades/facilities to the south (public access and lease area collectively).
- The lease area will be located at the southern corner of the access track that runs parallel to the beach, in the area of the south-most disused public toilet. The existing public toilet will be modified into a kitchen facility for the proposed restaurant / café.
- The existing sewage disposal facility, likely a septic tank system, will be repaired and/or upgraded.
- A turning circle will be located approximately midway on the existing access track, beyond which point the track will be removed and the dune vegetation re-established.
- Formalised parking will be established along the access track leading from Fairway Road (adjacent to the airport boundary), with further formalised spaces located at the lease / public access areas and towards the southern extent of the reduced access track that runs parallel to the beach (on the eastern side of the access track as recommended in the vegetation mapping report).
- Public access to the beach will be established at two points through the dunes via elevated board walks. Access to the beach will also be provided from the lease area.
- Dune rehabilitation as well as the rehabilitation of the northern half of the existing access track that runs parallel to the beach (towards the existing storm water outfall) is proposed.
- A sacrificial raised walkway in front of the rehabilitated dune (on the beach side), will link the northern beach access to the newly constructed pier.
- Signs will be used to inform and educate the public of dune rehabilitation (for schools etc.).
- The dune rehabilitation area will be cordoned off to prevent access.
- Additional fencing will be installed within parts of the site to improve security and protect the rehabilitated dunes and coastal forest.
- Vehicular access for beach maintenance and emergency purposes only, will be retained to

the south of the site.

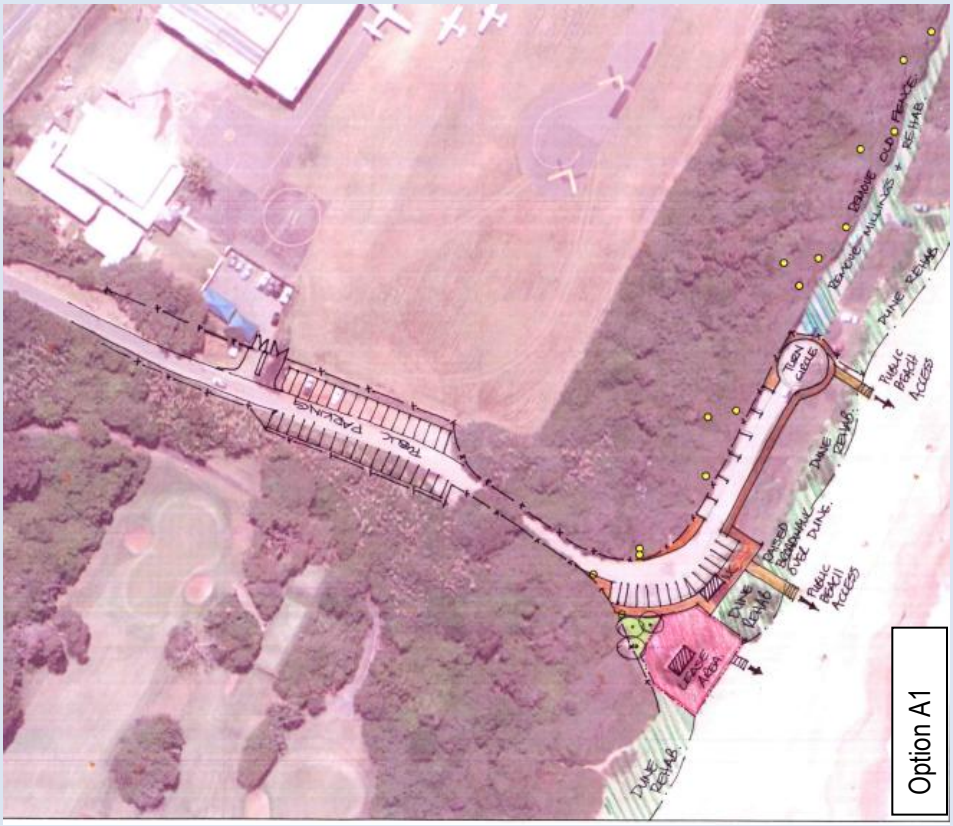

Figure 1: Sketch of Alternative A1 (Please note that the above plan is for illustrative purposes only and has since been updated, the formal plan is attached as Appendix A1)

Layout Alternative 2 (A2):

Please see attached Option 2 (in Appendix A2).

- This option includes the use of the entire length of access track for the proposed development, with dune rehabilitation restricted to seaward of the access track only.
- The proposed lease area is located towards the northern extent of the access track.
- The two existing public toilets to the south of the site will be modified into an ablution facility and a storage facility, respectively.
- The existing sewer disposal facility, likely a septic tank system, will be repaired or upgraded (.
- A temporary / portable toilet facility would need to be installed at the lease area.
- Formalised parking will be established along the access track leading from Fairway Road (adjacent to the airport boundary), with further formalised spaces located at the lease / public access areas and towards the southern extent of the reduced access track that runs parallel to the beach (now to be located on the eastern side of the access track as recommended in the vegetation mapping report). It should be noted that this has been amended from its initial location along the landward (west) side of the access track, as a result of comment received.
- Public access to the beach will be established at two points and formalised via elevated board walks through the rehabilitated dune.

- A sacrificial raised walkway in front of the rehabilitated dune (on the beach side), will link the northern beach access to the pier.
- Signs will be used to inform and educate the public of dune rehabilitation (for schools etc.).
- The dune rehabilitation area will be cordoned off to prevent access.
- Additional fencing will be installed within parts of the site to improve security and protect the rehabilitated dunes and coastal forest.
- Vehicular access will be retained onto the beach between the two existing public toilets (for emergencies and future maintenance works).

Figure 2: Sketch of Alternative A2

Layout Alternative 3 (A3):

Please see attached Option 3 (in Appendix A3).

- This option includes use of the entire length of access track for the proposed development, with dune rehabilitation restricted to seaward of the access track, and the lease area located towards the southern extent of the access track in the area of the existing southern most public toilet.
- The existing southern public toilet will be used as a kitchen or storage facility for the proposed restaurant / café; while the northern toilet will remain accessible by the public.
- The existing sewer disposal facility, like septic tank system, will be repaired or upgraded.

- Formalised parking will be established along the access track leading from Fairway Road (adjacent to the airport boundary), with further formalised spaces located along the seaward (east) side of the access track that runs parallel to the beach. A turning circle with additional parking will be located at the northern extent of the access track linked to a pedestrian beach access point.
- Public access to the beach will be established at three points through the dunes via elevated board walks.
- A sacrificial raised walkway in front of the rehabilitated dune (on the beach side), will link the northern beach access to the pier.
- Signs will be used to inform and educate the public of dune rehabilitation (for schools etc.).
- The dune rehabilitation area will be cordoned off to prevent access.
- Additional fencing will be installed within parts of the site to improve security and protect the rehabilitated dunes and coastal forest.
- Vehicular access for beach maintenance and emergency purposes only will be retained to the south of the site.

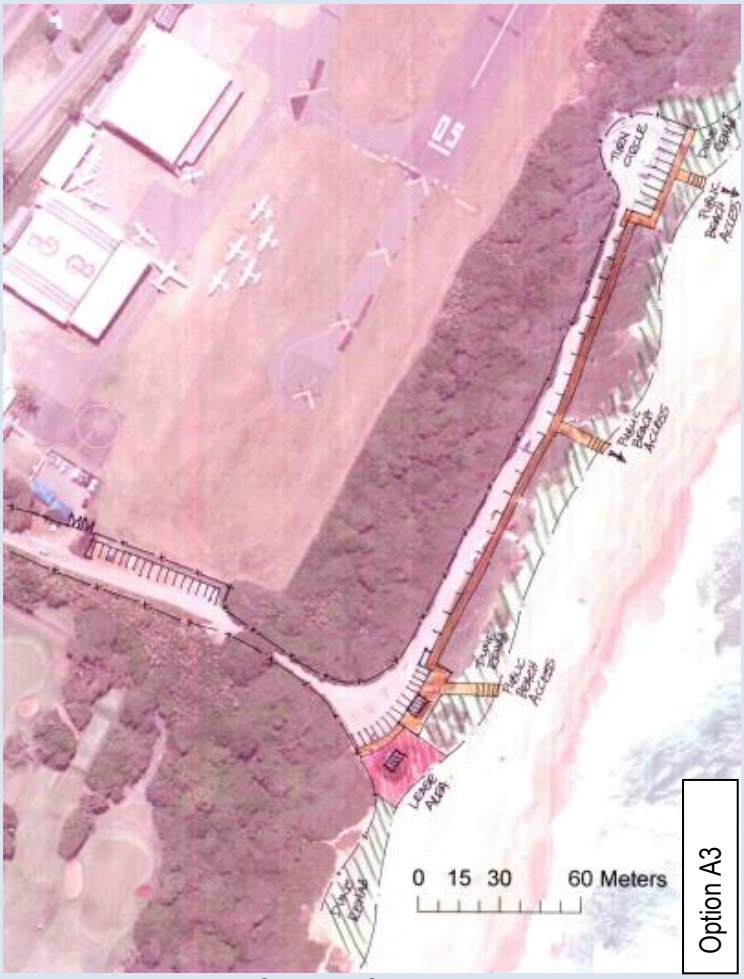

Figure 3: Sketch of Alternative A3

Layout Alternative No-Go: (NG)

- Retain status quo, i.e. continued neglect and decline of the area; including continued damage to vegetated dunes as a result of informal access paths, squatting, and parking in the dunes, thereby increasing the vulnerability of the area to coastal erosion and flooding.

Differences between A1 and A2:

- A2 will make use of the entire length of access track, compared to A1 which will only adopt half of the access track that runs parallel to the beach, therefore making A1 favourable in terms of enhancing the natural vegetation and coastal habitat.
- A1 will involve a much greater area of dune rehabilitation compared to A2. Therefore A1 remains the preferred development option as endorsed by the eThekwini Environmental Department.

Differences between A1 and A3:

- A3 will make use of the entire length of access track, compared to A1 which will only adopt half of the access track that runs parallel to the beach, therefore making A1 favourable in terms of enhancing the natural vegetation and coastal habitat.
- A3 will involve less dune rehabilitation compared to A1.
- A1 will involve a much greater area of dune rehabilitation compared to A3. Therefore A1 remains the preferred development option as endorsed by the eThekwini Environmental Department.

Sections B 5 – 15 below should be completed for each alternative.

5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1[2] (preferred or only site alternative)	[redacted]	
Alternative S2 (if any)		
Alternative S3 (if any)		

In the case of linear activities:

Alternative:	**Latitude (S):**			**Longitude (E):**		
Alternative A1 (preferred or only route alternative)						
• Starting point of the activity	29°	46‘	30“	31°	03‘	14“
• Middle point of the activity	29°	46‘	34“	31°	03‘	22“
• End point of the activity	29°	46‘	32“	31°	03‘	23“
Alternative A2 (if any)			“			“
• Starting point of the activity	29°	46‘	30“	31°	03‘	14“
• Middle point of the activity	29°	46‘	34“	31°	03‘	22“
• End point of the activity	29°	46‘	26“	31°	03‘	26“
Alternative A3 (if any)			“			“
• Starting point of the activity	29°	46‘	30“	31°	03‘	14“
• Middle point of the activity	29°	46‘	34“	31°	03‘	22“
• End point of the activity	29°	46‘	26“	31°	03‘	26“

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[3] (preferred activity alternative)	13 000 m²
Alternative A2 (if any)	12 500 m²
Alternative A3 (if any)	12 500 m²

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	[redacted]
Alternative A2 (if any)	
Alternative A3 (if any)	

[2] “Alternative S..” refer to site alternatives.
[3] “Alternative A..” refer to activity, process, technology or other alternatives.

The length of the site is constant for all three alternatives. The differences between the alternatives reflect the different layout options, with the same area either being developed or rehabilitated to natural habitat.

7. SITE ACCESS

Does ready access to the site exist? YES ~~NO~~

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

It should be noted that the access road that currently exists will not be extended for the works, however it will be widened along the beachfront seaward to accommodate public parking and two-way movement of traffic.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

8.1. the scale of the plan which must be at least a scale of 1:500;
8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
8.4. the exact position of each element of the application as well as any other structures on the site;
8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
8.6. walls and fencing including details of the height and construction material;
8.7. servitudes indicating the purpose of the servitude;
8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
- rivers, streams, drainage lines or wetlands;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);

8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
8.10. the positions from where photographs of the site were taken.

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to

this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

Illustrations of the proposed restaurant facility are not available as the development of the restaurant will be put to tender and the successful developer will lease the prescribed area from the Council. In the interim, Appendix C provides a series of photographs from various other similar establishments that will bring across the impression of what is to be developed.

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R2 500 000
What is the expected yearly income that will be generated by or as a result of the activity?	R2 000 000
Will the activity contribute to service infrastructure?	~~YES~~
Is the activity a public amenity?	~~YES~~
How many new employment opportunities will be created in the development phase of the activity?	30 (temp)
What is the expected value of the employment opportunities during the development phase?	R500 000
What percentage of this will accrue to previously disadvantaged individuals?	90%
How many permanent new employment opportunities will be created during the operational phase of the activity?	10
What is the expected current value of the employment opportunities during the first 10 years?	R400 000/ year
What percentage of this will accrue to previously disadvantaged individuals?	90%

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The condition of the Virginia Beach area has deteriorated over time and remains detached from the recently upgraded Durban Central Beaches promenade. Very limited coastal amenity is provided for locals and visitors at this access point with illegal beach driving (or beach driving for 'bonefide' fisherman continued to be supported by the eThekwini Municipality even after the beach driving ban) being a historical problem. The historical toilet facilities require an upgrade in terms of the sewage waste disposal in order to be accessible to the public. The access road, which was previously pocked with potholes, has been temporarily upgraded to facilitate access to the temporary stormwater culvert construction site. Numerous informal access points have been created through the vegetated dunes, leading to disturbed and sparse vegetation cover and blow outs. Littering is a problem, most likely due to the shortage of rubbish bins, the lack of appreciation for the area and general bad practices from local fishermen/beach goers. In addition, the dense coastal vegetation currently provides shelter for vagrants who continue to harvest

firewood, contribute to solid waste accumulation and unhygienic conditions in the dunes and pose a security/safety risk to those who visit the area as well as golfers on the neighbouring golf course and night operations at the neighbouring Virginia Beach Airport.

The establishment of the proposed restaurant or café in the lease area, which will boast environmentally friendly architecture, and the improvement of pedestrian access, and parking will draw locals (and tourists) to the area, allowing further investment in the facilities, so that they can be enjoyed by all.

The proposed development also includes the rehabilitation of the dune cordon. This in turn will increase the biodiversity value and ecological functioning of the local ecosystem, further enhancing the coastal aesthetics and the sense-of-place. Development proposed is predominantly behind the modelled eThekwini Coastal Erosion Line prepared by Dr Andrew Mather, who is a recognised sea level rise specialist. Identified erosion concerns are, however, not negated taking cognisance of more recent modelling undertaken of projected sea level rise (0.3m, 0.6m and 1m). Mitigation of this concern is the proposed dune rehabilitation and the temporary nature of the development proposed. The life of the infrastructure (short term) and value (low) fall within the identified thresholds and require the 0.3m prediction to be taken into consideration.

Value of Infrastructure	Life of Infrastructure	Impacts of Failure of the Infrastructure	Planned amount of sea level rise
Low **(up to R2 million)** Recreational facilities, car parks, board walks, temp beach facilities	Short term Less than 20 years	Low Minor inconvenience, alternative facilities in close proximity, short rebuild times	0.3m
Medium **(R2 million to R20 million)** Tidal pools, piers, recreational facilities, sewerage pump stations	Short to Medium Term Between 20 and 50 years	Medium Local impacts, loss of infrastructure and property	0.6m
High **(R20 million to R200 million)** Beachfronts, small craft harbours, Residential homes, sewerage treatment works	Medium to Long Term Between 50 and 100 years	High Regional impacts, loss of significant infrastructure and property	1.0m
Very High **(Greater than R200 million)** Ports, desalination plants, nuclear power stations	Long term In excess of 100 years	Very High Major disruption to the regional and national economy, failure of key national infrastructure	2.0m

This proposed development is fully in keeping with the principles of the ICM Act and the implementation of the proposed coastal set-back line with regards to development in areas of risk, and the specific legal instruction given to municipalities to provide access to the coastal zone. Including a restaurant/café allows for the creation of an informal public/private partnership in respect to the management/custodianship of this beach access/node. This should improve security and general cleanliness of the area as well as control vagrancy and other unsocial behaviour (prostitution, drug and alcohol abuse).

Indicate any benefits that the activity will have for society in general:

- Provision of access to the coastal zone;
- Improved economic and employment opportunities arising from the restaurant/café and related facilities;
- Improved infrastructure along the beachfront including parking and formalised pedestrian access;
- Improved and upgraded public amenity;
- Provision of access to new pier (the Virginia stormwater culvert / sea outfall);
- Improved protection of the vegetated dunes by promoting pre-assigned access points, and discouraging use of the numerous informal access points;
- Improved security arising from improved services and lease holder custodianship;
- Rehabilitated dune cordon and improvement of natural corridor and linkages to open space systems;
- Protection of the adjacent dune forest;
- Aesthetically appealing appearance of beachfront; and
- Semi-permanent nature of proposed development allows for easy rehabilitation should this intended commercial venture prove unsuccessful and unviable.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

- Job opportunities for locals;
- Improved access and accessibility;
- Improved aesthetic appeal with indirect economic benefits;
- Improved security with indirect and direct social and economic benefits;
- Improved public facilities; and
- Recreation / restaurant facility.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
The Seashore Act (Act No. 21 of 1935) as amended	National & Provincial	1935
Constitution of the Republic of South Africa (No. 108 of 1966)	National, Provincial and Local Government	1996
National Environmental Management Act (Act No. 107 of 1998) as amended	National & Provincial	1998
National Water Act (Act No 36 of 1998) as amended	Department of Water Affairs	1998
National Cultural Heritage Resources Act (Act No. 25 of 1999)	Amafa aKwaZulu Natali	1998
Marine Living Resources Act (Act No.18 of 1998)	Department of Agriculture, Forestry and Fisheries	1998
National Forest Act (Act No. 84 of 1998) as amended	Department of Agriculture, Forestry and Fisheries	1998
National Veld and Forest Fire Act (Act No. 101 of 1998) as amended	Department of Agriculture, Forestry and Fisheries	1998
National Environmental Management: Biodiversity Act (Act No. 10 of 2000)	National & Provincial	2000
Disaster Management Act (Act No. 57 of 2002)	Department of Co-operative Governance and Traditional Affairs	2002
National Environmental Management:	National & Provincial	2003

Protected Areas Act (Act No. 57 of 2003)		
National Environmental Management: Air Quality (No. Act 39 of 2004)	National & Provincial	2004
Integrated Coastal Management Act (Act No. 24 of 2008)	Department of Environmental Affairs	2008
National Environmental Management: Waste Act (Act No. 59 of 2008)	National & Provincial	2008
Municipal Building and other Regulations and by-laws: including Municipal Airports Code and Seashore Regulations	eThekwini Municipality	Various
Living with Coastal Erosion: A best practice short-term Guide	Department of Environmental Affairs and Tourism	2008
Civil Aviation Regulations	South African Civil Aviation Authority	2011

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	NO
If yes, what estimated quantity will be produced per month?	10m^3	

How will the construction solid waste be disposed of? (describe)

Landfilled and recycled (if appropriate).

Where will the construction solid waste be disposed of? (provide details of landfill site)

Bisasar Road, eThekwini Municipal Landfill.

Will the activity produce solid waste during its operational phase?	YES	NO
If yes, what estimated quantity will be produced per month?	5m^3	

How will the solid waste be disposed of? (provide details of landfill site)

eThekwini municipal collections.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

All forms of solid waste are anticipated to feed in to the municipal waste stream.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES	NO

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO
If yes, what estimated quantity will be produced per month?		
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	NO

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	NO

If yes, provide the particulars of the facility:

Facility name:	eThekwini Municipality – Southern WWTW		
Contact person:	Ednick Msweli		
Physical address	3 Prior Road, Durban		
Postal address:	P.O. Box 1038 Durban 4000 South Africa		
Postal code:	4000		
Telephone:	031 311 8600	Cell:	
E-mail:	ednick.msweli@durban.gov.za	Fax:	031 311 8699

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

All facilities and amenity being proposed and developed will be fitted with reuse/recycling options as per approved eThekwini policy.

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO

The proposed restaurant/café may well emit smoke during cooking but not in sufficient quantities to be controlled by legislation air emissions legislation. It will, however, be controlled via the implementation of eThekwini By-laws with respect to provision/sale of food stuffs.

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

If no, describe the emissions in terms of type and concentration:

As with normal construction activities involving excavation and demolition, dust will be generated. This will however be intermittent as well as localised. Provision for mitigation will be made in the EMPr for the construction phase.

13.4. Generation of noise

Will the activity generate noise?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO

The generation of noise in a residential area is controlled via eThekwini Municipal by-laws (public nuisance).

It is noted that while a limited number of beach goers currently use the area recreationally, the construction works will result in only slightly elevated noise levels. The operational phase, however, will result in an increase in ambient noise levels during peak periods due to the increase in visitor numbers and on occasion, entertainment from the proposed development. This increase in noise, while not considered to be beyond prescribed levels, can still be mitigated, by ensuring any sound systems used by the development face seaward, and the volume is capped during the evenings.

It is noted that the vegetated area and golf course serve as a buffer to any sound travelling in a southerly direction with the air field buffers sounds travelling in a northerly direction. It is further noted that the busy Durban CGB access road (the Ruth First Highway) would also serve to buffer any potential increases in noise to residents living West of that road – within 500m.

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
X					

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use permit from the Department of Water Affairs? YES | ~~NO~~
If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

All facilities and amenity being proposed and redeveloped will be fitted with energy saving equipment as per approved eThekwini policy.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Not relevant at this stage but will be included at detailed design stage. For example solar panel street lighting.

SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. A): /

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative A1:

~~Flat~~	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative A2 (if any):

~~Flat~~	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative A3 (if any):

~~Flat~~	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative NG (no go) (if any):

~~Flat~~	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site **(Please cross the appropriate box)**.

Alternative A1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	~~Dune~~	~~Sea-front~~

Alternative A2 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	~~Dune~~	~~Sea-front~~

Alternative A3 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	~~Dune~~	~~Sea-front~~

Alternative NG (no go) (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	~~Dune~~	~~Sea-front~~

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?	YES	~~NO~~
Previous internal geotechnical investigations have been conducted by eThekwini Municipality and have been made available to this process in response to comment made. The geotechnical report and supporting documentation is provided in Appendix D.		

If YES, please complete the following:

Name of the specialist: [redacted]
Qualification(s) of the specialist:
Postal address:
Postal code:
Telephone: [redacted] Cell:
E-mail: Fax:

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	~~YES~~	NO
If YES, specify and explain: Coastal Red Milkwood Trees, *Mimusops caffra* (see Section 4. Groundcover)		
Are their any special or sensitive habitats or other natural features present on any of the alternative sites?	~~YES~~	NO
If YES, specify and explain: Note: see Section 4 - Groundcover.		
Are any further specialist studies recommended by the specialist?	YES	~~NO~~
If YES, specify: [redacted]		
If YES, is such a report(s) attached in Appendix D?	YES	~~NO~~

Signature of specialist: _____ Date: [redacted]

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Dolomite, sinkhole or doline areas	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Seasonally wet soils (often close to water bodies)	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Unstable rocky slopes or steep slopes with loose soil	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Dispersive soils (soils that dissolve in water)	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Soils with high clay content (clay fraction more than 40%)	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
Any other unstable soil or geological feature	YES	~~NO~~	YES	~~NO~~	YES	~~NO~~
An area sensitive to erosion	~~YES~~	NO	~~YES~~	NO	~~YES~~	NO

Sensitivity to erosion is in respect to dynamic coastal processes and associated erosion.

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Has a specialist been consulted for the completion of this section?		~~YES~~	NO
If YES, please complete the following:			
Name of the specialist:	Keith Walters		
Qualification(s) of the specialist:	Diploma in Nature Conservation		
Postal address:	92 Umdoni Road, Amanzimtoti, Durban		
Postal code:	4126		
Telephone:	031 914 3871	Cell:	082 7413094
E-mail:	krw@telkomsa.net	Fax:	031 914 3871
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?		~~YES~~	NO
If YES, specify and explain:	Coastal Red Milkwood Trees, *Mimusops caffra*		
Are their any special or sensitive habitats or other natural features present on any of the alternative sites?		~~YES~~	NO
If YES, specify and explain:	The study area falls within the threatened KwaZulu-Natal Coastal Belt ecosystem, which is listed as a National Threatened Ecosystem (gazetted under GN 34809), and categorised as Vulnerable. A separate report as well as response to comments made in the stakeholder engagement process are attached as Appendix D.		
Are any further specialist studies recommended by the specialist?		YES	~~NO~~
If YES, specify:			
If YES, is such a report(s) attached in Appendix D?		~~YES~~	NO

Signature of specialist:  Date: **19 June 2014**

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	~~Natural veld with scattered aliens[E]~~	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	~~Paved surface~~	~~Building or other structure~~	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES	NO	Dune rehabilitation will restore a large section of the land back to natural area. The dune forest will receive additional protection from the proposed upgraded fencing. Increased visitor numbers will, however, put more pressure on the land area if proper controls are not enforced.
Low density residential	YES	NO	
Medium density residential	YES	NO	Low impact as residential properties are predominantly located the other side of the main Ruth First Highway. The development would improve access to the sea front. The few properties located between the golf course and Ruth First Highway could be impacted from a noise perspective and from increased traffic accessing the beach. This is not considered to be an unreasonable impact considering the location of these properties adjacent a major access route.
High density residential		NO	
Informal residential	YES	NO	Vagrants residing in the vegetated dunes will be impacted and are proposed to be evicted from the informal dwellings in an effort to improve security and protect the dune cordon.
Retail commercial & warehousing	YES	NO	The increase in visitors to the area will have a positive impact on the local economy.
Light industrial	YES	NO	
Medium industrial	YES	NO	
Heavy industrial	YES	NO	
Power station	YES	NO	
Office/consulting room	YES	NO	Likelihood of impact is minimal other than a potential increase in traffic at the exit from the Ruth First Highway and the entrance to the Virginia Airport.
Military or police base/station/compound	YES	NO	
Spoil heap or slimes dam	YES	NO	
Quarry, sand or borrow pit	YES	NO	
Dam or reservoir	YES	NO	
Hospital/medical centre	YES	NO	
School/ creche	YES	NO	
Tertiary education facility	YES	NO	
Church	YES	NO	
Old age home	YES	NO	
Sewage treatment plant	YES	NO	

Train station or shunting yard	YES	~~NO~~	
Railway line	YES	~~NO~~	
Major road (4 lanes or more)	~~YES~~	NO	Construction vehicles may have a minor impact on the Ruth First Highway; however this will only be a temporary issue.
Airport	~~YES~~	NO	Construction and potentially operational activities may have a minor impact on Virginia airport. Operational activities are not anticipated to have any real impact. No negative impact should be associated with the operational side of this proposed development.
Harbour	YES	~~NO~~	
Sport facilities	~~YES~~	NO	Sports fields are present approximately 500m to the north west of the works, and so there is no anticipated impact.
Golf course	~~YES~~	NO	Beachwood Golf course and Country Club is located immediately southwest of the site. The construction and operational activities may cause minor disruption to users due to increased traffic accessing the beach.
Polo fields	YES	~~NO~~	
Filling station	~~YES~~	NO	Likelihood of impact is minimal. Increase in visitors to the area will have a positive impact on the local economy.
Landfill or waste treatment site	YES	~~NO~~	
Plantation	YES	~~NO~~	
Agriculture	YES	~~NO~~	
River, stream or wetland	YES	~~NO~~	
Nature conservation area	~~YES~~	NO	Both Beachwood Mangroves Nature Reserve and the Virginia Bush Nature Reserve (which includes Danville Park) are within 500m of the site. Likelihood of negative impact is minimal. These reserves will be positively impacted by the rehabilitation activities proposed and the creation/formalisation of open space linkages.
Mountain, hill or ridge	YES	~~NO~~	
Museum	YES	~~NO~~	
Historical building	YES	~~NO~~	
Protected Area	~~YES~~	NO	Both the Beachwood Mangroves Nature Reserve and the Virginia Bush Nature Reserve are within 500m of the site. Likelihood of impact is minimal.
Graveyard	YES	~~NO~~	
Archaeological site	YES	~~NO~~	
Other land uses (describe)	YES	~~NO~~	

6. CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?	YES	NO

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;

(b) giving written notice to—
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the local and district municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  (vii) any other party as required by the competent authority;

(c) placing an advertisement in—

(i) one local newspaper; or
(ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in sub-regulation 54(c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
(i) illiteracy;
(ii) disability; or
(iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and

(b) state—
(i) that an application for environmental authorization has been submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
(iii) a brief project description that includes the nature and location of the activity to which the application relates;
(iv) where further information on the application can be obtained; and
(iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of sub-regulation 54(2) in the manner agreed by the KZN Department of Economic Development, Tourism & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality? ~~YES~~ NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

EThekwini Metropolitan Municipality is the applicant for this application, and has therefore been involved throughout this process. A consolidated comment from eThekwini was also received during the public review period. No objections to the development were received from the various departments. The Environmental Planning & Climate Protection Department opposed the proposed road widening between the refurbished parking at the end of the runway and the existing ablutions, and made specific requirements and enquiries relating to the development of a Dune Rehabilitation Plan, and long-term management of the site. Durban Solid Waste requested details as to how the refuse generated from functions at the facility will be managed. The formal written comment is attached to this report under Appendix E.

Has any comment been received from the local municipality? YES ~~NO~~

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

See above section, eThekwini Municipality is a Metropolitan area.

Has any comment been received from a traditional authority? YES ~~NO~~

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders? ~~YES~~ NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

The required public participation process, as prescribed in Regulation 54 of the EIA Regulations, 2010, was undertaken. Comments were received from numerous stakeholders and are captured in the Comments and Response report under Appendix E.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Environmental concerns:

- Damage to the coastline
- Impact on ground and surface water
- Preservation of Protected Tree Species
- The need for dune rehabilitation and a vegetation cutting plan

EIA Process:

- Adequacy of the Vegetation Specialist Report

Planning, Design, Land-use & Services

- Consideration in design of beach sediment dynamics and processes
- No road widening that will result in the removal of coastal forest vegetation
- Parking to be located on the seaward margin of the access road
- Formalisation of parking at the Virginia Airport overshoot
- The Lease Agreement must encompass responsible development, be very detailed and provide strict controls with regards to waste management, crime, and maintenance
- Application of the ICM Act principles
- Preference for coastal retreat over additional structures

Waste Disposal
- Method of sewage disposal

Pollution
- Pollution relating to construction

Health and Safety
- Increased noise levels
- Increase traffic
- Management of crime

Stormwater Management
- Stormwater Management in design and during construction

Economic Development
- Economic viability relating to the size of the available lease area
- The need and desirability, and improved socio-economic benefits
- Disputed socio-economic benefits

Coastal Access
- Capacity for extra parking and traffic
- Beach driving implications
- Alleged improvement of control (e.g. trampling)

General
- The need to establish a Joint Planning Committee

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report).

The relevance of the concerns raised by the I&APs is duly acknowledged by the EAP. The following responses are put forward to the main issues listed above:

- A critical aspect of the upgrade and proposed development at Virginia Beach is the reinstatement and rehabilitation of coastal dune vegetation. The eThekwini Municipality acknowledges the ecological value of this vegetation type, which is evident in eThekwini's dedicated strategy to rehabilitate coastal dune environments within its jurisdiction, supported by an approved Dune Rehabilitation Environmental Management Plan for such works. Further to this, protected tree species in the vicinity of the development have been identified and located, and will be demarcated to secure their presence. A comment in respect to widening of the road and subsequent removal of coastal forest/thicket vegetation is acknowledged, and thus this activity will be withdrawn and single lane passage of traffic will instead be adopted. Overgrowth of coastal bush poses health and safety risks in terms of line of sight for approaching motorist, and thus a vegetation cutting plan will be compiled to ensure preservation of protected tree species and to prevent inappropriate and uninformed pruning/lopping of coastal vegetation.

- In response to potential damage to the coastline, the project aims, through extensive dune rehabilitation, to enhance the coastal dune cordon. Apart from the risk associated with predicted sea-level rise and anticipated effects of climate change (such as increased intensity and frequency

of sea storms and tidal surges), damage to the coastal line as a result of this development is not anticipated.

- Given that there are no wetlands, rivers or streams on or passing through the proposed development site, the potential for affecting freshwater surface resources is negligible. Impacts on the marine environment are however possible, and thus direct and indirect risks and mitigation of potential negative impacts will be fully covered by means of a comprehensive Construction and Operations Environmental Management Programme.

- The simplicity of the vegetation report, in respect to its suitability as a specialist assessment, is acknowledged. It has since been confirmed by the vegetation specialist, as per the brief provided by eThekwini Municipality, that a mapping exercise was requested to identify vulnerable vegetation types/species that would possibly be affected whilst considering various options for the proposed area's upgrade. Further detail is provided in the response provided by the Vegetation Specialist, attached to the vegetation assessment/mapping report in Appendix D.

- A few concerns regarding parking were raised. While Alternative A1 and A3 layout plans portray parking located on the seaward side of the beachfront access road, the Alternative A2 layout plan indicates parking on the inland side, thus implying infringement and removal of coastal forest vegetation, which in turn will result in exposure to salt-laden winds and die-back of important species. Therefore, parking along the seaward margin is preferred and will be implemented for all three alternate layouts. The informal parking area at the overshoot of the Virginia Airport Runway 23 has been in existence for many years and is still proposed to be formalised as part of the upgrade.

- Integrated coastal management as a management philosophy and a legal requirement in terms of the NEM: ICM Act promotes a sustainable balance between sustainable development and environmental protection. As such, development proposals within the coastal zone need to be evaluated on a case-by-case basis. The Virginia Beach access point is an area highly utilised by several user groups, mainly fishermen harvesting for their livelihoods. The ICM Act specifically mandates eThekwini Municipality to plan for, provide and maintain access to the coastal zone and accompanying public amenity for use by residents and visitors alike. Access has been historically provided at this point, where neighbouring access to the coast is restricted, namely by the Beachwood Golf Course and the dense coastal forest abutting the Virginia Airport. This particular access point has been reported to the National Department of Environmental Affairs and is reflected as such on the Municipality's coastal access database. It is rated as 'high' in terms of priority for upgrade, and is to remain open. Consequently, with the current degraded facilities in place (ablutions and access road), this spatial area remains the only area suitable for such development. Moreover, the use of existing structures over preparing and erecting new structures at a different location, is seen to be potentially more environmentally sensitive (considerate).

- While retreat is the ideal scenario in the light of climate change and predicted sea-level rise, closing the beach access track will not prevent people from forcibly accessing the beach at this point, as they have historically been provided access here in the past. The coastal erosion lines for eThekwini were taken into account during the planning process and are reflected on the provided layout plans under Appendix A. Based on current thinking and best practice, with regards to the potential risk of sea-level rise and resultant loss of infrastructure (See Section 11.2 above and as detailed by Dr Andrew Mather), the proposed development is categorised as having low infrastructure value, a short tern life span and the potential impacts associated with the failure of such infrastructure is considered to be low. Thus the development in the proposed area can be permitted, provided it is of low impact and temporary in nature.

- It is clearly evident that the principles of the NEM: ICM Act have been applied and used to ensure that appropriate sustainable development of this degraded area can take place.
- While beach sediment dynamics and coastal processes at play in this area were not specifically assessed in this Basic Assessment process, these have been extensively investigated by eThekwini Municipality over the years, as evidenced by Dr Mather's response, the development of coastal erosion lines and the attached geotechnical report, and were duly considered in this development proposal by the Municipality. The latter report indicates a currently stable beach which, was not subject to the high levels of erosion of the 2007 exceptionally abnormal, tidal surge event. Furthermore, the existing toilets were not inundated or damaged by the same erosion event.

- Concerns were raised regarding responsible development, operation and the long term management of the facility. This was in respect to the management of waste, potential pollution, security and noise. Strict provisions and controls of these aspects and others will be included in the detailed Tender Documents as a contractual requirement for the prospective developers in the Lease Agreement. Noise levels are not anticipated to rise above that currently experienced and with the existing buffers in place (vegetation, M4 Highway). However, traffic calming measures will be put in place, and sound dampening and deflection during operation of the restaurant facility will be incorporated in the Contractual Agreement with the Lessee. Similarly, the provision of security services, and the management of crime in collaboration with the eThekwini Metro Police, will be the responsibility of the Lessee.

- A prospective developer expressed concern that the size of the lease area could negatively impact on the economic feasibility of the proposed development. To this end, a review was undertaken by Urban-Econ Development Economists on behalf of eThekwini Municipality and submitted as an additional comment in the stakeholder engagement process. In order for the development proposal to be economically viable, Urban Econ recommended that the size of the establishment be increased to provide 100m^2 for a single service structure (e.g. kitchen) and a further 400-800m^2 for outdoor seating and tables to enhance the proposed dining experience. As a result this basic assessment report has subsequently been amended.

- The need and desirability of the upgrade and associated development was echoed by several stakeholders and organisations, particularly as a means to improve and provide additional socio-economic benefits, and for the resultant upliftment of the area. Notwithstanding, these socio-economic benefits were also disputed and the alleged exploitation of the natural environment to rectify socio-economic problems was criticised. In response, recent experience with the Central Durban Beachfront upgrade provides specific measureable proof that improvement of facilities and greater public presence/ control does improve poor/historical unsociable behaviour. The Virginia Beach area is an existing access point which is currently under siege. The Municipality has a legal responsibility, in terms of the NEM: ICM Act, to provide safe access and amenity in addition to protecting coastal vegetation. Integrated coastal management requires balancing relationships and responsibilities and its key focus is on facilitating sustainable coastal development. In this instance, this proposed temporary development with its accompanying dune rehabilitation, is fully in keeping with the Act's principles.

- The integrity, type and extent, of the sewage infrastructure supporting the existing ablutions will be physically investigated in the early stages of construction as this information is currently unknown or available. Preliminary information suggests that septic tank systems are in place. In this regard, these systems will be repaired and/or upgraded where deemed necessary.

- The potential for construction-related pollution in the coastal zone will be reduced by means of mitigation measures recommended in this BAR and the Construction Environmental Management Programme.

- Adequate Stormwater Management has been provided for in the design stage and will be managed during construction via the Construction Environmental Management Programme. A stormwater management programme has since been prepared and is attached to this BAR.

- An internal Traffic Impact Assessment undertaken by the respective eThekwini Municipal Department indicates that, while traffic volumes are likely to increase in response to the new development, the main access roads, namely Fairway Road and the unnamed beach access road, are suitably designed and have the capacity to withstand this increase. The proposed number of parking bays (approximately 42 bays) is deemed sufficient for the size and nature of the development. This internal report is also attached to this BAR for ease of reference and as a result of comment received.

- Vehicular access to the beachfront was questioned in the light of past illegal beach driving incidents. It must be stated that, while this beach access point did encounter significant problems in respect to illegal beach driving, this dispute between eThekwini Municipality (who continued to allow so-called bonafide fishermen access to the beach after the beach driving regulations can into force) and the DEA has long since been resolved with access onto the beach now restricted, and limited to legitimate City operations, such a solid waste removal, lifesaving and other emergencies. The purpose of the temporary restaurant facility is not to control beach access, however, vehicular access onto the beach will be controlled, and security personnel will be in place to report illegal driving on the beach. In addition, signage of coastal regulations will be erected.

- The improvement of control in respect to people movement was disputed and retreat was suggested as the preferred method to halt further deterioration of the area. In response, it is noted that the proposed development does not propose to limit people movement, but rather direct and manage such movement via formalised access points and boardwalks; a system that was successfully implemented in the Durban Central Beachfront upgrade. Unsociable behaviour and squatting are the primary causes of deterioration with the current informal nature of access, with people movement and the parking of cars in sensitive dune areas being secondary. The development aims to guide people and increase appreciation and awareness to prevent further damage. In terms of retreat, people are likely to access the area regardless of the structures in place.

- It was proposed that a Joint Planning Committee be established with the City of Durban to discuss the future planning for the Virginia Node, including the Virginia Airport and Beachwood Golf Course. Although the formation of such a committee is not within the scope of this development proposal, eThekwini Municipality has duly acknowledged this recommendation, and the relevant department has indicated that it will consider the proposal for implementation.

Impact Ratings

The following parameters have been used to describe the impact/issues in this assessment:

1. Nature

This is a brief written statement of the environmental aspect being impacted upon by a particular action or activity.

2. Extent (E)

Extent refers to the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact.

- Site (1) – Within the construction site.
- Local (2) – Within a radius of 2 km of the construction site.
- Regional (3) – the scale applies to impacts on a provincial level and parts of neighbouring provinces.
- National (4) – the scale applies to impacts that will affect the whole South Africa.

3. Duration (D)

Duration indicates what the lifetime of the impact will be.

- Short-term (1) – less than 5 years.
- Medium-term (2) – between 5 and 15 years.
- Long-term (3) – between 15 and 30 years.
- Permanent (4) – over 30 years and resulting in a permanent and lasting change that will always be there.

4. Intensity (I)

Intensity describes whether an impact is destructive or benign.

- Very High (4) - Natural, cultural and social functions and processes are altered to extent that they permanently cease.
- High (3) - Natural, cultural and social functions and processes are altered to extent that they temporarily cease.
- Moderate (2) - Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way.
- Low (1) - Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.

5. Probability (P)

Probability describes the likelihood of an impact actually occurring.

- Improbable (1) - Likelihood of the impact materialising is very low.
- Possible (2) - The impact may occur.
- Highly Probable (3) - Most likely that the impact will occur.
- Definite (4) - Impact will certainly occur.

6. Cumulative (C)

In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

7. Significance (S)

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Score		Description
- (13 - 16 points)	NEGATIVE VERY HIGH	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
- (10 - 12 points)	NEGATIVE HIGH	These are impacts which individually or combined pose a significantly high negative risk to the environment. These impacts pose a high risk to the quality of the receiving environment. The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
- (7 - 9 points)	NEGATIVE MODERATE	These are impacts which individually or combined pose a moderate negative risk to the quality of health of the receiving environment. These systems would not generally require immediate action but the deficiencies should be rectified to avoid future problems and associated cost to rectify once in HIGH risk. Aesthetically and/or physically non-compliance can be expected over a medium term. In this case the impact is medium term, moderate in extent, mildly intense in its effect and probable. Mitigation is possible with additional design and construction inputs.
- (4 - 6 points)	NEGATIVE LOW	These are impacts which individually or combined pose a deleterious or adverse impact and low negative risk to the quality of the receiving environment, and may lead to potential health, safety and environmental concerns. Aesthetically and/or physical non-compliance can be expected for short periods. In this case the impact is short term, local in extent, not intense in its effect and may not be likely to occur. A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
0	NEUTRAL	Impact is neither beneficial nor adverse. These are impacts which cannot be classified as either positive or negative or classified and null and void in the case of a negative impact being adequately mitigated to a state where it no longer renders a risk.
+(4 - 6 points)	POSITIVE LOW	These are impacts which individually or combined pose a low positive impact to the quality of the receiving environment and health, and may lead to potential health, safety and environmental benefits. In this case the impact is short term, local in extent, not intense in its effect and may not be likely to occur. A low impact has no permanent impact of significance.
+(7 - 9 points)	POSITIVE MODERATE	These are impacts which individually or combined pose a moderate positive effect to the quality of health of the receiving environment. In this case the impact is medium term, moderate in extent, mildly intense in its effect and probable.
+(10 - 12 points)	POSITIVE HIGH	These are impacts which individually or combined pose a significantly high positive impact on the environment. These impacts pose a high benefit to the quality of the receiving environment and health, and may lead to potential health, safety and environmental benefits. In this case the impact is longer term, greater in extent, intense in its effect and highly likely to occur. The effects of the impact may affect the broader environment.
+ (13 - 16 points)	POSITIVE VERY HIGH	These are permanent and important beneficial impacts which may arise. Individually or combined, these pose a significantly high positive impact on the environment. These impacts pose a very high benefit to the quality of the receiving environment and health, and may lead to potential health, safety and environmental benefits. In this case the impact is long term, greater in extent, intense in its effect and highly likely or definite to occur. The effects of the impact may affect the broader environment.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Due to this being a largely linear nature of this proposed development, in respect to the upgrade of an existing access route and facilities designed to specifically suit the Virginia Beach frontage, the only alternative assessed is that of layout alternatives. Therefore only section B of each phase is completed, and not section A, which pertains to site alternatives.

b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

		Without Mitigation					With Mitigation				
IMPACTS	**Layout Alternative**	**E**	**D**	**I**	**P**	**S**	**E**	**D**	**I**	**P**	**S**
Vulnerability of development to coastal erosion	1	-1	-2	-4	-2	-9	-1	-1	-2	-1	-5
	2	-1	-2	-3	-2	-8	-1	-1	-2	-1	-5
	3	-1	-2	-4	-2	-9	-1	-1	-2	-1	-5
Impact on protected tree species, indigenous vegetation and associated fauna	1	-2	-1	-2	-3	-8	1	-1	1	-2	-1
	2	-2	-1	-2	-3	-8	-2	-1	0	-2	-5
	3	-2	-1	-2	-3	-8	-2	-1	0	-2	-5
Proliferation of invader plants in disturbed areas	1	-1	-1	-2	-2	-6	1	2	1	2	6
	2	-1	-1	-2	-2	-6	1	2	1	2	6

IMPACTS	Layout Alternative	Without Mitigation					With Mitigation				
		E	D	I	P	S	E	D	I	P	S
	3	-1	-1	-2	-2	-6	1	2	1	2	6
Improvement of public amenity, inclusive of aesthetics, public access, ablution facilities, services and infrastructure	1	2	2	2	4	10	2	2	2	4	10
	2	2	2	2	4	10	2	2	2	4	10
	3	2	2	2	4	10	2	2	2	4	10
Improved security	1	2	1	1	3	7	2	1	1	3	7
	2	2	1	1	3	7	2	1	1	3	7
	3	2	1	1	3	7	2	1	1	3	7
Development in mobile dune cordon	1	-1	-2	-2	-3	-8	-1	-2	-1	-1	-5
	2	-1	-2	0	0	-3	-1	-2	0	0	-3
	3	-1	-2	-2	-3	-8	-1	-2	-1	-1	-5
Potential increase in stormwater run-off	1	-1	-2	-1	-3	-7	2	2	2	2	8
	2	-1	-2	-2	-3	-8	1	2	1	2	6
	3	-1	-2	-2	-3	-8	1	2	1	2	6
Improved access for beachgoers	1	1	2	-1	-2	0	1	2	1	2	6
	2	1	2	-1	-2	0	1	2	1	2	6
	3	1	2	-1	-2	0	1	2	1	2	6
Increased job opportunities	1	2	2	0	3	7	2	2	0	3	7
	2	2	2	0	3	7	2	2	0	3	7
	3	2	2	0	3	7	2	2	0	3	7
AVERAGE	**1**					**-1.6**					**3.7**
	2					**-1.0**					**3.2**
	3					**-1.7**					**3.0**

IMPACTS	Layout Alternative	Without Mitigation E	D	I	P	S	With Mitigation E	D	I	P	S
Continued trampling, damage and degradation of dune vegetation due to informal access points and vagrants shelters within the vegetation	NG	-2	-4	-3	-4	-13	Motivation for this development has been adequately detailed, providing evidence that this upgrade is needed for the betterment of the area. It is therefore regarded that implementation of the development is a mitigation measure for this impact.				
Loss of public amenity, recreational opportunities and access due to deteriorating road and facilities, and increased crime	NG	-2	-2	-3	-3	-10					
Disjuncture between modern upgrade of Durban Central Beaches promenade and ageing under-utilised and unsafe area behind Virginia Airport	NG	-2	-4	-2	-2	-10					
Vulnerability of existing amenity to coastal erosion	NG	-1	0	1	-2	-2					
Continued crime and unsocial behaviour	NG	-2	-2	-2	-3	-9					
Loss of development opportunity	NG	-1	-2	0	-3	-6					
AVERAGE	**NG**					**-8.3**					

SUMMARY OF IMPACT RATINGS FOR THE PLANNING AND DESIGN PHASE PER ALTERNATIVE:

IMPACTS	Layout Alternative	Significance Score Without Mitigation	With Mitigation
Vulnerability of development to coastal erosion	1	-9	-5
	2	-8	-5
	3	-9	-5
Impact on protected tree species, indigenous vegetation and associated fauna	1	-8	-1
	2	-8	-5
	3	-8	-5
Proliferation of invader plants in disturbed areas	1	-6	6
	2	-6	6
	3	-6	6
Improvement of public amenity, inclusive of aesthetics, public access, ablution facilities, services and infrastructure	1	10	10
	2	10	10
	3	10	10
Improved security	1	7	7
	2	7	7
	3	7	7
Development in mobile dune cordon	1	-8	-5
	2	-3	-3
	3	-8	-5
Potential increase in stormwater run-off	1	-7	8
	2	-8	6
	3	-8	6
Improved access for beachgoers	1	0	6
	2	0	6
	3	0	6
Increased job opportunities	1	7	7
	2	7	7
	3	7	7
AVERAGE	**1**	**-1.6**	**3.7**
	2	**-1.0**	**3.2**
	3	**-1.7**	**3.0**
Continued trampling, damage and degradation of dune vegetation due to informal access points and vagrants shelters within the vegetation	NG	-13	
Loss of public amenity, recreational opportunities and access due to deteriorating road and facilities, and increased crime	NG	-10	
Disjuncture between modern upgrade of Durban Central Beaches promenade and ageing under-utilised and unsafe area behind Virginia Airport	NG	-10	
Vulnerability of existing amenity to coastal erosion	NG	-2	
Continued crime and unsocial behaviour	NG	-9	
Loss of development opportunity	NG	-6	
AVERAGE	**NG**	**-8.3**	

IN LIGHT OF THESE SCORE ABOVE IT CAN BE SEEN THAT <u>LAYOUT ALTERNATIVE TWO</u> EMERGES AS HAVING LESS OF AN IMPACT, BUT WITH SUITABLE MITIGATION, <u>LAYOUT ALTERNATIVE ONE</u> IS MORE BENEFICIAL.

Indicate mitigation measures to manage the potential impacts listed above:

The mitigation measures for the anticipated the Planning and Design Phase impacts for layout alternatives A1, A2, and A3 have been amalgamated to avoid repetition and for ease of reference and review. The planning and design phase related mitigation measures are thus common to all three layout alternatives. Where necessary, layout-specific mitigation measures are indicated.

Mitigation measures for the Planning and Design Phase:

• Only temporary structures to be installed seaward of the erosion line and natural defence (dune cordon) to be re-established; • Existing buildings (ablutions) should not be extended; • No services to be placed seaward of the erosion line; • Designs must incorporate soft engineering/ sea defence systems if deemed necessary; and • Sustainable, low impact, 'green', semi permanent buildings and sacrificial structures must be promoted.
• Ensure appropriate planning to avoid protected species and limit disturbance. More specifically, the dune forest thicket at the northern end of the access road, on the eastward side, should be completely avoided in any road widening activity. This can be accommodated (at this point) on the western side of the road into the *Brachylaena discolour* thicket. Widening of the access road on the westward side should not be permitted, to prevent clearance of dune thicket and forest and potential die back of protected species due to sea-spray exposure (Vegetation mapping report – Appendix D); • Road widening should not be permitted in the area between the refurbished parking at the airport runway and the existing ablutions as this will entail clearance of dune thicket; • Road widening for parking on the beachfront access road is only permitted on the eastern or seaward side to prevent removal and or damage to the dune thicket and forest vegetation; • Permeability must be maintained to allow for fauna to remain in the coastal dune habitat, e.g. fencing must be permeable and footpaths raised and breaks in vegetation and dune habitat must be avoided; • Implement an approved cutting plan for the access road; and • Prevent informal access to forest and fore dunes (including vagrants and visitors).
• Invasive plants eradication must be ensured; • Implement an Invasive Alien Plants (IAPs) eradication and management programme; and • Ensure that disturbance is kept to a minimum.
• Strict adherence to an approved Environmental Management Programme (EMPr) during construction; • A maintenance plan must be developed which includes human and financial resources; and • Maintenance requirements must be accounted for in the annual budget of the relevant municipal departments.
• Area of construction must be kept to minimum; • Only temporary structures to be installed;

• Preferential design should include the use of raised structures as far as practically possible; • Orientation of structures must take into account of prevailing wind directions and sediment movement; and • Stabilisation of dunes by means of rehabilitation/re-vegetation.
• Overall stormwater runoff is reduced due to rehabilitation of the dunes, however, adequate stormwater management must be planned for; • A Stormwater Management Plan must be developed to ensure adequate treatment of runoff from the access road and buildings to prevent erosion and pollution; and • Designs should include "Working with Nature"/Sustainable Urban Drainage techniques, as well as rainwater harvesting.
• Formal access points to be consolidated; • Informal access points to be rehabilitated; • Vehicular beach access to be limited to authorised personnel only; • Formal traffic signage and traffic markings must be implemented; and • Traffic calming by means of speed humps must be provided along the access road.
• Labour opportunities for previously disadvantaged persons and local communities should be ensured (during construction as well as operation).

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

Due to this being a largely linear development proposing the upgrade of an existing access route and facilities designed to specifically suit the Virginia Beach frontage, the only alternative assessed is that of layout alternatives. Therefore only section B of each phase is completed, and not section A which pertains to site alternatives.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

		Without Mitigation					With Mitigation				
IMPACTS	**Layout Alternative**	**E**	**D**	**I**	**P**	**S**	**E**	**D**	**I**	**P**	**S**
Potential solid waste pollution	1	-2	-1	-2	-3	-8	-2	-1	-1	-2	-6
	2	-2	-1	-2	-3	-8	-2	-1	-1	-2	-6
	3	-2	-1	-2	-3	-8	-2	-1	-1	-2	-6
Potential water pollution (ground, surface and marine)	1	-2	-1	-3	-2	-8	-1	-2	-1	-2	-6
	2	-2	-1	-3	-2	-8	-1	-2	-1	-2	-6
	3	-2	-1	-3	-2	-8	-1	-2	-1	-2	-6
Impacts on air quality (vehicle emissions, dust generation- ripping of surfaces and demolitions, delivery and mixing of materials)	1	-1	-1	-1	-2	-5	-1	-1	0	-1	-3
	2	-1	-1	-1	-2	-5	-1	-1	0	-1	-3
	3	-1	-1	-1	-2	-5	-1	-1	0	-1	-3
Destruction and/or disturbance to coastal habitat, including indigenous vegetation, protected tree species and associated fauna	1	-2	-1	-2	-3	-8	-1	-1	-1	-2	-5
	2	-2	-2	-2	-3	-8	-1	-1	-1	-2	-5
	3	-2	-1	-2	-3	-8	-1	-1	-1	-2	-5

IMPACTS	Layout Alternative	Without Mitigation					With Mitigation				
		E	D	I	P	S	E	D	I	P	S
Improvement of biodiversity and ecological integrity of coastal ecosystem as a result of dune rehabilitation	1	2	2	3	4	11	2	2	3	4	11
	2	1	2	2	4	9	1	2	2	4	9
	3	1	2	2	4	9	1	2	2	4	9
Vulnerability to coastal processes and erosion	1	-1	-2	-4	-2	-9	-1	-1	-2	-1	-5
	2	-1	-2	-3	-2	-8	-1	-1	-2	-1	-5
	3	-1	-2	-4	-2	-9	-1	-1	-2	-1	-5
Increased stormwater runoff from the introduction of impervious areas	1	-1	-2	-1	-3	-7	2	2	2	2	8
	2	-1	-2	-2	-3	-8	1	2	1	2	6
	3	-1	-2	-2	-3	-8	1	2	1	2	6
Potential disturbance (noise, traffic) to and compromised safety of beach goers, road users and surrounding land owners ; Disruption of motorised traffic on M4 Highway and Fairway Road and potential decrease in road conditions (safety, road surface)	1	-2	-1	-2	-3	-8	-1	-1	-1	-2	-5
	2	-2	-1	-2	-3	-8	-1	-1	-1	-2	-5
	3	-2	-1	-2	-3	-8	-1	-1	-1	-2	-5
Possible disturbance to infrastructure (piping, electrical cabling, old soak-aways)	1	-1	-1	-3	-2	-7	-1	-1	0	-2	-4
	2	-1	-1	-3	-2	-7	-1	-1	0	-2	-4
	3	-1	-1	-3	-2	-7	-1	-1	0	-2	-4
Potential increase in crime due to reduced use of the area during construction	1	-2	-1	-3	-2	-8	-2	-1	-1	-2	-6
	2	-2	-1	-3	-2	-8	-2	-1	-1	-2	-6
	3	-2	-1	-3	-2	-8	-2	-1	-1	-2	-6
Loss of amenity, parking and aesthetic	1	-1	-1	-3	-3	-8	-1	-1	-2	-2	-6

IMPACTS	Layout Alternative	Without Mitigation E	D	I	P	S	With Mitigation E	D	I	P	S
appeal during construction	2	-1	-1	-3	-3	-8	-1	-1	-2	-2	-6
	3	-1	-1	-3	-3	-8	-1	-1	-2	-2	-6
AVERAGE	**1**					**-5.9**					**-2.5**
	2					**-6.1**					**-2.8**
	3					**-6.2**					**-2.8**
Status quo remains, i.e. ongoing neglect and deterioration	NG	-2	-4	-3	-4	-13					
AVERAGE	**NG**					**-13**					

SUMMARY OF IMPACT RATINGS FOR THE CONSTRUCTION PHASE PER ALTERNATIVE:

IMPACTS	Layout Alternative	Significance Score Without Mitigation	With Mitigation
Potential solid waste pollution	1	-8	-6
	2	-8	-6
	3	-8	-6
Potential water pollution (ground, surface and marine)	1	-8	-6
	2	-8	-6
	3	-8	-6
Impacts on air quality (vehicle emissions, dust generation- ripping of surfaces and demolitions, delivery and mixing of materials)	1	-5	-3
	2	-5	-3
	3	-5	-3
Destruction and/or disturbance to coastal habitat, including indigenous vegetation, protected tree species and associated fauna	1	-8	-5
	2	-8	-5
	3	-8	-5
Improvement of biodiversity and ecological integrity of coastal ecosystem as a result of dune rehabilitation	1	11	11
	2	9	9
	3	9	9
Vulnerability to coastal processes and erosion	1	-9	-5
	2	-8	-5
	3	-9	-5
Increased stormwater runoff from the introduction of impervious areas	1	-7	8
	2	-8	6
	3	-8	6
Potential disturbance (noise, traffic) to and compromised safety of beach goers, road users and surrounding land owners; Disruption of motorised traffic on M4 Highway and Fairway Road and potential decrease in road conditions (safety, road surface)	1	-8	-5
	2	-8	-5
	3	-8	-5
Possible disturbance to infrastructure (piping, electrical cabling, old soakaways)	1	-7	-4
	2	-7	-4
	3	-7	-4
Potential increase in crime due to reduced use of the area during construction	1	-8	-6
	2	-8	-6
	3	-8	-6
Loss of amenity, parking and aesthetic appeal during construction	1	-8	-6
	2	-8	-6
	3	-8	-6
AVERAGE	**1**	**-5.9**	**-2.5**
	2	**-6.1**	**-2.8**
	3	**-6.2**	**-2.8**
Status quo remains. i.e. Ongoing neglect and deterioration	NG	-13	
AVERAGE	**NG**	**-13**	

IN LIGHT OF THESE SCORES ABOVE, IT CAN BE SEEN THAT <u>LAYOUT ALTERNATIVE ONE</u> EMERGES AS HAVING THE LEAST IMPACT WITH OR WITHOUT MITIGATION

Indicate mitigation measures to manage the potential impacts listed above:

The mitigation measures for the anticipated Construction Phase impacts for layout alternatives A1, A2, and A3 have been amalgamated to avoid repetition and for ease of reference and review. The construction related mitigation measures are thus common to all three layout alternatives. Where necessary, layout-specific mitigation measures are indicated.

Mitigation measures for the Construction Phase:

- Enforce a clean site policy such that all waste material is removed from the site, dunes and beach, and that waste does not become buried by mobile sand or disposed of in the forested areas;
- Sufficient general waste disposal bins will be made available for employees to use throughout the area and bins must be emptied regularly;
- Where possible waste should be recycled or sold to the community;
- Waste may be temporarily stored on site (up to 30 days) before being appropriately disposed of or collected by a waste disposal company. Proof must be retained;
- General waste and building rubble will be disposed of at an approved waste disposal facility, and proof of disposal must be retained;
- All temporary soil stockpiles, litter and rubble must be removed on completion of construction activities; and
- No dumping of waste material in surrounding open areas.

- Sufficient chemical toilets must be provided in all areas where construction is taking place. These must be emptied regularly (weekly);
- Sanitation facilities shall be located within 100 m from any point of work, but not closer than 50 m from the high water mark (HWM);
- Aggregate stockpiles must be located at least 10m away from stormwater channels and drains;
- Stockpiles must be suitably covered during periods of high rainfall;
- All plant and vehicles must be in good working order to prevent oil leaks etc. and contamination;
- No repairs may be undertaken beyond the contractor site camp;
- All hazardous substances must be stored on an impervious surface in a designated bunded area, able to contain 110% of the total volume of materials stored at any given time;
- An absorbent spill kit and storage containers must be available to handle spillages;
- Employees and contractors must be trained on the correct handling of spillages and precautionary measures to minimise potential spillages;
- All spillages must be recorded and reported to the responsible person;
- An Emergency Preparedness and Response Plan will be developed and implemented should an incident occur;
- Access to storage areas on site must be restricted to authorised employees only; and
- Contractors will be held liable for any environmental damages caused by spillages.

- Dust suppression measures need to be implemented on site to reduce the liberation of dust it is recommended that water be sprayed on the road when and where applicable; and
- There should be strict speed limits on dusty roads to prevent the liberation of dust into the atmosphere.

• Vegetation clearing is to be kept to a minimum and pre-agreed with the responsible person on site and under the supervision of an Environmental Compliance Officer (ECO); • Vegetation clearance should be restricted to the actual road servitude and access paths only; • No protected trees are to be removed. Where possible, removed vegetation could be replanted or used as mulch, during dune rehabilitation; • All construction activities should be strictly limited to the construction servitude area; and • All earthworks shall be undertaken in such a manner so as to minimize the extent of any impacts.
• Install permeable fencing, prevent informal access to forest and fore dunes (vagrants, visitors); and • Enforcement against illegal harvesting of fauna and flora.
• All machinery to be withdrawn to a safe level during extreme tidal surges and marine storms; • No equipment, plant or hardware shall be left on the beach; • All material and waste shall be removed from the beach on a daily basis; • No operations shall occur below the HWM, and thus no machinery may operate below this level; and • Develop an appropriate contingency plan for extreme climatic and marine conditions the during construction phase.
• Stormwater management must be carefully designed to ensure adequate treatment of runoff from the access road and buildings to prevent erosion and pollution; and • Every effort must be made to prevent soil and water contamination, as well as contamination of stormwater runoff.
• Proper warning signage to make people aware of the activities within designated areas must be provided; • All construction activities should be undertaken in a phased approach and according to designated working hours between the hours of 07:00 – 17:00 on weekdays and 7:30 – 13:00 on Saturdays; • No construction activities may be undertaken on Sunday; • All earth-moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability; • A complaints register must be made available and should any complaints be received, these should be logged in the complaints register and reported to the responsible person on site; • All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No 85 of 1993); • Where necessary, traffic control must be employed; • Adequate road safety signage and notices must be erected to inform road users of construction vehicles; • Speeds of truck and heavy vehicles transporting materials must be regulated; and • Damaged roads must be rehabilitated post-construction.
• Existing ablution facilities, services lines and other infrastructure must be proofed before excavation or construction.
• Maintain security of the site camp and construction area and ensure adequate lighting.
• Construction should be undertaken in a phased approach and outside of peak holiday periods, where possible, and to enable uninterrupted access to and use of the beach.

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Due to this being a largely linear development proposing the upgrade of an existing access route and facilities designed to specifically suit the Virginia Beach frontage, the only alternative assessed is that of layout alternatives. Therefore only section B of each phase is completed, and not section A, which pertains to site alternatives.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

		Without Mitigation					With Mitigation				
IMPACTS	**Layout Alternative**	**E**	**D**	**I**	**P**	**S**	**E**	**D**	**I**	**P**	**S**
Impact on dune vegetation, protected trees species, fauna and coastal habitat	1	-1	-2	-2	-2	-7	0	-2	2	-2	-2
	2	-1	-2	-2	-2	-7	-1	-2	1	-2	-4
	3	-1	-2	-2	-2	-7	-1	-2	1	-2	-4
Potential damage/loss of vegetation in rehabilitated areas for various reasons (vandalism, poor maintenance, by birds, coastal processes, etc.)	1	-1	-2	-3	-2	-8	-1	-2	-2	-2	-7
	2	-1	-2	-3	-2	-8	-1	-2	-2	-2	-7
	3	-1	-2	-3	-2	-8	-1	-2	-2	-2	-7
Potential establishment / re-establishment of invader weeds and plant species	1	-1	-2	-3	-3	-9	1	2	1	-1	3
	2	-1	-2	-3	-3	-9	1	2	1	-1	3
	3	-1	-2	-3	-3	-9	1	2	1	-1	3

IMPACTS	Layout Alternative	Without Mitigation					With Mitigation				
		E	D	I	P	S	E	D	I	P	S
Increased ambient noise levels and disturbance to nearby residents and landowners	1	-2	-2	-2	-3	-9	-1	-2	0	-1	-4
	2	-2	-2	-2	-1	-7	-1	-2	0	0	-3
	3	-2	-2	-2	-3	-9	-1	-2	0	-1	-4
Increased pollution	1	-1	-2	-2	-2	-7	-1	-2	-1	-1	-5
	2	-1	-2	-2	-2	-7	-1	-2	-1	-1	-5
	3	-1	-2	-2	-2	-7	-1	-2	-1	-1	-5
Possible congestion and safety issues associated with increased traffic	1	-1	-2	-1	-2	-6	-1	-2	-1	-1	-5
	2	-1	-2	-1	-2	-6	-1	-2	-1	-1	-5
	3	-1	-2	-1	-2	-6	-1	-2	-1	-1	-5
Improved security	1	2	2	2	2	8	2	2	2	2	8
	2	2	2	2	2	8	2	2	2	2	8
	3	2	2	2	2	8	2	2	2	2	8
Improvement and expansion of beach amenity and access	1	2	2	2	3	9	2	2	2	3	9
	2	2	2	2	3	9	2	2	2	3	9
	3	2	2	2	3	9	2	2	2	3	9
Opportunities to educate and increase knowledge regarding coastal dune systems	1	2	2	1	2	7	2	2	1	2	7
	2	2	2	1	2	7	2	2	1	2	7
	3	2	2	1	2	7	2	2	1	2	7
AVERAGE	**1**					**-2.4**					**0.4**
	2					**-2.2**					**0.3**

IMPACTS	Layout Alternative	Without Mitigation					With Mitigation				
		E	D	I	P	S	E	D	I	P	S
	3					**-2.4**					**0.2**
Status quo remains. i.e. ongoing neglect and deterioration	NG	-2	-4	-3	-4	-13					
AVERAGE	**NG**					**-13**					

SUMMARY OF IMPACT RATINGS FOR THE OPERATIONAL PHASE PER ALTERNATIVE:

IMPACTS	Layout Alternative	Significance Score Without Mitigation	With Mitigation
Impact on dune vegetation, protected trees species, fauna and coastal habitat	1	-7	-2
	2	-7	-4
	3	-7	-4
Potential damage/loss of vegetation in rehabilitated areas for various reasons (vandalism, poor maintenance, by birds, coastal processes, etc.)	1	-8	-7
	2	-8	-7
	3	-8	-7
Potential establishment / re-establishment of invader weeds and plant species	1	-9	3
	2	-9	3
	3	-9	3
Increased ambient noise levels and disturbance to nearby residents and landowners	1	-9	-4
	2	-7	-3
	3	-9	-4
Increased pollution	1	-7	-5
	2	-7	-5
	3	-7	-5
Possible congestion and safety issues associated with increased traffic	1	-6	-5
	2	-6	-5
	3	-6	-5
Improved security	1	8	8
	2	8	8
	3	8	8
Improvement and expansion of beach amenity and access	1	9	9
	2	9	9
	3	9	9
Opportunities to educate and increase knowledge regarding coastal dune systems	1	7	7
	2	7	7
	3	7	7
AVERAGE	**1**	**-2.4**	**0.4**
	2	**-2.2**	**0.3**
	3	**-2.4**	**0.2**
Status quo remains. i.e. ongoing neglect and deterioration	NG	-13	
AVERAGE	**NG**	**-13**	

IN LIGHT OF THESE SCORE ABOVE IT CAN BE SEEN THAT <u>LAYOUT ALTERNATIVE 2</u> EMERGES AS HAVING LESS OF AN IMPACT, BUT WITH SUITABLE MITIGATION, <u>LAYOUT ALTERNATIVE 1</u> IS MOST BENEFICIAL.

Indicate mitigation measures to manage the potential impacts listed above:

The mitigation measures for the anticipated the operational phase impacts for layout alternatives A1, A2, and A3 have been amalgamated to avoid repetition and for ease of reference and review. The operational phase related mitigation measures are thus common to all three layout alternatives. Where necessary, layout-specific mitigation measures are indicated.

Mitigation measures for the Operational Phase:

• Install fencing to prevent unauthorised access; • Install informative signage to educate visitors; and • Implement ongoing dune maintenance programme to ensure successful rehabilitation.
• Implement an on-going IAP eradication and management programme.
• Noise levels are not anticipated to rise above that currently experienced and with current buffers in place (vegetation, M4 Highway). However, responsible driving and use of vehicles must be practiced; and • Sound dampening and deflection must be implemented wherever possible.
• Additional waste bins must be installed along the road side and on the beach; • Implement a waste management plan which incorporates the monitoring, collecting and removal of litter; and • The area must be regularly patrolled by municipal staff for the collection of waste.
• Adequate road safety signage must be erected; • Visitors must exercise caution on the road and educate children to do the same; • Pedestrian crossings must be provided; and • Traffic regulation may be required during peak hours and special events.
• A maintenance plan must be developed which includes human and financial resources; and • Maintenance requirements must be accounted for in the annual budget of the relevant municipal departments.
• Installation of informative and educational signage regarding coastal ecosystems and processes.

2.4. IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING OR CLOSURE PHASE

No impacts have been assessed for this section as the closure phase is not envisaged in the foreseeable future of this development; however the section below provides mitigation measures for rehabilitation of the construction area once completed. The semi-permanent nature of the beach boma ensures that operation can be discontinued by the Municipality should it wish to do so without any impacts associated with decommissioning occurring.

The traditional definition of rehabilitation aims at returning the land in a given area to some degree of its former state after a particular process has resulted in its damage. A large component of this project entails the rehabilitation of the pioneer dune cordon (for all three layout alternatives) through re-shaping and replanting of appropriate dune vegetation. Alternative A1 incorporates rehabilitation on a greater scale whereby approximately half of the existing road access will be ripped and removed, the dune reshaped and replanted with appropriate vegetation.

Dune rehabilitation should be undertaken in accordance with the methods successfully employed for recreation and rehabilitation of dunes along the eThekwini Central Beaches Promenade from Ushaka Marine World to Blue Lagoon.

Recommended rehabilitation measures include the following:

Method	Equipment
Remove all construction material and litter from the area where construction has been completed, as well as the broader site.	To be undertaken by hand.
All hardened services laid down for construction purposes and not required as part of the development are to be ripped and removed, and spread with topsoil.	Tractor-Loader-Backhoe (TLB) to undertake the main de-compacting and loading activity, and all rubble to be loaded into a tipper truck and recycled of site or disposed at a registered landfill facility.
Pedestrian access and vehicular access to be restricted/controlled and formalised prior to starting of re-vegetation to minimise any disturbance to the area while young vegetation is starting to establish	To be achieved through the installation of suitable fencing and signage.
Topsoil that may removed and stockpiled during construction must be re-applied to the area to undergo rehabilitation. The depth of the topsoil layer to be applied depends on the natural depth of topsoil in the area, and the amount of topsoil that may have been lost during construction.	Topsoil must be applied from the topsoil stockpiled during construction.

Method	Equipment
Mulching will be required to stabilise mobile sands for the successful re-vegetation of the dunes. Brush packing /screening is also essential to minimise wind-blasting of newly planted vegetation	Mulching may be delivered to the area and initially distributed by a TLB. Thereafter, mulch must be spread manually using rakes and by hand. A biodegradable geotextile like Geojute cloth in place of and/or with mulch could possibly be utilised.
The types of grasses and plant species to be planted must be supervised by an experienced coastal horticulturalist or dune rehabilitation expert (e.g. Keith Walters or Elsa Pooley).	The vegetation mix should consist of pioneer grass and dune species of the area, and will also depend on what species are commercially available during the season required.
The areas which have been seeded and planted with seedling must be regularly watered directly after seeding until the vegetation cover becomes established. Watering is to be done in a manner that ensures that no erosion of the topsoil and seed mix takes place.	A sacrificial 25mm HDPE pipe with quick coupler valves/sprinkler heads should be installed to minimise the dragging of hosepipes over any newly planted material.
If the vegetation has not established after a period of two months after seeding and planting, the areas should be reseeded/replanted.	As above.
All alien vegetation is to be appropriately removed and disposed of. Alien species that have been encountered within the proposed project area include: *Anredera cordifolia* (Anredera), *Arundo donax* (Spanish reed), *Chromolaena odorata* (Triffid weed), *Lantana camara* (Lantana), *Mirabilis jalapa* (Four o' clock), *Opuntia littoralis* (Prickly pear cactus), *Poinsettia cyathophora* (Texas Poinsettia) and *Solanum seaforthianum* (Brazilian night shade).	Removal will to a large extent be done by hand. Saws may be necessary in certain cases and specific herbicides may be required (if used, the use of these must be strictly controlled). This material may be used as mulch but must be monitored to reduce the sprouting of alien vegetation.
The upgraded Virginia Beach front must be regularly inspected during the operational phase and alien vegetation that has re-emerged must be removed / follow-up treatment applied.	On-going alien vegetation removal programme (beyond the scope of the project).
During the operational phase, overgrown vegetation should be carefully trimmed back to prevent unnecessary damage to protected species and other coastal forest species.	Trimming to be undertaken by the eThekwini Parks and Recreational Department, or by a specialised tree-felling/garden maintenance company.
Educational signage needs to be erected to keep off the dunes as soon as the area is no longer under construction, or as rehabilitation progresses.	

2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

These monitoring and auditing recommendations are applicable to all three layout alternatives

Audit

- The draft EMPr must be amended to reflect the approved alternative.
- An Environmental Control Officer (ECO) will be appointed to ensure the implementation of the measures outlined in the Basic Assessment Report, inclusive of plans and layouts and the comments contained in the EMPr.
- Site inspections and audits will be carried out as per frequency indicated in the EMPr by a suitably qualified ECO. Monthly audits reports submitted to the Department for consideration is recommended.
- During the construction phase, environmental incidents and complaints from I&AP's will be investigated, recommendations will be made to mitigate and prevent further impacts and the incidents reported, where relevant, to the Applicants and/or Authorities.

Items to be monitored during construction

- All waste to be disposed at a registered landfill.
- Limit construction activities resulting in noise generation to day time only.
- Limit dust generation and implement dust suppression if required.
- Minimise usage of natural resources through prevention of wastage.
- Demarcate no-go sensitive areas and protected tree species.
- Demarcate construction sites / areas and prevent public access to these sites.
- Monitor complaints, investigate and implement rectifying measures.
- Monitor areas for pollution and degradation. Ensure implementation of identified rectifying measures.
- Compliance of EMPr and Environmental Authorisation by contractors.

Items to be ensured during operation

- Indigenous re-vegetation as per EMPr.
- Rehabilitation of any damage to sensitive areas, including potential erosion from construction activities or storm water run-off.
- Ensure appropriate annual budgets for maintenance and implement appropriate maintenance.
- Ensure safety of pedestrians by education of commuters and pedestrians on road safety aspects.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative Sites:

- There are no alternatives to the site as the intention is to upgrade the Virginia Beach front area specifically.
- No fatal flaws were identified during the Basic Assessment process thus far, prior to comments received through the Public Participation Process.

Alternative Layout A1 (preferred alternative)

The proposed development has been purposefully planned to enable the upgrade of the beach/coastal public amenity in a manner that imposes limited negative environmental impacts, given the sensitivity of the coastal environment, but also focuses largely on rehabilitation of the dune cordon, inclusive of the foredunes and dune thicket / forest.

As the majority of the site occurs along an existing access track and within a previously disturbed area, limited vegetation clearance will be required. This will be limited to the widening of the access road on the seaward side or trimming of overgrown vegetation, if clearing is not required. However, this will not result in the detrimental loss of coastal forest. In addition, the coastal forest vegetation will be ensured protection through the installation of additional fencing, as a means to improve security in the area, as well as the removal of encroaching alien invasive vegetation. Moreover, for this preferred layout, approximately half of the existing access route will be rehabilitated to coastal thicket/forest (involving ripping of existing hardened surfaces, reformation of the dune topography and revegetation), while the primary dunes will be similarly reconstructed to enhance the ecological functioning of a natural sea defence and maintaining biodiversity.

Although a large portion of the proposed upgrade and development area are at risk to coastal erosion and the predicated long term impacts of sea level rise, the main service structure (rustic open-air restaurant) will be entirely temporary in nature and the proposed beach access routes will be constructed of wood and will therefore be largely sacrificial. Furthermore, the footprint of existing structures (ablutions) will not be extended and no new buildings will be constructed. In terms of other coastal processes, namely, mobile dune formation, the re-establishment, stabilisation and rehabilitation of the foredunes will eventually result in mobile dune processes occurring further seaward and thus will be unhindered by the temporary development. Given the impermeable condition of the access track in its current state, the generation of stormwater run-off is not anticipated to reach unmanageable or detrimental volumes. Nonetheless, this will be mitigated by the extensive dune rehabilitation, which ameliorates stormwater runoff and promotes percolation, in combination with the sustainability-driven design concept for the proposed development and implementation of an effective stormwater management system.

Most of the anticipated impacts will occur during the construction phase, and will therefore be for a limited period and can be adequately mitigated to have a low or insignificant impact. Mitigation measures for the planning and design and operational phases also ensures that potential impacts can be lowered to acceptable levels. Although some impacts relating to increased traffic volumes are anticipated, the current capacity, design and safety aspects of Fairway Road and the un-named beach access road are deemed adequate to cope with traffic influx without undue road degradation or motor vehicle accidents.

The draft EMPr (Appendix F) has been developed to provide adequate mitigation measures for all phases of the proposed development, and will include specialist recommendations and stakeholder requirements, following the Public Participation Process.

Alternative Layout A2

Alternative layout A2 falls within the same existing access track and previously disturbed area as the preferred alternative layout A1. However the majority of the existing access track will be upgraded (not re-vegetated and rehabilitated), and the lease area is proposed to be located in the existing turning circle/car park at the northern extent of the site, landward of the eThekwini coastal erosion line.

The impact assessment above shows this layout imposing [marginally] greater environmental impact during the Construction Phase, but [marginally] lower environmental impact in terms of the Planning/Design and Operational phases. This is due to the position of the main lease area outside of the mobile dune zone and behind the coastal erosion line, and thus less vulnerable to coastal erosion, as well as having the least noise disturbance from the buffering effect of the surrounding coastal forest and greater distance from potentially affected landowners. Despite this, alternative layout A1 remains the preferred alternative due to the magnitude of dune rehabilitation to take place, and greater associated benefits with mitigation in place.

As with the preferred alternative A1, most of the impacts will occur during the construction phase, and can be adequately mitigated to have a low or insignificant impact. The draft EMPr (Appendix F) has been developed to provide adequate mitigation measures for all phases of the proposed development and will include specialist recommendations and stakeholder requirements.

Alternative Layout A3

Alternative layout A3 falls within the same existing access track and previously disturbed area as the preferred alternative layout A1, with the main lease area still located at the southern extent of the site. However, the entire existing access track, including the existing northern turning circle/car park will be upgraded (not re-vegetated and rehabilitated).

Alternative layout A3 remains the least preferred alternative due to the [marginally] higher negative impacts associated with all three phases. In addition, this layout offers the least amount of benefits even with mitigation measures in place.

As with the alternative layouts A1 and A2, most of the impacts will occur during the construction phase, and can be adequately mitigated to have a low or insignificant impact. The EMPr (Appendix F) has been developed to provide adequate mitigation measures for all phases of the proposed development and will include specialist recommendations and stakeholder requirements.

No-go alternative (compulsory)

Retaining the status quo of the study area will result in continued neglect and decline of the area, which includes numerous negative ecological and socio-economic impacts.

From consultations with several stakeholders thus far, and from personal observations of the area, unsocial behaviour (trading of drugs, drug abuse, prostitution, vandalism, crime) is rife. This on occasion extends to patrons of the adjacent Beachwood Golf Course and Virginia Airport. Consequently, the number of visitors to the area is low. In addition, portions of the coastal dune forest and foredune have been damaged through vagrant dwellings and informal access routes.

In terms of the NEM: ICM Act, eThekwini is duty-bound to provide both access and appropriate amenity to coastal resources, and the proposed project would certainly help to fulfil these requirements. The upgrade of this area will facilitate public access to the coastal zone and the provision of public amenity, contribute to a safer and more meaningful use of this public open space, while simultaneously conserving and rehabilitating the dune environment.

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAP sufficient to make a decision in respect of this report? If "NO", please contact the KZN Department of Economic Development, Tourism & Environmental Affairs regarding the further requirements for your report.	YES	NO

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

General EAP Statement and Recommendation of EAP:

All impacts identified during the planning and design, construction and operation phases can be adequately mitigated. Impacts identified and addressed through mitigation included: vegetation damage/loss, coastal erosion, stormwater management, waste management, and traffic.

The proposed development will have an impact of **low negative, medium-term significance** (albeit substantially limited) on the receiving environment, based largely on the semi-permanent (medium-term) nature of the completed restaurant establishment in the proposed lease area. In order for the proposed development to be economically viable, the EAP acknowledges the need to extend the facility footprint to approximately 1000m^2, to contain a 100m^2 main service structures and the remaining area for tables and seating.

It is imperative that clearing and trimming of indigenous coastal dune plant species be strictly controlled and kept to a minimum. The EAP concurs with various I&APs comments which state that the beachfront parking should be located on the seaward side as opposed to the western side; the latter necessitating infringement into the coastal forest vegetation with damage and/or removal. In addition to this, widening of the un-named beach access road between the parking at the head of the runway and the existing ablutions is not deemed necessary. In terms of stormwater management, runoff from the proposed development and beach access must be adequately and appropriately managed. The EAP does not support the use of septic tanks as the method of sewage disposal in this sensitive coastal area and recommends the use of a conservancy tank system to prevent pollution and public health and safety risks.

The development proposes extensive dune rehabilitation and rejuvenation of the beach amenity, and proposes to employ environmentally sound measures which ensure well-rounded sustainability.

In addition, the implementation of an effective stormwater management system should prevent contaminated run-off and erosion impacts on the surrounding coastal forest and marine environment.

The upgrade of the Virginia Beach coastal zone and construction of the Virginia Beach so-called 'Boma' will contribute to the up-liftment of the area in the following ways:

- Coastal dune habitat will be reinstated and conserved, and will serve to enhance natural sea defence, coastal biodiversity and aesthetics of the area;
- Visitors will have formalised, safe and improved coastal access, and a more pleasant beach experience along the Durban coastline;
- The area will become a tourist attraction and a source of revenue generation as a result of the improved beach amenity and restaurant facility;
- Construction and operation of the restaurant facility will create job opportunities;
- Unsocial behaviour and activities will be discouraged and markedly reduced, in part by the stewardship of the proposed restaurant lease holder and patrons and in part by the improved security;
- The safety of visitors will be increased through improved lighting and security measures;
- Traffic flow will be controlled and parking facilities formalised; and

- Visitors will be educated on the structure and functional importance of coastal vegetation.

Based on the status quo and the benefits that can be gained from this upgrade, it is the EAP's recommendation that alternate layout one (A1) be authorised by the DED TEA.

The following may be considered for inclusion in the environmental authorisation:

- A stringent tender document must be produced, advocating responsible and sustainable development concepts which includes strict guidance in respect to the nature of development that can take place;
- A stringent and detailed contractual lease agreement must be developed and entered into by eThekwini Municipality and the successful developer/lessee, and contain strict controls with regards to waste management, crime prevention, pollution prevention and overall maintenance;
- The draft EMPr and conditions therein should be adhered to;
- An ECO must be appointed and all contractor staff must be trained on the (to be updated) EMPr and Environmental Authorisation requirements prior to commencement of activities;
- Apart from the dune rehabilitation, sea defence structures may not be installed (e.g. retaining walls, etc.);
- No new permanent buildings may be constructed seaward of the coastal erosion line, or the footprints of existing buildings be extended;
- No additional services are to be placed seaward of the erosion line;
- The design concept should favour sustainable, low impact, 'green', semi-permanent / temporary buildings and sacrificial structures;
- Only temporary and sacrificial structures to be installed seaward of the erosion line;
- Orientation of structures must take into account prevailing wind directions and sediment movement;
- Formal access points are to be consolidated, while informal access paths to both dunes and forest must be rehabilitated and future access prevented.
- No-go areas and protected tree species must be demarcated prior to construction and be strictly avoided;
- Permanent fencing must permeable and boardwalks must be raised, to allow for fauna to migrate within the habitat;
- Dune rehabilitation must be undertaken according to the approved rehabilitation programme, supervised by an appointed dune rehabilitation expert, and adequately maintained thereafter;
- An approved stormwater management plan must be implemented and must not negatively affect the integrity of the dune system;
- A vegetation cutting plan must be developed and approved for the controlled trimming of coastal forest vegetation lining the development area and access road;
- Alien weeds and invader species within vicinity of construction must be removed and only indigenous vegetation may be introduced and managed accordingly;
- The re-establishment of alien weeds and invader plants must be monitored and the required eradication programme implemented; Environmental monitoring must be conducted during construction and incidents recorded and addressed accordingly. Attached as Appendix F;
- Construction activities must be undertaken according to designated working hours between 07h00 to17h00 on weekdays, and 07h30 to 13h00 on Saturdays. No construction activities to be undertaken on Sundays;
- Construction should be undertaken in a phased approach to enable uninterrupted access to and use of the beach;
- Existing ablution structures, services lines and other infrastructure must be proofed before

excavation or construction; and

- The Applicant and the appointed Contractor will be held liable for any environmental damages caused by spillages.

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site Plan(s)

Appendix B: Photographs

Appendix C: Facility Impression(s)

Appendix D: Specialist Declaration & Report

Appendix E: Public Participation Process

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information