

# BASIC ASSESSMENT REPORT



## environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**

14/12/16/3/3/1/1687

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

### Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily 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 typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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 may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

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14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

Note: A Botanical, Heritage and Traffic Specialist were appointed, and their assessments are attached to this report as **Appendices D1 to D4**.

### 1. PROJECT DESCRIPTION

#### a) Describe the project associated with the listed activities applied for

##### Project Locality:

The Koeberg Nuclear Power Station (KNPS) is located approximately 30 km north of Cape Town's CBD along the R27 West Coast Road and approximately 10 km southwest of the town of Atlantis, Western Cape (refer to Figure 1). The KNPS (and surrounding Koeberg Nature Reserve) is situated within and under the jurisdiction of the City of Cape Town Metropolitan Municipality. The KNPS is operated by Eskom Holding SOC Limited (Eskom) and acts as the major supplier of electricity for this province. The KNPS is located on Cape Farm Duynefontyn No. 1552.

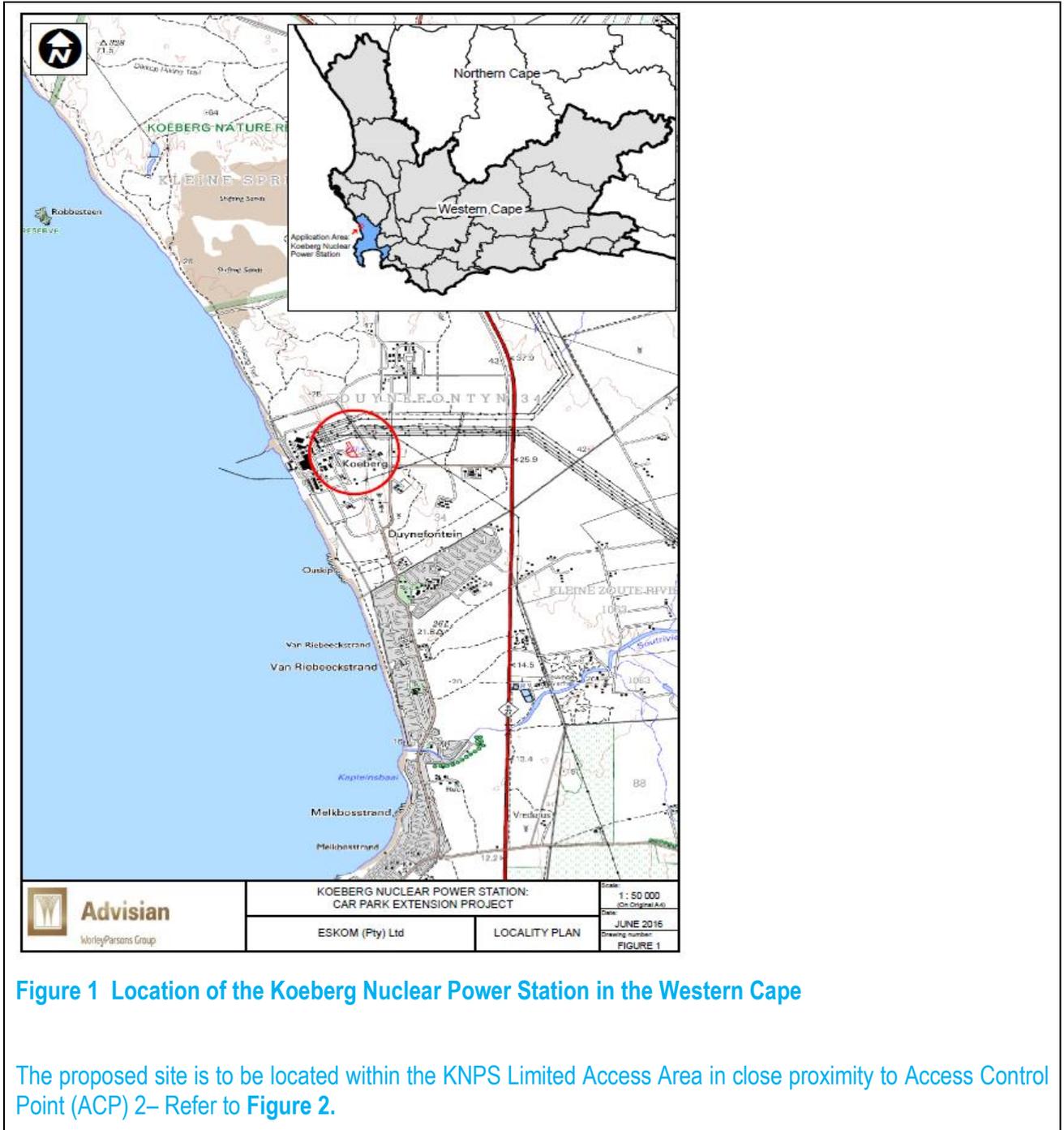




Figure 2 Location of the proposed Car Park Extension project

**Project Motivation**

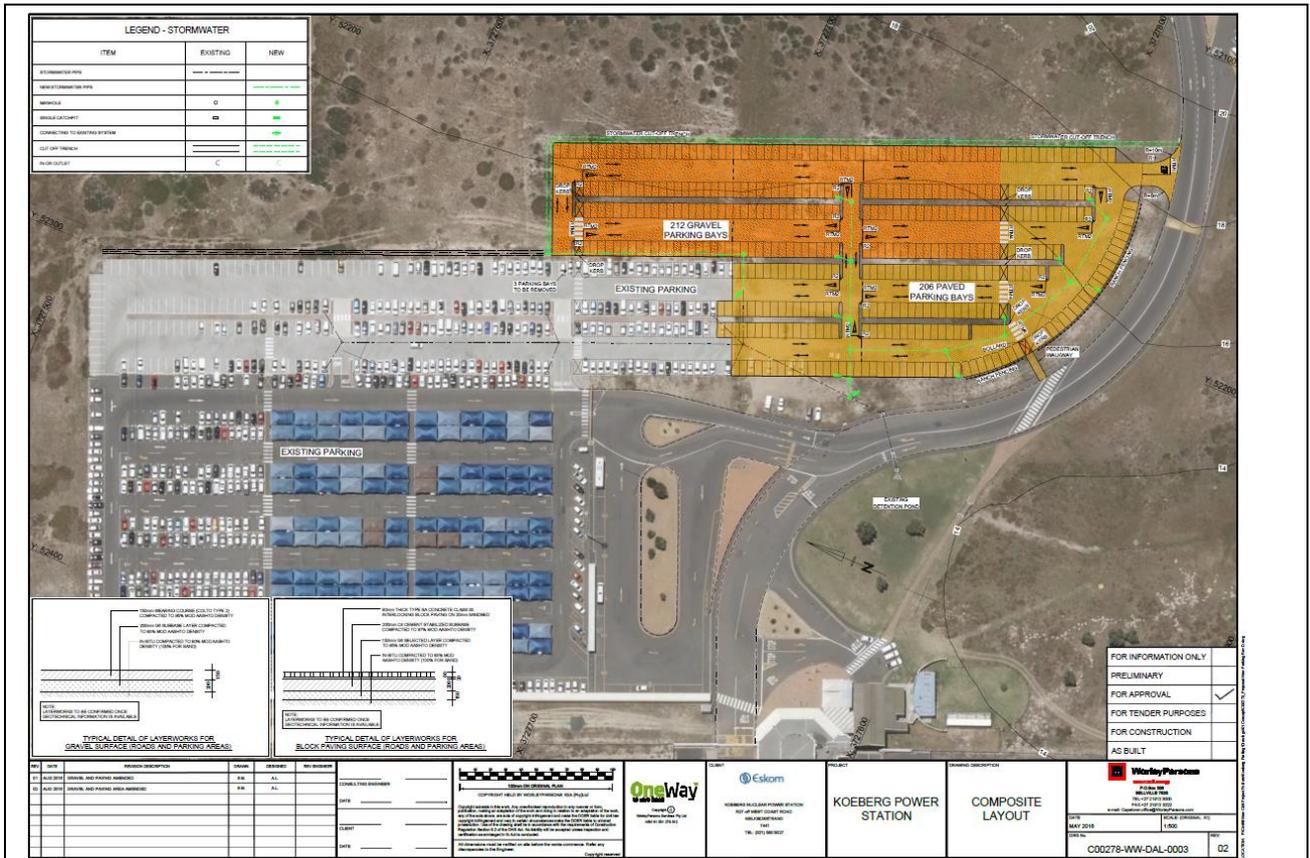
KNPS performs a refuelling outage approximately every 18 months on each unit (i.e. between one and two outages per year). The outage duration is between 1 and 3 months depending on the work scope. The current car park facilities are inadequate to support the additional outage workforce.

Additionally, to ensure continued operation of KNPS until 2045, major refurbishment and maintenance of the facility and its associated infrastructure is a necessity. During these major planned maintenance periods, additional staff and contractors are required on site for the successful completion of these activities. To accommodate the increase in staff and contractor numbers during these outage periods, Eskom has proposed an extension to an existing car park located on the KNPS site. This project will be a direct extension of the existing parking area and comprise of both paved and gravel parking bays. The gravel parking bays will cater for any overflow, especially when there is an overlap in shifts.

**Project construction details:**

The Car Park Extension Project will provide an additional **206 permanent** (paved) and **212 temporary** (gravel) **parking bays** with an expected development footprint of approximately **11 000m<sup>2</sup>** (Refer to Appendix C and **Figure 3** below for the conceptual design layout). This will increase the number of parking bays at ACP2 from 1015 to 1415 and the combined parking available at both ACP1 and ACP2 from 1185 to 1585 (a 34% increase).

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**Figure 3 Conceptual design layout for KNPS Car Park Extension project**

The construction work will entail typical layerworks as used in road construction with a depth of excavation varying between 380 mm and 500 mm. The deepest excavations, up to 1 m deep, will be required in areas where drainage for stormwater will be installed, but depths may vary slightly depending on the slope and the subsurface conditions.

As this is an extension (establishment of additional parking bays) of an existing car park, no bulk services are envisaged for this development.

No landscaping for the project is required, as the parking area extension will consists solely of paved and gravel areas.

The estimated construction timeframe for the project is 6 – 8 months.

**Biodiversity Aspects:**

KNPS is located within the Koeberg Nature Reserve, which incorporates a number of environments including small wetlands, coastal dune fields, strandveld dune vegetation, sand plain fynbos as well as areas infested with alien vegetation. This Nature Reserve is categorised as a “Protected Area” in terms of the National Environmental Management: Protected Areas Act (2003) and according to the Cape Town Municipality Biodiversity Database.

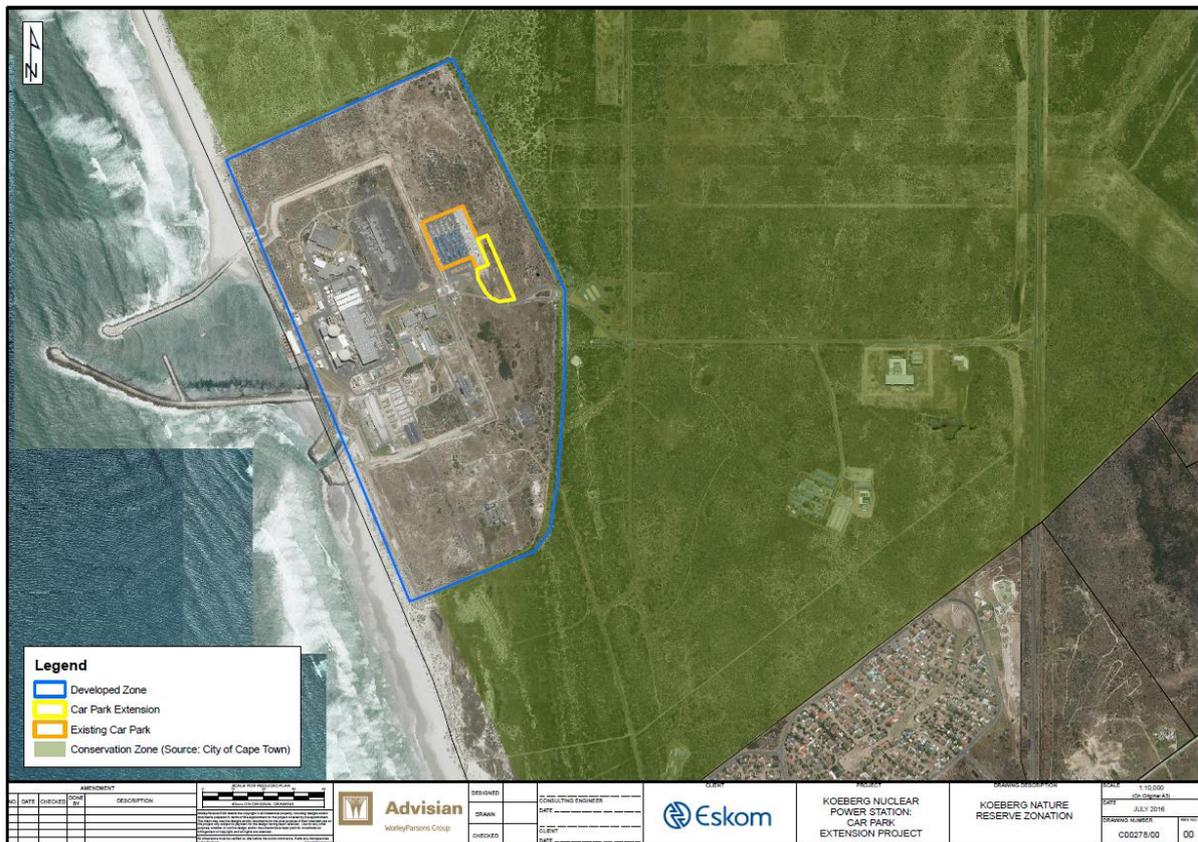
The Koeberg Nature Reserve has the following objectives:

- Maintain an environment in which the KNPS can continue to operate and possible future nuclear development can occur in a sustainable manner, while conserving the surrounding environment for the

benefit of the community;

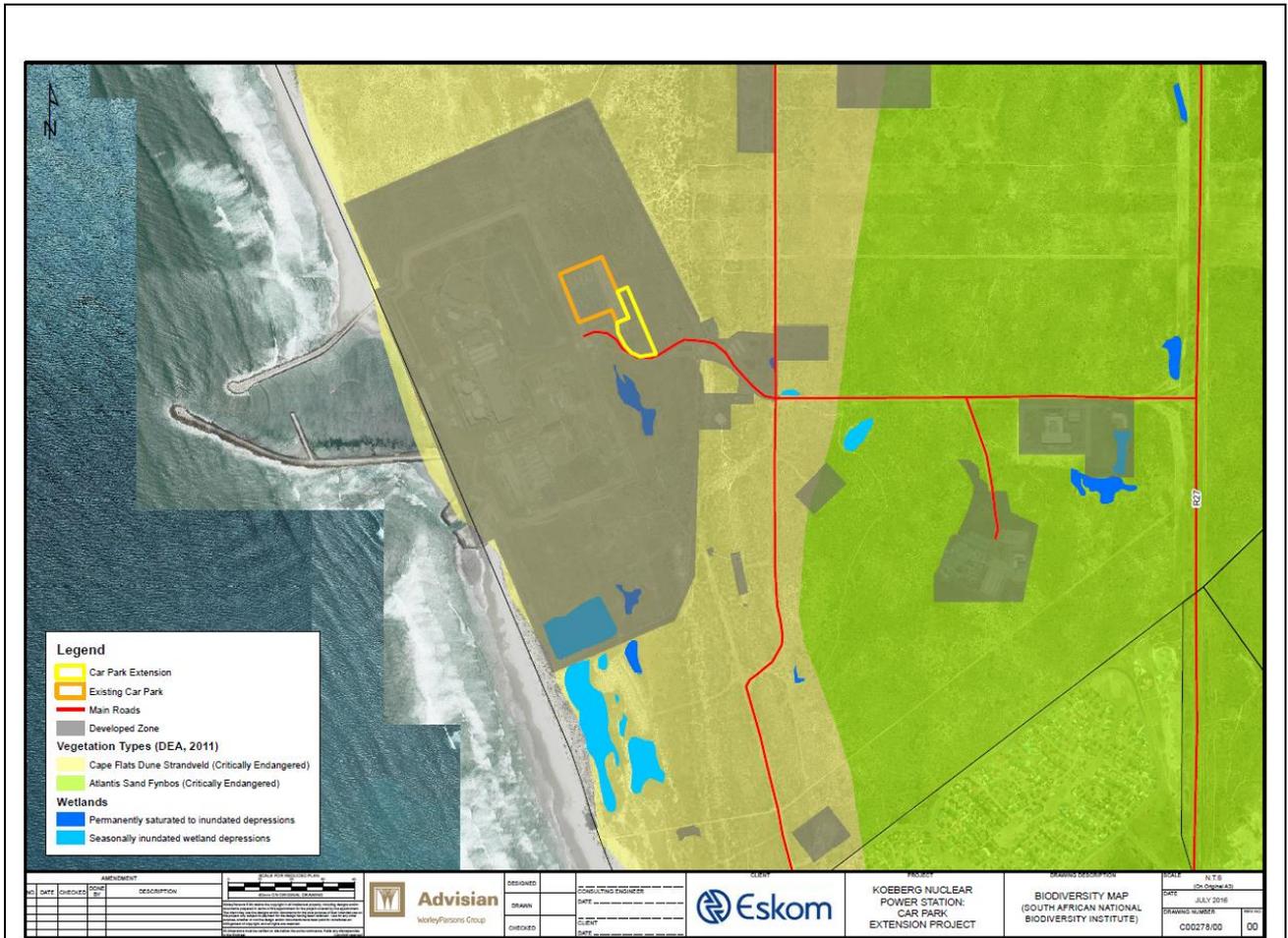
- Maintain an environment in which educational and recreational development can continue, within the context of the KNPS and its conservation objectives;
- Protect an ecologically viable, representative area of vegetation types present and its associated biodiversity;
- Protect the ecological integrity and functioning of wetlands, and their catchments;
- Protect the biodiversity of the area; and
- Provide access for the public to the area and its resources.

The Koeberg Nature Reserve Management Plan developed in 2015, defined various zones within the nature reserve according to its management activities. The management plan was approved by the MEC in September 2016 (see Appendix J5). The Nature Reserve therefore differentiates between a **conservation zone** and **developed zone**. The proposed **Car Park Extension project** will be located within the **developed zone** of the Nature Reserve as shown in **Figure 4**.



**Figure 4 Koeberg Nature Reserve Management Plan Zonation with the Car Park Extension project situated within the “Developed Zone”**

In terms of vegetation (biodiversity) type, although the project area is located within the Cape Flats Dune Strandveld, considered by the South African National Biodiversity Institute as “Critically Endangered”, the actual Car Park Extension site will be located in an already developed and ecologically disturbed area (refer to **Figure 5**).



**Figure 5: Biodiversity Map (South African National Biodiversity Institute) for the Car Park Extension Project.**

**Land Use Change:**

In terms of the City of Cape Town Land Use Municipal Planning Bylaw of 2015 the parking area extension requires a **rezoning application**. The zoning of the area (Refer to **Figure 6**) for the proposed Car Park Extension site is currently zoned as "Agriculture" and needs to be zoned as to either "Transport Zone 1" or "Risk Industry" through the submission of a rezoning application to City of Cape Town. The existing car park area is currently zoned as "Risk Industry" and recommended that the area to be extended, be zoned the same. A professionally registered town planner, namely CK Rumboll & Partners, has been appointed to complete this rezoning application and submit to the City of Cape Town Municipality for approval.

**Traffic management**

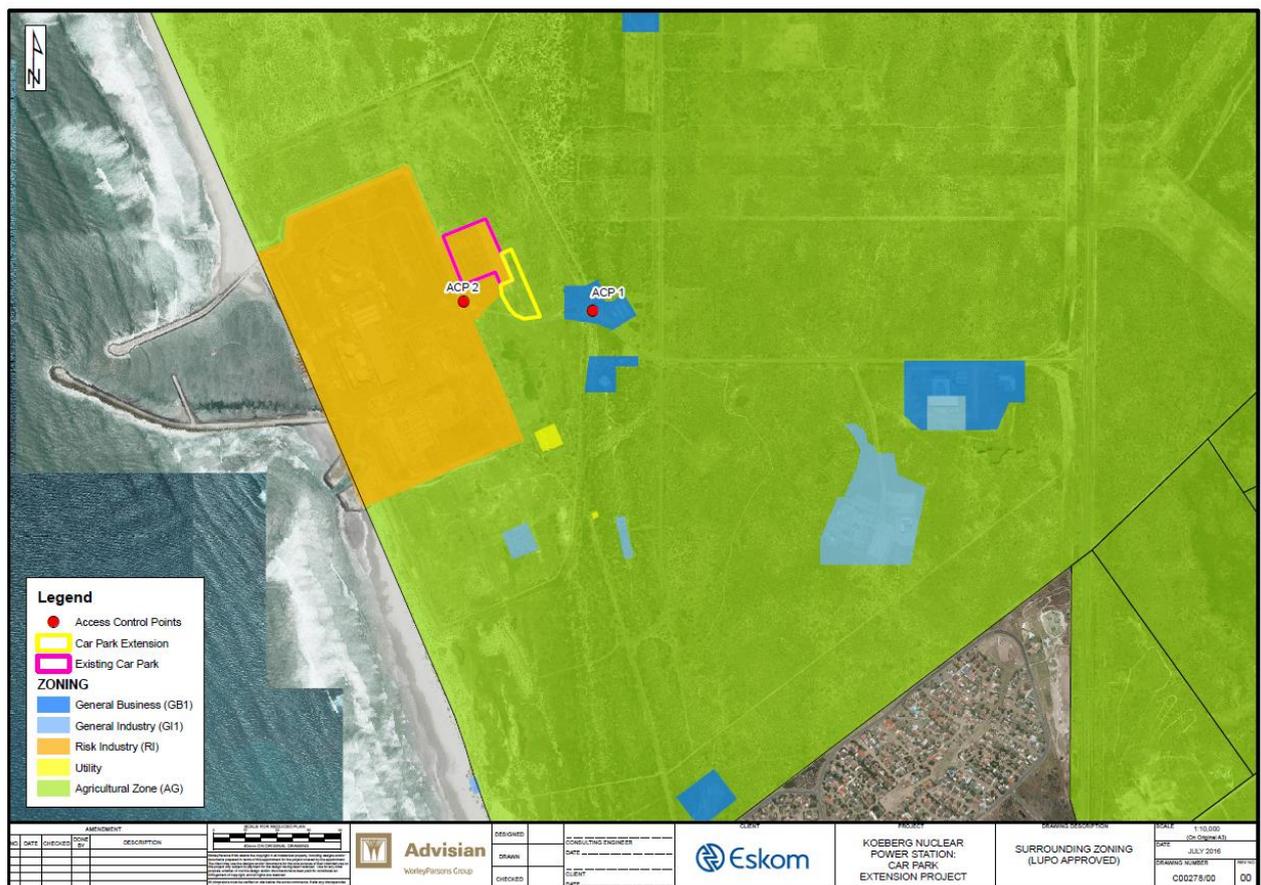
On request of the City of Cape Town (CoCT), a Traffic Evacuation Model (refer to **Appendix J2**) was completed for KNPS which incorporates the Car Park Extension project and submitted to the CoCT (for their record and modelling of traffic flow) on the 14th of November 2016. This was done to ensure that the Koeberg emergency plan evacuation times as restricted by the National Nuclear Regulator are protected.

A baseline Traffic Impact Assessment was completed for the KNPS site in 2007 and attached as **Appendix J3**. One of the main differences between the car park extension and the TIA assessment completed in 2007 was that the assessment completed in 2007 was conducted to determine the traffic impacts of additional staff on a permanent basis. The car park extension project on the other hand only aims at increasing the parking

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requirements on a temporary nature. The TIA made the statement that “During outage periods, movements into and out of the facility are more evenly spread throughout the day, i.e. without distinct (normal commuter) peaks in the mornings and afternoons”. Based on the previous statement, Eskom therefore does not expect that the proposed car park extension will significantly increase the traffic.

The Transport for Cape Town Official, namely Mr. Johan Massyn, in an e-mail correspondence dated 09 December 2016 (Refer to **Appendix E6**), indicated that the previous Traffic Impact Assessment compiled for the Koeberg Training Campus and Administrative Centre in 2007 was outdated and the City therefore requires that a new Traffic Impact Statement (TIS) for the Car Park Extension project be completed. HHO Africa Infrastructure Engineers was appointed by Eskom to complete an updated Traffic Impact Assessment (dated April 2017) which is attached to this report as **Appendix D4**.



**Figure 6: Existing zonation (in terms of City of Cape Town Land Use Planning) of the project area.**

### Heritage Aspects:

In terms of Section 38(1)(c)(i) of the National Heritage Resources Act (1999) any development exceeding an area of 5 000m<sup>2</sup> will require the submission of the Notification of Intent to Develop (NID) to Heritage Western Cape (HWC). A NID for the Car Park Extension project was submitted to the HWC on the 11<sup>th</sup> of July 2016.

HWC issued a response to the NID application and requested a Heritage Impact Assessment (HIA) be completed due to the potential presence of archaeological / paleontological heritage resources present on the Car Park Extension site. The HIA is attached to this report to as **Appendix D3**. HWC final decision on the

HIA submission is attached as [Appendix J1](#).

**Lighting Aspects:**

Light pollution due to excessive, misdirected, or obtrusive artificial light may have negative impacts on natural cycles e.g. be disruptive to nocturnal fauna and insects. Special lighting will be required for the Car Park Extension project to minimise or eliminate this hazard.

**Storm water management:**

Existing KNPS stormwater management system:

The storm water originating from the western part of the existing car park is discharged into the power station's underground storm water system which discharges into the sea. The eastern part of the existing car park, which was added at a later stage, has a separate storm water system that discharges into an attenuation pond just south of the car park. The car park extension will be constructed higher than the natural ground level. Stormwater will be collected and directed to an existing attenuation pond about 20m west of the proposed development. The water in the attenuation pond is allowed to infiltrate into the sandy soil.

Proposed stormwater management for the Car Park Extension project:

- Stormwater runoff generated from the car park extension (which will be constructed higher than the natural ground level) shall consist of an underground collection system;
- The collected stormwater shall be channelled through a gravel / oil trap into the existing storm water attenuation pond located approximately 20m east of the proposed development. The discharge system shall ensure that no erosion of soil occurs at the point of discharge where the flow rate is highest;
- Surface water in the attenuation pond will be allowed to infiltrate into the permeable sandy soil below; and
- The overflow channel linked to the existing attenuation pond will ensure that high volumes from extreme storm events can be channelled to the wetland to the south. The proposed car park extension project is not expected to increase the flow volume to this wetland by more than 10%. The wetland is some distance away from any buildings and situated at a lower level than surrounding buildings (flooding of buildings is highly unlikely).

**b) Provide a detailed description of the listed activities associated with the project as applied for**

<b>Listed activity as described in GNR 983 (<i>Listing Notice 1</i>)</b>	<b>Description of project activity</b>
<p><i>27. The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-</i></p> <p><i>(i) the undertaking of a linear activity; or</i></p> <p><i>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i></p>	<p><i>The proposed Car Park Extension project proposes to clear vegetation of approximately 11 000m<sup>2</sup> (1.1 ha)</i></p>

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Listed activity as described in GNR 985 ( <i>Listing Notice 3</i> )	Description of project activity
<p><i>12. The clearance of an area of more than 300m<sup>2</sup> or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p><i>(a) In Western Cape:</i></p> <p><i>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004.</i></p>	<p><i>The Car Park Extension project proposes to clear vegetation of approximately 11 000m<sup>2</sup>. The proposed site is located within the Cape Flats Dune Strandveld (FS 6) vegetation type (SANBI). This vegetation type has been classified as Critically Endangered in the list of ecosystems which are threatened and in need of protection, December 2011 (NEM: Biodiversity Act (2004)).</i></p> <p><i>The actual Car Park Extension site will be located in an already developed and ecologically disturbed area within the Koeberg Nature Reserve.</i></p>

## 2. 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 application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

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**a) Site alternatives**

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
An extension of the existing car park situated near ACP2 at KNPS is required.	33°40'24.94"S	18°26'14.21"E
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
No site alternative has been considered as the proposed site location is an extension of the existing car park.		
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
None.		

In the case of linear activities: - **Not applicable to this application.**

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A1 of this form.

**b) Lay-out alternatives - Not applicable to this application**

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

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Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

**c) Technology alternatives- Not applicable to this application**

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

Design Alternative
Eskom did consider a multi storey car park on the exiting car parks footprint but this was rejected due to adverse cost, and proximity to overhead power lines and adverse visual impacts.

**e) No-go alternative**

The no-go alternative will entail that the existing Car Park will not be extended. Therefore no additional parking bays will be provided for extra staff and contractors required for ongoing maintenance and refurbishment of the KNPS.
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Paragraphs 3 – 13 below should be completed for each alternative.

**3. PHYSICAL SIZE OF THE ACTIVITY**

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

**Alternative:**

Alternative A1<sup>1</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the activity:**

11 000m <sup>2</sup>
Not applicable m <sup>2</sup>
Not applicable m <sup>2</sup>

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Length of the activity:**

Not applicable m
m
m

**b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):**

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

**Alternative:**

Alternative A1 (preferred activity alternative)  
 Alternative A2 (if any)  
 Alternative A3 (if any)

**Size of the site/servitude:**

Not applicable	m <sup>2</sup>
	m <sup>2</sup>
	m <sup>2</sup>

**4. SITE ACCESS**

Does ready access to the site exist?

YES	
	Not applicable m

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

Describe the type of access road planned:

Not applicable.

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.

**5. LOCALITY MAP**

An A3 locality map must be attached to the back of this document, as **Appendix A1**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (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 and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

**6. LAYOUT/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 document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;

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- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

### 7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

### 8. 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.

### 9. FACILITY ILLUSTRATION

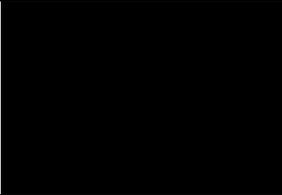
A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

### 10. ACTIVITY MOTIVATION

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

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>		<b>NO</b>	Please explain
In terms of the City of Cape Town Land Use Planning by-law, the car park extension requires a rezoning application. The zoning of the area for the parking area extension is currently zoned as "Agriculture" and needs to be zoned as to either "Transport Zone 1" or "Risk Industry".			

<b>2. Will the activity be in line with the following?</b>		
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	<b>YES</b>	
<p>The Western Cape PSDF is a spatial planning document that guides district and local spatial initiatives such as Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs). The Western Cape Provincial SDF sets out to put in place a coherent framework for the Province’s urban and rural areas that:</p> <ul style="list-style-type: none"> <li>• Gives spatial expression to the national and provincial development agendas;</li> <li>• Serves as basis for coordinating, integrating and aligning ‘on the ground’ delivery of national and provincial departmental programmes;</li> <li>• Supports municipalities in fulfilling their municipal planning mandate in line with the national and provincial agendas; and</li> <li>• Communicates government’s spatial development intentions to the private sector and civil society.</li> </ul> <p>The Western Cape Provincial SDF and CoCT IDP do not discuss the KNPS, but it is assumed that as an approved nuclear facility, consideration is given to the KNPS, its operations and development projects (i.e. <b>Car Park Expansion project</b>) and related exclusion zones.</p>		
<b>(b) Urban edge / Edge of Built environment for the area</b>	<b>YES</b>	
<p>Although the proposed Car Park Extension project is outside of the urban edge, it will be located within the already developed area of the KNPS site and within the developed zone of the Koeberg Nature Reserve (see Appendix A2 and A3 for the Developed and Conservation Zone maps).</p>		

<p><b>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b></p>	<p><b>YES</b></p>	
<p>The City of Cape Town's (CoCT's) IDP (2012-2017) is a strategic plan that is used to guide the development of the City for a specific period. It guides the planning, budgeting, implementation, management and future decision making processes of the CoCT.</p> <p>The strategic focus areas (or pillars) of the CoCT's IDP include:</p> <ol style="list-style-type: none"> <li>1. The opportunity city;</li> <li>2. The safe city;</li> <li>3. The caring city;</li> <li>4. The inclusive city; and</li> <li>5. The well-run city.</li> </ol> <p>These five pillars help focus the City's purpose of delivery. The IDP is the City's principal strategic planning instrument, from which various other strategic documents will flow. It informs planning and development in the City.</p> <p>The CoCT IDP does not discuss the KNPS, but it is assumed that as an approved nuclear facility, consideration is given to the KNPS, its operations, development projects (i.e. Car Park expansion project) and related exclusion zones.</p> <p>The City of Cape Town (CoCT) SDF (2012) is a long-term plan to guide and manage urban growth, and to balance competing land use demands, by putting in place a "logical development path that will shape the spatial form and structure of Cape Town".</p> <p>In the medium- to long-term, the CoCT would like to reduce the development impediments and safety risks associated with the KNPS. Specific actions related to this objective include:</p> <ul style="list-style-type: none"> <li>• The CoCT, in conjunction with Eskom and the Provincial Government of the Western Cape (PGWC), must update the Integrated Koeberg Nuclear Emergency Plan (KNEP) as required;</li> <li>• The CoCT, in conjunction with Eskom and the PGWC, must continue to optimise, with a view to sustainability, the requirements in respect of the KNEP; and</li> <li>• The CoCT must review and update the town planning assessment criteria to ensure that the processing and assessment of development applications within the KNPS emergency planning zones do not compromise the effective implementation of the KNEP.</li> </ul>		
<p><b>(d) Approved Structure Plan of the Municipality</b></p>	<p><b>YES</b></p>	
<p>In the medium- to long-term, the CoCT would like to reduce the development impediments and safety risks associated with the KNPS. Specific actions related to this objective include a review and update the town planning assessment criteria to ensure that the processing and assessment of development applications within the KNPS emergency planning zones do not compromise the effective implementation of the Koeberg Nuclear Emergency Plan.</p>		

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<p><b>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b></p>	<p><b>YES</b></p>	
<p>The Management Plan for the Koeberg Nature Reserve (KNR) (in which the Car Park Expansion project is situated) consists of a strategic framework aimed at providing the basis for the protection and operation of the Koeberg Nature Reserve (this biodiversity stewardship site and has been prepared collaboratively through a process including Eskom staff, general public, the DEA provincial conservation authorities, and key stakeholders such as CapeNature and the CoCT). The car park development will occur in the Developed Zone described in the Nature Reserve Management Plan. As such it is consistent with the objectives of the Management Plan.</p> <p>The Strategic Management Framework (a component of this Management Plan) describes the overall long-term goal for the operation and protection of the Koeberg Nature Reserve. The objectives and strategic outcomes that follow are intended to provide the basis for the Management Plan. The objectives provide a broad description of the goals for each key environmental aspect. The KNR management authority has approved this development.</p>		
<p><b>(f) Any other Plans (e.g. Guide Plan)</b></p>	<p><b>YES</b></p>	
<p>The Management Plan for the Koeberg Nature Reserve (in which the Car Park Expansion project is situated) consists of a strategic framework aimed at providing the basis for the protection and operation of the Koeberg Nature Reserve (this biodiversity stewardship site and has been prepared collaboratively through a process involving Eskom staff, general public, the DEA provincial conservation authorities, and key stakeholders such as CapeNature and the CoCT).</p>		
<p><b>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b></p>	<p><b>YES</b></p>	
<p>The CoCT IDP does not discuss the KNPS, but it is assumed that as an approved nuclear facility, consideration is given to the KNPS, its operations and development projects (i.e. Car Park expansion project).</p>		
<p><b>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b></p>	<p><b>YES</b></p>	
<p>The extension of the existing parking area is a critical requirement for the accommodation of additional Eskom staff and contractors during future planned outages and maintenance programmes at KNPS.</p>		

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<p><b>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	<p><b>YES</b></p>	
<p>No bulk engineering services are required as this will be an extension to an existing car park.</p>		
<p><b>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	<p><b>NO</b></p>	
<p>The CoCT IDP does not discuss the KNPS, but it is assumed that as an approved nuclear facility, consideration is given to the KNPS, its operations and development projects (i.e. Car Park Extension project).</p>		
<p><b>7. Is this project part of a national programme to address an issue of national concern or importance?</b></p>	<p><b>YES</b></p>	
<p>Development projects (i.e. Car Park Extension project) to accommodate future maintenance and refurbishment programmes, are critical in ensuring the continued operation of KNPS (until 2045).</p>		
<p><b>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b></p>	<p><b>YES</b></p>	
<p>Yes, as this project will extend the existing car park and provide additional parking bays to on-site staff and contractors required during the future maintenance and refurbishment programmes at KNPS.</p>		
<p><b>9. Is the development the best practicable environmental option for this land/site?</b></p>	<p><b>YES</b></p>	
<p>It will be an extension to an existing Car park situated within an already disturbed area, zoned for development within the Koeberg Nature Reserve management plan.</p>		
<p><b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b></p>	<p><b>YES</b></p>	
<p>The benefits of the project, namely provision of additional parking bays to accommodate additional staff and contractors during future maintenance and refurbishment programmes at KNPS, will outweigh any potential negative environmental impacts, as the proposed area to be developed is already developed (ecologically disturbed) with low ecological significance (Refer to Botanical Assessment attached as Appendix D2 to this Report).</p>		
<p><b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b></p>	<p><b>YES</b></p>	
<p>The proposed Car Park Extension project will be located within the already developed area of the KNPS site and within the developed zone of the Koeberg Nature Reserve.</p>		

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<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>		<b>NO</b>	
No, this project will alleviate parking constraints by providing additional bays for Eskom staff and contractors during future maintenance and refurbishments required at KNPS.			
<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>		<b>NO</b>	
The Car Park Extension will be situated outside of the urban edge but within a previously disturbed area (transformed area) and within the Developed Zone in the Koeberg Nature Reserve management plan.			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>		<b>NO</b>	
Not applicable.			
<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain		
This project will alleviate parking constraints by providing additional bays for Eskom staff and contractors during future maintenance and refurbishments required at KNPS.			
<b>16. Any other need and desirability considerations related to the proposed activity?</b>	Please explain		
Not applicable to this project.			
<b>17. How does the project fit into the National Development Plan for 2030?</b>	Please explain		
Not applicable to this project.			
<b>18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.</b>			
Any developments (i.e. Car Park Extension project) within the Developed Zone of the Koeberg Nature Reserve may only commence subject to the fulfilment of the requirements as stipulated in the EIA Regulations (2014) and the Integrated Environmental Management requirements as set out in Section 23 of the National Environmental Management Act.			
<b>19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.</b>			
Any proposed development within the Conservation Zone or Developed Zone of the Koeberg Nature Reserve will be screened in terms of the EIA Regulations (2014) which may require the amendment of the management plan and subsequent zonation plan to reflect any land use change, rezoning and buffer areas.			

### 11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

**BASIC ASSESSMENT REPORT**

<b>Title of legislation, policy or guideline</b>	<b>Applicability to the project</b>	<b>Administering authority</b>	<b>Date</b>
National Environmental Management Act, No. 107 of 1998	The following Listed Activities in terms of the 2014 EIA Regulations may be triggered by the Car Park Extension project, namely:  Listed Activity 27 from Listing Notice 1 (GNR 983) and Listed Activities 12 from Listing Notice 3 (GNR 985)	National Department of Environmental Affairs	1998
National Environmental Management: Protected Areas Act No. 57 of 2003	The existing Car Park is situated within the Koeberg Nature Reserve. The Protected Areas Act is the primary legislation guiding the management of this protected area.	National Department of Environmental Affairs	2003
Protected species and ecosystems control in terms of the National Environmental Management: Biodiversity Act No. 10 of 2004	The Car Park extension project is situated within the Koeberg Nature Reserve which is governed by the Biodiversity Act for the control protected species and vegetation	National Department of Environmental Affairs	2004
National Heritage Resources Act No. 25 of 1999	A Notification of Intent to Develop (NID) is required to be submitted to Heritage Western Cape for any development footprint which exceeds an area of 5 000 m <sup>2</sup> .	Heritage Western Cape	1999
City of Cape Town Land Use Planning By Law	The zoning of the area for the parking area extension is currently zoned as "agriculture" (which falls within the Koeberg Nature Reserve) and needs to be zoned to either "Transport Zone 1" or "Risk Industry".	City of Cape Town	2015

**12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

<b>YES</b>	<b>&gt; 5 m<sup>3</sup></b>
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How will the construction solid waste be disposed of (describe)?

Removed from the KNPS site and transported to a licenced municipal landfill facility for disposal.

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

Removed from the KNPS site and transported to a municipal landfill site for disposal.

Will the activity produce solid waste during its operational phase?

NO

If YES, what estimated quantity will be produced per month?

Not applicable  
m<sup>3</sup>

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

Removed from the KNPS site and transported to a municipal landfill site for disposal.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

A registered City of Cape Town municipal facility (i.e. Vissershok landfill site) in close proximity to the KNPS.

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

Not applicable.

*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 whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

### b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

NO

If YES, what estimated quantity will be produced per month?

Not applicable  
m<sup>3</sup>

Will the activity produce any effluent that will be treated and/or disposed of on site?

NO

*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.*

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Potential oil and other hydrocarbon spillages from vehicles utilising the new constructed parking bays. An oil trap must be implemented within the car park extension site to capture any contaminated stormwater run-off.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

**NO**

If YES, provide the particulars of the facility:

<b>Facility name:</b>	Not applicable.		
<b>Contact person:</b>			
<b>Postal address:</b>			
<b>Postal code:</b>			
<b>Telephone:</b>	<b>Cell:</b>		
<b>E-mail:</b>	<b>Fax:</b>		

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

Not applicable.

### c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

**NO**

If YES, is it controlled by any legislation of any sphere of government?

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

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

Not applicable.

### d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

### e) Generation of noise

Will the activity generate noise?

**YES**

If YES, is it controlled by any legislation of any sphere of government?

**YES**

Describe the noise in terms of type and level:

The activities associated with the construction phase of the Car Extension Project may produce noise (i.e. movement of trucks importing or exporting building material to and from site, TLB or Excavator activity) but Eskom will ensure the noise generated will comply with the Western Cape Noise Control Regulations (Provincial Notice 200/2013) of 20 June 2013.

**13. WATER USE**

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

Municipal	Groundwater		
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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:

Approximately 110 000 litres
---------------------------------

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

YES	
-----	--

If YES, please provide proof that the application has been submitted to the Department of Water Affairs. [A water use authorisation \(W5/720/A7/5/97/01 on 1 July 1997\) for KNPS for ground water abstraction was issued, for on-site boreholes. This water use registration certificate is attached as Appendix J4.](#)

**14. ENERGY EFFICIENCY**

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

Light fittings proposed for the Car Park Extension project will incorporate energy saving technology.
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Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Light fittings proposed for the Car Park Extension project will incorporate energy saving technology
--

**SECTION B: SITE/AREA/PROPERTY DESCRIPTION**

**Important notes:**

1. 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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES    
 If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Property description/physical address:**

<b>Province</b>	
<b>District Municipality</b>	
<b>Local Municipality</b>	
<b>Ward Number(s)</b>	
<b>Farm name and number</b>	Cape Farm Duynefontyn No. 1552.
<b>Portion number</b>	
<b>SG Code</b>	

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

The Car Park Extension site is currently zoned as "Agriculture".

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application. *Not applicable.*

Is a change of land-use or a consent use application required? YES

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### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Alternative S1:**

Flat

**Alternative S2 (if any):** Not applicable

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
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**Alternative S3 (if any):** Not applicable

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
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### 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.8 Dune

### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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.

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### 4. GROUNDCOVER

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

Natural veld in good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	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. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO
Non-Perennial River		NO
Permanent Wetland	YES Situated approximately 200m south-west of the proposed car park development	
Seasonal Wetland		NO
Artificial Wetland		NO
Estuarine / Lagoonal wetland		NO

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If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A wetland area on the KNPS site is situated approximately 200m south-west from the boundary the car park extension site (refer to **Figure 7**). The wetland was probably, prior to the KNPS development part of a wetland mosaic, but after construction and today it exists as an isolated, degraded, permanently saturated wetland (Liz Day, 2009). The importance of the wetland is classified as **low to moderate conservation importance** (Day, 2009). The wetland comprises of relatively small area of seasonally standing water, with little local habitat importance, other than as an area in which dense vegetation can be found in an otherwise stark portion of land (Day, 2009).



**Figure 7:** Wetland location in relation to Car Park Extension project site.

## 6. LAND USE CHARACTER OF SURROUNDING AREA

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

<b>Natural area</b>	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential <sup>A</sup>	Church	Agriculture
Retail commercial & warehousing	Old age home	<b>River, stream or wetland</b>
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area

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Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line <sup>N</sup>	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office	Airport <sup>N</sup>	Protected Area (Koeberg Nature Reserve).
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Not applicable.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Not applicable.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Not applicable.

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

### 7. 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 paleontological sites, on or close (within 20m) to the site? If YES, explain:

NO

A Notification of Intent to Develop (NID) was submitted to Heritage Western Cape (HWC) due to the car park development area exceeding an area of 5 000 m<sup>2</sup> (Refer to **Appendix D1**). HWC issued a response and requested that a Heritage Impact Assessment (HIA) be completed in terms of Section 38 of the National Heritage Resources Act, due to a possibility of archaeological / paleontological heritage resources present on the Car Park site. A HIA was completed and attached to this report as **Appendix D3**. The final record of decision from HWC is also attached to this report as **Appendix J1** and has confirmed no significant archaeological / paleontological heritage resources present on site.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

Dr. Jayson Orton from ASHA Consulting was appointed to complete a site assessment of the project site and the compilation of a NID (**Appendix D1**) and HIA (**Appendix D3**) for submission to HWC.

Will any building or structure older than 60 years be affected in any way?

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
YES	NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority. Refer to NID application and HIA attached as **Appendix D1** and **Appendix D3**, respectively.

## 8. SOCIO-ECONOMIC CHARACTER

### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Of the ~3.9 million people (according to the City of Cape Town: Integrated Development Plan 2016/2017) living in the City of Cape Town in 2011, ~2.6 million people were of working age. Of these, 65% (or ~1.7 million people) were in the labour force, while 3% were discouraged work seekers. Approximately 24% of Cape Town's labour force was unemployed in 2011 (Census 2011), closely mirroring provincial labour statistics.

Following the recession and global financial crisis, the unemployment rate increased in South Africa. The provincial unemployment rate grew by an average of 5.6% annually between 2009 and 2014 (higher than the national average of 3.5% - partly as a result of in-migration of unemployed people seeking work in the Western Cape).

However, in the Western Cape, the number of employed people has increased at a faster rate than the national average (PERO, 2015) indicating that although unemployment is rising, additional jobs are being created in the Province.

The industry with the highest share of employment in the Western Cape in 2014 was wholesale and retail trade (21.5%), followed by general government services (21.4%), finance, real estate and business services (16.7%) and manufacturing (13.2%) (StatsSA, 2014b and StatsSA, 2010).

Employment structure in the City of Cape Town is expected to largely mirror provincial employment

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statistics, with slightly lower numbers of the metropolitan population employed in primary sector than in rural areas.

### Economic profile of local municipality:

The following section briefly describes the socioeconomic status of the study area and of the suburbs in the study area. **Table 1** presents selected socioeconomic indicators for the suburbs in the study area.

**Table 1 Socio-Economic Indicators for the Study Area**

Suburb	% Working Age	% Adults with Grade 12 or Higher	Unemployment Rate	% Monthly Income < R 3 200	% Informal Dwelling	SES
Melkbosstrand	68.6	82.0	5.7	17.1	2.0	34.71
Kleine Zout River Small Holdings	71.3	34.4	20.0	76.9	54.0	52.13
Atlantis non-urban	73.0	38.7	18.3	49.8	12.0	54.35
Milnerton non-urban	69.9	73.3	5.6	21.9	7.1	36.77
Morning Star Small Holdings	75.4	66.1	9.4	12.7	10.5	36.37
Sunningdale	65.1	83.2	3.1	14.5	1.0	33.35
Atlantis	68.4	32.4	26.6	50.4	15.5	57.27
Philadelphia	65.6	35.6	12.5	32.7	9.0	50.14
Parklands	72.6	84.7	6.6	13.2	0.6	33.61
Vissershok	70.5	2.8	63.2	93.2	96.9	64.17
Bloubergstrand	75.2	87.3	5.5	16.4	0.5	33.53
Table View	73.8	83.1	6.0	14.8	0.5	34.31
Doornbach	73.7	13.1	56.3	93.6	99.1	59.43
Du Noon	71.9	29.6	36.7	76.8	59.1	56.21
Mamre	67.9	32.0	27.2	48.7	3.4	60.13
Milnerton	72.9	85.7	4.6	12.4	0.9	32.61
City of Cape Town	69.7	46.9	23.9	47.0	21.6	50.60
Total / Average	71.0	54.0	19.2	40.3	23.3	45.57

Based on the Socio Economic Status (SES) indices derived for this assessment, the socioeconomic status of the population of the study area is marginally better than the City average (see Table 1). On average, the population of the study area is slightly more educated and more likely to be employed than other people living in Cape Town. Households in the study area are less likely to have a very low monthly income (i.e. less than R3 200 / month). It is noteworthy that, on average, nearly one in four dwellings in each suburb is informal, about 2% higher than the City wide average.

The socio-economic status of people living in each of the suburbs in the study area varies significantly (see

Table 1).

Level of education:

The level of education (namely the percentage of Adults with Grade 12 or higher) per suburb is depicted in Table 1.

**b) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R Cannot be determined as this stage.
What is the expected yearly income that will be generated by or as a result of the activity?	R Nil
Will the activity contribute to service infrastructure?	<input type="checkbox"/> NO
Is the activity a public amenity?	<input type="checkbox"/> NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Will be only be determined at tender stage and once the construction contract is awarded.
What is the expected value of the employment opportunities during the development and construction phase?	R Refer to above statement
What percentage of this will accrue to previously disadvantaged individuals?	% Refer to above statement
How many permanent new employment opportunities will be created during the operational phase of the activity?	Nil. As this extension will form part of the existing car park area (which will be maintained by existing Eskom staff).
What is the expected current value of the employment opportunities during the first 10 years?	R Nil
What percentage of this will accrue to previously disadvantaged individuals?	Nil %

**9. BIODIVERSITY**

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity

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information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	The project site is situated within the Cape Flats Dune Strandveld area which is categorised as Critically Endangered (DEA, 2011). The proposed parking extension would result in loss of highly degraded Cape Flats Dune Strandveld. The result would be a Low Negative impact on any natural vegetation. The remaining vegetation at the site has been heavily disturbed in the past and is of low conservation value. The car park will be removed when the power station is decommissioned which will allow the area to be rehabilitated.

- b) **Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	Not applicable.
Near Natural (includes areas with low to moderate level of alien invasive plants)	20%	The area resembles a field with only a few naturally occurring species present, including dominant patches of duinekoel ( <i>Trachyandra divaricata</i> ), sour fig ( <i>Carpobrotus edulis</i> ), with a few plants of duinetaibos ( <i>Searsia laevigata</i> ), thatching reed ( <i>Thamnochortus spicigerus</i> ) and grysbietou ( <i>Osteospermum incanum</i> ).
Degraded (includes areas heavily invaded by alien plants)	80%	The vegetation at the site comprises highly degraded habitat that is considered to have low to very low conservation value. The most abundant alien invasive species (exotic weeds) include: <i>Bromus cf. diandrus</i> , turknael ( <i>Erodium moschatum</i> ), small mallow ( <i>Malva parviflora</i> ), and Kaapse dubbeltjie ( <i>Emex australis</i> ).
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	0%	Not applicable.

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c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Endangered	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary	Coastline
	Highly degraded Cape Flats Dune Strandveld occurs on the development site.			
		NO	NO	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The vegetation type which occurs on the proposed Car Park Extension development site comprises highly degraded (Cape Flats Dune Strandveld) habitat, which is considered to have a **low conservation value** (Refer to findings of the Botanical Assessment attached as **Appendix D2**).

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Cape Times (English Provincial Newspaper).	
<b>Publication name</b>	Isolabantu (Xhosa Local Newspaper).	
<b>Publication name</b>	Tygerburger (English Local Newspaper).	
<b>Publication name</b>	WeskusNuus (Afrikaans Local Newspaper).	
<b>Publication name</b>	Shutdown Times (English Eskom/ Internal Newspaper).	
<b>Date published</b>	25-26 October 2016.	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
	R27 road Entrance to KNPS (33° 40' 36.74"S; 18° 26' 30.70"E). Duynefontein suburb Entrance to KNPS (33° 41' 00.88"S; 18° 27' 21.96"E). Access Control Point 1 to KNPS site (33° 40' 31.81"S; 18° 26' 22.47"E). Access Control Point 2 to KNPS site (33° 40' 31.13"S; 18° 26' 07.32"E).	
<b>Date placed</b>	27 October 2016 – 28 November 2016	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

### 2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
Jan Norman	Homeowner and adjacent property owner: Erf 3108 Duynefontein.	jan.norman@eskom.co.za
Harry White	Atlantic Beach Home Owners Association.	harry.white@abhoa.co.za
Warren Leslie	Bloubergstrand Residents Association.	warren.leslie@remaxpa.co.za
Clifford Dorse	Blaauwberg Conservation area.	cliff.dorse@capetown.gov.za

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Smokie La Grange	Koeberg Public Safety Information Forum.	duvall@mweb.co.za
John Taylor	Melkbosstrand Neighbourhood Watch, Melkbosstrand Community Police Forum.	john@melkbosstrand.net
Samie Kleynns	Melkbosstrand Community Police Forum.	samiekleynhans@yahoo.co.za
Kurt Johnson	Melkbosstrand Ratepayers Association.	tapjohnson01@gmail.com
Gary Smith	Melkbos Resident Association.	078 989 5647
Andy Gubb	WESSA.	andy@wessa.wcape.school

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
<p>The comments (and responses there to) are detailed in the report attached as <b>Appendix E7</b>. In summary, responses were received from the City of Cape Town Local Municipality, Cape Nature, Western Cape Department of Environmental Affairs &amp; Development Planning (DEA&amp;DP) and the Western Cape Department: Road Network Management. The main issues / concerns raised by these stakeholders related to the following aspects:</p> <ul style="list-style-type: none"> <li>• Applicability of a specific Listed Activity (in terms of the 2014 EIA Regulations) to the project.</li> <li>• Request for the inclusion of Heritage Western Cape's final record of decision.</li> <li>• Inclusion of originally signed declarations as completed by the environmental assessment practitioner and the</li> </ul>	<p>Responses to the issues / concerns raised by the various stakeholders are detailed in the Comments &amp; Response Report (<b>Appendix E7</b>).</p>

<p>specialists</p> <ul style="list-style-type: none"> <li>• Inclusion in the Final BAR of the proof of public participation which was conducted.</li> <li>• Implementation of a waste management hierarchy (reduction, re-use and recycling of waste) during the construction phase of the car park extension project.</li> <li>• Management of stormwater on the car park extension site.</li> <li>• Dust suppression methods to be implemented during the construction phase to minimise potential dust generated on the car park extension site.</li> <li>• The use of ground water from on-site boreholes for dust suppression practise during the construction phase.</li> <li>• The need for a rezoning application for the car park extension site.</li> <li>• Traffic management related to the car park extension site and the request to complete an updated Traffic Impact Statement.</li> <li>• The approval of the Koeberg protected area management plan by the MEC.</li> <li>• An update to the socio-economic information provided in the draft basic assessment report.</li> </ul>	
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**4. COMMENTS AND RESPONSE REPORT**

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E7.

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### 5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
DEA: Integrated Environmental Authorisations	Salome Mambane	012 399 9385	–	smambane@environment.gov.za	Private Bag X447, Pretoria, 0001
DEA&DP Directorate: Development Management (Region 1)	Melanese Schippers	021 483 8349	021 483 4185	Melanese.Schippers@westerncape.gov.za	Private Bag X9086, Cape Town, 8000
	Alvan Gabriel	021 483 2742	021 483 4185	alvan.gabriel@westerncape.gov.za	
	Adri La Meyer	021 483 2887	021 483 4185	adri.lameyer@westerncape.gov.za	
DEA&DP Directorate: Waste Management	Eddie Hanekom	021 483 2708	021 483 4425	Eddie.Hanekom@westerncape.gov.za	
DEA&DP Directorate: Air Quality Management	Peter Harmse	021 483 8343	021 483 4185	peter.harmse@westerncape.gov.za	
DEA&DP Directorate: Pollution and Chemicals Management	Zayed Brown	082 788 1288	021 483 4185	zayed.brown@westerncape.gov.za	
Heritage Western Cape	Andrew Hall	021 483 5959	021 483 9842	abhall@westerncape.gov.za	Heritage Resource Council Private Bag X9067, Cape Town, 8000
CoCT: Environmental Resources Management	Morné Theron	021 444 0601	021 444 0605	morne.theron@capetown.gov.za	87 Pienaar Street, Milnerton, 7435
CapeNature	Rhett Smart	021 866 8000	021 866 1523	rsmart@capenature.co.za	Private Bag X5014, Stellenbosch, 7600

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CoCT: Specialised Environmental Health	Ian Gildenhuys,	021 590 5200	_	lan.Gildenhuys@capetown.gov.za	PO Box 2815, Cape Town, 8000
CoCT: Air Quality Management	Lynelle Matthys.	021 590 5200	_	Lynelle.Matthys@capetown.gov.za	246 Voortrekker Road, Vasco, Cape Town, 8000
Department of Water and Sanitation (DWS)	Derril Daniels	021 941 6189	021 941 6077	danielsd@dwa.gov.za	Private Bag X16, Bellville, Cape Town
Department of Agriculture, Forestry and Fisheries	Mashuduma Marubini	012 319 7619	_	mashuduma@daff.gov.za	Delpen Building, Room 282, Cnr of Annie Botha & Union Street, Pretoria
Department of Energy	Brenda Phahlamohla	012 444 4093	012 406 7798	brenda.phahlamohlaka@energy.gov.za	Private Bag X96, Pretoria
Department of Public Enterprises	Andretta Tsebe	012 431 1102	086 501 2624	Andretta.tsebe@dpe.gov.za	Private Bag X15, Hatfield 0028
Western Cape Government Road Network Management	Alvin Cope	021 483 2009	_	alvin.cope@westerncape.gov.za	PO Box 2603, Cape Town
Western Cape Department of Agriculture	Wouter Kriel	021 483 4930	021 483 7216	wouter.kriel@westerncape.gov.za	9 Wale St, Cape Town City Centre, Cape Town, 8000
SANRAL (Western Region)	Colleen Runkel	021 957 4600	021 946 1630	runkelc@nra.co.za	Private Bag X19, Bellville, 7535
National Nuclear Regulator	Dr. Peter Mkhabela	021 553 9504	086 588 4445	ptmkhabela@nnr.co.za	PO Box 46055, Kernkrag, 7441

## 6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

Refer to [Appendix E5](#) for a list of stakeholders who registered for the project and [Appendix E6](#) for comments received.

**SECTION D: IMPACT ASSESSMENT**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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. 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**

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
Extension to the existing Car park.	<p><u>Direct impacts:</u> Loss of <b>vegetation &amp; ecological processes</b> due to the development footprint during the project construction phase.</p>	<p><b>Low (-)</b> The vegetation type which occurs on the proposed Car Park Extension development site comprises highly degraded (Cape Flats Dune Strandveld) habitat, which is considered to have a low conservation value</p>	<p><u>Mitigation Measures:</u> The impact of the disturbance footprint and resultant loss of vegetation cannot be mitigated. The project area would need to be cordoned off and monitored by the Environmental Control Officer (ECO) during the construction phase so that no damage occurs to adjacent vegetation falling outside the intended construction area and to ensure no wildlife occurring within the Koeberg Nature Reserve are injured on the construction site. Rehabilitation of the area when the power station is decommissioned (2045) would also have to be implemented</p>
	<p>Loss of <b>heritage / cultural resources</b> during the project</p>	<p><b>Low (-)</b></p>	<p><u>Mitigation Measures:</u></p>

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Activity	Impact summary	Significance	Proposed mitigation
	<p>construction phase.</p>	<p>The thick layer of <i>ex situ</i> material across the bulk of the site renders it of low heritage sensitivity.</p>	<p>It is recommended that the proposed car park extension construction proceed but subject to the following points being incorporated into the conditions of authorisation:</p> <ul style="list-style-type: none"> <li>• A briefing session for the ECO and relevant project staff must be carried out prior to commencement of earthworks so that any isolated fossils seen during construction can be collected and retained. Such material would need to be given to a palaeontologist for description and accessioning in an approved repository; and</li> <li>• If any substantial archaeological or palaeontological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist or palaeontologist. Such heritage is the property of the state and may require excavation and curation in an</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
			approved institution.
	<b>Visual impact</b> as a result of extension to the car park.	<b>Low (-)</b> Although the development footprint will occur within the Koeberg Nature Reserve, the area proposed for the car park extension is located on an already disturbed / developed zone within the Reserve and therefore no mitigation measures are proposed.	<b>Mitigation Measures:</b> None required.
	<b>Noise impact</b> potentially generated by construction activities.	<b>Low (-)</b> This site is located approximately 1.8 km from the nearest residential settlement (namely Duynefontein) and noise impact expected to have a low negative impact on the surrounding environment.	<b>Mitigation Measures:</b> In order to comply with the Western Cape Noise Control Regulations (Provincial Notice 200/2013) of 20 June 2013, all construction vehicles, machinery and equipment must be serviced on a regular basis and fitted with mufflers.
	<b>Dust</b> potentially generated during the construction phase (i.e. after vegetation is stripped from topsoil).	<b>Medium (-)</b> The effect of the prevailing Cape South Easter wind on exposed areas may result in a medium negative impact on the surrounding environment.	<b>Mitigation Measures:</b> Dust suppression measures (e.g. use of Watercart) must be implemented on the site during the dry summer months (when strong winds are prevalent).
	<b>Impact on soil resources</b> due to potential hydrocarbon contamination during the construction phase of the project.	<b>Medium (-)</b> A potential exists for hydrocarbon contamination emanating from	<b>Mitigation Measures:</b> Drip trays must be positioned under all stationary construction vehicles, machinery and

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<b>Activity</b>	<b>Impact summary</b>	<b>Significance</b>	<b>Proposed mitigation</b>
		leaking construction vehicles and equipment on the Car Park extension site.	equipment. All vehicles, machinery and equipment must be washed and serviced off site and outside the Koeberg Nature Reserve.
	<b>Impact on groundwater resources</b> due to potential hydrocarbon contamination during the <b>construction phase of the project.</b>	<b>Medium (-)</b> A potential exists for hydrocarbon contamination from leaking construction vehicles and equipment on the Car Park extension site.	<b><u>Mitigation Measures:</u></b> Drip trays must be positioned under all stationary construction vehicles, machinery and equipment. All vehicles, machinery and equipment must be washed and serviced off site and outside the Koeberg Nature Reserve.
	<b>Impact on groundwater resources</b> due to potential hydrocarbon contamination during the <b>operational phase of the project.</b>	<b>Medium (-)</b> A potential exists for hydrocarbon contamination from leaking vehicles and equipment on the constructed Car Park extension site.	<b><u>Mitigation Measures:</u></b> An oil trap to be implemented on the car park extension site to capture potential oil (or hydrocarbon) contaminated stormwater.
	<b>Impact on surface water resources</b> (wetland area located approximately 200m south-west of the car park extension boundary) due to potential hydrocarbon contamination <b>during the construction phase.</b>	<b>Medium (-)</b> A potential exists for hydrocarbon contamination from leaking construction vehicles and equipment on the Car Park extension site.	<b><u>Mitigation Measures:</u></b> Drip trays must be positioned under all stationary construction vehicles, machinery and equipment. All vehicles, machinery and equipment must be washed and serviced off site and outside of the Koeberg Nature Reserve.
	<b>Impact on surface water resources</b> (wetland area located approximately 200m south-west of the car park extension boundary) due to potential hydrocarbon contamination <b>during the operational phase.</b>	<b>Medium (-)</b> A potential exists for hydrocarbon contamination from leaking vehicles and equipment on the Car Park extension site.	<b><u>Mitigation Measures:</u></b> An oil trap must be implemented on the car park extension site to capture potential oil (or hydrocarbon) contaminated surface

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Activity	Impact summary	Significance	Proposed mitigation
			water run-off.
	<b>Impact on surface water resources</b> (wetland area located approximately 200m south-west of the car park extension boundary) <b>due to flooding during extreme storm events (1:100 year).</b>	<b>Low (-)</b> A potential exists for a small amount of excess surface water to be diverted from the existing stormwater system to the wetland area (during extreme 1:100 year storm events).	<b>Mitigation Measures:</b> None required.
	Impact on existing <b>traffic flow patterns</b>	<b>Low (-)</b> The net impact of the expansion of the parking area on peak hour traffic operations at the main access intersection with the R27 will be negligible, and that the current priority intersection control has sufficient capacity to accommodate the limited increase in traffic demand.	<b>Mitigation Measures:</b> None required.
	<b>Socio-Economic impact</b>	<b>High (+)</b> Temporary local jobs created during the construction phase of the project.	<b>Mitigation Measures:</b> None required.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
<b>Alternative 2</b>			
Not applicable as an extension of an existing Car park is required.	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
	<b>Direct impacts:</b>		

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
<b>Alternative 3</b>			
Not applicable as an extension of an existing Car park is required.	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
<b>No-go option</b>			
No extension to the existing Car park.	<b>Direct impacts:</b> This option will result in a <b>negative Socio-Economic impact.</b>	<b>High</b> If the existing Car Park is not extended, this will result in no extra parking bays made available for additional on-site staff and contractors required for future maintenance activities, which will comprise or negatively impact on the overall operation of the KNPS until 2045.	Not applicable.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

## 2. 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 A (preferred alternative)**

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#### **IMPACT ASSESSMENT METHODOLOGY**

Once a potential impact has been determined it is necessary to identify which project activity will cause the impact, the probability of occurrence of the impact, and its magnitude and extent (spatial and temporal).

This information is important for evaluating the significance of the impact, and for defining mitigation and monitoring strategies. The aspects and impacts identified are therefore described according to the following:

#### **Nature/Status of the Impact:**

The nature of the impact refers to the type of impact or how the development will affect the surrounding environment. The question therefore to be asked is what will be impacted and how. The Status of the impact refers to a description as to whether the impact will be positive (a benefit to the environment), negative (detrimental to the environment), or neutral (no change to the environment).

#### **Spatial Scope/Extent:**

The spatial scope for each aspect, receptor and impact is defined. The physical extent of each identified impact can be classified as:

- Local and limited to the immediate area of development (the site/servitude/corridor); or
- Limited to within 5km of the development; or
- The impact may be realised regionally/nationally or even internationally.

For example, the impacts of noise are likely to be confined to a smaller geographical area than the impacts of atmospheric emissions, which may be experienced at some distance. The significance of impacts also varies spatially. Many are significant only within the immediate vicinity of the site or within the surrounding community, whilst others may be significant at a local or regional level.

#### **Duration:**

Duration refers to the length of time that the aspect may cause a change to the baseline environment. The environmental assessment will distinguish between different time periods by assigning a rating to duration based on the following scale:

- Short term (0-5 years)
- Medium term (5-15 years)
- Long term (>15 years, but where the impacts will cease after the operational phase of the site)
- Permanent

#### **Probability of Occurrence:**

The probability of occurrence refers to the likelihood of the impact occurring and can be classified in accordance with the following scale:

- Improbable (low likelihood)
- Probable (distinct possibility)

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- Highly probable (most likely)
- Definite (impact will occur regardless of prevention measures)

### Magnitude/Intensity/Severity:

The severity of an environmental aspect is determined by the degree of change to the baseline environment, and includes consideration of the following factors:

- The reversibility of the impact;
- The sensitivity of the receptor to the stressor;
- The impact duration, its permanency and whether it increases or decreases with time;
- Whether the aspect is controversial or would set a precedent; and
- The threat to environmental and health standards and objectives.

It is then established whether the impact is destructive or innocuous and whether the impact should be described as one of the following:

- **Low:** where no environmental functions and processes are adversely affected.
- **Medium:** where the environmental functions and processes of the affected area will be altered but continues to function in a modified manner.
- **High:** where the environmental functions and processes of the affected area are altered to such an extent that they temporarily or permanently cease to function.

### Determination of Impact Significance:

The information presented above in terms of identifying and describing the aspects and impacts is summarised in tabular form and significance is assigned with supporting rationale.

The environmental significance rating is an attempt to evaluate the importance of a particular impact, the consequence and likelihood of which has already been assessed by the relevant specialist as and when required.

In order to assess the significance of each impact, the following ranking scales will be employed:

**Table 2: Impact Significance Ranking Scales**

PROBABILITY:	DURATION:
5 - Definite/don't know 4 - Highly probable 3 - Medium probability 2 - Low probability 1 - Improbable 0 - None	5 - Permanent 4 - Long-term (impact ceases after the operational life of the activity) 3 - Medium-term (5-15 years) 2 - Short-term (0-5 years) 1 - Immediate
SCALE:	MAGNITUDE:
5 - International 4 - National 3 - Regional 2 - Local 1 - Site only	10 - Very high/don't know 8 - High 6 - Moderate 4 - Low 2 - Minor

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	0 - None
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Once the above factors had been ranked for each impact, the overall significance of each impact was assessed using the following formula:

**(Potential Significance) = (Magnitude + Duration + Scale) x Probability**

The potential significance (PS) has a maximum rating of 100 points. Environmental impacts are rated as having either a High(H), a Moderate(M) or a Low(L) significance according to the following scale:

**PS > 60 = High Environmental Significance**

**60 < PS > 30 = Moderate Environmental Significance**

**PS < 30 = Low Environmental Significance**

Significance will thus be classified according to the following:

- **Low:** Low Environmental Significance – Mitigation easily achieved or little is required;
- **Moderate:** Moderate Environmental Significance – Mitigation is both feasible and fairly easily possible; and
- **High:** High Environmental Significance – Adverse Impact. Mitigation, if possible, is often difficult, expensive and time consuming.

The Potential Environmental Impact Significance can then be calculated for each impact for the various stages of the project before and after mitigation measures are implemented.

The Environmental Impact Significance calculated for each impact for the various stages of the proposed Car Park Extension project before and after mitigation measures are taken into consideration:

VISUAL IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	1	4	21	L		
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		

NOISE IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	2	2	2	4	16	L		
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		

DUST IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	4	2	2	8	48		M	
CONSTRUCTION WITH MITIGATION	3	2	1	4	21	L		

SOIL IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H

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CONSTRUCTION	4	2	2	8	48		M	
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		

GROUND WATER IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	2	6	30		M	
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		
OPERATION	3	2	2	6	30		M	
OPERATION WITH MITIGATION	2	2	1	2	10	L		

SURFACE WATER IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	2	6	30		M	
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		
OPERATION	3	2	2	6	30		M	
OPERATION WITH MITIGATION	2	2	1	2	10	L		

ECOLOGICAL IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	1	4	21	L		
CONSTRUCTION WITH MITIGATION	2	2	1	2	10	L		

HERITAGE / CULTURAL IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	1	6	21	L		
CONSTRUCTION WITH MITIGATION	2	2	1	6	18	L		

SOCIAL / ECONOMIC IMPACT (POSITIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	4	4	2	10	64			H

TRAFFIC IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
CONSTRUCTION	3	2	1	6	21	L		

Not applicable.

### Alternative C

Not applicable.

### No-go alternative (compulsory)

This option will entail that the existing Car Park will not be extended resulting in no extra parking bays made available for additional on-site staff and contractors required for future maintenance activities, which will comprise or negatively impact on the overall operation of the KNPS until 2045.

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SOCIAL / ECONOMIC IMPACT (NEGATIVE)	CRITERIA				TOTAL	SIGNIFICANCE		
	P	D	S	M		L	M	H
NO CAR PARK EXTENSION	4	4	2	10	64			H

**SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

Not applicable.

If "YES", please 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.

Recommendations by the Heritage, Botanical and Traffic Specialists (Refer to the specialist reports in Appendix D1, D2, D3 and D4) and mitigation and management measures detailed in the EMPr (attached as Appendix G) must be implemented during the construction phase of the Car Park Extension project.

Is an EMPr attached?

YES

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Ryan Emslie Jonas

NAME OF EAP



SIGNATURE OF EAP

April 2017

DATE

## SECTION F: APPENDIXES

The following appendixes must be attached:

### Appendix A: Maps

[Appendix A1 – Locality Map](#)

[Appendix A2 – Conservation & Developed Zone Map 1](#)

[Appendix A3 – Conservation & Developed Zone Map 2](#)

[Appendix A4 – Wetland map](#)

### Appendix B: Photographs

[Appendix B- Project Site Photographs](#)

### Appendix C: Facility illustration(s)

[Appendix C – Conceptual Engineering Layout for Car Park Extension](#)

### Appendix D: Specialist reports (including terms of reference)

[Appendix D1: Heritage application \(NID\)](#)

[Appendix D2: Botanical Assessment](#)

[Appendix D3: Heritage Impact Assessment](#)

[Appendix D4: Traffic Impact Assessment \(2017\)](#)

### Appendix E: Public Participation

[Appendix E1: Advertisements \(including proof of placement\)](#)

[Appendix E2: Site Notices \(including proof of placement\)](#)

[Appendix E3: I&AP Notification letter \(including proof of notification\)](#)

[Appendix E4: Stakeholder Database](#)

[Appendix E5: List of registered stakeholders](#)

[Appendix E6: Comments received](#)

[Appendix E7: Comments & Response Report](#)

### Appendix F: [Impact Assessment](#)

### Appendix G: [Environmental Management Programme \(EMPr\)](#)

### Appendix H: [Details of EAP and expertise](#)

### Appendix I: [Specialist's declaration of interest](#)

### Appendix J: Additional Information

[Appendix J1: Heritage Western Cape Record of Decision](#)

[Appendix J2: Koeberg Traffic Evacuation Model](#)

[Appendix J3: Traffic Impact Assessment \(2007\)](#)

[Appendix J4: Water Use Authorisation](#)

[Appendix J5: Approval of Koeberg Nature Reserve Integrated Management Plan](#)