

# **THE PROPOSED ESTABLISHMENT OF A VISITORS' SCIENCE CENTRE ON ERF 431, (A PORTION OF ERF 353), CARNARVON**



## **Draft Basic Assessment Report**

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

**Kindly note that:**

- 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 competent authority for the activity that is being applied for.
- It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- 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.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- 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.
- This report must be handed in at the offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be original.
- The report must be compiled by an independent environmental assessment practitioner.
- 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 request report, during any stage of the application process.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- 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.

## SECTION A: ACTIVITY INFORMATION

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

YES

NO

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

### 1) ACTIVITY DESCRIPTION

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

The development proposal is a visitors' science centre on Erf 431 (a portion of Erf 353), Carnarvon. The visitors' science centre is intended to leverage on the nearby Square Kilometre Array Telescope Project and is made up of the following:

- **Public Zones:** These areas are accessible to the general public and are intended to encourage community participation in scientific matters. These public zones include *inter alia*, a planetarium, multi-purpose auditoriums, community resource centres, retail gift shops, and interactive play areas.
- **Non-Public Zones:** These areas are not accessible to the general public and comprise administrative offices, staff boardrooms, mechanical and electrical control rooms and storage areas. These zones are essential for the operational efficiency and maintenance of the visitors' science centre.

The proposed development will be approximately 45 200m<sup>2</sup> in size and access to the proposed site exists via End Street.

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

<b>Detailed description of listed activities associated with the project</b>	
Listed activity as described in Listing Notice 1 of 2014 (as amended).	Description of project activity that triggers listed activity
<p><b>Item 12</b>, <i>“The development of— dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—</i></p> <p><i>(a) within a watercourse;</i>  <i>(b) in front of a development setback; or</i>  <i>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding—</i>  <i>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</i>  <i>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</i>  <i>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</i>  <i>(dd) where such development occurs within an urban area; [or]</i>  <i>(ee) where such development occurs within existing roads, [or] road reserves or railway line reserves; or</i>  <i>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared”.</i></p>	<p>The proposed development will be bigger than 100m<sup>2</sup> and will extend to within 100m of an existing dam.</p>
<p><b>Item 19</b>, <i>i.e., “The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse”.</i></p>	<p>The proposed development is located close to an existing dam and the proposed site may overlap the area around the proposed dam that displays the characteristics of wetlands.</p>
<p><b>Item 27</b>, <i>i.e., “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</i></p>	<p>The proposed development requires more than 1ha but less than 20ha of indigenous vegetation to be cleared.</p>



<p>activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan”.</p>	
<p><b>Item 28</b>, i.e., i.e., “Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes”.</p>	<p>The proposed development entails transforming more than 1ha of land zoned Agriculture to an urban land use.</p>
<p>Listed activity as described in GN No. R. 986 of 2014 (as amended)</p>	<p>Description of project activity that triggers listed activity</p>
<p><b>Item 4</b>, i.e., “The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p><b>g. Northern Cape</b></p> <p>i. In an estuary; ii. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding disturbed areas; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an international convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas; or (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or</p>	<p>The proposed development is located within an area identified as a CBA and will be provided with a road wider than 4m that has a reserve less than 13.5m</p>

<p>iii. Inside urban areas:          (aa) Areas zoned for use as public open space;          (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; or          (cc) Seawards of the development setback line or within urban protected areas”.</p>	
<p><b>Item 12</b>, i.e., “The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken following a maintenance management plan.</p> <p><b>g. Northern Cape</b></p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or before the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii. Within critical biodiversity areas identified in bioregional plans;</p> <p>iii. Within the littoral active zone or 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on even in urban areas; or</p> <p>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had equivalent zoning”.</p>	<p>The proposed site forms part of a Critical Biodiversity Area and the establishment of the proposed development requires that more than 300m<sup>2</sup> of indigenous vegetation be cleared.</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 accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The coordinates 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.

### **Need and Desirability**

The proposed establishment of the visitors' science centre will provide employment opportunities to construction workers and building contractors during the construction phase and this will in the short-term help to alleviate the significant unemployment situation in the Carnarvon area. The proposed development will also generate business opportunities for local entrepreneurs such as building contractors and suppliers of building materials.

The proposed development leverages on the nearby Square Kilometre Array Telescope Project with a view to encouraging the local community to become more involved in science and science-related matters. The proposed development will during the operational phase, provide employment opportunities for *inter alia*, scientists, information officers, cleaners, gardeners, maintenance crews and managers. The proposed development will also attract additional tourists to Carnarvon and the money spent in the area by the additional tourists will help in strengthening the economy of the area. These long-term socio-economic benefits of establishing the proposed visitors' science centre are therefore quite significant.

The likely negative terrestrial biodiversity impacts of the proposed development will remain low when the recommendations of the terrestrial biodiversity specialist are implemented ((Appendix D1, refers). The likely freshwater-related impacts will remain low when the recommendations of the freshwater specialist are implemented (Appendix D2, refers). The likely heritage-related impacts of the proposed development will remain low when the recommendations of the heritage specialist are implemented (Appendix D3, refers). The likely negative socio-economic impacts will remain low and the positive socio-economic impacts will remain significant when the recommendations of the socio-economic specialist are implemented (Appendix D4, refers) and the likely negative visual impacts will remain low when the recommendations of the visual impact specialist are implemented (Appendix D6, refers).

In view of the above, the proposed visitors' science centre on Erf 431 (a portion of Erf 353), Carnarvon is highly desirable.

**a) Site alternatives**

The proposed site is a disused parcel of land located between existing urban land uses in the central business district of Carnarvon.

The potential negative impacts of the proposed development will be medium to low in significance upon the implementation of the recommendations specified in the specialist investigation reports appended to this Draft BAR and the implementation of the EMPr and conditions of environmental authorisation. In addition, Erf 431, Carnarvon is owned by the Applicant. This increases the suitability level of the proposed site for the proposed development and significantly lowers the need for time and effort to be spent investigating other site alternatives.

In view of the above, the proposed site is the preferred site alternative and is the only site alternative that the Applicant has considered.

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

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

Coordinates of corner points of study area (if there are more than 7 co-ordinates, please attach a list as <b>Appendix 4</b> )  For linear developments a list of turning points must be attached	Latitude (S) (DDMMSS)			Longitude (E) (DDMMSS)		
	30°	58'	04.21"	22°	07'	20.25"
	30°	57'	57.68"	22°	07'	22.15"
	30°	57'	58.68"	22°	07'	29.99"
	30°	53'	04.73"	22°	07'	28.89"

**b) Layout alternatives**

The development proposal entails establishing a visitors' science on Erf 431 (a portion of Erf 353), Carnarvon. The proposed site is a disused parcel of land located between existing urban land uses in the central business district of Carnarvon and access thereto exists via End Street. The feasible route for accessing the proposed site is via End Street and this leaves very little opportunity for layout alternatives. In light of this, no layout alternatives have been considered.

**c) Design alternatives**

N/A

<b>Alternative 1 (preferred alternative)</b>
See "ACTIVITY DESCRIPTION" of this Draft BAR.

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

NA

<b>Alternative 1 (preferred alternative)</b>		
N/A		
<b>Alternative 2</b>		
N/A		
<b>Alternative 3</b>		
N/A		

**e) No-go alternative**

The no-go alternative entails maintaining the *status quo*. This means that in spite of the significant need to create more employment opportunities and the need to grow scientific interest in the area, the proposal to establish the visitors' science centre would be abandoned and the opportunity to leverage on the SKA Telescope Project nearby would be allowed to wither.

The SKA Telescope Project requires that curbs be put on the agricultural activity in Carnarvon and agricultural activity currently forms the backbone of the economy of the town. The anticipated socio-economic benefits of establishing the visitors' science centre will help in counterbalancing the negative economic impact of the curbs on agricultural activity that the SKA telescope Project requires.

It would therefore be highly undesirable to adopt the 'no-go alternative. The 'no-go' alternative should therefore be discarded and the preferred alternative authorised by the competent authority.

**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 (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

**Size of the activity:**

Approximately 4.25ha.

or, for **linear activities**: N/A

**Length of the activity:**

- Alternative A1 (preferred activity alternative)
- Alternative A1 (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)
- Alternative A4 (if any)


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

**Length of the activity:**

- Alternative A1 (preferred activity alternative)

	m <sup>2</sup>
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- Alternative A1 (if any)


Alternative A2 (if any)  
 Alternative A3 (preferred activity alternative)  
 Alternative A4 (if any)


#### 4) SITE ACCESS

Does ready access to the site exist?  
 If NO, what is the distance over which a new access road will be built

<b>YES</b>	<b>NO</b>

Describe the type of access road planned:

Access to the proposed site exists via End Street.
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Include the position of the access road on the site plan and required map, as well as an indication of the road about the site.

#### 5) LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. 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 coordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The coordinates 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;
- 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):

<ul style="list-style-type: none"> <li>• <b>Is the activity permitted in terms of the property's existing land use rights?</b></li> </ul>	YES	NO	Please explain
An application must be lodged and the relevant permit obtained in term of land use planning legislation before the proposed development can be established on the proposed site.			
<ul style="list-style-type: none"> <li>• <b>Will the activity be in line with the following?</b></li> </ul>			
<ul style="list-style-type: none"> <li>(a) <b>Provincial Spatial Development Framework (PSDF)</b></li> </ul>	YES	NO	Please explain
The proposed site is located in an urban area, with urban land uses bordering the proposed site the east, west and north. The proposed development therefore amounts to urban infill and will have very little bearing on the Provincial Spatial Development Framework of the Northern Cape.			
<ul style="list-style-type: none"> <li>(b) <b>Urban edge / Edge of Built environment for the area</b></li> </ul>	YES	NO	Please explain
The proposed development amounts to urban infill and will therefore cause no negative impacts on the Urban Edge.			

<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>	YES	NO	Please explain
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The proposed development amounts to urban infill and will therefore not clash with the Integrated Development Plan of the Kareeberg Local Municipality. In fact, the proposed development will help to alleviate the severe shortage of employment opportunities in the area and facilitate long-term socio-economic development by helping to grow an interest in science and science-related matters in the mainly agricultural area.

<b>(d) Approved Structure Plan of the Municipality</b>	YES	NO	Please explain
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The proposed development amounts to urban infill and will therefore be consistent with the Integrated Development Plan of the Kareeberg Local Municipality.

<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>	YES	NO	Please explain
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No EMF is known to exist for the area.

<b>(f) Any other Plans (e.g. Guide Plan)</b>	YES	NO	Please explain
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The proposed development amounts to urban infill and will therefore not clash with Policies and Plans. In fact, the proposed development will provide employment opportunities during the construction and operational phases and is in the long-term intended to leverage on the SKA Telescope Project nearby so that an interest in scientific matters can be grown in the mainly agricultural area.

<ul style="list-style-type: none"> <li><b>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></li> </ul>	YES	NO	Please explain
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The proposed development will provide employment opportunities during the construction and operational phases and is in the long-term intended to leverage on the SKA Telescope Project nearby so that an interest in scientific matters can be grown in the mainly agricultural area and to enhance tourism in the area.

<ul style="list-style-type: none"> <li><b>Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategy as well as the local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b></li> </ul>	YES	NO	Please explain
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<p>The proposed development will provide employment opportunities during the construction phase and that will benefit the local economy in the short-term.</p> <p>In addition, during the operational phase the proposed development will create employment opportunities for cleaners, gardeners, maintenance crews, etc. The proposed development will also benefit the local economy by attracting tourists that will spend their money in the municipal area. This aligns well with the goal of attaining socio-economic growth in the municipal area as indicated the 2017-2022 IDP of the Kareeberg Local Municipality.</p>			
<p>• 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.)</p>	YES	NO	Please explain
<p>The Kareeberg Local Municipality will provide the required municipal services to the proposed development and access to the proposed site exists via End Street.</p>			
<p>• 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.)</p>	YES	NO	Please explain
<p>The Applicant for the proposed development is the National Research Foundation- South African Radio Astronomy Observatory and not the Kareeberg Local Municipality.</p> <p>Comment has been requested from the Pixley ka Seme District Municipality and the Kareeberg Local Municipality on the Draft BAR. The comment will be taken into account in the BAR and will be attached as Appendix I of the BAR.</p>			
<p>• Is this project part of a national programme to address an issue of national concern or importance?</p>	YES	NO	Please explain
<p>N/A</p>			
<p>• 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.)</p>	YES	NO	Please explain
<p>The proposed site is within close proximity to the site of the Square Kilometre Array Telescope and the proposed development will leverage on this to help grow an interest in science and science-related matters in the region.</p>			
<p>• Is the development the best practicable environmental option for this land/site?</p>	YES	NO	Please explain
<p>The proposed site is within close proximity to the site of the Square Kilometre Array Telescope and the proposed development will leverage on this to help grow an interest in science and science-related matters in the region.</p> <p>The proposed development will also provide short-term employment opportunities during the</p>			

<p>construction phase that will benefit <i>inter alia</i>, building contractor companies and their employees as well as construction materials suppliers in the local area.</p> <p>In addition, during the operational phase the proposed development will create employment opportunities for information officers, cleaners, gardeners, maintenance crews, managers, training instructors etc. The proposed development will also benefit the local economy during the operational phase through the money that the additional tourists attracted by the visitors' science centre will spend in the administrative area of Kareeberg Local Municipality. These benefits will align well with what is advocated for in the IDP of the Kareeberg Local Municipality.</p> <p>In light of the medium to low ecological impacts likely to be caused by the establishment of the proposed development and the significant socio-economic benefits, the proposed development is deemed the Best Practicable Environmental Option.</p>			
<p>• <b>Will the benefits of the proposed land use/development outweigh the negative impacts?</b></p>	<p><b>YES</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>The potential negative impact of establishing the proposed development on terrestrial biodiversity when the recommended mitigation measures are implemented is of medium to low significance (Appendix D1, refers). The potential negative impact of establishing the proposed development on aquatic biodiversity when the recommended mitigation measures are implemented is low (Appendix D2, refers). The potential negative impact on cultural/ historical and paleontological aspects when the recommended mitigation measures are implemented is medium to low (Appendix D3, refers). The potential negative impact on socio-economic aspects when the recommended mitigation measures are implemented is medium to low and is short-term (Appendix D4, refers). The likely negative impact on agriculture in the area is low (Appendix D5, refers) and the potential negative visual impact when the recommended mitigation measures are implemented is low Appendix D6, refers).</p> <p>In light of the medium to low negative environmental impacts that society is likely to face as a result of the proposed establishment of the visitors' centre on the proposed site and the significant benefits that society will enjoy, it is clear that the benefits that will result from the proposed development far outweigh the potential negative impacts.</p>			
<p>• <b>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><b>NO</b></p>	<p>Please explain</p>
<p>It is highly unlikely that the granting of an environmental authorisation for the proposed establishment of visitors' science centre on the proposed site will set any kind bad precedent in the local municipal area, as it is clear that the potential negative environmental impacts of the proposed development are medium to low and the potential economic and social impacts are quite significant.</p>			
<p>• <b>Will any person's rights be negatively affected by the proposed activity/ies?</b></p>	<p><b>Yes</b></p>	<p><b>NO</b></p>	<p>Please explain</p>
<p>•</p>			
<p>The potential negative impact of establishing the proposed development on terrestrial biodiversity when the recommended mitigation measures are implemented is of medium to low significance (Appendix D1, refers). The potential negative impact of establishing the proposed development on aquatic biodiversity when the recommended mitigation measures are implemented is low (Appendix D2, refers). The potential negative impact on cultural/ historical and paleontological aspects when the recommended mitigation measures are implemented is medium to low (Appendix D3, refers). The potential negative impact on socio-economic aspects when the recommended mitigation measures are implemented is medium to low and is short-term (Appendix D4, refers). The likely negative impact on agriculture in the area is low (Appendix D5, refers) and the potential negative visual impact when the recommended mitigation measures are</p>			

<p>implemented is low Appendix D6, refers).</p> <p>In light of the medium to low negative environmental impacts that society is likely to face as a result of the proposed establishment of the visitors' centre on the proposed site and the significant benefits that society will enjoy, it is clear that the socio-economic benefits that will result from the proposed development far outweigh the potential negative impacts.</p> <p>A public participation process that meets the minimum legal requirements is being followed and should anybody express a concern that their legal rights stand to be violated, the concern raised will be dealt with appropriately.</p>			
<p>• Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed site for the visitors' science centre is a land parcel located in between two existing urban land uses and therefore constitutes urban infill.</p>			
<p>• Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>• What will the benefits be to society in general and the local communities?</p>			
<p>The proposed development will provide short-term employment opportunities during the construction phase that will benefit <i>inter alia</i>, building contractor companies and their employees as well as construction materials suppliers.</p> <p>In addition, during the operational phase the proposed development will create employment opportunities for information officers, managers, maintenance crews, cleaners, public relations officers etc. The proposed development will also leverage on the existing Square Kilometre Array Telescope in the area and help address the identified need of growing an interest in science and science-related matters in the region. In addition, the proposed visitors' science centre will help to grow tourism in the area by attracting additional tourists who will spend money in the local area, thereby strengthening the economy in the administrative area of the Kareeberg Local Municipality.</p>			
<p>• Any other need and desirability considerations related to the proposed activity?</p>			
<p>N/A</p>			
<p>• How does the project fit into the National Development Plan for 2030?</p>			
<p>The proposed development will provide employment opportunities for construction workers during the construction phase many of whom will be Previously Disadvantaged Individuals and will provide additional business opportunities for entrepreneurs like building contractor companies and their employees as well as construction materials suppliers in Carnarvon.</p> <p>In addition, during the operational phase, the proposed development will create employment opportunities for <i>inter alia</i>, information officers, cleaners, scientists, maintenance crews and managers, many of whom will be Previously Disadvantaged Individuals. The proposed development will also benefit the local economy during the operational phase by attracting additional tourists to Carnarvon and the monies spent by the tourists will boost economic activity in the administrative area of the Kareeberg Local Municipality. In light of the above, the proposed development is in line with the objective of achieving inclusive economic growth that is contained in the National Development Plan.</p>			

The proposed development will leverage on the Square Kilometre Array Telescope nearby and help in addressing an identified need to grow an interest in science and science-related matters in the region. The public zones of the visitors' science centre, including a planetarium and interactive areas, encourage public engagement in the Science, Technology Engineering and Maths fields, aligning with the NDP's focus on building a knowledge-based economy and improving youth education

**• Please describe how the general objectives of Integrated Environmental Management as set out in Section 23 of the NEMA have been taken into account.**

The general objectives of Integrated Environmental Management, namely, to promote sustainable development through the integration of social, economic and ecological considerations as well as the maintenance of inter- and intra-generational equity have been taken into account through the following:

- The actual and potential impacts of the proposed activity on the environment, socio-economic conditions, and cultural heritage, relative to the proposed site have been identified and evaluated. The proposed mitigation measures, with a view to minimizing negative impacts on the environment, socio-economic conditions, and any cultural heritage, while maximizing benefits and promoting compliance with the principles of environmental management, were assessed.
- The potential environmental impacts of establishing the proposed visitors' science centre on Erf 431, Carnarvon have been identified and assessed, and measures proposed to avoid or minimise the potential negative impacts.
- A public participation process that meets the minimum legal requirements has been followed for the Basic Assessment application to help ensure that the decision-making process takes into account the comments of members of the public and commenting authorities.
- The environmental features of the proposed site have been considered and evaluated in the management and decision-making of the activity. An EMPr has been compiled (Appendix G, refers) for the proposed development and in the EMPr, the potential impacts with impact avoidance and mitigation measures to be adhered to during the implementation phase are specified.

**• Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

The principles of environmental management, as per Section 2 of the NEMA have been taken into account. The principles include:

**Socio-economic development:** People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural, and social interests – the proposed activity is unlikely to cause an overall negative effect on people. The establishment of the proposed visitors' science centre on Erf 431, Carnarvon will provide short-term and long-term employment opportunities in Carnarvon as well as attract additional tourists to the area. The additional tourists will spend money in Carnarvon, thereby contributing towards the strengthening of the economy in the administrative area of the Kareeberg Local Municipality.

- **Sustainable development:** Development must be socially, ecologically and economically sustainable. The potential negative environmental impacts associated with the proposed development are of Medium to Low significance as indicated in the terrestrial biodiversity investigation report attached hereto as Appendix D1, freshwater investigation report attached as Appendix D2, the heritage specialist investigation report attached hereto as Appendix D3, the socio-economic impact investigation report Attached hereto as Appendix D4, the agricultural compliance statement attached hereto as Appendix D5 and the visual impact report attached hereto as Appendix D6. The recommendations contained in the specialist investigation reports are included in the EMPr and will be implemented to help ensure that the potential impacts identified in the said reports are avoided or minimised. The potential impacts of the proposed establishment of the proposed development will be minimised further through the implementation of the impact avoidance and mitigation measures contained in the EMPr (Appendix G, refers). In this way, the benefits associated with

establishing the proposed development that have been detailed in this Draft BAR will be kept outweighing the potential negative impacts.

- **Transparent Public Participation Process:** The public participation process followed gives I&APs an opportunity to view and provide comment on the Draft BAR before the BAR is finalised and submitted. The decision of the competent authority will be forwarded to all I&APs so that whomsoever wishes to appeal the decision may appeal.

## 11) 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

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations of 2014 (as amended)	Applications for environmental authorisation must comply with the requirements specified in the NEMA and in the EIA Regulations of 2014 (as amended)	Northern Cape Provincial Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	This application
Integrated Environmental Management Information Series	Criteria to be used for evaluating the environmental impacts of the proposed activity during the NEMA EIA application process (a copy of the Integrated Environmental Management Information Series can be accessed at <a href="https://www.environment.gov.za/documents/strategies/integrated_environmentalmanagement_eim">https://www.environment.gov.za/documents/strategies/integrated_environmentalmanagement_eim</a> ).	Northern Cape Provincial Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	This application
Karee Local Municipality and Pixley ka Seme District Municipality	Municipal by-laws to be adhered to during the construction and operational phase.	Local and District Municipalities	Subsequent to any EA being granted for this application

## 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?

YES	NO
≈20 000m <sup>3</sup>	

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

The waste will be transported to a suitably licensed municipal solid waste disposal site and dumped.

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

The waste will be transported to a suitably licensed municipal waste disposal site.

Will the activity produce solid waste during its operational phase?

YES	NO
-----	----

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

m <sup>3</sup>
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How will the solid waste be disposed of (describe)?

The normal amount of solid waste that can be expected from a public information centre per month

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

The solid waste will be collected by the municipal refuse collection trucks that collect solid waste from downtown in Carnarvon.

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

N/A

*If the solid waste (construction or operational phases) will not be disposed of at 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?

YES	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?

YES	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?

YES	NO
-----	----

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

m <sup>3</sup>
----------------

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

YES	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.*

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

YES	NO
-----	----

If YES, provide the particulars of the facility:

**Facility Name:**  
**Contact person:**  
**Postal**


<b>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 wastewater, if any:

N/A
-----

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?	YES	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

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:

--

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM: WA?	YES	NO
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If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority - N/A

**e) Generation of noise**

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

Describe the noise in terms of type and level:

Normal noise generated by trucks and caterpillars will be generated during the construction phase. The noise will be limited to regular construction working hours as is explained in the EMPr.
---

**13) WATER USE**

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

Municipal	Waterboard	Groundwater	River, stream, dam or lake	Other	The activity will not use water
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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:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	NO
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If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

#### 14) ENERGY EFFICIENCY

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

The proposed visitors' science centre includes solar panels on the roof.

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

The proposed visitors' science centre development includes solar panels on the roof.



## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

### Important notes:

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

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

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

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

YES  NO

If YES, please complete the form titled "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:	Province	Northern Cape	
	District Municipality	Pixley ka Seme District Municipality	
	Local Municipality	Kareeberg Local Municipality	
	Ward Number(s)		
	Erf number	Erf 431, Carnarvon	
	SG 21 Code	C01700010000043100000	
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:	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.			
Is a change of land-use or a consent use application required?			<input type="checkbox"/> YES <input type="checkbox"/> NO

### 1) GRADIENT OF THE SITE

Indicate the general gradient of the site.

#### Alternative S1 (Preferred):

Flat	1:50 – 1:20 Average	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 S2 (if any):

Flat	1:50 – 1:20 Average	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):

Flat	1:50 – 1:20 Average	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:

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	✓	2.9 Seafront	
2.10 At sea					

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

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

	Alternative A1		Alternative A2		Alternative A3		Alternative A4	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	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 GeoScience may also be consulted.

## 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 – good condition	Natural veld with scattered aliens	Natural veld with a heavy alien infestation	Veld dominated by alien species	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

Please see Appendix B for Site Photographs and further descriptions of site vegetation.

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.

N/A

## 5) SURFACE WATER

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

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

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

## 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 a description of how this influences the application or may be impacted upon by the application:

<b>Natural area</b>	<b>Dam or reservoir</b>	<b>Pole fields</b>
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
<b>Retail commercial &amp; warehousing</b>	Old age home	<b>River, stream or wetland</b>
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office/consulting room	Airport	Protected Area
Military or police base/station/compound	Harbour	Cemetery
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (indigenous vegetation)
		-

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

N/A

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:

N/A

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:

N/A

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

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
--	-----	----

A core area of a protected area?	YES	NO
A buffer area of a protected area?	YES	NO
The planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
A buffer area of the SKA?	YES	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:	YES	NO
	Uncertain	

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:

N/A

Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If YES, please provide proof that the permit application has been submitted to SAHRA or the relevant provincial authority.		

## 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.

The Kareeberg Local Municipality governs an area approximately 17 702km<sup>2</sup> in size, *i.e.*, approximately 17% of the area governed by the Pixley ka Seme District Municipality. The population of the area was estimated at 12 722 in 2012 and is growing at approximately 2.07% per annum, with the main town being Carnarvon and then Vosburg as well as Vanwyksvlei.

The dominant economic activities in the municipal area are sheep and game farming, Finance and Business, Trade as well as community services. However, Carnarvon is gradually becoming a hub for astronomy as a result of the SKA Telescope and the Meerkat Radio Telescope Projects in the area.

The municipal area has low education levels, with only 19% of the group aged 20 and older having completed matric and approximately 14.7% having never attended school. The extent of poverty in the municipal area is significant, with approximately 37% of the population unemployed and dependent on social grants and approximately 67% requiring municipal subsidised housing as a result of earning below R3500 per month.

The construction phase business opportunities for local entrepreneurs like building contractors and suppliers of building materials and the construction phase employment opportunities operational phase employment opportunities associated with establishing the proposed visitors' science centre will therefore provide an important boost to the economy of the town of Carnarvon and the wider administrative area of the Kareeberg Local Municipality. Furthermore, the proposed visitors' science centre will encourage the community in the administrative area of the Kareeberg Local Municipality Carnarvon and the wider region to become more interested and involved in science and science-related matters so that it becomes possible in the future for a significant number of notable scientists to hail from the area.

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

Anticipated CAPEX value of the project on completion	R140 000 000
What is the expected annual income to be generated by or as a result of the project?	The proposed visitor's science centre is not for generating income.
New skilled employment opportunities created in the construction phase of the project	50 to 60 employees over a period of 14 months
New skilled employment opportunities created in the operational phase of the project	The skilled workers that will be employed, during the operational phase include information officers, managers, technicians for maintenance and scientists.
New un-skilled employment opportunities created in the construction phase of the project	110 over a period of 14 years
New un-skilled employment opportunities created in the operational phase of the project	12
What is the expected value of the employment opportunities during the operational and construction phase?	R3 500 000 during the construction phase of 14 months and R6 000 000 during the first five years of the operational phase
What percentage of this value will accrue to previously disadvantaged individuals?	85%
The expected current value of the employment opportunities during the first 10 years	R10 000 000
What percentage of this value that will accrue to previously disadvantaged individuals?	85%

## 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 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)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	

- b) Indicate and describe the habitat condition on site (will be described once assessments have been received)

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into the condition, e.g. poor land management practices, presence of quarries, grazing, harvesting regimes etc).
Natural		
Near Natural (includes areas with low to moderate levels of alien invasive plants)		
Degraded (includes areas heavily invaded by alien plants)		
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	60%	The vegetation on the proposed site is significantly disturbed, with signs of trampling caused by pedestrians using the property as a throughfare and with a soccer field having been established near the north-eastern corner. Please see the Biodiversity Compliance Statement attached hereto as Appendix D1

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)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline			
	Endangered									
	Vulnerable									
	Least Threatened	YES	NO	UNSURE	YES	NO	YES	NO		

d) Please describe 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)

**Vegetation**

The vegetation on the proposed site is identified as Upper Nama Karoo. This vegetation type is categorised as Least Threatened. Please refer to the terrestrial biodiversity investigation report attached hereto as Appendix D1

**Aquatic ecosystems**

The proposed site does not have any watercourses thereon. However, an old dam exists with 100m too the south of the proposed site.



## SECTION C: PUBLIC PARTICIPATION

### 1) ADVERTISEMENT AND NOTICES

Publication name	Gemsbok
Date published	28 June 2024
Location of notices	
Agricultural cooperative	
Proposed site	
Offices of the Kareeberg Local Municipality	
<b>Date placed:</b> 28 June 2024	

Include proof of the placement of the relevant advertisements and notices (Refer to 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 No. R. 733.

#### **PPP (Refer to Appendix E)**

- An advertisement was placed in a local newspaper which was published on 28 June 2024. Refer to Appendix E1.
- Adjacent landowners/ occupiers were notified via letter drops on 28 June 2024.
- An initial register of possible interested and affected parties was compiled (Refer to Appendix E)
- A site visit was conducted on 28 June 2024 to familiarise with the proposed site and nearby surrounding area and identify environmental sensitivities associated with the proposed site.
- A Comments and Responses Report (C&R Report) has been compiled to address comments received during the initial stage of public participation (Refer to Appendix E).
- Subsequent to the pre-application process, an application form was compiled and submitted to the competent authority and a Draft BAR has been made available to the competent authority and I&APs for a commenting period of 30 days.

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

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (Tel. number or e-mail address)

Include proof that the key stakeholder received written notification of the proposed activities (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 with the competent authority.

### 3) ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES (Please See Appendix E)

Summary of main issues raised by I&APs	Summary of response from EAP
None	N/A

### 4) COMMENTS AND RESPONSES REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the 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 BAR as Appendix E3.

**Please refer to Appendix E3 for the comments and response report.**

### 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
<b>Please refer to Appendix E</b>					

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

### 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 before the commencement of the public participation process.

A list of registered I&APs must be included in Appendix E5.

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

## 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.

Please see Appendix F for Impact Assessment and Scoring Matrix.

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
Geographic and physical	<b>Direct impacts:</b>	Low negative	<ul style="list-style-type: none"> <li>- Implement EMPr;</li> <li>- Minimise development footprint;</li> <li>- ECO monitoring;</li> </ul>
	<b>Indirect impacts:</b>	Low negative	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	Low negative	
Biological: (vegetation, protected species, CBAs,)	<b>Direct impacts:</b>	Medium-low negative	<ul style="list-style-type: none"> <li>• All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.</li> <li>• A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies.</li> <li>• Before any work is done the footprint must be clearly demarcated. The demarcation must aim at minimum footprint and minimisation of disturbance.</li> <li>• All alien invasive species within the footprint and or within 10m of the footprint must be removed responsibly. Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods);</li> </ul>
	<b>Indirect impacts:</b>	Low negative	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	Low negative	

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
			<ul style="list-style-type: none"> <li>Care must be taken to dispose of alien plant material responsibly.</li> <li>Indiscriminate clearing of any area outside of these footprints must not be allowed.</li> <li>An integrated waste management approach must be implemented during construction.</li> <li>Construction related general and hazardous waste may only be disposed of at approved waste disposal sites.</li> <li>All rubble and rubbish should be collected and removed from the site to a Municipal approved waste disposal site.</li> </ul>
Sewage Management	<b>Direct impacts:</b>	Low negative	A single portable toilet for every 15 construction workers must be provided during the construction phase and the sewage must be collected and appropriately disposed of at a licensed wastewater treatment works at least twice a week.
	<b>Indirect impacts:</b>	Low negative	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	Low negative	
Watercourse	<b>Direct impacts:</b>	Medium negative	<ul style="list-style-type: none"> <li>Construction work must be commenced with and completed during the dry season to minimise the washing away of sediment into the nearby watercourse.</li> <li>Stormwater control trenches must be kept clear of blockages</li> </ul>
	<b>Indirect impacts:</b>	Low negative	
	<b>Cumulative impacts:</b>	Low negative	
Socio-economic	<b>Direct impacts:</b>	Medium positive	No mitigation is required.
	<b>Indirect impacts:</b>	Medium positive	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	Medium positive	
Cultural-Historical	<b>Direct impacts:</b>	Low	<ul style="list-style-type: none"> <li>In the event that fossil remains or trace fossils are discovered either on the surface or exposed by excavations, the Environmental Control Officer (ECO) in charge of these developments must be informed. These discoveries ought to be protected, and the</li> </ul>
	<b>Indirect impacts:</b>	Low	
	<b>Cumulative impacts:</b>	Low	

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
	<i>After mitigation</i>		<p>ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that mitigation can be carried out by a palaeontologist.</p> <ul style="list-style-type: none"> <li>• Before any fossil material can be collected from the development site, the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012).</li> <li>• These recommendations should be incorporated into the Environmental Management Programme (EMPr) for the Project.</li> <li>• If during construction, any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found, the SAHRA must be alerted as per section 35(3) of the NHRA.</li> <li>• If unmarked human burials are uncovered, the SAHRA must be alerted immediately as per section 36(6) of the NHRA. Depending on the nature of the finds, a professional archaeologist or palaeontologist must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources are of archaeological or palaeontological significance, a Phase 2 rescue operation may be required, subject to permits issued by SAHRA.</li> </ul>
Noise impact	<b>Direct impacts:</b>	Medium negative	<p>Any noise caused by the establishment of the proposed development will be a temporary impact of the construction phase and the noise of the operational phase should be comparable to the current noise levels of the surrounding central business district. The following mitigation measures will be implemented:</p> <ul style="list-style-type: none"> <li>- A complaints register must be maintained on-site. Any complaints received will be responded to and rectified accordingly. The ECO must be notified of any complaints</li> <li>- Working hours must be strictly limited to construction working hours that are</li> </ul>
	<b>Indirect impacts:</b>	Low	
	<b>Cumulative impacts:</b>	Moderate	

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
			acceptable to the local authority
Visual impact	<b>Direct impacts:</b>	Medium	<ul style="list-style-type: none"> <li>The construction phase should be completed as quickly as possible.</li> <li>Construction work must be limited to during the day.</li> <li>Construction work should be limited to during the day</li> <li>All construction rubble and debris must be cleared as soon as possible.</li> </ul>
	<b>Indirect impacts:</b>	Low	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	Low	
<b>No-go option</b>			
The "No-Go" option: Potential impact associated with the No-Go alternative.	<b>Direct impacts:</b>	High negative	<p>- The no-go alternative entails maintaining the <i>status quo</i>, i.e., to allowing the proposed site to remain as a disused parcel of land.</p> <p>This is a highly undesirable option, as leveraging on the establishing the proposed development to leverage on nearby SKA Telescope Project nearby is expected to result in major socio-economic benefits in the region.</p> <p>The 'no-go' alternative is especially undesirable to adopt, in light of the low potential negative impacts of the proposed development when the impact mitigation measures contained in the EMPr are implemented.</p>
	<b>Indirect impacts:</b>	High negative	
	<b>Cumulative impacts:</b> <i>After mitigation</i>	High negative	

**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 occurring and the significance of impacts.

**Please refer to Appendix F for the full Impact Assessment and proposed Mitigation Measures.**

### **Proposed establishment of a visitors' science centre on Erf 431 (a portion of Erf 353), Carnarvon**

The establishment of the proposed visitors' science centre will provide some employment opportunities during the construction phase, thereby helping temporarily to alleviate the significant unemployment in the area and will strengthen the economy of the nearby surrounding area by boosting business for local entrepreneurs that include *inter alia*, construction companies and

suppliers of building materials.

The operational phase of the proposed development will provide significant socio-economic benefits by providing employment opportunities for inter alia, information officers, gardeners, maintenance crews, scientists, managers. In addition, the local economy is likely to experience an influx of monies that will be spent by the additional tourists that the visitors' science centre will draw to the town of Carnarvon.

The proposed development will result in low ecological impacts upon implementation of the impact mitigation measures contained in the terrestrial biodiversity study report (Appendix D1, refers). In addition, the proposed development will result in low freshwater-related impacts upon implementation of the recommendations contained in the freshwater investigation report (Appendix D2, refers). The proposed development will result in low heritage-related impacts upon implementation of the impact mitigation measures contained in the heritage impact specialist investigation report (Appendix D3, refers) and the proposed development will result in a low visual impact upon implementation of the impact mitigation measures contained in the visual impact investigation report (Appendix D6, refers).

In view of the above, the likely benefits of the establishing the proposed visitors' science centre far outweigh the potential negative impacts. It is therefore advisable that the competent authority authorise the proposed establishment of the visitors' science centre on Erf 431 (a portion of Erf 353), Carnarvon.

## SECTION E. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto sufficient to decide in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	NO
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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 a further assessment).

The Draft BAR has to be made available to Interested and Affected Parties for public participation as per the EIA Regulations of 2014 (as amended) and it is only afterwards that the BAR can be compiled and submitted to the competent authority for a decision on the application.
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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.

<b><u>Recommended conditions of authorisation</u></b>		
<ul style="list-style-type: none"> <li>• All construction must take place in accordance with an approved construction and operational phase Environmental Management Programme (EMPr).</li> <li>• A suitably qualified and experienced ECO must be appointed to ensure compliance with the conditions of the Environmental Authorization and the EMPr.</li> <li>• Construction work must be strictly limited to daytime working hours to minimise the possibility of noise disturbance.</li> <li>• All waste material on site must be removed and disposed of at a suitably licensed municipal waste disposal facility.</li> <li>• The recommendations contained in the terrestrial biodiversity investigation report attached to the BAR as Appendix D1 must be implemented</li> <li>• The recommendations contained in the freshwater investigation attached to the BAR as Appendix D2 must be implemented.</li> <li>• The recommendations contained in the heritage impact investigation report attached to the BAR as Appendix D3 must be implemented</li> <li>• The recommendations contained in the socio-economic impact investigation report attached to the BAR as Appendix D4 must be implemented,</li> <li>• The recommendations contained in the visual impact investigation report attached to the BAR as Appendix D6 must be implemented</li> <li>• The recommendations contained in the geotechnical investigation report attached to the BAR as Appendix D7 must be implemented</li> </ul>		
Is an EMPr attached?	YES	NO

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 in 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.



Bernard de Witt\_  
NAME OF EAP

\_\_\_\_\_  
SIGNATURE OF EAP

\_\_\_\_\_  
DATE

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## **SECTION F: APPENDICES**

The following appendices are attached:

### **APPENDIX A: MAPS**

### **APPENDIX B: SITE PHOTOGRAPHS**

### **APPENDIX C: FACILITY ILLUSTRATION**

### **APPENDIX D: SPECIALIST REPORTS**

### **APPENDIX E: PUBLIC PARTICIPATION**

APPENDIX E1:PROOF OF ADVERTISEMENT AND NOTICES

APPENDIX E2:COMMENTS AND RESPONSES

APPENDIX E3:I&AP REGISTER

### **APPENDIX F: IMPACT ASSESSMENT AND SCORING MATRIX**

### **APPENDIX G: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

### **APPENDIX H: DETAILS OF EAP AND EXPERTISE**