

ENVIRONMENTAL IMPACT ASSESSMENT
DRAFT BASIC ASSESSMENT REPORT

ESKOM PIENAARSRIVIER CNC
DEA Ref number 14/12/16/3/3/1/1039
DATE April 2014

TEXTURE
ENVIRONMENTAL CONSULTANTS

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1. INTRODUCTION

Eskom Holdings SOC (Ltd) Limpopo Operating Unit, Land Development plans to construct the Pienaarsrivier Customer Network Centre (CNC) in the vicinity of Pienaarsrivier.

The proposed Pienaarsrivier Customer Network Centre will facilitate the rendering of services and maintenance by Eskom officials to existing customers and structures as, inter alia, emergency personnel will be based at the CNC and will be close at hand in case of any electricity problems.

The full scope of work includes the construction of a new office building including electrification, plumbing and interior; stand-by accommodation for staff; technical service centre; enclosed equipment and general store; 2.400mm high steel palisade fence; 59 parking bays; wash bay; 103 680 litre fuel tank; chemical sewer plant; new transformer storage plinth, drainage sump and oil bund; 21 meter lighting; and a new guardhouse.

Eskom therefore proposes to construct the Pienaarsrivier Customer Network Centre (CNC) to improve the rendering of services and maintenance to the area.

2. STUDY APPROACH

The approach followed by the consultants was based on the specifications for the undertaking of a Basic Assessment as provided in the document "Companion to the EIA Regulations, Integrated Environmental Management Guideline Series 5, Department of Environmental Affairs, 2010".

The study approach followed by the Consultants, in short, entailed the following steps:

- Preliminary site investigations to determine the scope of works of the project and to familiarise with the sites were done by the EAP and Eskom in August 2013.
- An application for a Basic Assessment was submitted to DEA and the project was issued with reference number DEA Ref 14/12/16/3/3/1/1039 on 19 September 2013.
- Specialist ecological input was obtained to investigate the flora, fauna and the general biophysical environment in an attempt to identify the potential impacts of the project.
- The proposed development is covered by the National Heritage Resources Act which incorporates heritage impact assessments in the Environmental Impact Assessment process. A Phase 1 Heritage Impact Assessment was therefore done by a specialist to identify the potential impact on heritage resources.
- The National Heritage Resources Act 25 of 1999 in addition requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance be protected. Fossil heritage of national and international significance is found within all provinces of the RSA. Therefore a Palaeontological Assessment was also commissioned.
- Input from an avifauna specialist was obtained to determine the impact of the proposed project on birds.
- During the months of August 2013 - March 2014 the EAP, the ecologist, the bird impact specialist, the archaeologist/cultural heritage management consultant, conducted additional site investigations.
- The Public Participation Programme (PPP) started in March 2014 and continued until May 2014. It included the identification of key stakeholders, the distribution of information letters with a request for comment, as well as advertising of the project in the local press and on site.
- Contact was established with landowner(s) to notify them of the proposed project.

- The Public Participation Programme allows for informed and responsible decision-making by all interested and affected parties. The authorities from whom comments have been received are as follows:
 - Limpopo Dept of Economic Development, Environment & Tourism: Environmental Impact Management
 - Dept of Water Affairs
- A draft Basic Assessment Report was compiled with the main aim to identify issues, potential impacts and potential alternatives associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (I&APs).
- The draft Basic Assessment Report was distributed on 2 May 2014 to the following stakeholders for their comment :
 - Department of Water Affairs: Water Resources & Water Quality Management
 - South African Heritage Resources Authority (via SAHRIS)
 - Limpopo Heritage Resource Authority / LIHRA
 - Limpopo Department of Economic Development, Environment and Tourism: Environmental Impact Management
 - Department of Agriculture, Forestry and Fisheries
 - Department of Minerals and Energy
 - Road Agency Limpopo
 - Department of Roads and Transport
 - Department of Cooperative Governance, Human Settlement and Traditional Affairs: Spatial and Human Settlement Planning
 - Department of Rural Development and Land Reform: Land Reform Office
 - Department of Rural Development and Land Reform: Land Claims Commissioner
 - Transvaal Landbou Unie SA
 - Cullinan Boere Vereniging
 - Pretoria Landbou Unie
 - Waterberg Landbou Unie
 - Endangered Wildlife Trust
 - Wildlife and Environmental Society of SA
 - Agri SA
 - Agri Limpopo
 - Bela-Bela Local Municipality
 - Waterberg District Municipality
 - SA Civil Aviation Authority
 - Eskom Holdings SOC Ltd - Transmission
 - Eskom Holdings SOC Ltd - Limpopo Operating Unit, Distribution
 - Landowners
- Copies of the draft BAR were submitted to the following key stakeholders:
 - Bela-Bela Local Municipality, Municipal Offices, Chris Hani Drive, BELA-BELA, 0480. For Attention: Mr L N Nyambeni, Manager Technical Services cc Mrs D Masa Head of Department: Social and Community Services; Mr M M Maluleka, Municipal Manager.
 - Limpopo Province Department of Economic Development, Environment and Tourism, Modimole Office, 85 River Street, Modimole. Tel 014 7175202. For Attention: Mr L Mahlaule.
 - The Librarian, Bela Bela Municipality: Library Chris Hani Drive BELA-BELA 0480 For Attention Ms M Raditsa Tel 014 736 8052.
 - Limpopo Province Department of Economic Development, Environment and Tourism: Environmental Management, Corner of Suid and Dorp Streets, POLOKWANE, 0700. For attention: Ms T P Malungani cc Mr V M Mongwe.
 - South African Heritage Resource Agency, 111 Harrington Street, CAPE TOWN, 8000. For Attention: Mr Philip Hine - submitted via SAHRIS/email).
 - Department of Water Affairs 22 Rooth Street Bronkhorstspuit For Attention Mr S Macevele Deputy Director: Water Quality Olifants Water Management Area Tel 013 932 2061.
 - Department of Agriculture, Fisheries and Forestry Waterberg District 110 Munnik Street Makhado For Attention: Mr Dlamini Nosipho Tel 015 519 3300/084 501 3563.
 - Eskom Holdings SOC Ltd, Limpopo Operating Unit, Distribution, Land Development, Room T122, 92 Hans van Rensburg Street, POLOKWANE. For Attention: Nkateko Msimango.
- The due date for comment to the draft Basic Assessment Report is 13 June 2014. This allows for a comment period of 40 days.

- In addition, notification of an information meeting on 16 May 2014 was submitted to all I&APs. The purpose of the meeting is to furnish the landowners, and other interested parties with information regarding the extent of the project, the proposed alternatives, and the extent of the Environmental Impact Assessment Process. Information and maps will be presented at the meeting.
- Subsequently, a final Basic Assessment Report (BAR) will be compiled and submitted to I&APs for comment.
- Finally, the final BAR will be submitted to DEA for a decision regarding authorisation of the project. This report will include all concerns raised to the draft and final BARs and the responses thereto. The Consultants (EAPs) will ensure that all concerns raised are addressed in appropriate detail in the final Basic Assessment Report.

3. SCOPE OF PROJECT

3.1 Background

Eskom Limpopo Operating Unit, Land Development (Eskom) plans to construct the Pienaarsrivier Customer Network Centre (CNC) in the vicinity of Pienaarsrivier in the Limpopo Province.

The proposed Pienaarsrivier Customer Network Centre will facilitate the rendering of services and maintenance by Eskom officials to existing customers and structures as, inter alia, emergency personnel will be based at the CNC and will be close at hand in case of any electricity problems.

A Basic Assessment (BA) process for this proposed project is currently being undertaken by Texture Environmental Consultants. The listed activities for the proposed project are the following:

Listed Activity	Activity/Project Description
<u>GN 544, June 2010, Number 13</u> The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres;	A 103 680 litre (103,68 cubic metres) diesel tank will be erected on the site of the Customer Network Centre (CNC). (One cubic meter equals 1000 liters)
<u>GN 544, June 2010, Number 23</u> The transformation of undeveloped, vacant or derelict land to (i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (ii) <u>residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares;</u> except where such transformation takes place for linear activities.	The proposed Customer Network Centre will be constructed on land of approximately 3 hectares near Pienaarsrivier.

3.2 Locality and Regional Context

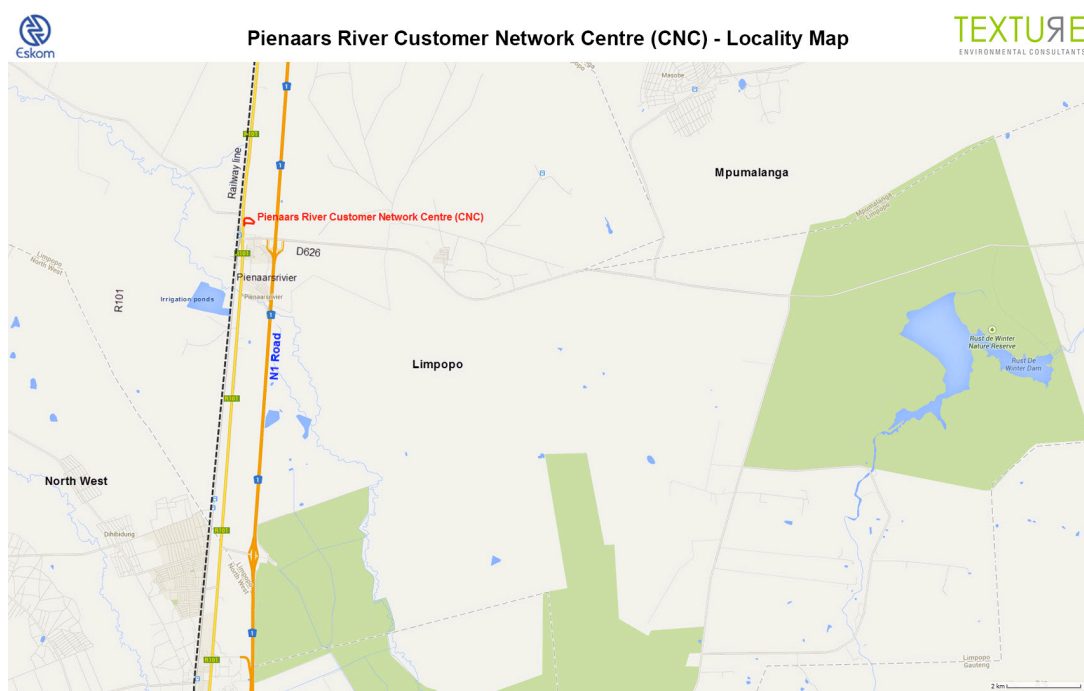
The Eskom Project is located approximately 35km to the south of the town of Bela Bela and is situated on the eastern shoulder of the R101 which runs from Pretoria in the south to Bela Bela in the north. The project area is located on the southern edge of the Springbok Flats and therefore is a level piece of land (1:50 000 Topographical base map 2528AB).

The Project Area is covered with acacia and other bushveld trees where the veld has not been disturbed. The tree and grass plain (savannah veld) of the Springbokflats was home to a wide range of antelope and other game in the past. The landscape is flat where the two alternatives for the proposed CNC will be established.

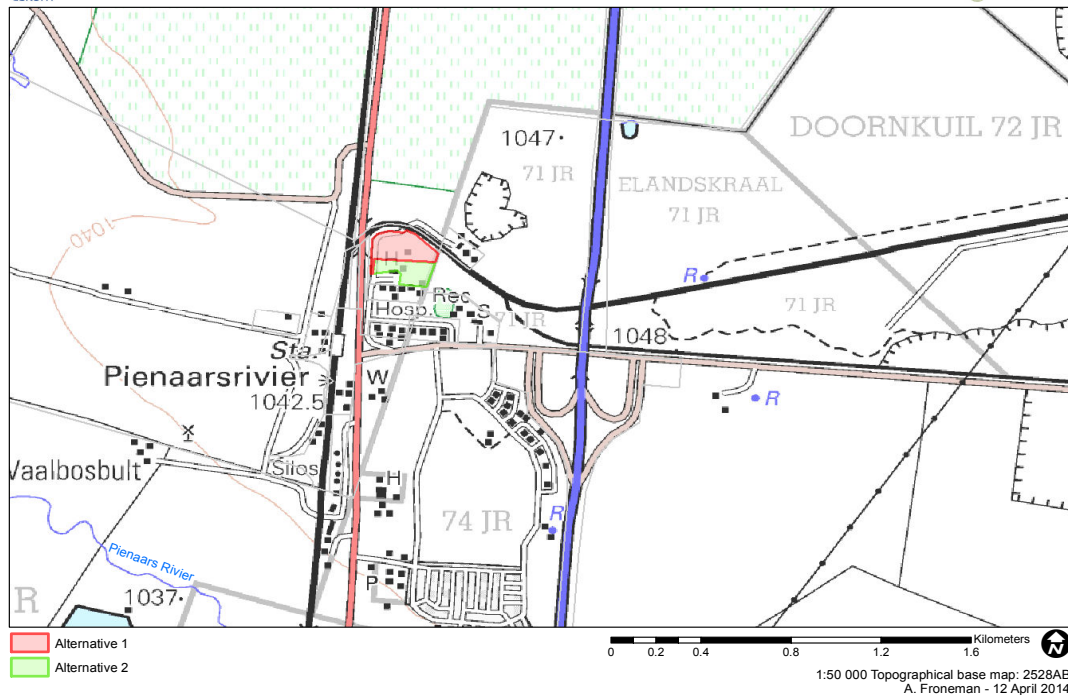
The larger Project Area has been transformed during the last decades, firstly as a result of the development of Pienaarsrivier as an agricultural hub between Pretoria and the far north and subsequently as a result of the development of business infrastructure as well as residential townships in Pienaarsrivier.

There are significant sources of disturbance at the proposed sites - a railway line on the northern boundary, the R101 provincial road borders the western border of the sites, there is a church and a SAPS office (significant vehicle and pedestrian traffic) located to the south of the site and finally a stone crushing plant and the N1 highway to the east. There is also significant existing infrastructure on the piece of property where the proposed sites are located - road and railway infrastructure, distribution power lines and telephone lines.

The Eskom Project Area where the two alternatives for the CNC will be established cannot be described as pristine pieces of land any longer. Both pieces of land have been affected as a result of developmental activities outlined above although a few indigenous trees still exist on both Alternative 01 and Alternative 02.



Location Map



Site map

3.3 Property descriptions

The proposed location for the site for the Pienaarsrivier CNC is on the farm Vaalboschbult 66 JR portion 32 near Pienaarsrivier in the Bela-Bela Local Municipality in the Limpopo Province.

3.4 Need for the project

The Eskom Conversion Act, 2001 (Act No. 13 of 2001) establishes Eskom as a State Owned Company (SOC) with the Government of South Africa as the only shareholder, represented by the Minister of Public Enterprises. The main objective of Eskom is to “provide energy and related services including the generation, transmission, distribution and supply of electricity, and to hold interests in other entities”.

The proposed Pienaarsrivier Customer Network Centre will facilitate the rendering of services and maintenance by Eskom officials to existing customers and structures as, inter alia, emergency personnel will be based at the CNC and will be close at hand in case of any electricity problems.

Eskom therefore proposes to construct the Pienaarsrivier Customer Network Centre (CNC) to improve the rendering of services and maintenance to the area.

3.5 Project components

The full scope of work includes the construction of:

- new office building including electrification and plumbing and interior
- stand-by accommodation for staff

- technical service centre
- enclosed equipment and general store
- 2.400mm high steel palisade fence
- 59 parking bays
- wash bay
- 103 680 litre fuel tank
- chemical sewer plant
- new transformer storage plinth, drainage sump and oil bund
- 21 meter lighting
- new guardhouse

The relevant listed activities for the proposed project are the following:

1. The CNC will be constructed on a site of approximately 3 hectares.

The project involves identification of a site of at least 2 hectares on which Eskom would be able to construct a Customer Network Centre. The physical size of the footprint/developed areas will be approximately 1830.64 m². The coverage of the site will be approximately 16%.

Listed Activity	Activity/Project Description
<p>GN 544, June 2010, Number 23</p> <p>The transformation of undeveloped, vacant or derelict land to</p> <p>(i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or</p> <p>(ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares;</p> <p>except where such transformation takes place for linear activities.</p>	<p>The proposed Customer Network Centre will be constructed on land of approximately 3 hectares near Pienaarsrivier.</p>

2. A diesel tank of 103 680 litre will be erected on the site

Listed Activity	Activity/Project Description
<p>GN 544, June 2010, Number 13</p> <p>The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres;</p>	<p>A 103 680 litre (103,68 cubic metres) diesel tank will be erected on the site of the Customer Network Centre (CNC). (One cubic meter equals 1000 liters)</p>

4. FEASIBLE AND REASONABLE ALTERNATIVES

The following alternatives have been identified and are described as follows:

4.1 NO-GO ALTERNATIVE

It is suggested that to maintain the status quo is not the best option for the macro environment. This project is part of Eskom's implementation of a Master Plan for the rendering of services and maintenance by Eskom officials to existing customers and structures. Inter alia, emergency

personnel will be based at the CNC and will be close at hand in case of any problems in the distribution network. Should this application not be approved then the support to the broader area will be unreliable and this can result in blackouts and major disturbances in energy provision.

The natural environment of the study area has been moderately impacted upon. It is also situated within the small town of Pienaarsrivier and as such is subject to many of the impacts associated with low levels of urbanisation. Historically, the ground has been lightly cultivated and grazed, but not on a commercial scale.

No habitats or areas are seen as sensitive (no-go zones). There are no wetlands within the study area or within a 500m radius of the study area. There are no suitable habitats for red data faunal or floral species as such. The only sensitive (no-go zone) is seen as the camelthorn tree within the study area. This tree has to be protected and left undisturbed. Besides this area, there are no other sensitive (no-go) areas. However, the fact that the veldtype in which the study area is situated (Springbokvlakte thornveld) is endangered and poorly protected means that any development within the study area needs to be well designed carefully constructed and minimised.

Taking the above into consideration and all mitigating measures put forward, then there are no 'fatal flaws' seen and the project may go-ahead. In other words, if all recommendations and mitigating measures are put in place the project can go ahead. The No-Go development alternative is not considered the responsible way to manage the site(s).

4.2 ACTIVITY ALTERNATIVES:

4.2.1 Agriculture

- The Springbokvlakte is a region known for its rich, turf soils and as been well cultivated and utilised over the years. The primary agricultural activity is cultivation of mielies (maize). Other agricultural activities include cattle and winter crops such as wheat.
- The study area itself is small and situated within an urbanised area.
- The study site is presently a small piece of un-utilised veld that is lying fallow. No extensive or even medium term agricultural activities of any sort have taken place on the site over the years.
- The agricultural potential of the study area can be seen as very low arable to very low-grazing. In other words, the agricultural potential for the local area (or loss thereof caused by the construction of a customer network centre) is negligible.
- It is therefore submitted that agriculture could not be considered as an alternative activity on the site.

4.3 LOCATION/SITE ALTERNATIVES

4.3.1 Description of Site Alternative 1 and 2

Eskom is planning the construction of a number of customer network centres around the country. The need for one has been identified for the Pienaarsrivier district. The size of the ground needed is approximately 2ha, although only about 20-30% will be developed in terms of buildings.

Two alternatives (options) for the site of the CNC were identified and investigated. Alternative 1 is to the immediate north of Alternative 2.

The GPS coordinates for specific locations within the study site are as follows:

- Alternative 1 (centre point): 25°12'2.67"S; 28°17'48.88"E.

- Alternative 2 (centre point): 25°12'6.39"S; 28°17'50.45"E.

The land use on the two site alternatives is that of un-utilised thornveld. The area can however, be best described as a low-level urbanised area.

The study area and both Alternative sites are flat to very flat, with no koppies, rocky ridges or kloofs (steep valleys). The study area slopes slightly from east to west. The centre area is fairly flat, with a slight slope to the north and to the south.

No large perennial rivers are found in the immediate area or the study area. The closest river is the Pienaars river, which is approximately 1,7km to the west and south of the study area. No wetlands, drainage lines or other watercourses are present in the study area. No large bodies of open water such as dams or even farms dams are present in the study area or in the local area.

There is very little difference between Alternative 1 and Alternative 2 in terms of the natural environment. Alternative 1 has a camelthorn tree on it that needs to be protected. However, Alternative 2 has more large trees on site and therefore potentially more trees would need to be removed.

A comparison between the two Alternatives, as to the number of ecologically sensitive units each one potentially impacts on, is shown below.

Table: Comparison of Potential Impacts by Alternative Options

Ecological Sensitive Units	Alternative 1	Alternative 2
Areas of High ecological sensitivity	0	0
No-Go areas in close proximity	1	1
No. of river & stream crossings	0	0
No. of major drainage line crossings	0	0
Rocky outcrops in corridor	0	0
Ridges in corridor	0	0
Floodplains encountered	0	0
Wetlands encountered	0	0
Total impacts per route	1	1

4.3.2 Co-ordinates:

The alternatives for the project are found at approximately:

Alternative 1 Bend Coordinates

Longitude (Degrees Minutes Seconds)	Latitude (Degrees Minutes Seconds)
28° 17' 44.47" E	25° 12' 6.43" S
28° 17' 44.61" E	25° 12' 4.23" S
28° 17' 53.41" E	25° 12' 4.75" S
28° 17' 53.88" E	25° 12' 3.49" S
28° 17' 50.50" E	25° 12' 0.56" S
28° 17' 49.32" E	25° 12' 0.07" S
28° 17' 48.95" E	25° 12' 0.39" S
28° 17' 46.80" E	25° 12' 0.10" S
28° 17' 45.08" E	25° 12' 0.60" S
28° 17' 44.33" E	25° 12' 1.35" S
28° 17' 44.06" E	25° 12' 6.41" S

Alternative 2 Bend Coordinates

Longitude (Degrees Minutes Seconds)	Latitude (Degrees Minutes Seconds)
28° 17' 53.37" E	25° 12' 4.80" S
28° 17' 52.16" E	25° 12' 8.35" S
28° 17' 48.19" E	25° 12' 8.10" S
28° 17' 48.44" E	25° 12' 6.41" S
28° 17' 47.97" E	25° 12' 6.04" S
28° 17' 44.51" E	25° 12' 6.41" S
28° 17' 44.65" E	25° 12' 4.27" S

4.3.3 Specialist input

Specialist input was obtained to investigate the impact of the various alternatives that could accomplish the purpose of the project. The specialist input is summarised as follows:

4.3.3.1 Ecological Status Report

The ecological status report identified the following:

Conservation status

The study site is situated within Springbokvlakte Thornveld, which is part of the Central Bushveld Bioregion and the Savanna Biome.

The conservation status of the Springbokvlakte Thornveld is considered Endangered. Only 1% is statutorily conserved, mainly in the Mkombo Nature Reserve. Roughly three times this area is conserved in a number of other reserves. At least 49% of the veldtype has already been transformed, including about 45% cultivated and 3% urbanised.

Species of conservation concern

No floral or faunal species of conservation concern (which include red data species) were found on the study site during field investigations. None are considered to occur.

No species of conservation concern were observed during field investigations. However, a few camelthorn (*Acacia erioloba*) trees were found on and close to the study site. This is a protected tree (species of conservation concern) and cannot be moved or disturbed at all without proper supervision and/or authorisation. The Ecological Sensitivity map in Appendix A4 shows the location of two camelthorn trees (C1 & C2). Both of these camelthorn trees will need to be clearly marked and enclosed prior to commencement with construction so that they are visible to construction crews and machine operators. Other identified camelthorn trees fall way outside of the study site or access areas. A few other large acacia thorn trees (*Acacia mellifera* & *Acacia nilotica*) have also been marked and it is strongly recommended that if possible these trees not be removed (T1-T9). The gps coordinates for the exact positions of the camelthorns and other acacia trees are given in the Ecological Sensitivity map in Appendix A4.

Ecological sensitivity

The only identified distinct habitat type on the study site is thornveld. No ecological communities in the study area were found to have a high ecological sensitivity and deemed as 'No-Go' zones. The exception being the camelthorn tree identified on site. Camelthorn (*Acacia erioloba*) is a protected tree species.

Ecological Communi	Floristic Sensitiv	Faunal Sensitivi	Ecological Sensit	Development Go-Ahead
Thornveld	Medium	Medium/Low	Medium	Go-But

Surface water in the region and study area

No large perennial rivers are found in the immediate area or the study area. the closest river is the Pienaars river, which is approximately 1,7km to the west and south of the study area. No wetlands, drainage lines or other watercourses are present in the study area. No large bodies of open water such as dams or even farms dams are present in the study area or in the local area.

The study area for the Pienaarsrivier CNC falls within Primary Drainage Area A.

Go, No-Go Option

From an environmental viewpoint no fatal flaws (no-go options) were identified. If all recommended mitigating measures are enforced then the project has go-ahead in terms of the ecological component of the project.

Proposed alternative route recommendations

There is very little difference between Alternative 1 and Alternative 2 in terms of the natural environment. Alternative 1 has a camelthorn tree on it that needs to be protected. However, Alternative 2 has more large trees on site and therefore potentially more trees would need to be removed.

Therefore, taking all pertinent issues relating to the natural environment into account, as well as the specialist's views during site investigations the Ecological recommended alternative for the proposed project is: Alternative 1

Impacts

The nature of the impact on the natural environment is the proposed construction and establishment of a customer network centre (CNC). The biggest impact will be during the construction phase when the buildings and parking lot are built. Thereafter, the impacts will still be significant and lasting and will include the buildings and continual movement of people in the area. The fact that the area will be fenced will have significant impact on the movement of any terrestrial species should they venture through the area.

The footprint of the proposed project is relatively small and in a low urbanised and farming area and will not have any significant negative impacts on other activities.

Impact on thornveld

The impact of the activities associated with the project is initially seen as high. The main reasons are that buildings and parking lots will be constructed and the terrain will be fenced. This creates a more definite footprint on the natural environment. This is aggravated by the fact that the veldtype in which the study site is situated is viewed as endangered. There is also a protected camelthorn tree on the preferred site (Alternative 1).

However, the reality is that the identified sites are within impacted veld that is within the town of Pienaarsrivier, albeit outside the outer edge. The site is almost surrounded by built up environment, which offsets the impacts on the natural veld where there is presently little or no human impact.

General Impacts

General impacts rated before and after mitigating measures are implemented

Issue	Significance rating before and after mitigation	
	Before	After
Farming Related & Other Issues		
Access to properties	Low	Low
Access roads (damage, blocking)	Medium	Medium
Loss of agricultural potential	Low	Low
Loss of cultivation potential	Low	Low
Loss of grazing potential	Low	Low
Impacts on seasonal activities	Low	Low
Natural Environment		
Erosion	Low	Low
Impact on flora	Medium	Medium
Impact on fauna	Low	Low
Impact on watercourses	Low	Low
Impact on wetlands	Low	Low
Importation of alien vegetation	Low	Low
Impact of herbicides	Low	Low
Impact on conservation areas	Low	Low

Mitigation of Impacts

Construction phase

- No area for a campsite or temporary storage site should be selected where it would be necessary to cut down any trees or clear any shrub land whatsoever, not even alien species.
- Any selected temporary site (accommodation and storage) preferably must be on the demarcated site itself.
- No site within 100m of a river, stream or major drainage line may be used for temporary accommodation or storage. However, in the case of this project it is not an issue.
- No indigenous trees or shrubs outside of the selected CNC site may be removed.
- No additional access roads to the CNC site for equipment transport and day-to-day vehicles may be constructed. Only existing roads to be used.
- Dust will be an issue during construction. A church building is nearby, as well as residential houses. Therefore, water trucks must be used daily on roads and construction sites to dampen dust.
- No trees above 2m on the selected CNC site may be removed without written consent from a botanist or ecologist. Protected trees do occur on the sites.
- An on going programme must be implemented to mechanically control alien plant species that invade the disturbed soils within the CNC site.
- Mechanical control of alien species to be implemented within three (3) months of completion of construction of the powerline. Thereafter ever six months.
- No chemical control (herbicides) to be used in the control of alien plants. All control of weeds to be mechanical in nature.
- Only locally indigenous trees to be planted on CNC site (if landscaping is to be done).
- All construction material, equipment and any foreign objects brought into the area by contractors and staff to be removed immediately after construction.
- Removal of all waste construction material to an approved waste disposal site. And only by an official registered waste removal company. Eskom to ensure that the company does remove waste to a registered site and does not dump illegally.

- A 5m buffer zone (no-go zone) around the two identified camelthorn trees to be implemented. Orange barrack netting to be erected around these trees and maintained during the entire construction phase.

General Recommendations

Construction phase

- Camp site, storage facilities and other necessary temporary structures to preferably be erected within the confines of the CNC site.
- No open fires to be allowed outside of designated sites.
- Collection of wood for fires and cooking from out of the surrounding veld is prohibited.
- A designated area for camp fires and cooking needs to be made. Should open fires be used then an area of at least 2m by 2m needs to be cleared of any flammable materials such as grass.
- No material or machinery to be stored or placed in the open veld outside the designated area of the CNC site.
- Proper and adequate containers (rubbish bins) to be placed in campsites for the temporary disposal of food waste and general litter generated by construction workers. These containers need to close securely to avoid items (eg. Paper and plastic) been blown into the veld, etc. Proper waste management is essential.
- Containers for food and general waste to be removed weekly to avoid bins overflowing their capacity.
- Under no circumstances may any sewage, waste food or general litter be dumped, or buried in the veld.
- No concrete to be allowed to be mixed in the veld. Only premixed cement to be used and only to be transported onto site in registered concrete trucks.
- All construction activities and movement of people and machinery to remain within the designated CNC site, as far as possible and within reason.

Completion phase

- All leftover construction material, equipment, refuge, etc. needs to be completely removed after construction. This immediately after completion of construction, as well as on a continual basis during construction.
- Removal of all waste construction material must be to an approved waste disposal site only.
- Proper and complete take down and removal of all temporary accommodation sites, storage sites, etc. needs to take place immediately after the completion of the project. This includes all litter (paper, plastic, bottles, etc.).
- All disturbed sites and surfaces to be rehabilitated. Rehabilitation work to start during and immediately on completion of the project.
- No unused piles of sand, soil or construction materials of any kind whatsoever to be left in the powerline corridors, or at temporary construction or storage sites.

Maintenance phase

- During any maintenance activities all storage of equipment, temporary structures, etc must all be within the CNC site itself.
- No new veld or areas outside of the CNC terrain may be used for storage.
- No new veld or areas outside of the CNC terrain may be used (even on a temporary basis) for the holding of rubbish or other removed materials whatsoever.
- All storage and temporary dumping sites to be within the CNC terrain and only on disturbed areas. These disturbed areas could include paving and/or parking lots.

4.3.3.2 Bird Impact Assessment

The Bird Impact Assessment indicated the following:

The study area has been transformed for decades to accommodate a change in land use (i.e. industrial, urban and agriculture) which reduced the number and variety of bird species originally inhabiting the area on account of the loss of habitat and decline in food availability. In the case of the larger Red Data bird species, this has resulted in these species long since disappearing from the study area for all practical reasons. It is therefore not envisaged that any Red Data species will be permanently displaced from the study area by the habitat transformation that will take place at the site of the proposed CNC, irrespective of which alternative is ultimately used. The avifauna that will be directly affected by the loss of habitat are the birds breeding and foraging in the 3ha area that will be taken up by the CNC. These are almost entirely made up of smaller, non-threatened passerines, with the exception of a few non-threatened raptors and terrestrial species. In this instance, the impact should not materially threaten the local or regional populations of any of these species, due to the small size of the development.

Vegetation types and bird habitat

1 Woodland

Arid woodland (which forms part of the savanna biome and also encompasses Springbokvlakte Thornveld) is historically the dominant vegetation type in the study area and consists of a grassy under-storey and a distinct woody upper-storey of trees and tall shrubs. In the study area, the woodland has been extensively disturbed and consists mostly of open (on old cleared lands) to dense (especially along the Pienaaarsrivier) Acacia woodland. Large areas of woodland have been completely cleared in the past and now consist of grassland.

The Red Data species have all but disappeared from the study area, due to habitat transformation. The natural vegetation in the area itself where the new CNC is to be constructed originally comprised natural woodland, but the woody element has largely been cleared sometime in the past, and it now consists mostly of grassland with low shrub in places and a few isolated trees. None of the Red Data species are likely to be attracted to the remaining natural woodland in the study area except Red-billed Oxpecker, which might be attracted to livestock.

2 Agriculture

There are no cultivated lands within the study area itself, but there are agricultural lands just south of the study area, which are irrigated with water from the Pienaaarsrivier. In general agricultural monocultures are less important for the Red Data species that might still occur in the study area, as it lacks the structural variety of the original woodland. Of more potential importance for Red Data species in the study area are old lands where the woody elements were cleared in the past and where vegetation has re-established. These areas now resemble open woodland with extensive grass cover, which is the dominant habitat type at both alternative sites of the proposed CNC. Species that might benefit from the clearing of the original woodland are Secretarybird, Black-winged Pratincole, Lanner Falcon, Lesser Kestrel, African Grass-Owl and African Marsh-Harrier.

3 River, dams and wetlands

The only river in the area is the Pienaaars river. Rivers are important habitat for birds in that they act as corridors of microhabitat for waterbirds, while the riparian vegetation on the banks provide cover for skulking species such as African Finfoot. The project does not impact directly on the river, as the riverine vegetation is located largely outside the study area. The two alternative sites for the CNC

itself are located approximately 1.6km away from the river at its closest point. There is a dam located approximately 2km from the proposed CNC sites which most likely acts as a focal point for waterbirds. Red Data species that could be attracted to the dam include Greater Flamingo, Yellow-billed Stork, Greater Painted-snipe, Black Stork and African Openbill. The CNC is not expected to impact directly on any birds attracted to the aforesaid dam.

4 Urban and industrial infrastructure

The study area contains the small town of Pienaarsrivier. There are significant sources of disturbance at the proposed sites - a railway line on the northern boundary, the R101 provincial road borders the western border of the sites, there is a church and a SAPS office (significant vehicle and pedestrian traffic) located to the south of the site and finally a stone crushing plant and the N1 highway to the east. There is also significant existing infrastructure on the piece of property where the proposed sites are located - road and railway infrastructure, distribution power lines and telephone lines. All of this makes the occurrence of sensitive Red Data species highly unlikely due to disturbance and habitat fragmentation.

Assessment of impacts

1 Displacement through habitat transformation and disturbance

During the construction phase and maintenance of the proposed CNC, habitat destruction and transformation inevitably takes place. This happens with the construction of access roads, and the actual construction of the CNC infrastructure, which will result in the total transformation of an area of approximately 3ha. These activities will have an impact on birds breeding, foraging and roosting in or in close proximity of the site, through the modification of habitat and disturbance during the construction activities, which will result in the displacement of birds from the area.

Historically (i.e. before the establishment of the current infrastructure and agriculture) the area surrounding the proposed CNC comprised entirely of undisturbed woodland. As a result it could have supported a number of large Red Data species, particularly raptor species such as Martial Eagle, Tawny Eagle, Bateleur, Lappet-faced Vulture and also non-raptors such as Southern Ground Hornbill and Kori Bustard. However the study area has been transformed for decades to accommodate a change in land use (i.e. industrial, urban and agriculture) which reduced the number and variety of species originally inhabiting the area on account of the loss of habitat and decline in food availability. In the case of the larger Red Data species, this has resulted in these species long since disappearing from the study area for all practical reasons. It is therefore not envisaged that any Red Data species will be permanently displaced from the study area by the habitat transformation that will take place at the site of the proposed CNC, irrespective of which alternative is ultimately used. The avifauna that will be directly affected by the loss of habitat are the birds breeding and foraging in the 3ha area that will be taken up by the CNC. These are almost entirely made up of smaller, non-threatened passerines, with the exception of a few non-threatened raptors and terrestrial species. In this instance, the impact should not materially threaten the local or regional populations of any of these species, due to the small size of the development.

Mitigations

Potential mitigations for the identified impacts are shown in the table below.

TABLE : Potential mitigations for the identified impacts

Construction Phase

Impact	Mitigation
Habitat destruction	The construction activities must be restricted to the actual footprint of the development. Measures must be put in place to ensure that construction personnel are prevented from accessing the property outside the actual construction site. Care must be taken to ensure that the habitat destruction is kept to what is absolutely necessary for the construction of the CNC.

Comparison of alternatives

None of the options emerges as a clear preferred alternative from a bird impact perspective. The reason for that is that the two options are all clustered in the same area, and of comparable size, meaning that the envisaged impacts are likely to be very similar. Any of the two options are therefore regarded as potentially suitable, provided appropriate mitigation is implemented.

Conclusion

The construction of the proposed Pienaarsrivier CNC will pose a limited threat to the birds occurring in the vicinity of the new infrastructure primarily through habitat destruction and disturbance. However, the impact of habitat transformation associated with the construction of the CNC should be low and should only affect non-Red Data species resident or foraging at the site itself, and not local or regional populations.

4.3.3.3 Heritage Impact Assessment

The main findings of the Heritage Impact Assessment are summarised as follows:-

The Phase I HIA study for the proposed Eskom Project did not reveal the presence of any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Eskom Project Area. There is consequently no reason from a heritage point of view why the Eskom Project should not continue. Both Alternative 01 as well as Alternative 02 seems to be suitable from a heritage point of view for the construction of the proposed Pienaarsrivier CNC.

Mitigation

If any heritage resources of significance is exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

4.3.3.4 Palaeontological Impact Assessment

The main findings of the Palaeontological Impact Assessment are as follows:-

The National Heritage Resources Act 25 of 1999 requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance are protected. Fossil heritage of national and international significance is found within all provinces of South Africa. Heritage resources may not be excavated, damaged, destroyed or otherwise impacted by any development without prior assessment and without a permit from the relevant heritage resources authority.

Summary of findings

The development is taking place in an area covered by mostly the Karoo dolerites of the Karoo Dolerite Suite intrusive into the Irrigasie Formation of the Karoo Supergroup. It is early Jurassic, Mesozoic in age. The development site is situated in town at the crossing of two roads.

Fossils in South Africa mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature. Therefore, if there is the presence of Karoo Supergroup strata the palaeontological sensitivity is generally LOW to VERY HIGH, but here locally ZERO. An exemption letter is issued.

Recommendation

- There is no objection to the development of the construction of the Eskom Project. It is not necessary to request a Phase 1 Palaeontological Impact Assessment to determine whether the erection of buildings, planting of pylons or the erection of a substation will affect fossiliferous outcrops as the palaeontological sensitivity is ZERO. A Phase 2 Palaeontological Mitigation will only be required if during excavation of the development comes across fossiliferous outcrops.
- Both Alternatives are viable as their impact on the palaeontological heritage are equal.

Mitigation

- The following should be conserved: if any palaeontological material is exposed during digging, excavating, drilling or blasting and SAHRA must be notified. All development activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.

5 IMPACT ASSESSMENT

The 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 have been addressed in the draft Basic Assessment Report.

6 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

An Environmental Management Programme was prepared to detail a plan of action to ensure that recommendations for preventing the negative environmental impacts (and where possible improving the environment) are implemented during the life-cycle of a project.

7 CONCLUSION

Alternative sites have been investigated for the project. As can be seen from the discussions, both sites are acceptable if the proposed mitigations are implemented. The ecological assessment favours Site Alternative 1 due to the fact that Alternative 2 has more large trees on site and therefore potentially more trees would need to be removed.

The final decision between Route 1 or 2 should be made on the accumulative weight of other parameters such as feedback from public participation, land tenure issues, construction costs, etc. **Currently, Alternative 1 is preferred as the final Site Alternative** due to the recommendation as stipulated in the ecological assessment as well as the support of the landowner for Alternative 1.

The affected property for the proposed Site Alternative 1 is the farm Vaalboschbult 66 JR portion 32 near Pienaarsrivier in the Bela-Bela Local Municipality in the Limpopo Province.
