ZITHOLELE CONSULTING

PONGOLA - CANDOVER 132 KV POWER LINE AND GOLELA SUBSTATION
DRAFT VISUAL REPORT

Report No.: JW013/13/D764

July 2013

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TERMS AND ABBREVIATIONS

BA ..... Basic Assessment
DEA ..... Department of Environmental Affairs
DWEA ..... Department of Water and Environmental Affairs
DWA ..... Department of Water Affairs
DWAF ..... Department of Water Affairs and Forestry
EA ..... Environmental Authorisation
EMP ..... Environmental Management Plan
GN ..... Government Notice
J&W ..... Jones and Wagener
km ..... kilometres
kV ..... kilovolt
m ..... metres
m^3 ..... cubic metres
mamsl ..... metres above mean sea level
NEMA ..... National Environmental Management Act
NWA ..... National Water Act
R ..... Regulation
SANBI ..... South African National Biodiversity Institute
ToR ..... Terms of Reference
WUL ..... Water Use Licence
WULA ..... Water Use Licence Application

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1. INTRODUCTION

1.1 Background Information

Eskom Holdings State Owned Company Limited (Eskom) is the South African utility that generates, transmits and distributes electricity. Eskom supplies about 95% of the country's electricity and about 60% of the total electricity consumed in Africa. Eskom plays a major role in accelerating growth in the South African economy by providing a high-quality supply of electricity.

With the construction of three proposed new 132 kV substations (Ndumo, Gezisa and Mbazwana) for the supply of the greater Makhathini area in northern KwaZulu-Natal, the existing Pongola-Candover 132kV line will be overloaded by 2013.

Should this line be out of service for whatever reason, then the Makhathini, Gezisa, Ndumo and Nondabuya loads will be shed resulting in an inevitable loss of power supply in the greater Makhatini area and an unacceptable service to customers.

A second 132kV line from Pongola to Candover therefore needs to be constructed to enhance security of supply for the Makhatini substations of Ndumo, Gezisa and Mbazwana in northern KwaZulu-Natal. In order to accommodate a second Pongola-Candover 132kV line, modifications to the existing Pongola 132/22kV substation and the end point, the existing Candover switching station, will have to be undertaken. A second 132kV power line and substation is also required to tee-off the existing Mkuze-Pongola 132kV power line (also called Mkuze-Pongola line 1). This proposed substation will be constructed close to the turn-off from the N2 to the road leading to Golela and Swaziland. This substation will accommodate the electrical load for developments within the vicinity of the border post. As the two projects are in close proximity their environmental impact assessment is being dealt with simultaneously. The area is very hilly and mountainous with bushveld which imposes access constraints and difficulties associated with identifying alternative power line corridors. Game farms, a game reserve and some sugar cane are the predominant land uses.

1.2 Description of the Project

1.2.1 Project Details

The first assessment is for the proposed second Pongola-Candover 132kv power line and associated modifications to the existing Pongola substation and Candover switching station. A 36 metre wide power line corridor for this second 132kV power line from the existing Pongola substation to the existing Candover Switching Station must

be located. The estimated length of the power line will be approximately 50km long. Eskom has a vacant power line servitude parallel to the existing 132kV power line between Candover Switching Station and Pongola Substation which will constitute one of the corridor alternatives for assessment. Modifications to the existing Pongola Substation and Candover Switching Station must be done to accommodate the second Pongola-Candover 132kV line.

The second assessment is for the loop-in and loop-out 132kv power lines from the existing Pongola-Candover 132kv (also called Mkuze-Pongola line 1) power line to the proposed Golela substation and finding the best location for this substation.

This proposed new 132/22kV substation will be located about 1 km north-east of the intersection of the N2 and the secondary road to the Golela border post. Corridors of about 500 metre wide will be investigated in which to locate the 36m wide servitudes for the two approximately 15 km long loop-in and loop-out lines to run from the existing Mkuze-Pongola 132kV line (Mkuze-Pongola Line 1) at two points to the proposed Golela Substation.

1.2.2 Technical Details

The proposed Golela 132/22kV stepdown substation will have a footprint of roughly 100 x 100m. The associated infrastructure to be constructed will include:

- Perimeter Fence: The perimeter of the site will be fenced to ensure the safety of the site and the surrounding people and animals.
- Terracing and foundations: The site will be terraced if needed and foundations will be constructed in line with substation foundation requirements.
- Circuit breakers: For disconnection under no-load condition for safety, isolation and maintenance.
- 5 feeder bays for a potential 5 X 22kV woodpole power lines to exit the substation will be constructed

The proposed 132kV power line will have self-supporting and guyed suspension and strain towers which require a 36m wide servitude - 18 metres either side of the centre line. The towers will be on average 20m high.

1.2.3 Client request

Zitholele Consulting requested Jones and Wagener to submit a quotation to assist with the compilation of a Surface Water as well as a Visual Assessment of the proposed project and its alternatives.

1.3 Study Approach

After the discussions mentioned above, J&W proposed the following scope of work and way forward:

- Delineation of the wetlands according to the DWA methodology (*A practical field procedure for the identification and delineation of wetlands and riparian areas, Edition 1, September 2005)*;

- Once delineated – to determine if the stockpile is within 500m of any wetlands, as 500m is the area of impact that triggers the requirement for a Water Use License prior to any activities being undertaken;
- Comment on the type, size and existing impacts on any potential wetlands;
- Comment on the impact of the groundwater cut-off channel to be constructed above the slope; and
- Indicate a potential way forward with the Authorities.

The above scope was accepted on the 28th August 2012 and the work commenced with site visits on the 29th and 31st August 2012, later on in the project, several changes were made to the route alternatives, after which the site was visited again in October 2012 to include the new areas. This report documents the findings of the assessments.

1.4 Project Team Details

The following project personnel were involved in the compilation of this report.

Konrad Kruger, BSc Hons (Geog)

Mr. Konrad Kruger graduated from the University of Pretoria with a BSc in Environmental Science in 2002 and BSc Honours in Geography in 2003. He has been involved in a variety of environmental projects in the last eight years and has undertaken a variety of specialist studies, mapping and environmental consulting. The specialist studies included vegetation assessments, soil mapping and agricultural assessments, wetland delineations, visual assessments and terrestrial ecological assessments. In terms of similar work, he has undertaken surface water and visual assessments for the Duvha-Minerva 400 kV power line deviation, the Bravo 400 kV Integration Project and the Camden-Mbewu 765 kV power line project.

1.5 Assumptions and Limitations

The following assumptions/limitations were relevant during the assessment:

- The information regarding the position of the route alternatives was received from the client and J&W is not responsible for the accuracy of the route positions;
- Access to the study area was restricted The wetland assessment was undertaken at the end of winter – hence peak summer flows/wetland extent could not be determined; and
- The site was burnt prior to the site investigations and hence the vegetation indicators could not be utilised as part of the delineation.

1.6 Site Locality

The study area is located between the towns of Pongola and Mkuze in the northern parts of the KwaZulu-Natal Province. The main roads in the region are the N2 highway, the R69 and the R66. Figure 1 below illustrates the regional location of the site and Figure 2 shows the topography.

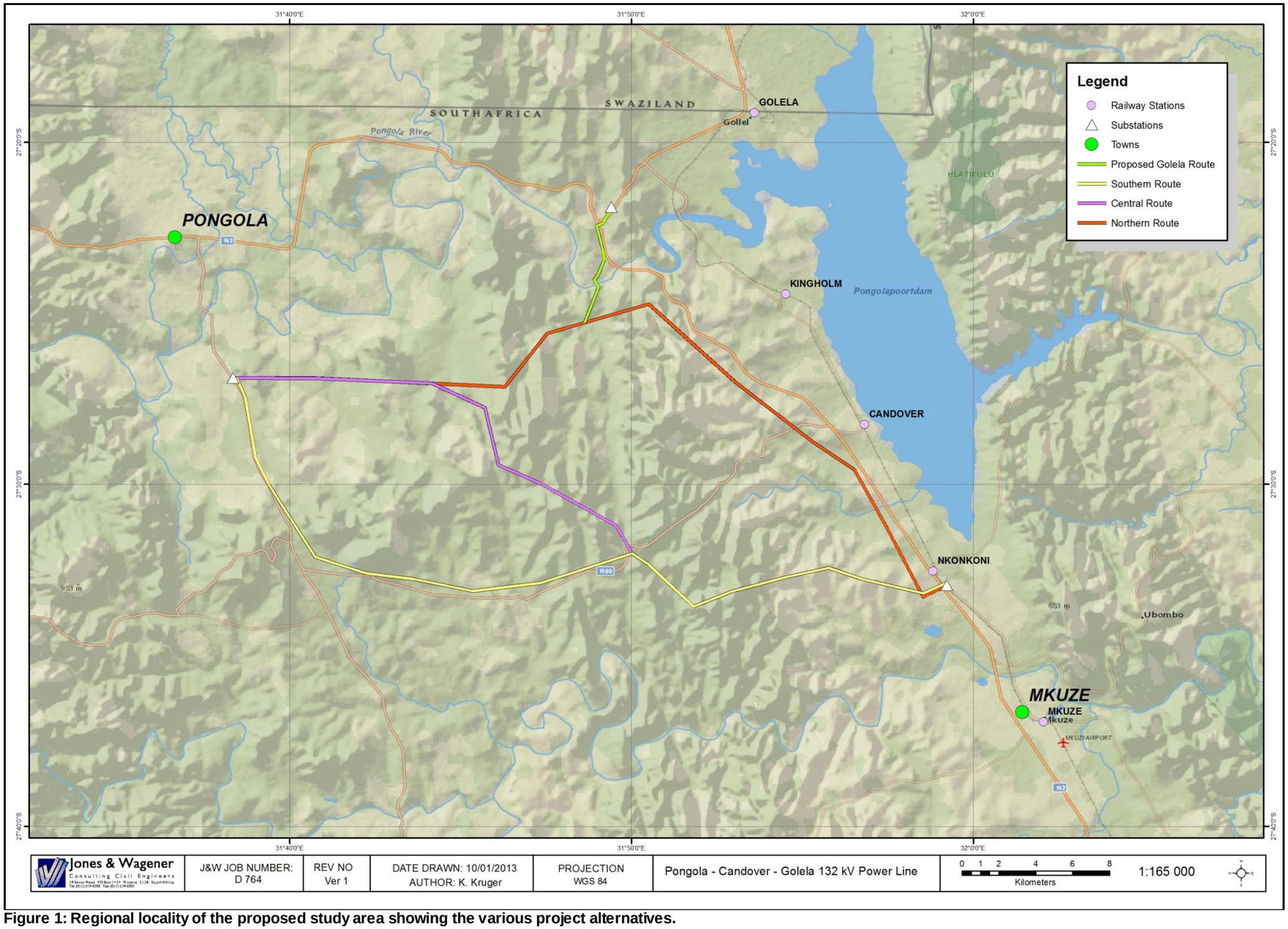

Figure 1: Regional locality of the proposed study area showing the various project alternatives.

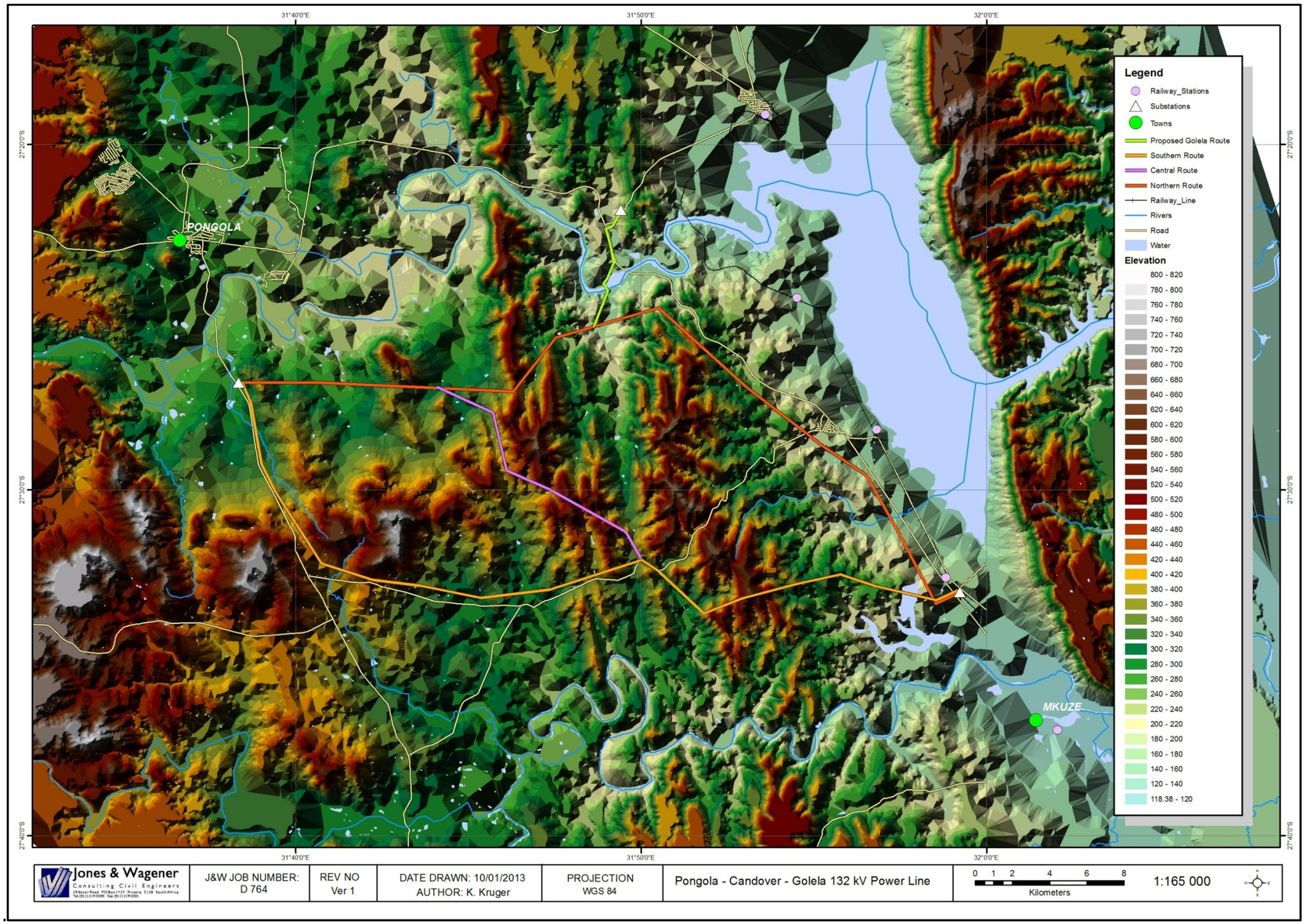

Figure 2: Site Topography and Drainage

2. VISUAL ASSESSMENT

2.1 Introduction

The site and surrounding area may be characterised as bushveld with patches of agricultural land on the extremeties of the study area. The land is used by the traditional authorities and people for grazing of cattle and goats, while the non-traditional areas are mostly used for game farming/hunting farms. In the agricultural areas sugar cane is the dominant crop with fruit also being cultivated. The topography of the region, as described in Section 2 above and shown in the photo below, is quite rugged, with several ridges running through the study area.

Figure 3: View of the topography of the study area

The proposed corridors aim to connect the Candover substation with the Pongola substation and all three corridors take diffenent paths through the ridges. Also the Northern Corridor follows the existing Pongola-Candover 132 kV power line.

2.2 Methodology

The methodology adopted for the visual assessment includes the following tasks:

- Examine the baseline information (contours, building dimensions, vegetation);
- Determine the area from which the proposed power line may be visible (viewshed);
- Identify the locations from which views of the proposed power line may be visible (observation sites), which include buildings and roads;
- Analyse the observation sites to determine the potential level of visual impact that may result from the proposed railway; and
- Identify measures available to mitigate the potential impacts.

Each component of the assessment process is explained in detail in the following sections of the Report.

2.2.1 The Viewshed

The viewshed represents the area from which the proposed site would potentially be visible. The extent of the viewshed is influenced primarily by the combination of topography and vegetation, which determine the extent to which the site would be visible from surrounding areas. The viewshed was determined by J&W through the following steps and presumptions:

- The likely viewshed was determined by desktop study (ArcGIS) using contour plans (20 m interval); and
- An offset of 2 m (maximum) for the observer and an offset of 20 m (maximum) for the proposed power lines were utilized during the spatial analysis.

2.2.2 Visibility Assessment

Site visibility is an assessment of the extent to which the proposed power line would potentially be visible from surrounding areas. It takes account of the context of the view, the relative number of viewers, duration of view and view distance.

The underlying rationale for this assessment is that if the proposed power line (and associated infrastructure) is not visible from surrounding areas then the development will not produce a visual impact. On the other hand if one or more power lines are highly visible to a large number of people in surrounding areas then the potential visual impact is likely to be high.

Based on a combination of all these factors an overall rating of visibility was applied to each observation point. For the purpose of this report, categories of visibility have been defined as high (H), moderate (M) or low (L).

2.2.3 Assessment Criteria

For the purpose of this report, the quantitative criteria listed in Table 2-1 have been determined and used in the Visibility Assessment. The criteria are defined in more detail in the subsection following.

Table 2-1: Visual Impact Assessment Criteria

CRITERIA	DEFINITIONS
Category of Viewer	
Static	Farms, homesteads or industries
Dynamic	Travelling along road
View Elevation	
Above	Higher elevation then proposed power line.
Level	Level with power line view
Below	Lower elevation then power line viewed
View Distance	
Long	> 5 km
Medium	1 – 5 km
Short	200 m – 1 000 m
Very Short	< 200 m
Period of View	
Long Term	> 120 minutes
Medium Time	1 – 120 minutes
Short Term	< 1 minute

Category Viewer

The visibility of the proposed power line will vary between static and dynamic view types. In the case of static views, such as views from a farmhouse or homestead, the visual relationship between the proposed power line and the landscape will not change. The cone of vision is relatively wide and the viewer tends to scan back and forth across the landscape.

In contrast views from a moving vehicle are dynamic as the visual relationship between the proposed power line is constantly changing as well as the visual relationship between the proposed power line and the landscape in which they it is seen. The view cone for motorists, particularly drivers, is generally narrower than for static views.

View Elevation

The elevation of the viewer relative to the object observed significantly influences the visibility of the object by changing the background and therefore the visual contrast. In situations where the viewer is at a higher elevation than the building/structure it will be seen against a background of landscape. The level of visual contrast between the proposed power line and the background will determine the level of visibility. A white/bright coloured structure seen against a background of dark/pale coloured tree-covered slopes will be highly visible compared to a background of light coloured slopes covered by yellow/brown dry vegetation.

In situations where the viewer is located at a lower elevation than the proposed power lines it will mostly be viewed against the sky. The degree of visual contrast between a metallic structure will depend on the colour of the sky. Dark grey clouds will create a significantly greater level of contrast than for a background of white clouds.

View Distance

The influence of distance on visibility results from two factors:

- With increasing distance the proportion of the view cone occupied by a visible structure will decline; and
- Atmospheric effects due to dust and moisture in the air reduce the visual contrast between the structure and the background against which they are viewed.

Period of View

The visibility of structures will increase with the period over which they are seen. The longer the period of view the higher the level of visibility. However, it is presumed that over an extended period the level of visibility declines as people become accustomed to the new element in the landscape.

Long term views of the proposed power line will generally be associated with farm homes and homesteads located within the viewshed. Short term and moderate term views will generally relate to people moving through the viewshed mostly by vehicle.

Site Visibility

The procedure followed by J&W to assess Site Visibility involved:

- Generate a viewshed analysis of the area utilizing ArcGIS 10.
- Determine the various categories of observation points (e.g. Static, Dynamic).

2.3 Visual Character

2.3.1 Landscape Character

The site and surrounding area may be characterised as bushveld with patches of agricultural land on the extremeties of the study area. The proposed power line will start at the Candover substation just south of the Jozini Dam in a valley just north of Mkuze. Elevations range from 160m at Candover to points as high as 700m before decending to the Pongola substation at 340m as shown in Figure 2.

As discussed in Section 2 the bulk of the streams in the study area are non-perennial with the exception of the Pongola and Mkuze rivers, which are the major rivers in the study area and also along with the Jozini Dam the only perennial water sources in the study area. None of the Pongola-Candover corridors cross over these perennial water sources, however the Golela Corridor will have to cross the Pongola River. The Southern and Central Corridors also cross over a wetland in the south west of the study area.

The landscape surrounding the proposed power line can be described as savannah bushveld with some cultivation in the north and south. The natural vegetation does provide quite good screening when at the same elevation as the proposed powerline, however with the varied topography in the study area, views are often elevated and the powerline and the cleared corridor are usually clearly visible against the otherwise thick bush. As mentioned, the Northern Corridor follows an existing route – the Pongola-Candover 132 kV route. Figure 4 below provides a view of the existing Pongola-Candover power line lines looking south along the power line. In addition to the game farming, grazing and agricultural activities, the area is also is crossed by the N2 Highway, the R66 and R69 regional roads and a railway line.

Figure 4: Views of the existing power line.

2.3.2 Viewshed

It should be noted that the viewshed, which is plotted on the maps below, is an approximation that may vary in some locations. Potential views to the proposed power line are likely to be blocked in some localised situations by vegetation or local landform features at specific locations within the viewshed. Similarly, glimpses of the proposed power line may be available from some high-elevation locations outside the plotted

viewshed. The figures illustrate the visibility of each of the alternatives. The coloured areas indicate areas that are visible with the red areas having very high visibility and the green having lower visibility.

Notable features of the viewshed are summarised by the following points and illustrated in the maps below:

- The Pongola-Candover Routes
    - The viewshed rarely extends north of the Pongola River;
    - Numerous hunting/safari lodges are located within the viewshed with high numbers of potential viewers;
    - Views alter significantly due to topography with isolated views on high outcrops; and
- The Golela Route
    - Views also highly variable related to topography;
    - Corridor very visible locally, but very few viewable areas beyond 4km.

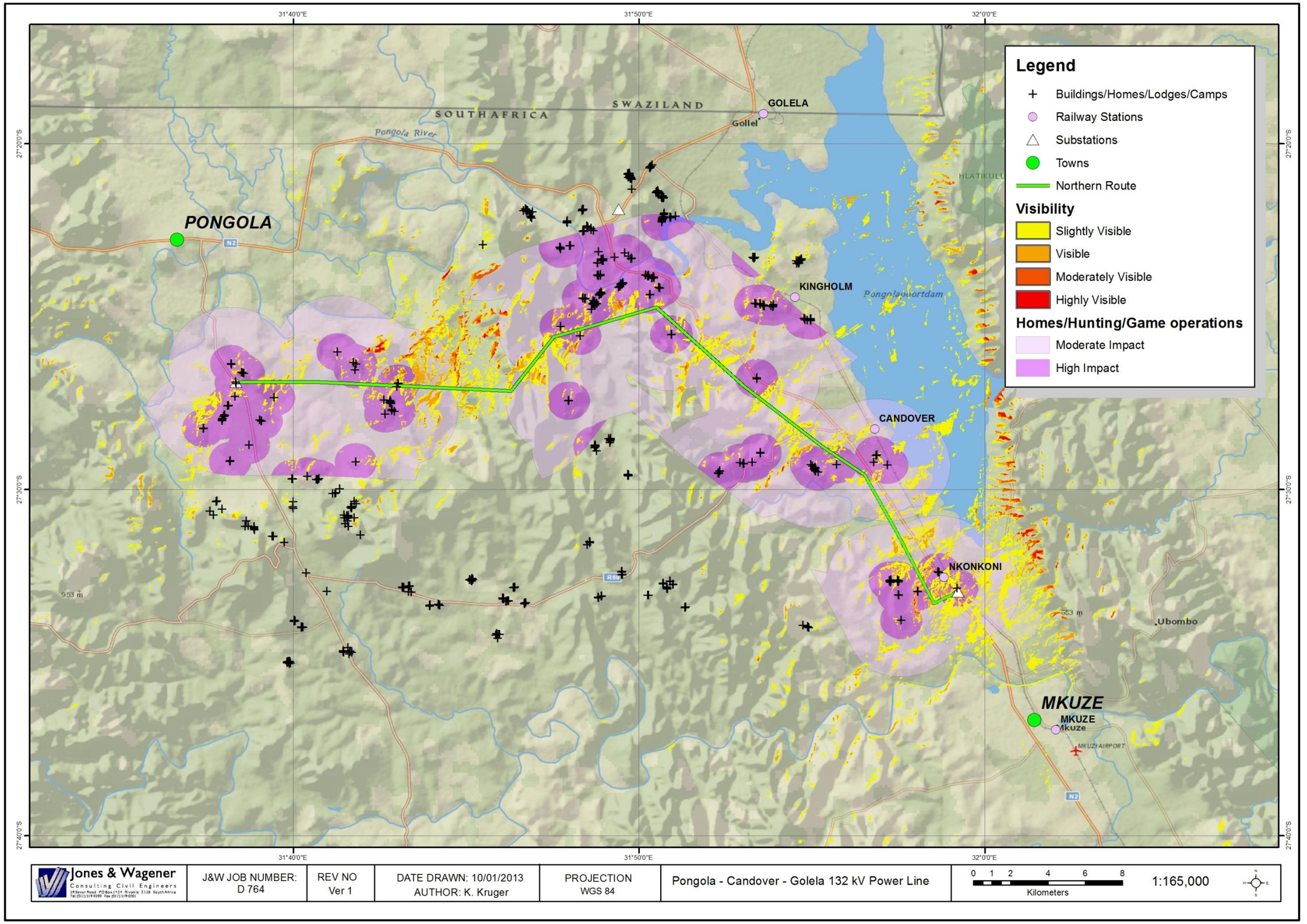

Figure 5: Visual Impact of the proposed Northern Corridor

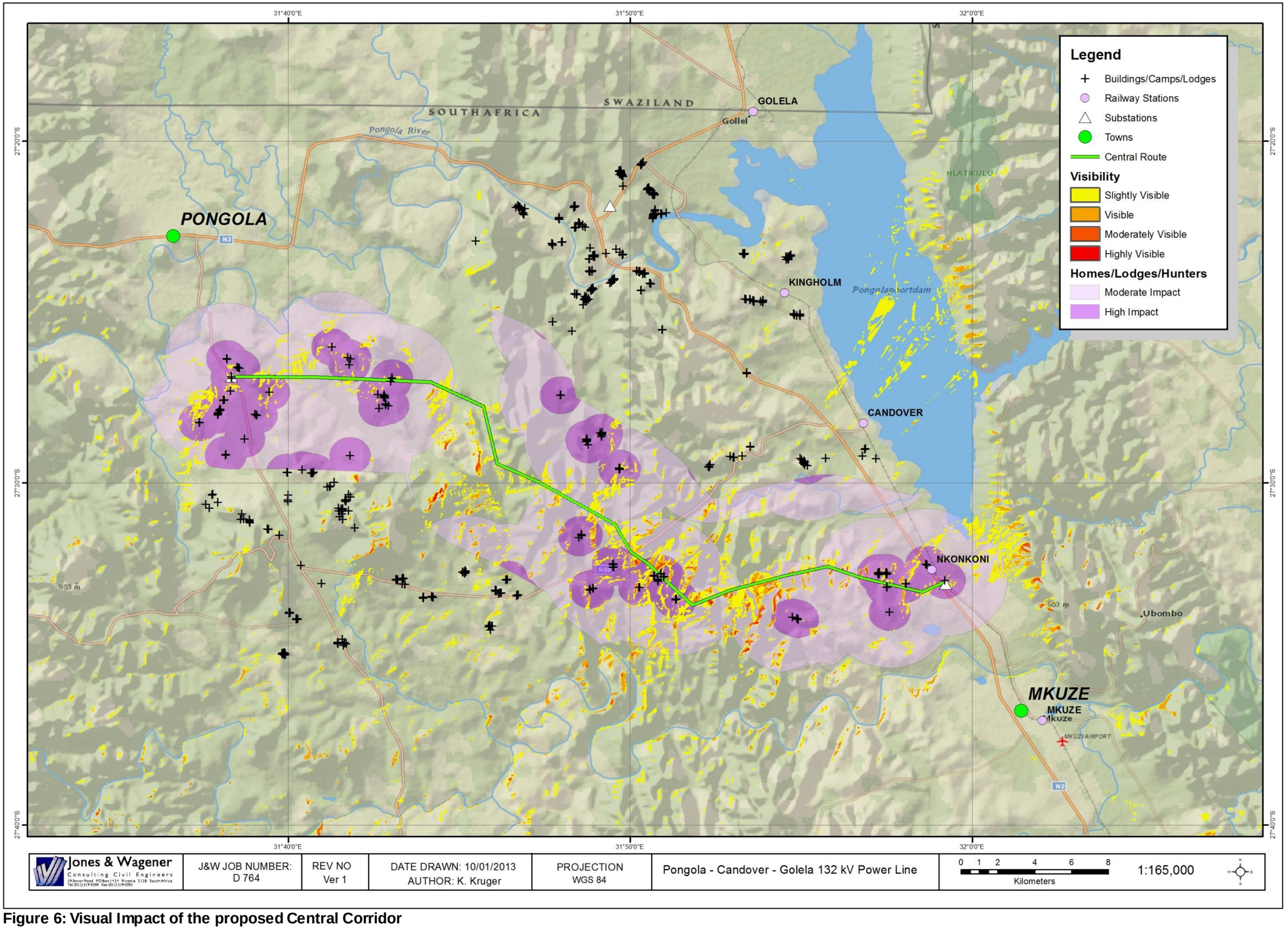

Figure 6: Visual Impact of the proposed Central Corridor

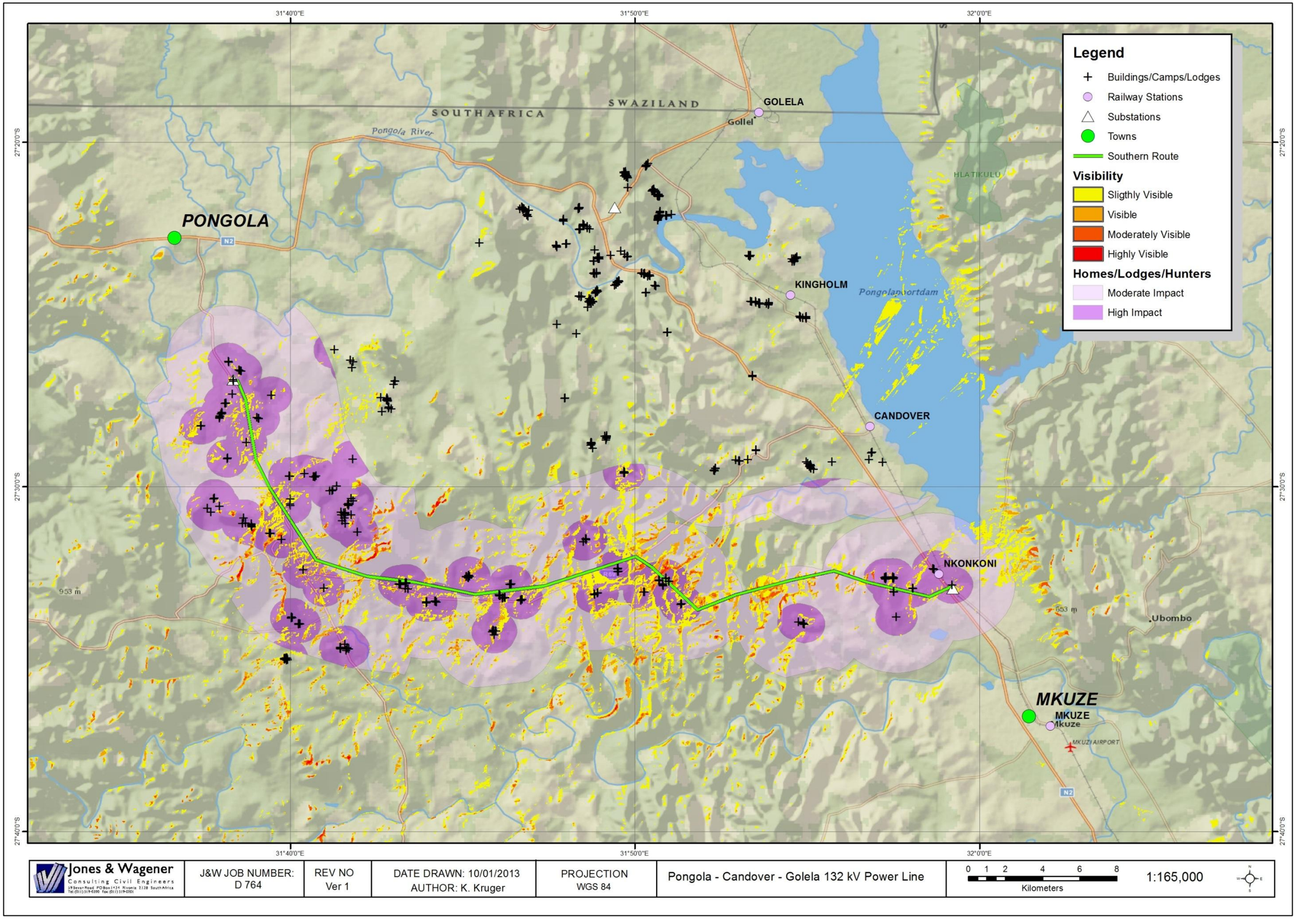

Figure 7: Visual Impact of the proposed Southern Corridor

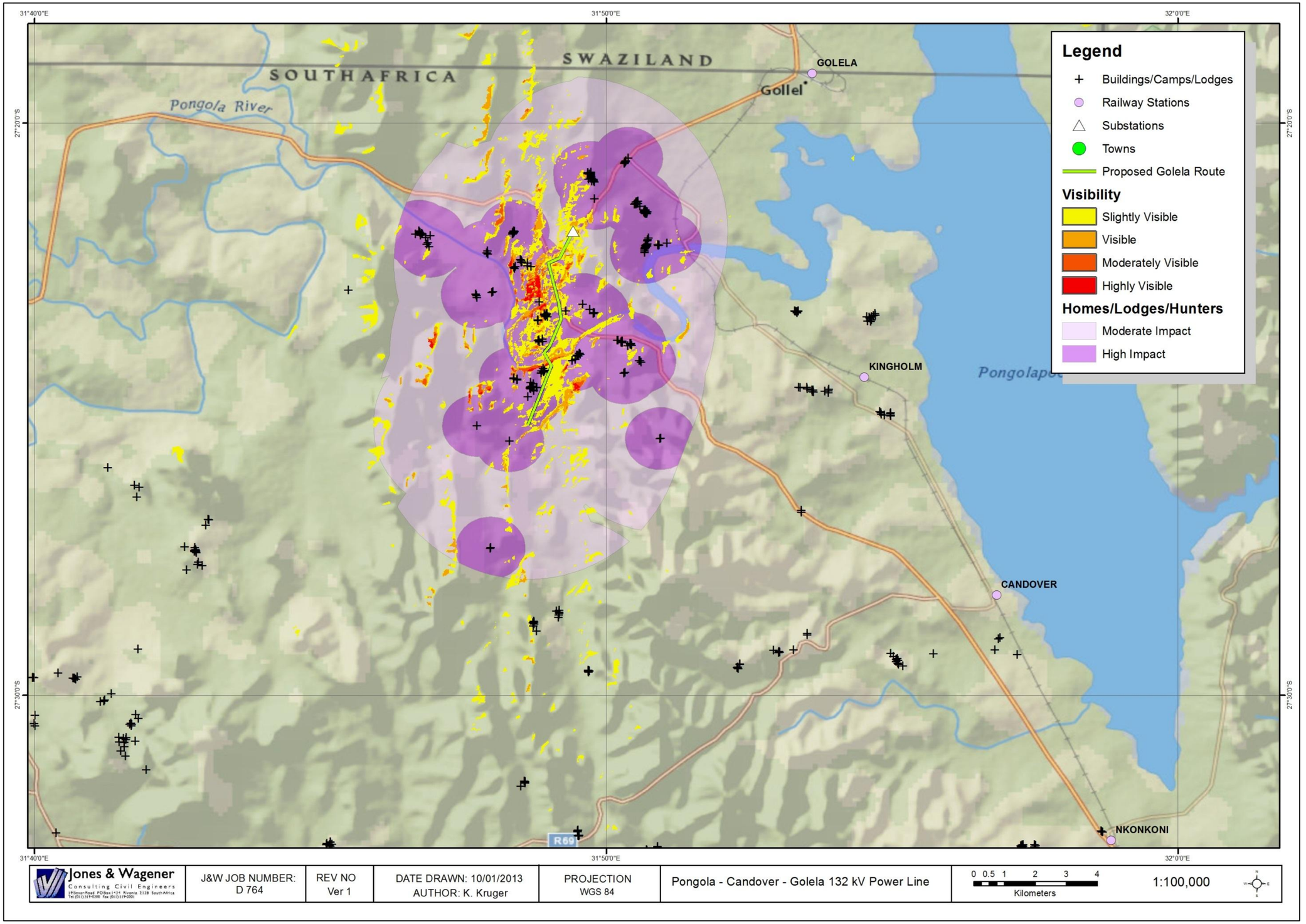

Figure 8: Visual Impact of the proposed Golela Corridor

3. IMPACT ASSESSMENT

3.1 Methodology

The following methodology was provided by Zitholele to be used for the assessment of impacts on this project. Please note that it was followed where-ever possible, however the visual impact was described using a visual impact methodology as well as the methodology given below.

To ensure uniformity, the assessment of impacts is addressed in a standard manner so that a wide range of impacts can be compared with each other. For this reason a clearly defined significance rating scale is provided to assess the significance (importance) of the associated impacts. The scale embraces the notion of extent and magnitude, but does not always clearly define these since their importance in the rating scale is very relative. For example, the magnitude (i.e. the size) of are affected by atmospheric pollution may be extremely large (1000 km²) but the significance of this effect is dependent on the concentration or level of pollution. If the concentration were great, the significance of the impact would be HIGH or VERY HIGH, but if it were dilute it would be LOW or VERY LOW. Similarly, if 60 ha of a grassland type are destroyed the impact would be VERY HIGH if only 100 ha of that grassland type was known. The impact would be VERY LOW if the grassland type were common.

The potential significance of every environmental impact identified is determined by using a ranking scale, based on the following (the terminology is extracted from the DEAT guideline document on EIA Regulations, April 1998):

Occurrence

- Probability of occurrence (how likely is it that the impact may occur?), and
- Duration of occurrence (how long may it last?)

Severity

- Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
- Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?)

In order to assess each of these factors for each impact, the following ranking scales were used:

Probability:
5 – Definite/don't know
4 – Highly probable
3 – Medium probability
2 – Low probability
1 – Improbable
0 – None

Duration:
5 – Permanent
4 - Long-term (ceases with the operational life)
3 - Medium-term (5-15 years)
2 - Short-term (0-5 years)
1 – Immediate

Scale:
5 – International
4 – National
3 – Regional (>5km)
2 – Local (<5km)
1 – Site only
0 – None

Magnitude:
10 - Very high/don't know
8 – High
6 – Moderate
4 – Low
2 – Minor

Once the above factors had been ranked for each impact, the environmental significance of each was assessed using the following formula:

SP = (magnitude + duration + scale) x probability

The maximum value is 100 significance points (SP). Environmental effects were rated as either of high, moderate or low significance on the following basis:

- More than 60 significance points indicated high environmental significance.
- Between 30 and 60 significance points indicated moderate environmental significance.
- Less than 30 significance points indicated low environmental significance.

High = H	Moderate = M	Low = L

Please note that **only negative impact will be ranked**

The degree of certainty of the assessment was judged on the following criteria:

Definite: More than 90% sure of a particular fact.
Probable: Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible: Between 40 and 70% sure of a particular fact or of the likelihood of an impact occurring.
Unsure: Less than 40% sure of a particular fact or the likelihood of an impact occurring.

Figure 9: Impact assessment methodology

3.2 Visual Impact

3.2.1 Impact Assessment Methodology

Visual impact is defined as the significance and/or severity of changes to visual quality of the area resulting from a development or change in land use that may occur in the landscape.

Significance or severity is a measure of the response of viewers to the changes that occur. It represents the interaction between humans and the landscape changes that they observe. The response to visible changes in the landscape may vary significantly between individuals.

Perception results from the combination of the extent to which the proposed power line is visible (level of visibility) and the response of individuals to what they see. A major influence on the perception of people/tourist in relation to the proposed power line will be the visual character and quality of the landscape in which it would be located. Natural landscape areas such as national parks, mountain areas or undeveloped sections of coast are valued for their high visual quality. The introduction of buildings and associated infrastructure may be seen as a negative impact on these areas of high visual quality. In the case of this site some people are used to the existing power lines and has been in the area for a number of years.

The potential visual impact of the proposed power line will primarily result from changes to the visual character of the area within the viewshed. The nature of these changes will depend on the level of the visual contrast between buildings/structures and the existing landscape within which they would be viewed.

The degree of contrast between the proposed power line and the surrounding landscape will result from one or more of the following visual characteristics:

- Colour;
- Shape or form;
- Scale;
- Texture; and
- Reflectivity.

The visual simulations prepared by J&W illustrate the extent to which the power line will be visible from key observation points (static and dynamic views). The vertical form/dimensions of the structures would be hidden by their location among existing buildings and within a well vegetated area. The visual contrast is increased by the “shape” and scale of the buildings/structures, which generally will not be viewed along the skyline.

3.2.2 Initial Impact

The existing visual environment in this area has been altered for an extended period of time by the construction of the N2 Highway, the existing Pongola-Candover 132 kV route as well as the railway line. However the landscape of the study area remains largely natural/grazing land and the area is also known as a tourist/hunting destination as shown in the photo below taken from an existing lodge in the study area. The existing 132 kV Pongola-Candover power line is shown in the yellow circles.

The existing impact to the visual environment is rated a LOW magnitude, *local scale,* long term duration impact that is *highly probable*. This results in a rating of 40 or a Moderate rating as per the methodology.

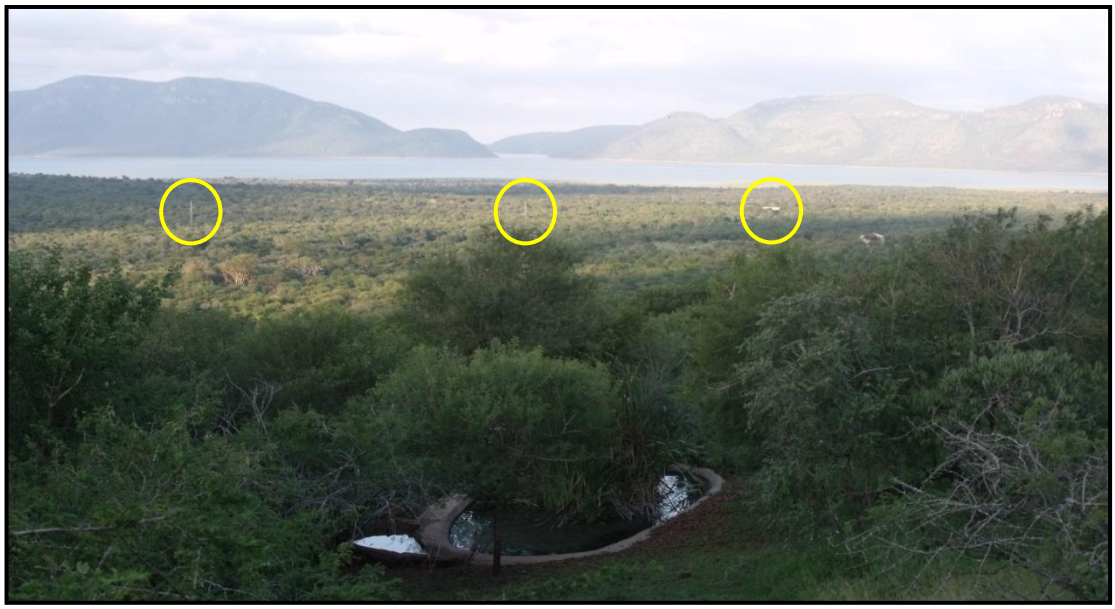

Figure 10: Views from an existing lodge (pylons in yellow)

3.2.3 Additional Impact

The additional impact determination for visual aspects is quite a challenge as there are different viewers all over the viewshed. They are classified as either static or dynamic viewers, each of which is described below.

Static Views

The proposed power lines would potentially be visible from the surrounding farmland and game farms/lodges and the high-lying areas throughout the study area. The potential number of viewers from this area should be low as the farmlands are quite sparsely populated but the views would vary greatly depending on site specific conditions like the orientation of the homes as well as the location of other buildings, fences, vegetation and localized landforms. All these elements have the potential to block views from the buildings to the proposed power line. In addition the existing 132 kV Pongola-Candover power line traverses in the same vicinity.

The impact to hunting and nature conservation practices in the area is difficult to assess, as the potential viewers are moving throughout the study area. In order to try and assess this impact the lodges, camps and houses within the study area was buffered by a 1 km buffer and this area shown as a high use area were the impact will be high. The areas from 1 – 5 km were identified as moderate impact areas as hunters or game viewers could traverse through these areas when visiting the farms. The anticipated visibility from each of the proposed corridors is shown in Figures 5 – 8.

Dynamic Views

The power lines will be visible to a moderate number of viewers, mainly those travelling along the N2 highway and some travellers along the R66/R69 depending on the corridor selected. For each of the corridors the following dynamic views apply:

- Northern Corridor;
    - N2 visible for about 8 km travelling at 120 km/h that equates to 4 minutes of visibility. This is highly variable due to localised vegetation cover; and
    - R66 only visible when entering the Pongola substation for a few seconds.
- Central Corridor;
    - N2 visible when crossing over the road and a few intermittent spots along the highway;
    - R69 visible when crossing the road as well as a short section along the road – visible for an estimated 5 minutes;
    - R66 only visible when entering the Pongola substation for a few seconds.
- Southern Corridor;
    - N2 visible when crossing over the road and a few intermittent spots along the highway;
    - R69 visible for 16 km and travelling at 100km/h that equates to an estimated view time of 10 minutes;
    - R66 visible for 12 km and travelling at 100km/h that equates to an estimated view time of 7 minutes.
- Golela Corridor;
    - Visible from the N2 for 6 km travelling at 120 km/h that equates to 3 minutes of visibility.

The proposed power line would also be visible from several farm roads which are located around the proposed site. The viewing distance varies between 1 and 4 km for these roads and if the viewing distance is less than 2 km, the potential visual impact would be considered as Low.

Summary

From the discussions above the following impacts are anticipated for each Corridor:

- Northern Corridor
    - Static observers include game and hunting farms, traditional settlements and agricultural farms;
    - Dynamic observers include travellers on the N2 highway and short views from the R69 and R66 roads;
    - The corridor follows the existing Pongola-Candover 132 kV power line alignment;
    - This impact is rated a HIGH significance considering the number of high value tourism and hunting operations in the area, *local scale* and long

term duration. This impact is *definite* and is therefore rated as a **High impact.**

- Central Corridor
    - No existing impact along large sections of the corridor;
    - Traverses over some on the highest points in the study area;
    - Static observers mostly grazing farmers with some game farms;
    - Dynamic observers very limited to the road crossings;
    - This impact is rated a HIGH significance considering the unspoilt nature of the area, *local scale* and long term duration. This impact is *definite* and is therefore rated as a High impact.
- Southern Corridor
    - Static observers include game farms, traditional settlements and agricultural farms;
    - Dynamic observers include travellers on the R69 and R66 roads and short views from the N2 highway;
    - This impact is rated a HIGH significance considering the number of tourism and hunting operations in the area, *local scale* and long term duration. This impact is *definite* and is therefore rated as a High impact.
- Golela Corridor
    - Static observers include game farms and agricultural farms;
    - Dynamic observers include travellers on the N2 highway and short views from the Golela road;
    - This impact is rated a HIGH significance, *local scale* and long term duration. This impact is *definite* and is therefore rated as a High impact.

3.2.4 Cumulative Impact

The cumulative impact only really is applicable to the Northern Corridor which is located alongside the existing Pongola-Candover power line. Most biophysical impacts compound one another, however in the case of visual impact, often stakeholders prefer to have impacts in areas of existing impact. In the case of the Pongola-Candover line, the visual impact of one or two lines against the backdrop of the bushveld vegetation will not significantly increase the visibility rating as per the additional impact assessment.

3.2.5 Mitigation Measures

- If the Northern Corridor is selected, ensure that the tower spacing matches the existing line as far as possible to minimise the visual impact;
- Only remove vegetation from the servitude that is a danger to the proposed power line;
- Avoid leaving any building material or waste on site that could create a visual impact;
- Access road construction should be minimised to prevent unnecessary dust, i.e. use existing roads as far as possible; and

- Utilise non-shiny structures for the hard park and toilets, i.e. avoid unpainted roofs.

3.2.6 Residual Impact

With the implementation of the mitigation measures above, the visual impact will be managed as best it could, however in the main the impact will remain as assessed for the additional impact i.e. a **High impact** for both the construction and operational phases.

4. CONCLUSION AND RECOMMENDATIONS

In conclusion Eskom proposes the construction of the Pongola-Candover and Golela 132 kV power line and substation. This report evaluated the baseline conditions and potential impacts to the visual environment of the four corridors given by the client.

The Northern Corridor provided a suitable corridor with the minimum additional impact due to the close proximity of the existing Pongola-Candover power line. This not only is an existing impact, but also does not require the construction of an entirely new access road through the study area. However this area is also the main locus of the high value tourism and hunting operations in the area.

The Golela Corridor provides a suitable crossing over the Pongola River but remains highly visible as it is located adjacent to the highway and the main turnoff to Swaziland and Golela.

It is the recommendation of this report that the Northern and Golela Corridors be selected for the proposed project and that the mitigation measures contained in this report be included in the Environmental Management Plan (EMP) to be compiled for the project.

5. REFERENCES

South Africa, Republic, 1998. *National Water Act, Act No. 36 of 1998*. Government Gazette 19182, Government Printer, Pretoria.

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Project Manager Reviewer

for Jones & Wagener

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