

**HERITAGE IMPACT ASSESSMENT (SECTION 38.8) FOR A 400KV
DOUBLECIRCUIT TRANSMISSION POWER LINE FROM FIRGROVE TO
MITCHELL'S PLAIN AND MITCHELL'S PLAIN SUBSTATION**

And

**HERITAGE IMPACT ASSESSMENT (SECTION 38.8) FOR A 400KV
SINGLECIRCUIT TRANSMISSION POWER LINE FROM THE EXISTING PHILIPPI
SUBSTATION TO A PROPOSED MITCHELL'S PLAIN SUBSTATION AND THE
PHILIPPI SUBSTATION UPGRADE**

Report prepared for BKS (Pty) Ltd
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Expertise and Declaration of Independence

This report was prepared by Tim Hart of ACO (the Archaeology Contracts Office of the University of Cape Town), who has a BA (Hons) (Archaeology) UCT and a MA (Archaeology) UCT.

Tim has considerable experience in undertaking Heritage Impact Assessments (including archaeology). Tim has worked in the field of heritage since 1987 and has completed along with his colleagues at ACO more than 1 000 heritage studies.

This specialist report was compiled on behalf of BKS (Pty) Ltd for their use in preparing Environmental Impact Assessments for the proposed projects. We do hereby declare that we are financially and otherwise independent of the applicant and BKS (Pty) Ltd.

TJG Hart.

Tim Hart

EXECUTIVE SUMMARY

The Archaeology Contracts Office of the University of Cape Town was appointed by BKS to conduct a Heritage Impact Assessment of as a contribution to two related EIA processes that involve the construction of 400 kV transmission lines on the Cape Flats area, Cape Town.

The existing electricity network to the area is not able to meet the predicted needs of the rapidly expanding Cape Flats communities. The proposal by Eskom Holdings Ltd is to construct two new sets of power lines to strengthen the Peninsula grid.

These are the Firgrove – Mitchells Plain 400kV double circuit transmission lines and Mitchells Plain – Philippi substation single circuit 400 kV transmission lines. The proposal also involves the construction of a new substation at Mitchells Plain. The following heritage indicators were identified during the scoping assessment phase.

Firgrove – Mitchells Plain

- The Impact of 400 kV lines on the historic wine estate Vergenoegd
- The impact of 400 kV lines on the Historic Zeekoeivlei farmstead
- The impacts of 400 kV lines of the edge of the Cape Winelands cultural landscape
- The Impact of 400 kV lines on the Driftsands Nature Reserve

Mitchells Plain – Philippi

- The impact of 400 kV lines of the Philippi Horticultural cultural landscape.

During the course of the EIA process possible routes were narrowed down to the extent that placement of individual towers could be assessed and adjusted as needed. It was also established that it was possible to re-utilise existing servitudes which has played a major role in limiting impacts to an acceptable degree. Indications are that the significance of impacts throughout is generally low with respect to the proposed Firgrove-Mitchells Plain 400kV lines. In addition provided that the Vanguard Drive corridor is maximised for use with respect to the Mitchells Plain – Stikland 400 kV transmission line, impacts to sense of place with respect to the Philippi Horticultural Area will be minimised.

No heritage resources were identified at the proposed site of the Mitchells Plain Substation.

The landscapes that will be used throughout are highly urban and transformed. Given the small footprint of the proposed activities, impacts to archaeology and palaeontology are expected to be minimal. The proposed activities are considered both acceptable and necessary.

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1 Introduction

The Archaeology Contracts Office of the University of Cape Town was appointed by BKS Pty Ltd to provide input on heritage impacts for two environmental impact assessments (scoping level and EIA phases) for the proposed construction of 400 kV transmission lines and substations between:

- Firgrove substation – Proposed Mitchells Plain Substations (400 kV double circuit)
- Mitchells Plain – Phillipi substations (400 KV single circuit)

The landscape of the area is the Cape Flats with some involvement of the edge of the Stellenbosch – Somerset West winelands. The heritage indicators within the study area were discussed at length in a submission to BKS during the scoping phase and are not replicated in this report. The focus of this work is the assessment of impacts on identified areas of heritage sensitivity. This report contains two sections. Section 1 discusses the proposed Firgrove – Mitchells Plain transmission corridor while section 2 examined the proposed Mitchells Plain – Phillipi transmission corridor.

In the scoping report heritage concerns were expressed in a number of areas – namely:

Firgrove – Mitchells Plain

The Impact of 400 kV lines on the historic wine estate Vergenoegd

The impact of 400 kV lines on the Historic Zeekoeivlei farmstead

The impacts of 400 kV lines of the edge of the Cape Winelands cultural landscape

The Impact of 400 kV lines on the Driftsands Nature Reserve

Mitchells Plain – Phillipi

The impact of 400 kV lines of the Phillipi Horticultural cultural landscape

1.1. Need for the proposed activity

The Peninsula electricity distribution system is under stress in a number of areas in that it does not have the capacity to supply the quickly increasing demand for electricity, particularly on the Cape Flats. To alleviate this situation Eskom (Eskom Holdings Ltd) have embarked on two separate but related projects.

The **first** project is the construction of a new Mitchell's Plain Substation and a 400kV double circuit transmission power line from the same Mitchells Plain Substation to one of the following locations - the existing Firgrove Substation (which is to be expanded) or the existing Stikland Substation. The study area traverses some 30 km of landscape across the Cape Flats. Eskom has confirmed that in places it will be possible to re-use existing servitudes. Where this is not possible a 55 m wide servitude is required.

The **second** project is the construction of a 400kV single circuit transmission power line from the proposed Mitchell's Plain Substation to the existing Philippi Substation, for which an upgrade has been proposed. The study area for the Mitchell's Plain-Philippi project traverses approximately 10km. A servitude width of up to 55m for the transmission power line would need to be acquired in places if existing servitudes cannot be used.

2 Assessing heritage impacts of transmission lines

The assessment of transmission lines in terms of heritage is methodologically unlike impact assessments that involve assessing physical landscape disturbance. Since typically transmission lines evoke the greatest change to a landscape above the ground surface, the emphasis is to assess impacts to heritage that is visually sensitive. By this we mean places or structures that are publicly celebrated as heritage or have the potential to be publicly celebrated as such. Historic farms, iconic landscapes and views, places of conflict or celebration are therefore important.

The following guiding principles are used;

In open landscape during daylight hours transmission lines (400 kV) on self-supporting towers are visible (but not necessarily intrusive) from a distance of up to 5 km.

CNdV and DEAP (2006) in their development of guidelines for the establishment of wind energy facilities in the Western Cape have suggested that a buffer zone of 1 km be established around significant heritage sites to minimize the change to "sense of place" (this is sometimes difficult to achieve in parts of the Western Cape (such as the Winelands) where celebrated heritage places are common on the landscape). The point at which a transmission line may be perceived as intrusive or offensive, is a subjective judgment, however in our experience lines within 1 km of a reference point are noticeable but not necessarily intrusive. After 450 m the lines become increasingly intrusive and become visually dominating after 100 m (depending on topography).

The presence of pre-existing transmission lines in an area serves as a mitigation factor (rather than a cumulative negative impact) in terms of establishing new transmission lines in the same area. In other words electrical infrastructure clutter is best confined to existing areas or corridors of vertical visual disturbance, rather than introducing new vertical visual disturbance to undisturbed landscape.

While archaeological and palaeontological sites share the potential to be publicly celebrated heritage places, they are less visible than structures in a landscape and are therefore less celebrated as tangible heritage with visual sensitivity. Since the impact on the land surface

caused by transmission lines is very small, and reasonably adjustable at the level of final route selection, this study has focused on those aspects of heritage that are less easy to negotiate in terms of the proposed activity, namely heritage sites that are visually sensitive.

The direct impact on archaeological and palaeontological sites can only be addressed at the final “walkdown phase” however in the case of these two projects this is hardly necessary as almost all areas have been modified in the past.. Mitigation can normally be achieved by micro-adjustment of tower positions and exclusion of sensitive areas.

2.1 The kinds of impacts on heritage caused by the activity

The transmission lines will consist of overhead cables suspended from towers placed 400-300 m apart (or as needed). Each steel tower (which could be a solid steel tower or lattice construction) will need to be mounted on concrete footings set into the ground surface. Hence each point of land surface disturbance is confined to the few square meters of the towers bases. The actual servitude will require a service road (normally an unpaved track) while the corridor (usually 55 m wide) will have to be cleared of tree cover and structures. During construction the landscape will be subject to a period of temporary disturbance when construction equipment is brought onto site for building of the towers and lifting of the cables.

3 Study Method

The process followed by the BKS Pty Ltd has been exhaustive commencing with the assessment of a number of options within broad corridors eventually refining this down to the placement of individual towers in the EIA phase. Since this is an EIA process, the study has been multidisciplinary, however the team has taken due cognisance of potential visual heritage impacts. This was achieved through two team sites visits of two days duration each, discussions with HWC at the scoping phase of the study, and unprecedented in transmission line assessment: – the rating of impacts with respect to all proposed tower positions throughout the study area. This was achieved through a full team workshop held after site inspections had taken place. Through Eskoms’ technical input combined with the inputs of the various specialists, proposed towers have been optimally positioned with the result that virtually all heritage impacts have been eliminated or greatly reduced with respect to both projects.

4 Impact Assessment: Firgrove-Mitchells Plain.

The assessment of impacts to the main heritage indicators on this route are discussed in the following pages.

4.1 Firgrove – Mtichells Plain corridor

4.1.1 Zeekoevlei historic farm house.

This early 19th century dwelling was destroyed by fire in early 2011 after the holding company (golf course development) was liquidated and the building abandoned. The location of transmission lines a short distance to the east of the dwelling house would have constituted an impact, however a recent site inspection revealed that the house had been so completely destroyed that its status as a significant heritage indicator is massively reduced. The land is destined to become a golf course development, while the area directly affected by the proposed transmission lines is no longer farmed and overrun with alien vegetation. The proposed transmission line across the property to Firgrove Substation follows an existing servitude and transmission lines.



Figure 1 Above: the location of Zeekoevlei Farm House in relation to proposed tower positions. The yellow arrow marks the view point (below) showing the servitude and existing transmission lines that mark the proposed route. The remains of the farm house is obscured by recent vegetation growth.

4.1.2 Vergenoegd wine estate

During the scoping process this heritage site was judged to be a potential recipient of negative visual impacts that could affect the surrounds of the property, particularly if the transmission lines were to be constructed on the estate land to the north side of the N2. Although some distance away from the Vergenoegd historic buildings, it is possible that the proposed transmission lines could have been perceived as intrusive from a number of vantage points close to the historic farm *werf*. Fortunately it has proved feasible to route the proposed transmission lines on the south side of the N2 off Vergenoegd property. The N2 at this point, which is raised on an embankment above the surrounding landscape will have a

screening effect on the transmission lines. The resulting impact is therefore of low – neutral significance.

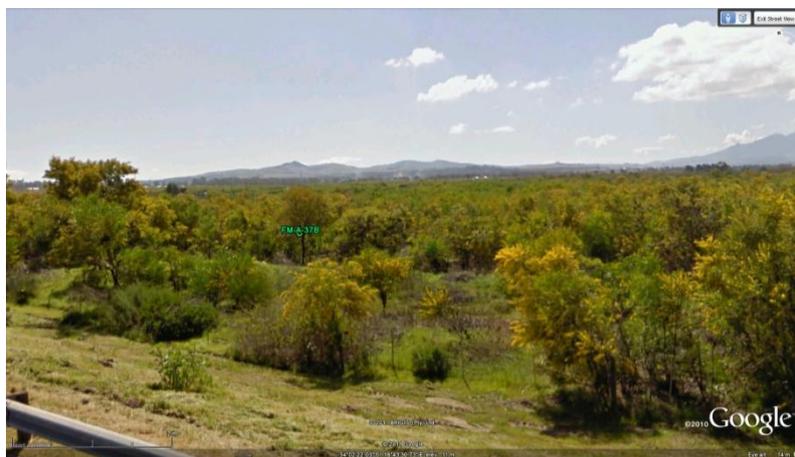
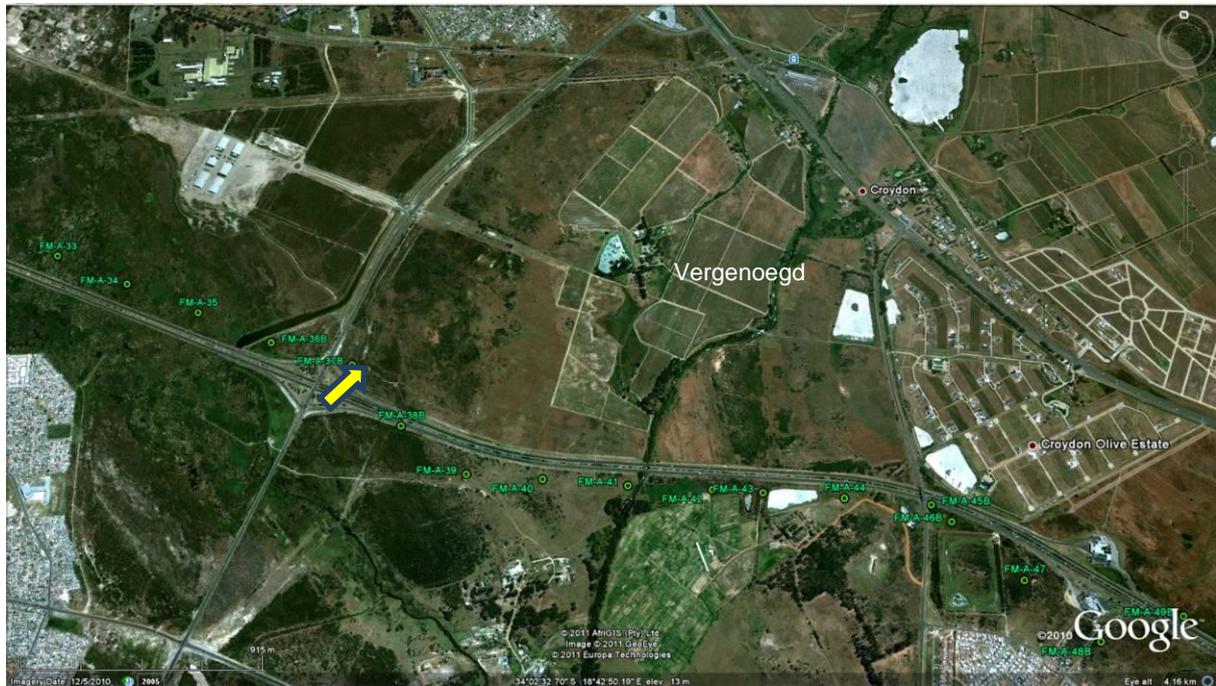


Figure 2 Above: The positions of proposed towers are placed south of the N2 apart from where the transmission lines have to cross the N2 to avoid the Kyalitsha wetlands. Vergenoegd is located at the pond at the centre of the image. Left: View towards Vergenoegd from an elevated position on the N2 (yellow arrow above). The historic werf just over 1000 m away is hidden from view by dense alien vegetation.

THEME	HERITAGE: FIRGROVE MITCHELLS PLAIN DOUBLE CIRCUIT 400 kV TRANSMISSION LINE	
Impact focal point	Impact on heritage of study area and surrounds Firgrove area	
Phase	Construction Phase	Operational Phase
Site Description	Firgrove –Mitchells Plain	Firgrove-Mitchells Plain
Nature of impact	Construction of power lines may affect visual/aesthetic qualities as perceived from Vergenoegd Estate and Zeekoevlei historic farm.	Presence of power lines may affect visual/aesthetic qualities as perceived from Vergenoegd Estate and Zeekoevlei historic farm
Extent of impact	Local (1)	Local (1)
Duration of impact	Short-Medium term (2)	Long term (4)
Intensity of impact	Low (2)	Low (2)
Probability	High (5)	High (5)
Confidence	High	High
Status	Negative	Negative
Calculation	$(1+2+2) \times 5 = 25$	$(1+4+2) \times 5 = 35$
Level of significance	Low	Low-Medium
Cumulative Impacts	In the case of power lines the worst accumulative impacts occur when the landscape is bisected by numerous facilities which break up large tracts of country. It is always advantageous to utilise existing corridors.	
Mitigation measures	<p>An independent, suitably qualified person with at least a B. Sc (Hons) in the natural sciences, to act as the ECO.</p> <p>Changes to alignments should be checked by heritage specialist.</p> <p>Any finds in foundation trenches should be reported by the ECO to an archaeologist/heritage specialist and to HWC for further action if need be. Any finds of human remains, whether archaeological or crime related should not be disturbed by reported to SA.</p>	
Level of significance after mitigation	Low	Low-Medium

Table 1

4.2 Mitchells Plain – Firgrove (Mitchells Plain – Stikland corridor)

The heritage resources and areas identified in the section of the study area are:

- Driftsands Nature Reserve
- Edge of the Cape Winelands

4.2.1 Driftsands Nature Reserve

This is a declared nature reserve that represents that last elements of the Cape Flats landscape that have survived into the 21st century. In these terms it is considered a heritage resource although human made heritage on the site is limited to the late 20th century. Initially it was proposed that transmission lines between Mitchells Plain and Stikland be routed through the nature reserve (which is in a very poor condition), however revision of the proposal had led to the re-use of existing corridors around the edge of the site. This will effectively limit impacts to areas that have already been disturbed. There is an existing servitude up the R300 (MS route C Towers 25b-29) to where the proposed lines crosses the northern edge of the nature reserve via an existing corridor of disturbance (towers 30-35). Alternatively route MS-D passes up the eastern edge of the reserve through an already existing corridor of disturbance.

Driftsands is surrounded by suburbia, roads, electrical services, low cost housing and informal settlements. While the transmission lines for all routes will be visible from inside the reserve, none of them impact the core areas. In the context of the surrounding urban clutter, transmission lines do not constitute an unexpected presence. Given that the opportunities for routing transmissions lines in urban areas are extremely limited, all alternatives presented represent a reasonable compromise. Route options C and D are equally acceptable constituting a medium-low negative impact to the visual qualities of the place. No mitigation is applicable.

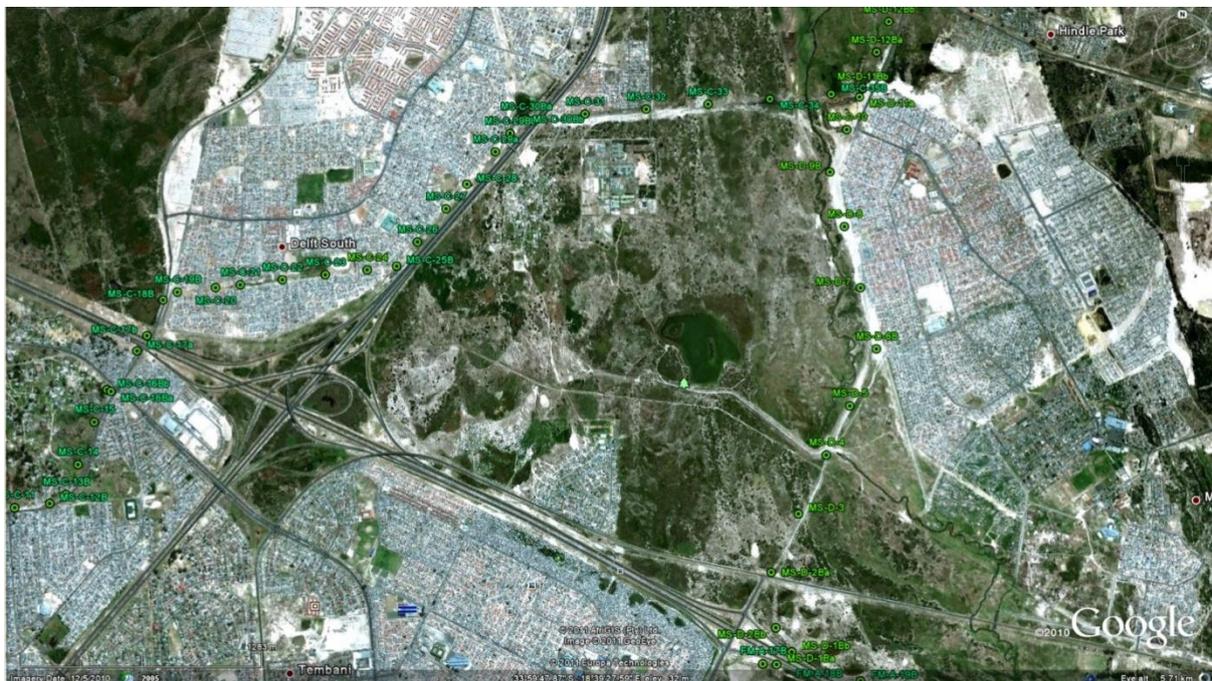


Figure 3 The Driftsands Nature Reserve. Transmission line routes utilise existing corridors and avoid core areas of the reserve.

4.2.2 Urban edge -The Cape Winelands

The proposed Mitchel's Plain Stikland line passes through existing servitudes through the recent suburbs around Kuils River, Brentwood, Brakenfell before terminating at the Stikland Substation. During the scoping phase of the study there was some doubt as to whether the existing servitudes could accommodate a further transmission line which would have meant that alternative corridors would have been required. This was potentially a source of negative visual impacts that might have been experienced from the notable Cape wine farms such as Zewenwacht and Langerwacht that lie on the edge of the Cape Winelands Cultural Landscape.

Confirmation by Eskom that it is technically possible to re-utilise existing servitudes that run through corridors in existing recent suburbs has alleviated this threat. The wine lands edge will therefore be buffered by recent development areas and the existing *milieu* of existing transmission lines (which would need to be re-rationalised to accommodate new services). Hence all activities will occur in areas that have been subject to previous electrical related activity. Had the transmission line had to be routed to the urban edge, the likely impacts would have been considerably greater.

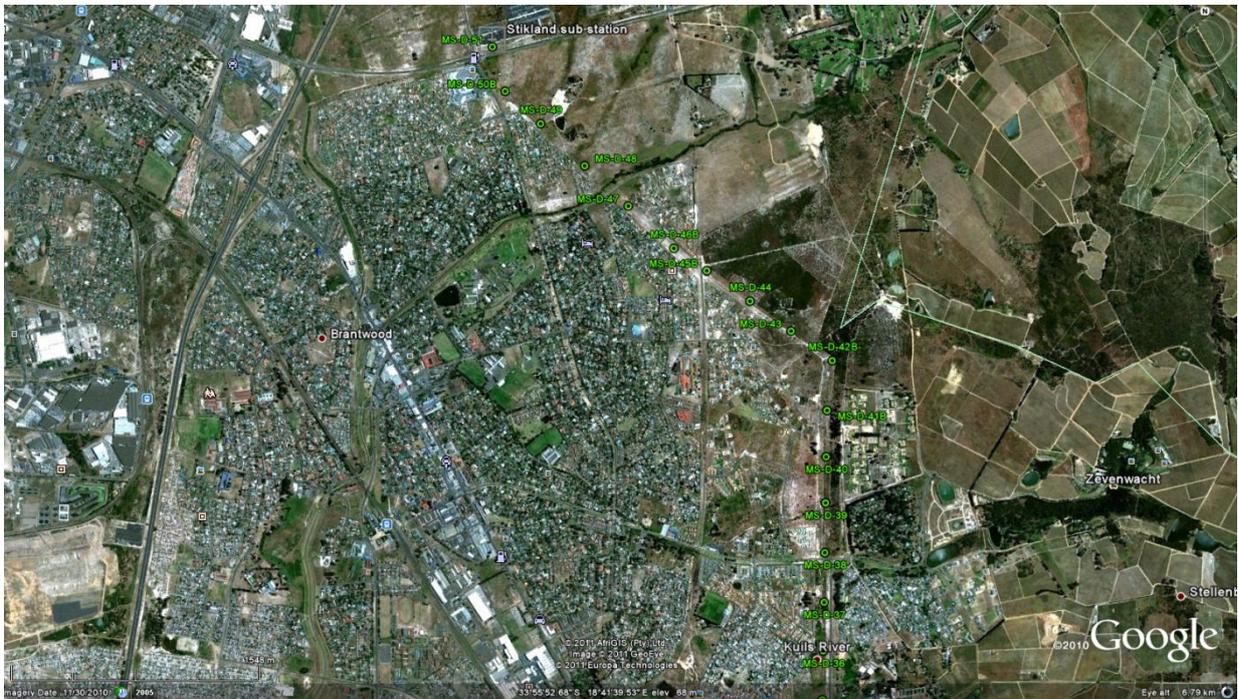


Figure 4 The proposed route of the Mitchells Plain – Stikland transmission line involves the re-use of an existing servitude that already contains a clutter of electrical infrastructure. Sensitive areas such as Zewenwacht and adjoining farm Langwerwacht are buffered by recent development areas to the west of the existing servitude.



Figure 5 Looking in a northerly direction towards Stikland, the existing corridor which is to be used for the proposed Transmission line (Close to Rouxville)



Figure 6 Looking in a southerly direction towards Kuils River (wine lands left distance) the existing corridor which will re-utilised.



Figure 7 The Stikland corridor just outside the existing substation.



Figure 6 The existing corridor which will be re-utilised adjacent to the Zeewenwacht link road.

4.2.3 Archaeology and palaeontology

The site inspection revealed that there are very few areas throughout the 30 km study area that have not been subject to landscape modification or prior disturbance.

The likelihood of impacts to archaeological and palaeontological material are extremely low. There is a possibility that material will be impacted during excavations for tower footings, however the depth and size of the impact would be limited by the fact that tower footings are usually limited to 1-2 sq. m in size.

No particular recommendations or mitigation is required, other than to report any finds (including human remains) to Heritage Western Cape for their advice on further action.

4.3 Proposed Mitchells Plain Substation site.

No heritage resources were identified in the candidate area. No impacts are expected.

4.4 Conclusion

The construction of a double circuit 400 KV transmission line between the proposed Mitchells Plain Substation and Firgrove will result in low impacts in terms of heritage. This outcome is mainly due to the comprehensive planning and consultative process implemented during this EIA which has avoided areas of known sensitivity. Potential impacts to the edge of the Winelands with respect to the Mitchells Plan –Stikland route have been largely eliminated as it will be possible to re-utilise existing servitudes. Hence this option is equally acceptable.

Unless the proposed alignments undergo substantial change during the design phase, it is recommended that HWC provide comment that will allow the project to proceed. No mitigation or further work is required, however further alterations to the alignments (if these take place) should be reviewed by a heritage specialist.

THEME	HERITAGE: FIRGROVE MITCHELLS PLAIN DOUBLE CIRCUIT 400 kV TRANSMISSION LINE			
Impact focal point	Impact on heritage of study area and surrounds (Mitchells Plain – Stikland)			
Phase	Construction Phase		Operational Phase	
Site Description	MS-D	MS-C	MS-C	MS-D
Nature of impact	Construction of power lines may affect visual/aesthetic qualities as perceived from Cape Winelands (MS-D) and Driftsands Nature Reserve (MS-C.)		Construction of power lines may affect visual/aesthetic qualities as perceived from Cape Winelands (MS-D) and Driftsands Nature Reserve (MS-C.)	
Extent of impact	Local (1)		Local (1)	
Duration of impact	Short-Medium term (2)		Long term (4)	
Intensity of impact	Low (2)	Low (2)	Low (2)	Low (2)
Probability	High (5)		High (5)	
Confidence	High		High	
Status	Negative		Negative	
Calculation	$(1+2+2) \times 5 = 25$	$(1+2+2) \times 5 = 25$	$(1+4+2) \times 5 = 35$	$(1+4+2) \times 5 = 35$
Level of significance	Low	Low	Low-Medium	Low-Medium
Cumulative Impacts	In the case of power lines the worst accumulative impacts occur when the landscape is bisected by numerous facilities which break up large tracts of country. It is always advantageous to utilise existing corridors.			
Mitigation measures	<p>An independent, suitably qualified person with at least a B. Sc (Hons) in the natural sciences, to act as the ECO.</p> <p>Changes to alignments should be checked by heritage specialist.</p> <p>Any finds in foundation trenches should be reported by the ECO to an archaeologist/heritage specialist and to HWC for further action if need be. Any finds of human remains, whether archaeological or crime related should not be disturbed by reported to SA.</p>			
Level of significance after mitigation	Low	Low	Low-Medium	Low -Medium

Table 2

5 Impact Assessment: Mitchells Plain – Phillippi 400 kV single circuit transmission line

The second project is the proposed construction of a single circuit 400 kV transmission line between the proposed new Mitchells Plain Substation and the existing Phillippi Substation. The identified heritage resource on this route is the Phillippi Horticultural area. Impacts and mitigation are summarised in Table 2.

5.1 Phillippi Horticultural Area

This vegetable farming area was established by German settlers after 1860. In recent years its visual qualities have degenerated, and protected structures have diminished due to demolition and neglect, however the landscape itself with its pattern of farm lands has been recognised as a cultural landscape by the City of Cape Town and has been mooted as a conservation area under the Land Use Planning Ordinance (Lupo) according to information provided by the City of Cape Town's Environment and Heritage Department (D.Hart pers comm). New transmission lines are a potential source of impact as they would add visual clutter.

Alternatives:

Three possible alternatives have been posed for the transmission lines in this area. None of the proposed route penetrates the actively farmed area, however routes PM4 and PM2 pass within close proximity while route PM1 follows the existing Vanguard Drive corridor.

Options PM2 Towers 1b-13 (yellow) and PM4 Towers 1b -4 (pink) will result in a medium – high visual impact as they are likely to be conspicuous from within the Phillippi Horticultural Area.

Option PM 1 towers 1- 18 (black) will result in a low impact to the cultural landscape as this is the furthest from the horticultural area and lies within an existing infrastructure corridor of low visual appeal hence this alternative is favoured in combination with towers PM 3 1-4.

5.1.1 Archaeology and palaeontology

The site inspection revealed that there are very few areas throughout the 10 km study area that have not been subject to landscape modification or prior disturbance.

The likelihood of impacts to archaeological and palaeontological material are extremely low. There is a possibility that material will be impacted during excavations for tower footings, however the depth and size of the impact would be limited by the fact that tower footings are usually limited to 1-2 sq. m in size.

No particular recommendations or mitigation is required, other than to report any finds (including human remains) to Heritage Western Cape for their advice on further action.

THEME	HERITAGE: MITCHELLS PLAIN – PHILLIPI SINGLE CIRCUIT 400 kV TRANSMISSION LINE			
Impact focal point	Impact on heritage of study area and surrounds (Mitchels Plain – Phillipi)			
Phase	Construction Phase		Operational Phase	
Site Description	PM1	PM2-PM4	PM1	PM2-PM4
Nature of impact	Construction of power lines may affect visual/aesthetic qualities as perceived from within the Phillipi Horticultural area.		Power lines may affect visual/aesthetic qualities as perceived from within the Phillipi Horticultural area.	
Extent of impact	Local (2)		Local (2)	
Duration of impact	Short-Medium term (2)		Long term (4)	
Intensity of impact	Low (2)	Low-Medium(4)	Low (1)	Medium- High (8)
Probability	High (5)		High (5)	
Confidence	High		High	
Status	Negative		Negative	
Calculation	$(2+2+2) \times 5 = 30$	$(2+2+4) \times 5 = 40$	$(2+4+1) \times 5 = 30$	$(2+4+8) \times 5 = 70$
Level of significance	Low-Medium	Medium	Low-Medium	High
Cumulative Impacts	In the case of power lines the worst accumulative impacts occur when the landscape is bisected by numerous facilities which break up large tracts of country. It is always advantageous to utilise existing corridors.			
Mitigation measures	<p>PM 1 route largely favoured to use of existing Vanguard Drive corridor which limits impacts to the agricultural areas.</p> <p>An independent, suitably qualified person with at least a B. Sc (Hons) in the natural sciences, to act as the ECO.</p> <p>Changes to alignments should be checked by heritage specialist.</p> <p>Any finds in foundation trenches should be reported by the ECO to an archaeologist/heritage specialist and to HWC for further action if need be. Any finds of human remains, whether archaeological or crime related should not be disturbed by reported to SA</p>			
Level of significance after mitigation	Low-Medium	Low	Medium	High

Table 3



Figure 8. The Phillippi Horticultural Area. Options PM2 (yellow) and PM4 (pink) will result in a medium – high visual impact as they are likely to be conspicuous from within the Phillippi Horticultural Area. Option PM 1 (black) will result in a low impact to the cultural landscape as this is the furthest from the horticultural area and lies within an existing infrastructure corridor of low visual appeal (Vanguard Drive) hence this alternative is favoured.

5.2 Conclusion

Maximising use of the Vanguard Drive corridor will largely eliminate impacts to the Philippi Horticultural Area. The proposed activity is a necessary infrastructural development which will be of benefit to the local community. It is recommended that HWC support the proposal. There are no further mitigation requirements.

5.3 References

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6 Appendix A: Notes on heritage resources in the Area

6.1 *Drift Sands Nature Reserve*

Numerous historic records attest to the bleakness of the Cape Flats – miles of undulating sandy dunes interspersed with wetlands. The physical characteristics of this area made the Cape Peninsula an isolated enclave separated from the hinterland of the country by a landscape that was very difficult to cross on foot, horseback or by wagon. Numerous archaeological and cultural heritage impact assessments have now been completed for development and sand mining operations on the Cape Flats. The findings of these studies indicate that even in pre-colonial times the area was sparsely inhabited.

During the 17th and 18th centuries the Cape Flats was largely avoided by the colonists. Until the early 20th century what is now known as Voortrekker Road served as the historic route by which one could cross the Cape Flats as it followed a shallow spine of high hard ground between Cape Town and Belville.

During the 19th century most of the arable agricultural land that fringed the peninsula was cultivated and becoming increasingly urbanised. Due to the ever increasing demand for agricultural land, areas of the Cape Flats were used for grazing which further de-stabilised the dune systems. By 1870 the colonial government had loaned or sold portions of the Cape Flats for farming purposes. However, in every instance the land reverted back to the crown as successions of would-be farmers failed to achieve a viable result (Bloomer 1959). John X Merriman, the then minister of Crown Land, believed that the Cape Flats could be stabilised by introducing vegetation that could be used for growing windbreaks, and various Australian species were introduced with great effect. In 1877 a number of families of poor German immigrants were deposited on the Cape Flats equipped with tents, two weeks rations and instructed to start farming. Initially they endured severe hardship but by 1883 (Cape of Good Hope General Directory) many of these families had enjoyed some measure of success by creating fields between Port Jackson and willow windbreaks. Descendents of these German settlers continue to farm in the Phillippi vegetable growing areas of the Cape Flats to this day.

The historic record attests to the difficulty of managing land on the Cape Flats. In the late 19th century the government declared certain areas “forest reserves”. The motivation for these declarations was to exclude livestock that were overgrazing dune vegetation exacerbating sand mobility that threatened the newly formed farming areas (Cape Archives 1/468). By the beginning of the 20th century agriculture had become established around the fringes of the Cape Flats, however, the bulk of the area was largely undeveloped. Stabilising of the Cape Flats was a local issue for many years to the extent that in the late 19th century a series of temporary railways were built out onto the flats towards what is now the Airport

Industria area. The cities domestic waste was transported by train and dumped in the dune slacks (or inter-dune area) as a means of stabilising the shifting sands (Lastovica 1974)

The earliest accurate map depicting the Cape Flats is an 1890 map of the South Western Districts. Despite the fact that this map is highly detailed, the Driftsands nature reserve area is indicated as being “drift sands” (see Appendix A for historic maps). The Kuils River appears to have followed an irregular course, however, this is to be expected in a landscape characterised by seasonal flooding. In 1941 the Driftsands area was bounded by the Bellville Forest Reserve to the east and the Eerste River Forest Reserve to the West and the Strandfontein Forest Reserve to the south (1941 Chief Director Surveys and Mapping). The Kuils River flowed through the area in a course again different to that of today entering a large inland delta known as the “Buffelsvlei” to the south. According to the first title deed diagrams of the area (S.G. No 205/1948) the Kuils River never exited to the sea at this time but sank away into the sands of the Cape Flats, perhaps breaking through to the Eerste River in times of flood. By 1958-1959 (1959 Chief Director Surveys and Mapping) Driftsands had hardly changed, however, the Buffelsvlei to the south was beginning to be transformed with the establishment of the Eerste River Aerodrome and a work colony. By 1979 the beginnings of the Mfuleni Township had been established, however, the Driftsands area was relatively unchanged. Aerial photographs taken in 1988 show that it was at this time that the first major transformation took place within what is now the reserve itself – a large sand mine had been opened in the central area and the Medical Research Facility was in place. In the ensuing years the retention dam was built and the sand mine has reverted to a small lake and wetland inhabited by birds and amphibians. The massive transformations that saw informal settlements encroach on Driftsands occurred after 1994, while the Buffelsvlei delta has been impacted by the development of Khayalitsha. The Kuils River has become permanent tributary of the Eerste River. The environmental history of the site points to a dynamic landscape of dunes and wetlands, the Kuils River meandering through following a course that best suited the prevailing volume of water according to seasons and the movements of mobile dunes.

Apart from the 20th century dam, the Medical Research Facility and deductions for housing purposes (Namely Sikhumbule), the Driftsands Nature Reserve has never been subject to any formal development nor been owned by any private person or organisation. The history of deeds transfer indicates that it was initially owned by the Union of South Africa (first deed 1942) and the “Division of the Cape”. In recent years portions have been subtracted for the use of the hospital facility (1972) while the whole remaining portion was transferred to the Municipality of Cape Town in 1985 (Deeds Transfers SG Folio 544/1-5). It is currently owned by the Provincial Government.

The dense sub-urban development that characterises “The Flats” today largely took place after 1960, when as a result of South Africa’s apartheid policies whereby persons of colour were forcibly re-settled in a series of new townships. A massive influx of people to urban

areas after 1994 resulted in the rise of informal settlements to the extent that today there is very little left of the original Cape Flats landscape. Driftsands Nature Reserve is the last enclave, which although transformed in places, imparts a sense of the ancient dune landscape.

Indications are that the Driftsands Nature Reserve was never formally settled (apart from Sikhumbule). – its existence is an accident of history in that it was a piece of land that nobody wanted or valued. In terms of current values, its significance as a natural heritage place is exceptional.

6.1.1 Vergenoegd Wine Estate

This farm was granted in 1772, and is considered to be an important heritage site of provincial significance (Fransen 2006). It consists of a yard and complex of vernacular buildings of high architectural importance on the edge of the winelands. Recently restored it is a celebrated heritage site and a popular wine route stop-off point.

6.1.2 Zeekoeivlei historic site

Originally known as Vogelsang, the land was granted in 1702 to Sarah Tas, the sister of Adam Tas (the famous *freeburgher* who was instrumental in bringing the corrupt governor Willem Adriaan Van der Stel, to justice). At the time Sara Tas was unmarried – a fact which has caused some speculation as it was very unusual for an unmarried woman to be granted land. The farm was owned by for many years by persons who were the elite of the 18th century colony. In 1720 the land was owned by Johannes Swellengrebel (father of Governor Hendrik Swellengrebel) who also owned Zandvliet in Macassar. Later on the farm was owned by Hendrik Cloete who later sold it and several other farms in the district before taking up ownership of Groot Constantia on the Peninsula. By 1800 Vogelsang had taken on the name of the Vlei on the property – Zeekoeivlei, the name which it has retained to this day. In 1818 the farm once again was owned by the Cloete family when Pieter Lourens Cloete (fifth son) acquired the farm. Sometime later in the 19th century the farm came into the possession of Mr C Alderman who's descendants owned the property until the present day.

It is highly likely that the land was initially used for cattle farming, how ever we can surmise that Hendrik Cloete may well have started vine cultivation on the land as this was a particular interest of his. Vine cultivation was practiced by the Alderman family until 1985, after which they reverted to dairy farming.

The main homestead (Zeekoeivlei) and associated outbuildings form a significant complex of historic structures, which together with the yard and garden and access routes form a highly conservation worthy cultural environment.

The homestead is a large house laid out in a typical “T” shape characteristic of vernacular dwellings of the 18th – early 19th century. It has a thatched roof with a full length – width *solder*, and half hipped (*wolfneus*) end-gables, but no front gable. There is a front *stoep*. The joinery (fenestration, internal shutters, doors) is Georgian and early Victorian (early-mid 19th century) and generally in very good condition. The internal layout of the building is atypical of what would be expected in “T” shaped houses in that extensive use has been made of corridors throughout (a British borrowing).allowing separate access to individual rooms. The front portion of the “T” appears to have had a more typical symmetrical layout with rooms on either side of the front entrance way. The rooms and corridors are lofty and spacious, the original imported pine (probably North European) ceiling boards and grooved beams exist throughout.

Two later Victorian additions were made to the building while 20th century alterations have been restricted to moving some internal walls and doorways. A garage or *waenhuis* built from stone attached to the end of the “T” is probably a pre-Victorian feature.

Through circumstances not well understood, Zeekoievlei was destroyed by fire in early 2011. Loss of original fabric has been over-whelming. Even if the building was to be restored (if possible), its authenticity would be highly compromised.

6.1.3 Winelands edge

The urban edge of the Cape Winelands lies within a few kilometers of Zewenwacht Wine Estate, Langewarwagten, Saxonberg. These were very early VOC land grants which today are cherished for their history, their particular vernacular architecture (Cape Dutch). Zewenwacht is famous for its historic homestead, its gardens and views towards Table Mountain. It is a declared provincial heritage site and a part of the Cape Winelands Cultural



Landscape. The Cape Winelands collectively is considered a highly sensitive heritage resource which has been in recent years compromised by modern lifestyle estates. The area has been tentatively nominated for world heritage status. It is importantly that the edge of the Winelands areas are safe-guarded.

6.2 Phillipi

Of increasingly recognised significance is the Phillipi farmlands cultural landscape – an area with historic routes that has the appearance of gradually losing its traditional farming origins as the surrounding suburbia encroaches. Small industries, dwellings and sheds abound. The area has a neglected quality but is actually very important in terms of the production of common vegetables.

Historically the area was a mosaic of windswept dunes and wetlands and considered marginal for any form of human habitation. In the 1860's, a group of German settlers brought to the country by John X Merriman were literally compelled to commence agriculture in the area. With the assistance of imported plant species (Willow and Port Jackson), the dunes were stabilised and the small settlement of Phillipi was established (Blumer 1959), Hart and Halkett, (1997). The tradition of vegetable farming by the tenacious German settlers continued through until the present day.