Scientific Aquatic Services

Applying science to the real world

Bellville, Cape Town
Cell +27 78 220 8571
Cell +27 82 866 9849
admin@sasenvironmental.co.za
www.sasenvironmental.co.za

Name: Natasha van de Haar
Date: Tuesday, 11 November 2014
Ref: SAS 214260

SRK Consulting
183 Main Road
Rondebosch
7700
Tel: +27 (0)21 659 3060
Fax: +27 (0)21 685 7105
Email: smasson@srk.co.za

Attention: Mr. S. Masson

Dear Sir,

RE: VEGETATION AND AVIFAUNAL IMPACT ASSESSMENT INPUT AS PART OF THE BASIC ASSESSMENT FOR THE PROPOSED ESKOM DENOVA PROJECT NEAR BLOEKOMBOS, WITHIN THE WESTERN CAPE PROVINCE

Scientific Aquatic Services (SAS) was appointed to conduct a brief site survey to assess potential impact on vegetation and avifauna as part of the environmental assessment and authorisation process for the proposed Eskom Denova Power Line and substation. Two alternative routes were proposed that will be referred to as 'Alternative A' and 'Alternative B (preferred) ' below. The same area is proposed for a substation that will form part of the alternative that proves to be feasible and was therefore assessed as part of both alternatives.

Alternative A extends over approximately 1.5km. The majority of the route traverses areas heavily infested by *Echium plantagineum* and *Avena fatua* with a slight increase in diversity and abundance of indigenous vegetation within natural wetland features. Alternative A runs parallel to Old Paarl road (approximately 60m from the road) for 1km before it turns away in a south easterly direction for another 520m crossing an alien vegetation dominated open veld area.

Alternative B extends over approximately 1.8km and traverses large areas of cultivated lands with the southern portion intercepting an unchannelled valley bottom wetland used primarily for grazing purposes. Three artificial earth dams were encountered within areas presently used for cultivation, two of the dams retain water year round and do provide more intact habitat for wetland dependent floral and avifaunal species.

It should be noted that both alternatives intercept the same unchannelled valley bottom wetland (indicated as the Bottelary River by the National Freshwater Ecosystem Priority Areas Database).

However, the portion intercepted by Alternative A is located closer to residential development as well as several access roads off Old Paarl road; whereas the portion intercepted by Alternative B is only used for livestock grazing. As a result, the perceived ecological state for the portion near Alternative B, although transformed, was considered higher (relative to Alternative A) at the time of the assessment (assessed in detail in the wetland assessment report).

Figure 1: Alternative A – South eastern portion (top left); isolated areas with *Pennisetum macrourum* within the south eastern portion (top right); artificial earth dams (bottom).

Figure 2: Alternative B - Unchannelled valley bottom (top left); agricultural areas (top right); artificial earth dams (bottom).

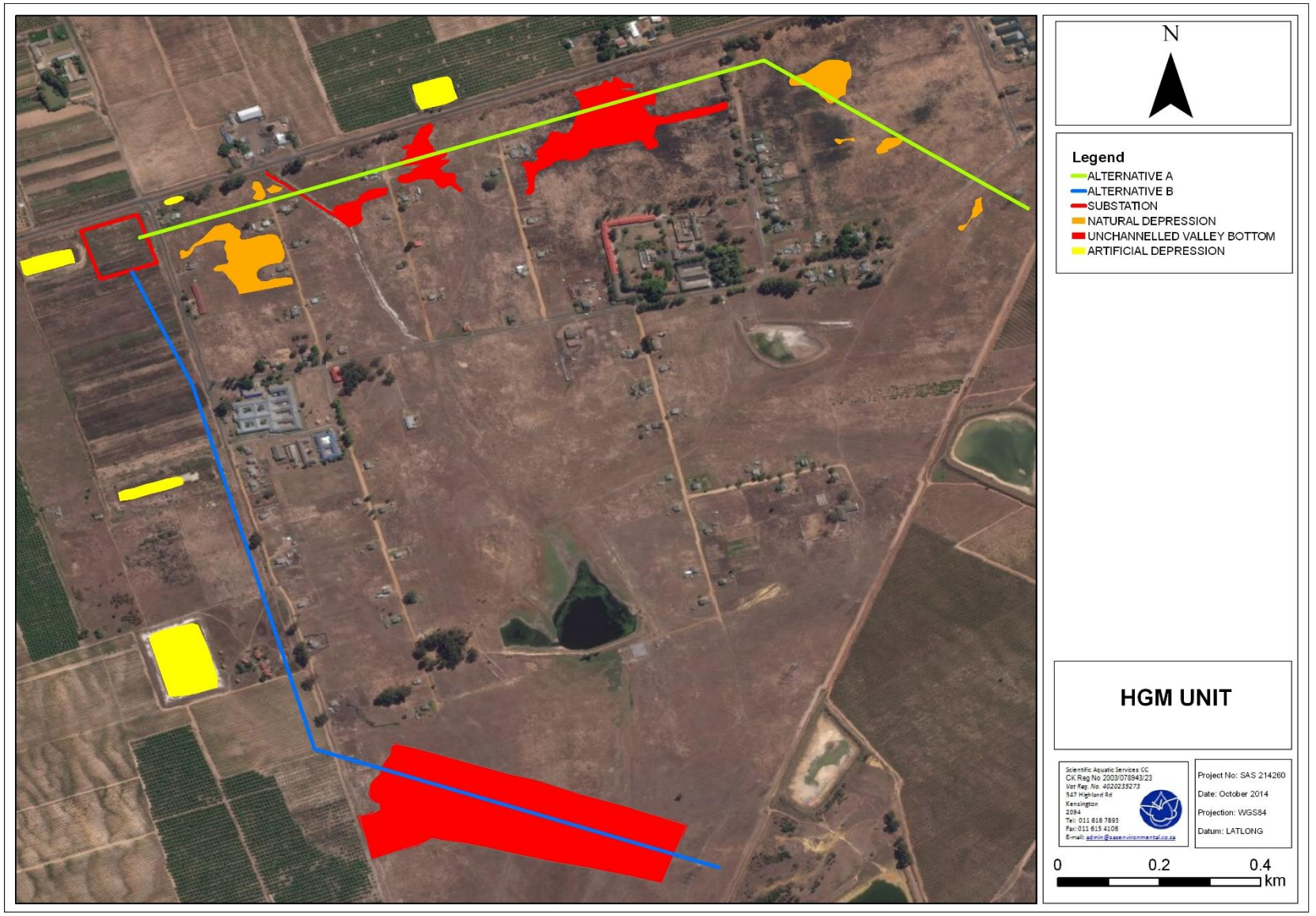

Figure 3: Digital satellite image depicting the location of the alternatives and wetland features in relation to surrounding areas.

1 IMPACT ASSESSMENT

The tables below serve to summarise the significance of potential impacts on vegetation and avifauna associated with the project footprint. Impacts associated with the construction and operational phase have been assessed separately. The sections below present the impact assessment according to the method prescribed by SRK Consulting. In addition, it also indicates the required mitigatory and management measures needed to minimise potential ecological impacts and presents an assessment of the significance of the impacts taking into consideration the available mitigatory measures, assuming that they are fully implemented. In the assessment of impacts prior to the implementation of mitigation measures the assumption has been made that all general good housekeeping measures as listed below will be strictly adhered to throughout all phases of the development.

The list below provides an indication of the general good housekeeping mitigation measures that must be adhered to in order to avoid or reduce general impacts:

- Strictly control edge effects of construction activities such as erosion and alien vegetation proliferation;
- Implement waste management as contemplated in the Environmental Management Programme;
- Provide appropriate sanitation facilities for the duration of the proposed construction activities and remove all waste to an appropriate facility;
- Designate specific areas for dumping of spoil material or waste and remove all material once construction has been completed;
- Regularly inspect all construction vehicles for leaks;
- Carry out all servicing and refuelling of construction vehicles on a concrete platform with runoff traps and containment. If refuelling takes place in the field use drip trays at all times;
- Treat contaminated soils with appropriate product;
- Remove and appropriately dispose of any contaminated soil and water to a designated dump site as rapidly as possible following contamination;
- Remove all waste, with special mention of waste rock and spoils and remaining construction material from the site on completion of the project;
- Reduce airborne dust at construction sites through:
    - Damping dust generation areas with freshwater;
    - Use of cloth or brush barrier fences;
    - Covering dumps or stockpiles with plastic sheets; and
    - Apply appropriate measures on all dirt roads that service the construction site.
- Do not allow fires for heating and cooking.

It should be noted that the impact assessment is based upon the findings made during a brief site visit, therefore no detailed vegetation or avifaunal assessment was undertaken. However, SAS is confident that the results, as discussed in this screening report, will provide the relevant planners and decision makers with sufficient information to formulate an opinion on the viability of the proposed development from an ecological conservation viewpoint.

1.1 Vegetation Impact Assessment

IMPACT 1: LOSS OF FLORAL HABITAT AND ASSOCIATED FLORAL BIODIVERSITY

Construction Phase

Activities leading to impact

- Clearing of the project footprint and the disturbance of soils,
- Clearing of the project footprint and the removal of vegetation; and
- Compaction of soils.

The main impact associated with the construction of the power line will be restricted to areas where support structures and the substation will be permanently located as well as temporary access roads used for the movement of construction material.

Alternative A is located within areas that was historically cultivated or where earth moving activity has taken place. As a result alien vegetation encroachment within terrestrial areas, with special mention of *Echium plantagineum* and *Avena fatua,* is considered to be severe. A slight increase in abundance and diversity of indigenous vegetation were noted within the wetland areas.

The majority of the Alternative B is located within historically cultivated land or adjacent to an existing gravel road where vegetation transformation has been significant as a result of alien vegetation encroachment and earth moving activity as part of road construction as well as creation of stormwater canals next to the road. Therefore, the majority of Alternative B has very limited value in terms of floral habitat provision.

The proposed development routes along Alternative A and Alternative B are indicated to be terrestrial CBAs (Drakenstein- Stellenbosch Fine Scale Map) and therefore are of importance for reaching regional conservation targets. However, taking into consideration the extent of vegetation transformation within terrestrial areas in combination with the servitude that will restrict future development within these areas, it is not considered to impact on conservation targets and is not regarded as a fatal flaw to the project.

The southern portion of Alternative B does cross one unchannelled valley bottom wetland, where the vegetation community as well as floral habitat remained slightly more intact mainly as a result of wetland habitat being unsuitable for agriculture. However, natural floral diversity as well as habitat are still considered very limited due to the encroachment of alien vegetation. The area is presently being used for livestock grazing that has impacted upon the wetland habitat in some areas, however the wetland in its present state still provides habitat for wetland dependent floral species such as *Zantedeschia aethiopica* and *Geranium incanum*.

Due to the degree to which the natural floral assemblage has been modified the intensity of the impact will be low for both alternatives. However, impact due to construction of the support structures and the substation will remain for an extended period of time. The extent of the impact would most likely only be within the vicinity of the support structures, therefore considered local. As a result the overall impact significance related to both alternatives will be low prior to the implementation of mitigation measures.

Vegetation will be removed for the construction of the support structures and the substation, regardless of mitigation, therefore the probability of the impact will remain definite and the duration will be long term for both alternatives. According to the impact assessment rating method the impact significance would therefore not decrease. However, it is the opinion of the specialist that the impact significance would most likely be very low, should mitigation measures be implemented. The opinion is based on the fact that even though the support structures would remain long term any additional activities will be restricted in extent, intensity as well as duration, if mitigation measures are adhered too and by so doing the overall impact significance can be decreased.

It should also be noted that although vegetation will be removed, regardless of mitigation. Floral habitat in the vicinity of the portion of the unchannelled valley bottom wetland at Alternative B was considered to be slightly more intact and therefore intensity due to the loss of habitat can be considered marginally higher compared to Alternative A. Furthermore, due to the spacing of the wetland features intercepted by Alternative A, there is the potential of avoiding wetland areas with careful layout planning along this proposed route, which will be difficult to implement at Alternative B due to the width of the channelled valley bottom wetland.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Long-term	**Low**	Definite	**LOW**	**– ve**	High
	1	1	3	5				
B	Local	Low	Long-term	**Low**	Definite	**LOW**	**– ve**	High
	1	1	3	5				

Essential mitigation measures during the construction phase:

- Keep all construction footprint areas as well as vegetation removal to a minimum. In this regard specific mention is made of the need to avoid site clearing between support towers;
- Take the site sensitivity plan (as provided by SAS wetland assessment 2014) into consideration during the layout of temporary tracks and access routes; and
- Construction of support structures within the wetland zones as delineated by SAS (2014) as well as the allocated buffer zones should be avoided wherever possible.

Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Long-term	**Low**	Definite	**LOW**	**– ve**	High
	1	1	3	5				
B	Local	Low	Long-term	**Low**	Definite	**LOW**	**– ve**	High
	1	1	3	5				

Operational Phase

Activities leading to impact:

- Maintenance activities.

Activities associated with the operational phase of the development is likely to be minimal and at present, vegetation transformation along the majority of both alternatives is considered severe; therefore impact as a result of maintenance activities was determined to be similar for both alternatives.

The maintenance of the support structures will be required for the duration of the operational phase, however impact related to these maintenance activities are only expected to remain short term (up to 2 years). The impact will also be restricted to the substation as well as the support structures and would therefore be local. Due to the present degree of vegetation transformation, the impact associated with the operational phase is considered of a low intensity[1]. The overall impact significance prior to the implementation of mitigation measures was therefore determined to be very low. Should the operation footprint areas be kept to a minimum and not encroach onto surrounding wetland habitat the probability of the impact occurring can be reduced to improbable in turn decreasing the overall impact significance to insignificant.

[1] It has been assumed that no long term vegetation clearing for the prevention of fire damage, underneath the power line will be undertaken.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Probable	**VERY LOW**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Probable	**VERY LOW**	**– ve**	High
	1	1	1	3				
Essential mitigation measures during the operation phase: • Keep all operational footprint areas to a minimum; and • Restrict maintenance vehicles to designated roads.								
Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				

IMPACT 2: LOSS OF FLORAL SPECIES OF CONSERVATIONAL CONCERN AND ASSOCIATED HABITAT

Construction Phase

Activities leading to impact

- Clearing of the project footprint and the disturbance of soils,
- Clearing of the project footprint and the removal of vegetation; and
- Compaction of soils.

Four species of conservation concern were encountered during the brief site visit of Alternative B. *Brunsvigia orientalis, Babiana regia, Corycium orobanchoides* and a *Moraea* sp. are listed as Schedule 4 protected species[2]. All the species are listed due to the family being protected, however all are considered relatively common within the region with the exception of *Babiana regia* listed as 'Critically Endangered' within the SANBI Red List of South African Plants. *B. regia* populations are only known to still exist in very few locations mainly due to rapid decline of its habitat as a result of agriculture and urban development.

Although Alternative B is transformed, the unchannelled valley bottom still provides habitat for viable populations of the above mentioned species with special mention of the 'Critically Endangered' *B. regia*. The intensity of the impact is therefore considered to be high and the duration long term. The impact extent would be local, however it should be noted that the loss of species will be of regional significance. The overall impact significance was therefore determined to be high prior to mitigation. It is deemed possible that the impact significance can be decreased to low if an assessment is undertaken during which areas are identified with the least amount of individuals where support structures can be constructed. In addition it is recommended that individuals that will be disturbed be rescued and relocated to adjacent similar habitat.

Only *Moraea* sp. and one *Disa bracteata* individual were identified within wetland areas intercepted by Alternative A. Both are listed as Schedule 4 protected species. Although only a brief site assessment has been undertaken, the terrestrial habitat associated with Alternative A is considered to be too

[2] Western Cape Nature Conservation Laws Amendment Act, 2000

degraded to support a significantly larger protected or threatened floral species population. Therefore, intensity is considered to be medium and the duration long term before mitigation. The impact extent would be local, however it should be noted that the loss of protected species will be of regional significance. The overall impact significance was therefore determined to be medium prior to mitigation. If the support structures are placed outside wetland areas the impact significance can be reduced to a very low level.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Medium	Long-term	**Medium**	Definite	**MEDIUM**	**– ve**	High
	1	2	3	6				
B	Local	High	Long-term	**High**	Definite	**HIGH**	**– ve**	High
	1	3	3	7				

Essential mitigation measures during the construction phase:

- Keep all construction footprint areas as well as vegetation removal to a minimum. In this regard specific mention is made of the need to avoid site clearing between support towers;
- Take the site sensitivity plan (as provided by SAS wetland assessment 2014) into consideration during the layout of temporary tracks and access routes;
- Construction of support structures within the wetland zones as delineated by SAS (2014) as well as the allocated buffer zones should be avoided as far as possible;
- Determine the final positions of pylons on site under guidance of a botanist or suitably qualified specialist (to impact least number of SCC individuals), should Alternative B be chosen as the preferred alternative; and
- Rescue and relocate all identified species of conservational concern to areas adjacent to construction footprint areas, preferably when the bulbs are dormant (March to May). Should any SCC, protected or specially protected species as listed by Schedule 3 and 4 of the Act be removed or destroyed, a permit will be required from CapeNature.

Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Long-term	**Low**	Improbable	**VERY LOW**	**– ve**	High
	1	1	3	5				
B	Local	Medium	Long-term	**Medium**	Possible	**LOW**	**– ve**	High
	1	2	3	6				

Operational Phase

Activities leading to impact:

- Maintenance activities.

Floral habitat available in the vicinity of Alternative A has already been transformed to the degree that it provides very little habitat for species of conservational concern. The intensity of impact associated with maintenance activities is therefore low. These activities would also be confined to support structures and would therefore be local in extent and of short term. Prior to the implementation of mitigation measures the impact significance was therefore determined to be insignificant.

For Alternative B, where the unchannelled valley bottom does provide habitat for several populations of species of conservational concern, impact due to loss of individuals or habitat as a result of maintenance activities are expected to extend over a medium term and be of a high intensity. The overall impact significance was therefore determined to be medium prior to mitigation. It is deemed possible that the impact significance can be reduced to insignificant if all operational related activities

are kept strictly within designated footprint areas and do not encroach onto surrounding wetland habitat.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	High	Medium-term	**Medium**	Probable	**MEDIUM**	**– ve**	High
	1	3	2	6				
Essential mitigation measures during the operation phase: • Keep all operational footprint areas to a minimum; and • Restrict maintenance vehicles to designated roads.								
Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				

1.2 Avifaunal Impact Assessment

IMPACT 1: LOSS OF AVIFAUANL HABITAT

Construction Phase

Activities leading to impact:

- Site clearing and the removal of avifaunal breeding and foraging habitat.

Avifaunal habitat in the vicinity of both Alternatives is considered to be very limited due to degree of habitat transformation as a result of agriculture and residential infrastructure, in combination with ongoing agricultural related activity. Surface water within the unchannelled valley bottom was also found to be isolated and limited to small pools along the system in turn reducing avifaunal habitat diversity and availability. Furthermore, no amphibians that could be a potential food source were encountered during the site visit.

General anthropogenic activities, use of access roads off Old Paarl road as well as numerous domestic dogs were noted during the site survey will decrease the possibility of avifauna using areas in the vicinity of Alternative A for either breeding or foraging habitat. The unchannelled valley bottom wetland habitat near Alternative B is located further from anthropogenic activity and therefore could potentially provide habitat for more avifaunal species.

Two earth dams were encountered near Alternative B located within land which is presently being cultivated. Both dams are artificial and are most likely used for irrigation purposes. However, obligate wetland species such as *Typha capensis* and *Juncus kraussii* were encountered which indicates that the soil has remained saturated long enough for the support of wetland vegetation. The thick wetland vegetation and open water do provide habitat for species such as *Euplectes orix* (Southern Red Bishop) and *Microcarbo africanus* (Reed Comorant) (both common for the region and listed as least concern), not encountered anywhere else along the proposed route.

The channelled valley bottom wetland was impounded in one area intercepted by Alternative A, no other earth dams either natural or artificial are located within the immediate vicinity of the proposed alternative. *M. africanus* (Reed Comorant) was identified within the impoundment, however the area is deemed too close to ongoing anthropogenic activity to provide habitat for an avifaunal community of significant abundance and diversity.

Taking into consideration the above findings, Alternative B can be considered of marginally higher importance with regards to the provision of avifaunal habitat for more common species expected to occur. However, the difference is not great enough for the duration, intensity and extent to fall within different impact assessment rating categories. The intensity of impact due to construction is therefore considered to be low and local in extent although the duration of the impact would be long term due to the permanent nature of the substation and power line that could potentially encroach onto the unchannelled valley bottom wetland. Mitigation that will result in a decrease in impact significance include limiting construction footprint areas to what is absolutely essential and preferably outside wetland and buffer zones as well as prohibiting the movement of vehicles and personnel within the wetland habitat. With the implementation of these mitigation measures the construction phase impact can be reduced to an insignificant level.

Without mitigation	***Extent***	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
A	Local	Low	Long-term	**Low**	Probable	**LOW**	**– ve**	High
	1	1	3	5				
B	Local	Low	Long-term	**Low**	Probable	**LOW**	**– ve**	High
	1	1	3	5				
Essential mitigation measures during the construction phase • Define the boundaries of construction footprint areas and ensure that all activities remain within defined footprint areas; and • Permit only essential vehicles and personnel within the wetland with buffer zones as defined by SAS (2014).								
Managed	***Extent***	***Intensity***	***Duration***	***Consequence***	***Probability***	***Significance***	***Status***	***Confidence***
A	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				

Operational Phase

Activities leading to impact:

- Maintenance activities within wetland features.

Any maintenance activity will be restricted to the areas where the infrastructure has been constructed. Therefore impact associated with the operational phase of the development is likely to be minimal provided that maintenance activities remain within the construction footprint areas and no indiscriminate driving is allowed through the unchannelled valley bottom wetland. The impact associated with the operational phase is therefore considered to be of a local extent, of a low intensity and of a short term duration (up to two years) and the overall impact significance prior to the implementation of mitigation measures is considered to be insignificant. With the implementation of mitigation measures the probability of the impact can be reduced to improbable, however the overall impact significance will remain at an insignificant level.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
Essential mitigation measures during the operational phase • Keep all operation footprint areas to a minimum.								
Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				

IMPACT 2: LOSS OF AVIFAUNAL MIGRATION CORRIDORS OR INDIVIDUALS

Construction Phase

Activities leading to impact:

- Collision of construction vehicles with avifaunal species;
- Noise due to construction activities.

Open veld and wetland features within the immediate vicinity of Alternative A is considered too close to ongoing anthropogenic activity to provide breeding or foraging habitat for threatened or protected avifaunal species. The area to the north of Alternative A is also presently used for commercial production of fruit and therefore the area does not form part of a natural migration corridor usually associated with linear wetland features.

One *Anthropoides paradiseus* (Blue Crane) individual was encountered within the unchannelled valley bottom near Alternative B. This species is listed as vulnerable by the IUCN Red List of Threatened species 2014. *A. paradiseus* are adapted to transformed grassland and agricultural lands. Therefore, the construction phase will not necessarily pose a threat to individuals of this species and individuals are expected to move away from areas where construction is taking place.

As a result, no loss of avifaunal migration corridors is expected as a result of the construction phase should either of the alternatives be chosen and loss of individuals is unlikely, the most significant impact is however expected during the operational phase (refer to assessment below).

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Possible	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Possible	**NSIGNIFICANT**	**– ve**	High

	1	1	1	3				

Essential mitigation measures during the construction phase:

- Define the boundaries of the construction footprint areas and ensure that all activities remain within defined footprint areas; and
- Permit only essential vehicles and personnel within the wetland with buffer zones as defined by SAS (2014).

Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				
B	Local	Low	Short-term	**Very Low**	Improbable	**INSIGNIFICANT**	**– ve**	High
	1	1	1	3				

Operational Phase

Activities leading to impact:

- Collision of operational vehicles with avifaunal species;
- Collision of avifaunal species with power lines.

It is considered unlikely that any operational vehicles will collide with avifaunal species, due to the low abundances encountered during the site visit. The only avifaunal species of concern with regards to migration is the *Anthropoides paradiseus* (Blue crane). *A. paradiseus* has an affinity for agricultural and wetland areas throughout the Western Cape and although the habitat associated with the Alternative B will not be significantly affected by the proposed construction activities, there is still the possibility of individuals flying into the power lines during the operational phase. Therefore the extent will be local, however the intensity is considered to be medium due to the presence of *A. paradiseus.* The power line as well as the substation will remain long term. The overall impact significance prior to mitigation was therefore determined to be medium. With the implementation of mitigation measures the overall impact significance can be reduced to insignificant.

Open veld and wetland features in the vicinity of Alternative A is considered significantly transformed and it is doubtful that the unchannelled valley bottom forms part of an avifaunal migration corridor. Therefore, the extent of impact that may result due to operational activities prior to mitigation is deemed to be local, of low intensity, however would remain long term.

Without mitigation	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Long-term	**Low**	Possible	**VERY LOW**	**– ve**	High
	1	1	3	5				
B	Local	Medium	Long-term	**Medium**	Probable	**MEDIUM**	**– ve**	High
	1	2	3	6				

Essential mitigation measures during the operational phase:

- Application of Bird Flight Diverters or flaps for the length of the delineated unchannelled valley bottom wetland (refer to SAS wetland assessment 2014) to mitigate for potential collisions;
- Ensure that Bird Flight Diverters or flaps are maintained and replaced as necessary;
- Permit only essential vehicles and personnel within the wetland with buffer zones as defined by SAS (2014).

Managed	*Extent*	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
A	Local	Low	Long-term	**Low**	Improbable	**VERY LOW**	**– ve**	High
	1	1	3	5				

B	Local	Low	Long-term	**Low**	Improbable	**VERY LOW**	**– ve**	High
	1	1	3	5				

1.3 No Go Alternative

Due to the lack of extensive urban development in combination with the present land use being agriculture and grazing of livestock, it is doubtful that any present impact associated with either of the Alternatives due to anthropogenic activities would increase in either extent or intensity within the next 5 years. It is therefore expected that floral and avifaunal habitat and diversity would remain the same if the proposed development does not proceed.

1.4 Cumulative Impact Assessment

Floral and avifaunal habitat within the region is under continued threat due to expansion of urban development, agriculture as well as alien invasive encroachment. Although the footprint area associated with the construction of a power line and substation is not deemed significant in extent it may add to the cumulative effect of loss of habitat for avifaunal and floral species.