

- The issues identified in the Scoping Report and Plan of Study for EIA must be further investigated during the Environmental Impact Assessment Report.
- Description of all the properties on which the alternatives will be undertaken must be mentioned in the Final Scoping Report.

3. Specialist Studies

All specialist studies undertaken and referred to in the Draft Scoping Report must be attached in the Final Scoping Report (FSR). Such specialist studies must also include Biodiversity Assessment, Wetland Delineation and/or Riverine Study, Visual Assessment, Heritage Impact Assessment, Social Impact Assessment and Geotechnical Investigations.

4. Alternatives

An assessment of alternatives must include a comparative assessment of alternative location of activity components on the site. The assessment of alternatives must be discussed in relation to the surrounding land uses and impacts associated with each alternative assessed and mitigated against.

5. Significant rating of impacts

The assessment of impacts, identification of impacts and significant rating of such impacts must lead to reliable conclusion that the mitigation employed will reduce impacts to the level it has been indicated.

6. Locality map and layout plans or facility illustrations

The locality map and layout plans or facility illustrations must meet the following specifications:

- The scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.
- For gentle slopes the 1m contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1: 10, the 500mm contours must be indicated on the plan.
- Areas with indigenous vegetation (even if it is degraded or infested with alien species).
- Locality map must show exact position of development site or sites.
- Locality map shows and identifies (if possible) public and access roads.
- The current land use as well as the land use zoning of each of the properties adjoining the site or sites.

The layout plan:

- The layout plan must be printed in colour and overlaid with a sensitivity map.
- Layout plan must be of acceptable paper size and scale (A1 size for activities with development footprint of >50 hectares).
- Layout plan scales must be A1 = 1:1000
- Layout plan must show the position of services, electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, stormwater infrastructure and existing telecommunication infrastructure (where possible);
- Servitudes indicating the purpose of the servitude.
- Sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto) rivers and wetlands.
- Cultural and historical features.

7. EMPr

An Environmental Management Programme (EMPr) is not included in the Draft Scoping Report. In the Final Scoping Report, a site specific, practical and enforceable EMPr must be included. It must be detailed and include recommendations from all specialist studies relevant to the proposed site.

8. Public participation process

- Issues raised during Public Participation Process are not all addressed in the Comments and Response Report attached in the Draft Scoping Report (DSR) and must be addressed.
- The amended Comments and Response Report must be attached to the Final Scoping Report.
- An advert (published in the newspaper Beeld, Vrydag 13 November 2015) that had been attached in the Draft Scoping Report must be included in the Final Scoping Report. Further, a second advert published in November 2016 is not included in the DSR and must be attached in the Final Scoping Report.
- Further, site notices for both adverts mentioned above must be attached in the Final Scoping Report when submitting to this Department.

If you have any queries regarding the contents of this letter, contact the official at the details indicated above.

Yours faithfully



Mr. Teboho Leku
Acting Director: Impact Management
Date: 9/12/2016



Annexure M

Environmental Scanning Report

APPENDIX A
ENVIRONMENTAL SCAN

1

**PRELIMINARY ENVIRONMENTAL SCAN
FOR THE ROUTE DETERMINATION PHASE OF
THE PROPOSED PWV 17 BETWEEN THE BRONBERG MOUNTAIN RANGE
AND THE PIENAARS RIVER ON THE FARM SWARTKOPPIES**

Prepared by: _____
PLAN ASSOCIATES

Date:

NOVEMBER 2005

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FOREWORD

The kilometer distances in this Environmental Scan Report, differ from the kilometer distances used in the main report, by 18 km. Consequently, by subtracting 18 km from any kilometer distance in this report, the corresponding kilometer distance in the main report is obtained.

1. INTRODUCTION AND BACKGROUND

During the mid-seventies, the transport and planning authorities compiled a grid road network covering the traditional PWV area. The grid network concept was based on a functional road classification system comprising a range of mobility and access routes and forms the basis of the Strategic Major Road Network for Gauteng Province. The PWV 17 plays an important role in achieving these objectives.

The main aim of this preliminary scan was to ensure that all the environmental aspects are taken into consideration while determining the location of the proposed PWV 17 alignment between the Bronberg and the Pienaars River. The area under investigation is located to the east of Tshwane and falls within the area of jurisdiction of the Kungwini Local Municipality.

This scan first set out to establish whether there are any 'fatal flaws' associated with the proposed/planned route of the road, and will also serve to alert future designers of aspects to take into consideration and/or to investigate.

2. PURPOSE AND METHODOLOGY OF THE ENVIRONMENTAL SCAN

2.1 Purpose

The western section of Kungwini is very sought after for the development of residential estates, lodges, conference facilities, eco tourism facilities, health spa's etc. and various rezoning and consent-use applications have already been submitted to the authorities for approval.

When development takes place, roads that supply access to and from the developments must be constructed and/or existing roads must be upgraded.

In order to ensure that an optimum alignment for the PWV 17 is taken into consideration during development planning and in reaction to the environmental considerations, Gautrans embarked on a review of the route determination of route PWV17 between road PWV5 in the south and the Pienaars River, just to the north of the N4.

Due to the urgency for the completion of the scan for the section of the PWW17 between the Bronberg and the Pienaars River, the work was undertaken in two phases. This scan describes the environmental issues for the section of the PWW17 freeway between the Bronberg and the Pienaars River and it represents Volume 1 of the larger environmental scan.

2.2 Methodology

The environmental information that was taken into consideration for the compilation of this scan consist of the following:

- Various site surveys done by environmental consultants and specialists
(Annexure A contains a map summary of site visits that were undertaken and issues identified for further investigation by specialists);
- The Environmental Management Framework for Kungwini West;
- The Integrated Development Plan for Kungwini;
- The Bronberg Strategic Environmental Assessment;
- The GDACE C-Plan; and
- Information supplied by the Kungwini Local Authority.

3. ALTERNATIVES IDENTIFIED

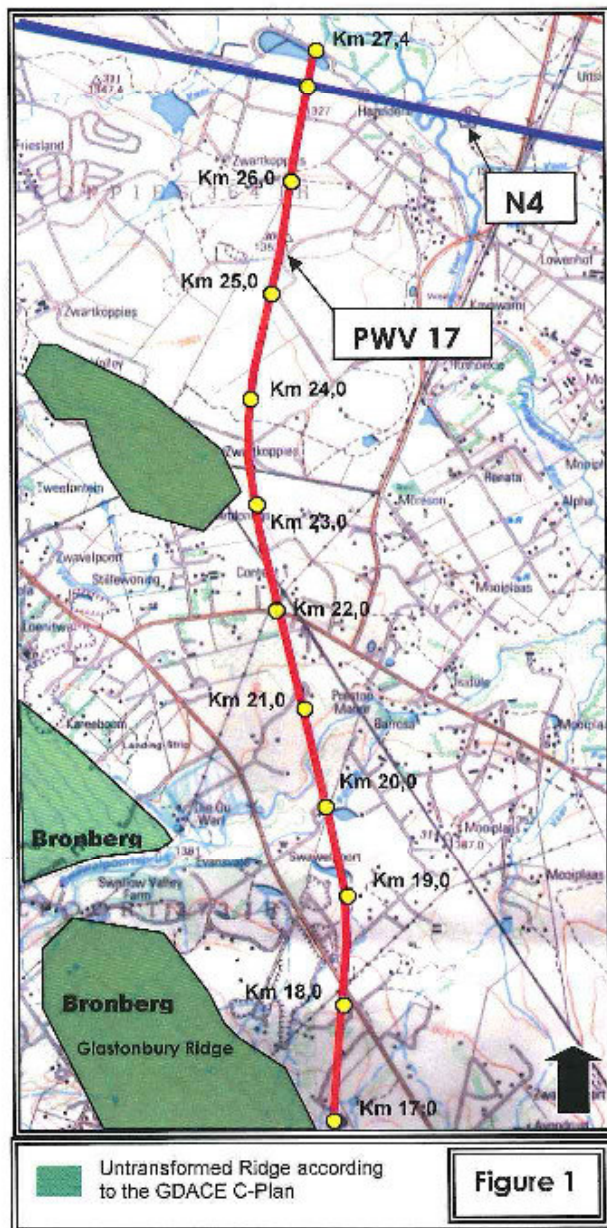
Although many alternative alignments were investigated for the section of the PWW 17 to the south of the Bronberg, Gautrans regards the alignment of the section of the PWW 17 to the north of the Bronberg as fairly fixed, because rural development in the area, and particularly the positioning of some small holdings along the route, has already taken account of the alignment of the proposed freeway. Preliminary design for the systems interchange between PWW17 and the N4 freeway and for PWW17 to the north of the interchange have also been completed already.

In order to limit the impact of the proposed freeway on the sensitive Bronberg, two alignment alternatives were considered. The one alternative runs through the Zwavelpoort, while the other alternative necessitates the tunnelling of the PWW 17 through the Bronberg.

From an environmental point of view, the tunnelling option was regarded as the preferred alternative and therefore this report assumes that the PWV 17 will be tunnelled through the Bronberg, although by a scale of order more expensive than an open cutting.

4. GENERAL DESCRIPTION OF THE PROPOSED ALIGNMENT

(Refer to Figure 1)



The involved section of the PWV 17 is approximately 11,4 km in extent and it stretches in a south-north direction, traversing the farms Swawelpoort 373 JR and Zwartkoppies 364 JR. Km 17,0 of the PWV 17 is situated just north of the Glastonbury Ridge that forms part of the larger Bronberg Mountain Range. Just after km 18,0 the proposed

freeway crosses Lynnwood Road (the K34). At approximately km 22,0 it intersects the Boschkop Road. At approximately km 27,0 it intersects the N4 freeway and at approximately km 27,4 it traverses the Pienaars River on the farm Zwartkoppies.

The proposed route lies in the quarter degree grid square 2528CD (Rietvleldam). When looking at the vegetation type that occurs along the alignment, it can be classified as Rocky Highveld grassland with shallow rocky soil, and is a transitional type between the high inland plateau grassland and the lower inland plateau bushveld. Of the area covered by this type of grassland, 65% is transformed and less than 1,5 % conserved (Low & Rebelo 1966). In addition the vegetation is highly threatened by frequent burning and urbanisation.

5. EXISTING LAND USE OF THE STUDY AREA

(Refer to Annexure A for a description of existing land-use)

The existing land-use of the study area mainly comprises farms and agricultural holdings. Although the agricultural potential of the soils are generally high to moderate, cultivated lands in the area are limited. Other agricultural and agricultural related activities that take place in the area are diary and livestock farming (some cattle use the study area for grazing purposes), equestrian farms and agricultural holdings.

Due to existing and previous agricultural and quarrying activities in and around the study area, only isolated patches of natural vegetation were identified during the site visits. Electrical power lines also traverse the study area.

6. POSSIBLE FUTURE DEVELOPMENTS IN THE STUDY AREA

As already mentioned, the western section of Kungwini is currently experiencing a significant amount of development pressure and new developments require certain upgrading to the local and provincial road network systems.

Although developers already appointed engineers to compile traffic impact assessments and to propose road upgrading on a local and provincial scale, Gautrans regarded it necessary to confirm the proposed PWV 17's alignment in the developing areas in view of certain environmental concerns that have come to their attention.

According to the Kungwini Local Municipality they are in favour of development in the western section of Kungwini, because it is situated immediately adjacent to existing urban areas of Tshwane, and it would increase their rates and taxes base, once developed.

The Integrated Development Plan (IDP) for the area earmarked the farms in and around the study area for densification purposes. According to the Kungwini Local Municipality they will support 1ha and 0,5ha subdivisions on certain farms.

When looking at Provincial Policy and Framework Documents such as the Environmental Management Framework (EMF) for Kungwini West and the GDACE C-Plan, no gentleman's estates are supported in the area and no development is supported on ridges, irreplaceable sites and areas with high and moderate agricultural potential. The current EMF supports clutter and space developments that take all the environmental aspects into consideration.

It is, however, important to note that the proposed PWV 17 is a freeway that is planned for the future and it is only natural for the existing urbanised area of Tshwane to expand into the western sections of Kungwini. Once intense urbanisation starts to take place in the western sections of Kungwini, some sub-divisions and rezoning will take place and if the proposed alignment of the PWV 17 is in place, it will be possible to do future planning around the PWV 17 (i.e. commercial and offices will be planned adjacent to the freeway and residential developments and tourism related land-uses will be situated further away from the freeway).

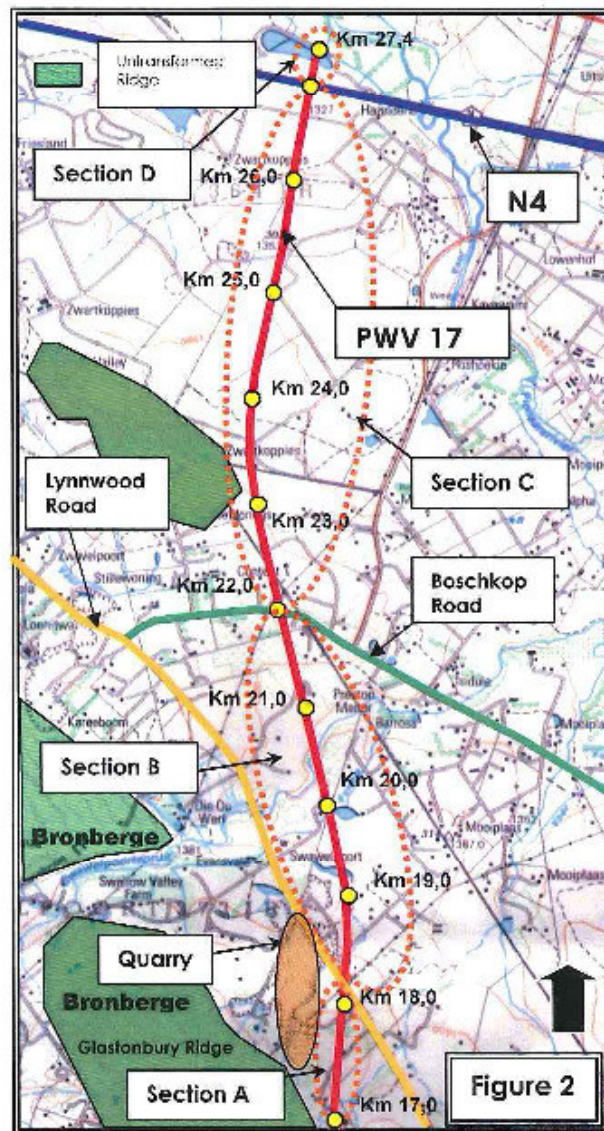
7. COMPATIBILITY OF THE PROPOSED FREEWAY WITH THE ENVIRONMENT (SOCIAL, ECOLOGICAL AND ECONOMICAL)

The compatibility of the proposed PWV 17 with the environment has been determined¹ and the results are given below. Reference can also be made to Annexure B for the Floral Habitat Report and to Annexure C for the Red Data Bird and Mammal Species Scan.

¹ The Department of Agriculture, Conservation, and Environment was consulted regarding the red data species that might occur in the area. In addition, specialists surveyed the areas that were identified as irreplaceable sites on the GDACE C-Plan. It is however important to note that due to the inaccessibility of some of the areas, it was not possible to examine all the identified sections during the survey.

For discussion purposes the study area has been divided into four sections namely Section A (The section between km 17,0 and Lynnwood Road), Section B (The section between Lynnwood Road and Boschkop Road), Section C (The section between Boschkop Road and the N4 Freeway) and Section D (the section between the N4 Freeway and the Pienaars River).

Figure 2 below illustrates the four sections.

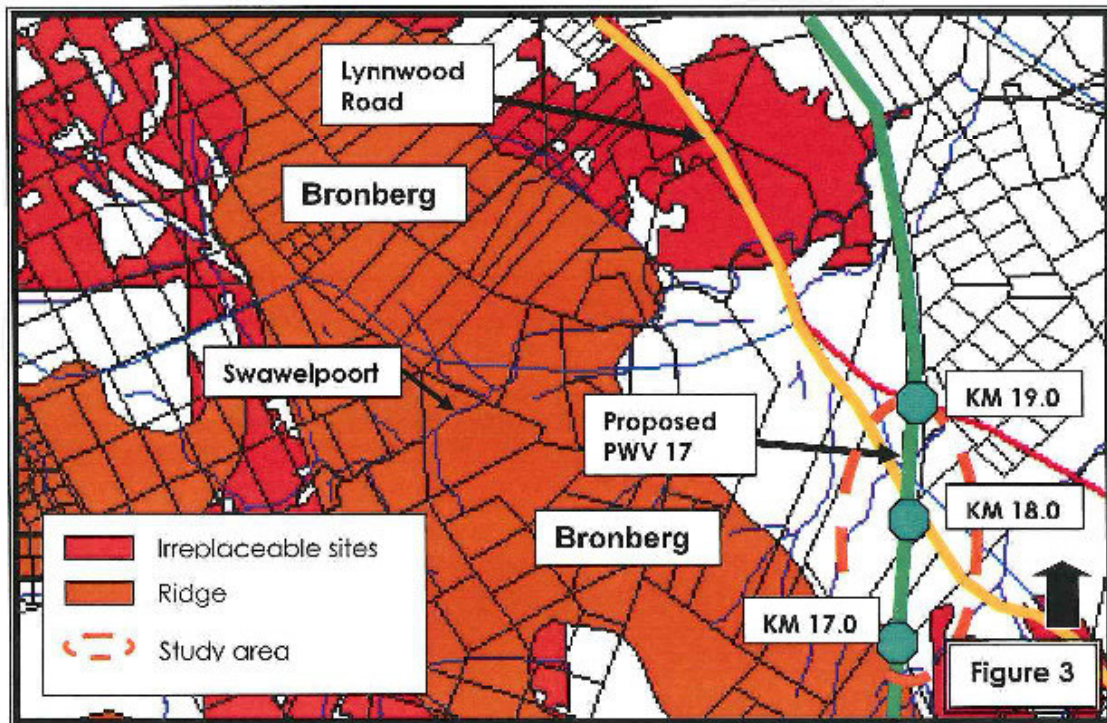


7.1 Section A: The section between the Bronberg and Lynnwood Road

The section between km 17,0 (the Bronberg) and Lynnwood Road traverses the farm Zwavelport 373 JR. The study area that is affected by this section of the road is situated in close proximity of the Bronberg Mountain Range that is regarded as a valuable ecological, aesthetical, cultural and historical asset to the Tshwane and Kungwini region.

Most of the affected properties are privately owned agricultural holdings with access roads that lead to dwelling units and outbuildings. Due to security reasons, it was not possible to obtain access to these privately owned properties. It was, however, possible to visually observe the properties from Lynnwood Road.

7.1.1 Ecological Environment



From an ecological point of view the section between km 17,0 (the Bronberg) and Lynnwood road is not regarded as very sensitive by GDACE. As already mentioned, the involved area was not accessible during the site visits and therefore it was not possible to do any detailed fauna and flora surveys to confirm the findings of GDACE.

Although the area is not regarded as sensitive by GDACE there is a possibility that the *Juliana Golden Mole* (a red data mole species) could occur on the site. The mole species is associated with the sandy soils on and in close proximity of the Bronberg Mountain Range.

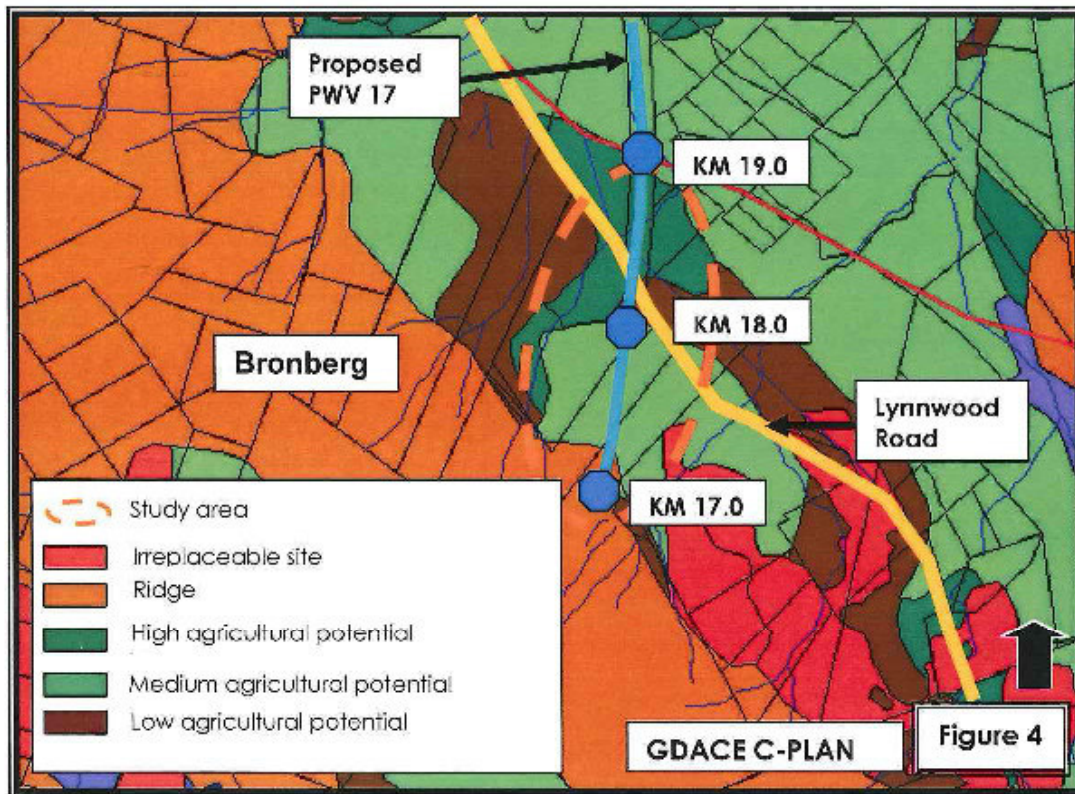
7.1.2 Social and Economical Environment

As already mentioned some dwelling units and outbuildings occur in the area affected by the proposed PWV 17. The proposed freeway will not only cause noise and visual impacts in this rural area, but it will also affect access roads to properties. If not planned correctly, the proposed freeway will also cause the division of a community.

If the long-term land-use of the properties adjacent to the freeway is to remain residential, the proposed freeway could have a negative impact on the residential property values and the existing "Sense of Place" and rural character.

When looking at the agricultural potential of the involved section of the study area, it is covered with a combination of high, medium and low agricultural soils. Medium agricultural potential soils are the dominant soil types.

No or very limited agricultural activities currently take place on the affected properties and therefore it is not foreseen that the road will have a significant economical impact on current agricultural activities.

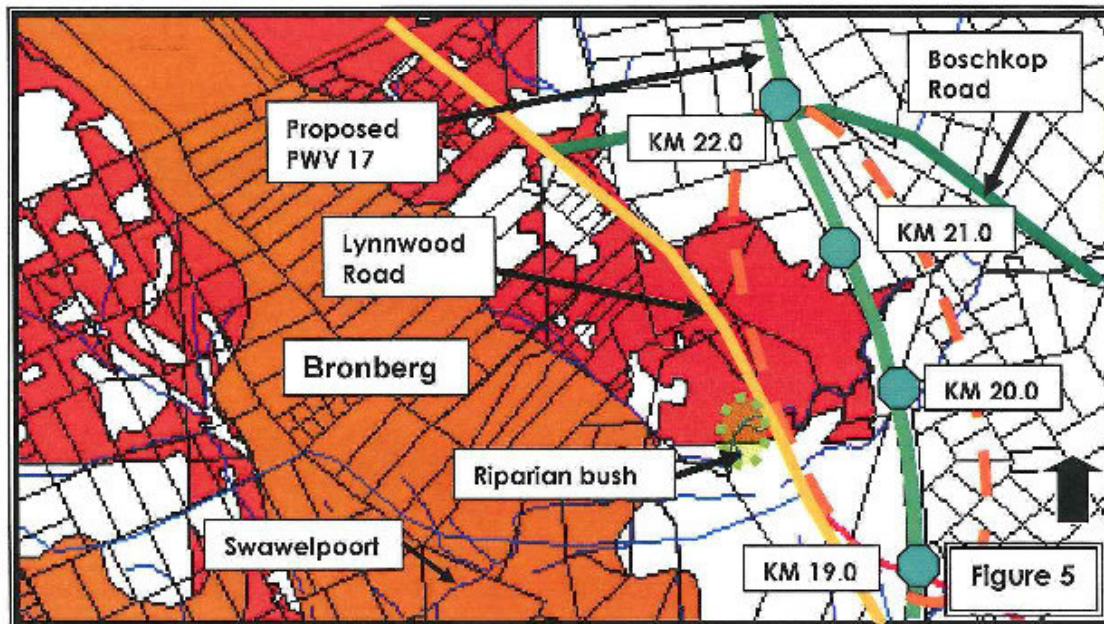


7.2 Section B: The Section between Lynnwood Road and the Boschkop Road (\pm km 18,0 to km 22,0)

This section also traverses the farm Swawelpoort 373 JR and between km 20,0 and km 21,0 it traverses a furrow and the Swawelpoort Spruit. According to the GDACE C-Plan the areas in close proximity of the Swawelpoort Spruit are regarded as irreplaceable sites. Due to the public open space adjacent to the river, it was easier for the flora specialist to obtain access to the properties of Section B.

Although many of the affected properties are privately owned, a fairly large strip of land (between km 18,0 and km 20,0) has already been developed in accordance with the proposed alignment of the freeway. The proposed road reserve is clearly indicated on the GDACE C-Plan. Preston Manor and Barrosa equestrian estates that are situated on the farm Mooiplaats, are located just north of the proposed freeway.

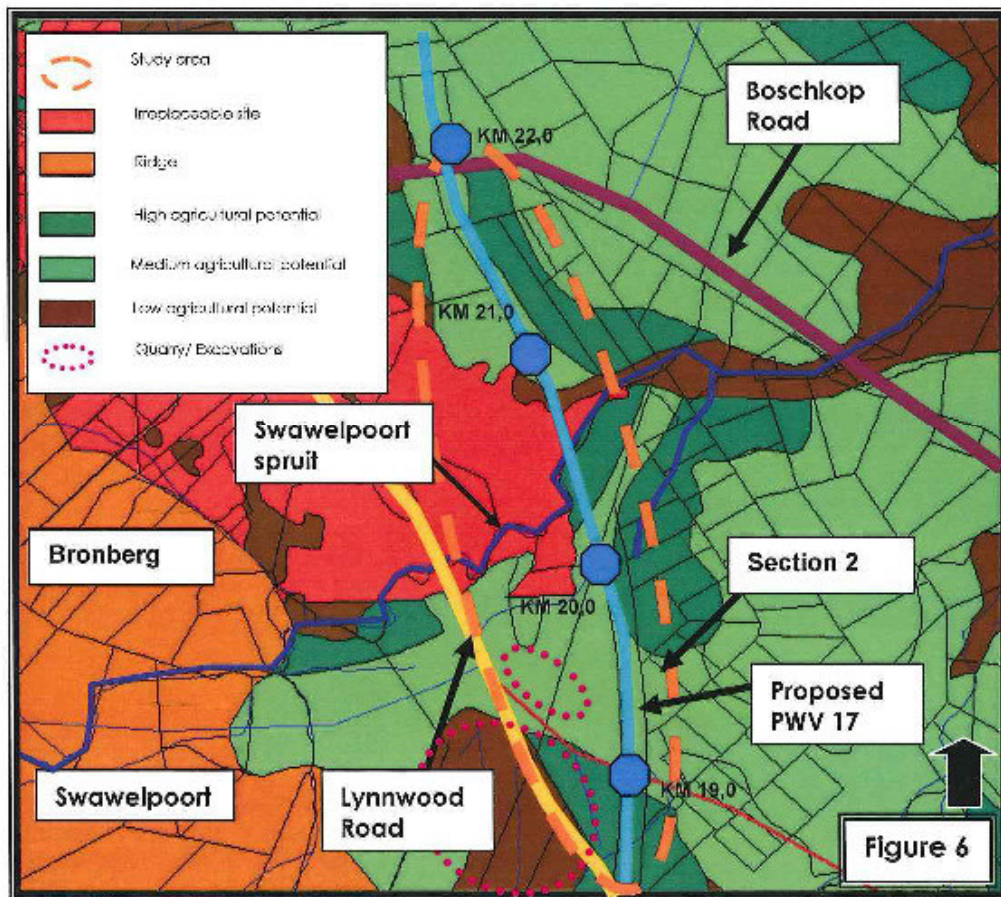
7.2.1 Ecological Environment



From an ecological point of view the GDACE C-Plan regards the areas around the Swawelpoort Spruit as irreplaceable sites. A flora specialist surveyed the irreplaceable site areas and compiled a list of trees, shrubs, geophytes, herbs and grasses that were identified in the area. (Refer to Item 4.3, Table 3 Annexure B for list of plants).

The section of the irreplaceable site that is situated in close proximity of the proposed freeway consisted of slightly disturbed moist grassland. The only riparian bush that was identified adjacent to the Swawelpoort Spruit occurs to the southwest of Lynnwood Road. The proposed freeway affects no sensitive riparian vegetation and no red data species were found in the areas identified as irreplaceable sites.

7.2.2 Social and Economical Environment



The social impacts that will be caused by Section B are similar to the social impacts identified for Section A. The proposed freeway will also traverse agricultural holdings with private homes and farm outbuildings and some access roads to these agricultural holdings will be affected. Quarry activities take place just west of the proposed freeway.

If not planned correctly section B will also have a negative impact on the rural character, "Sense of Place", visual and acoustical qualities of the area. Section B will also cause the division of a rural community.

It is however important to note that a fairly large section along the planned route for the proposed PWV 17 has already been developed in accordance with the proposed alignment of the freeway (between km 18,0 and km 20,0) and therefore it can be argued that the affected and surrounding land-owners are aware of the proposed freeway that will traverse the area.

The agricultural potential of the study area affected by section B is also dominated by medium agricultural potential soils. Some high agricultural potential soils surround the Swawelpoort Spruit and a non-perennial tributary of the spruit (mainly between km 19,0

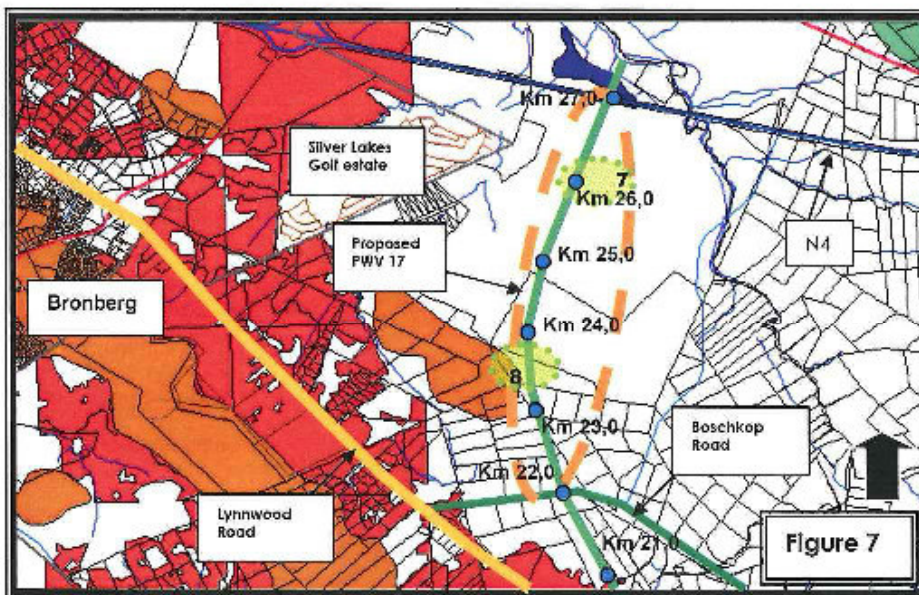
and km 21,0). A narrow strip of low agricultural potential soils also occurs adjacent to the Swawelpoort Spruit. No or very limited agricultural activities currently take place on the affected properties and therefore it is not foreseen that the road will have a significant economical impact on current agricultural activities.

7.3 Section C: The Section between Boschkop Road and the N4 Freeway (± km 22,0 to km 27,0)

Between km 22,0 and km 27,0 section C traverses the Farms Swawelpoort 373 JR, Mooiplaats 367 JR and Zwartkoppies 364 JR. As in the case of Section A, the GDACE C-Plan does not regard Section C (±km 22, 0 – km 27,0) as ecologically sensitive.

Agricultural activities are currently taking place on some of the holdings and according to the GDACE C-Plan the largest portion of Section C is covered with medium agricultural potential soils. It is however important to note that some development applications have already been submitted for proposed developments on the farm Zwartkoppies.

7.3.1 Ecological Environment

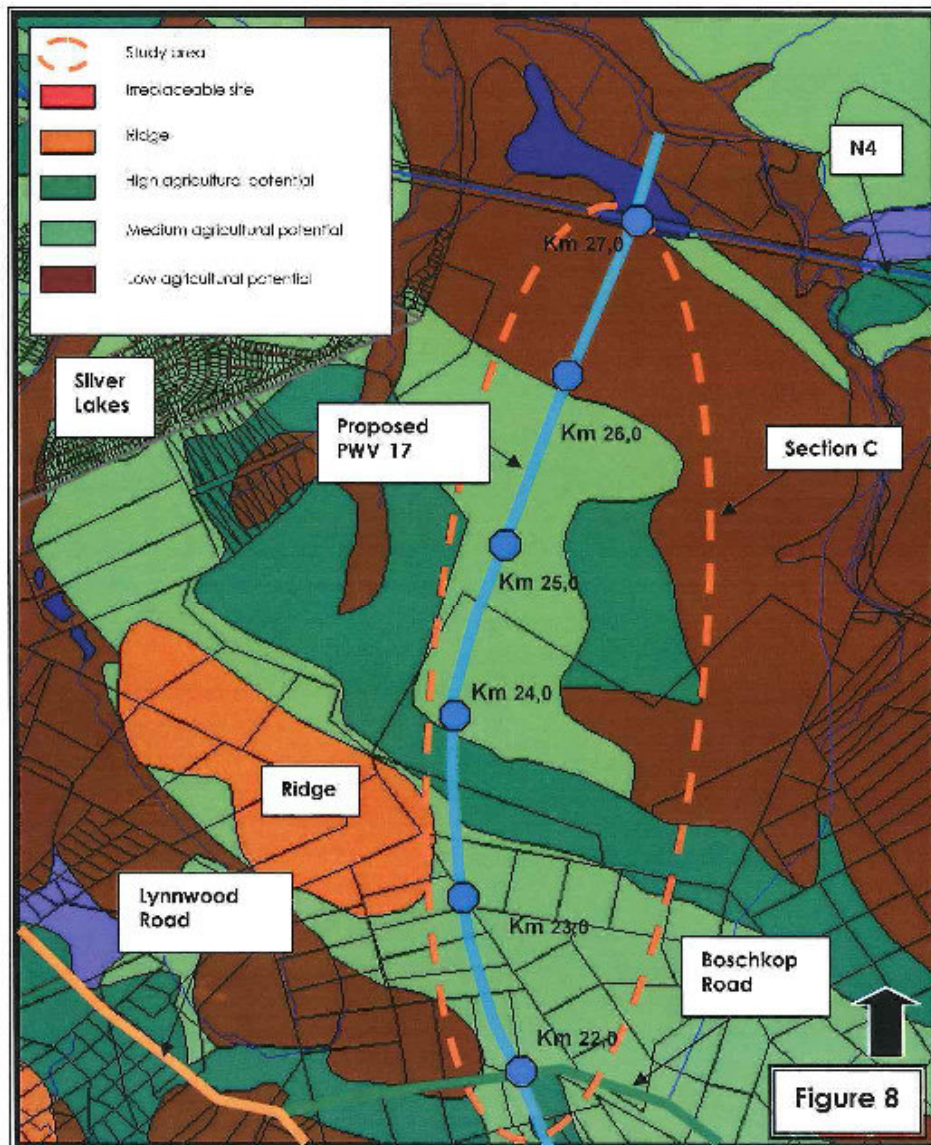


Most of the area between km 22,0 and km 27,0 was given over to sorghum planting at the time of the site visits. Some other planted grazing such as *Digitaria eriantha* was also seen. Only small patches of natural vegetation, which mainly occurs in and around rocky outcrops, remained in between the large lands.

Although the GDACE C-Plan does not regard the land between km 22,0 and km 27,0 as ecologically sensitive, vegetation scans were done at rocky outcrops in areas 7 and 8 (indicated on Figure 6) to determine and confirm the ecological sensitivity of the remaining natural vegetation of the area. (Refer to Item 4.2, Table 2 of Annexure B for list of plant species recorded in areas 7 and 8) No red data species were recorded in Section C.

A small ridge is located to the west of the proposed freeway (between km 22,0 and km 24,0) and the ridges policy must be taken into consideration when road planning is done for this section of the road. Although the GDACE C-Plan indicates that the ridge is situated to the west of the proposed freeway, the proposed road will cut through the easternmost portion of the 200 m buffer zone around the ridge.

7.3.2 Social and Economical Environment



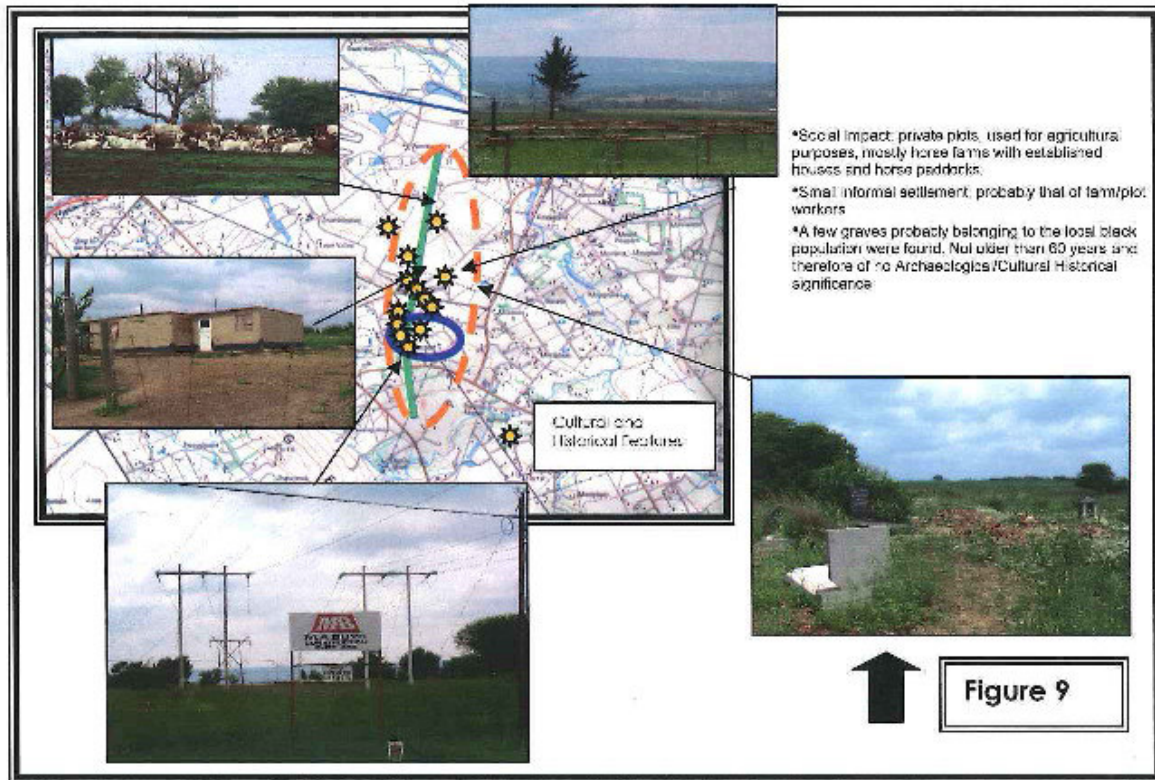
Many private agricultural holdings that are used for agricultural activities occur in the area. Agricultural activities mainly include horse farms with horse paddocks, cattle farming and some cultivated lands. Between km 22,0 and km 23,4 and between km 23,8 and km 26,0 the agricultural potential of the study area is medium and between km 23,4 and km 23,8 a narrow strip of high agricultural potential soils runs through the study area. The agricultural potential of the soil between km 26,0 and km 27,0 (adjacent to the N4 Freeway) is low. Informal housing (most probably housing for farm workers) occur on some of the holdings and a few graves (not older than 60 years) were also noted close to the road alignment. According to a cultural and historical specialist (Me Mia Marais), the graves have no archaeological or cultural historical significance and she is of the opinion that the graves probably are those of persons that stayed on the farm as farm workers.

Due to the fact that the graves have no archaeological or cultural and historical significance, it will be possible to submit an application for the relocation of the graves to a local cemetery. Another alternative is to re-align the proposed PWV 17 to avoid the graves.

According to another cultural and historical specialist that conducted a full cultural and historical survey in Section C (*Annexure D: Archaeological Assessment: Zwartkoppies: Prof. Huffman*), thirteen cultural and historical features were identified in and around the proposed PWV 17 alignment. In order to obtain clarity about the issue a meeting (4 August 2005) was held with Professor Huffman to determine the impact of the proposed road on the cultural and historical features. During this meeting more particulars regarding the cultural and historical features were obtained.

Although Professor Huffman originally indicated in his Archaeological Assessment Report (*Annexure D*) that it is preferable to move the PWV 17 alignment to the east in order to avoid the archaeological site, he indicated during this meeting that it would be possible for the PWV 17 freeway to traverse the area subject to earlier mitigation action. The proposed alignment as described in this scan already took the GPS waypoints as supplied by the specialist into consideration and in principle the specialist agrees with the proposed alignment. A letter was sent to Professor Huffman confirming the above discussions (*Annexure E*).

Illustration of land-use activities in Section C:



When looking at existing infrastructure, the proposed freeway will run underneath a power line. The road design phase must take the power line into consideration (i.e. the relocation of the power line/ pylons).

7.4 Section D: The Section between the N4 Freeway and the Pienaars River (\pm km 26,0 to km 27,4)

Between km 26,0 and km 27,4 (section D) the route traverses the portion of the farm Zwartkoppies 364JR that is located to the north of the N4 freeway. A series of large man-made dams surrounded by seepage areas, occur in the study area. The Pienaars River flows past the dams, approximately 200 m to 400 m to the north.

The natural grassland along the Pienaars River was replaced with kikuyu lawn for lawn production purposes and the remainder of the farm's natural grassland was replaced with grazing to support the large milk producing farm. Although the lawn production has long since ceased, huge areas were taken over by kikuyu. In later years the planted grazing on the farm comprised of *Sorghum bicolor* that was mainly used for silage.

7.4.1 Ecological Environment

Also Refer to Annexure B for Vegetation scan and Annexure C for Bird and Mammal scans.

(a) Flora

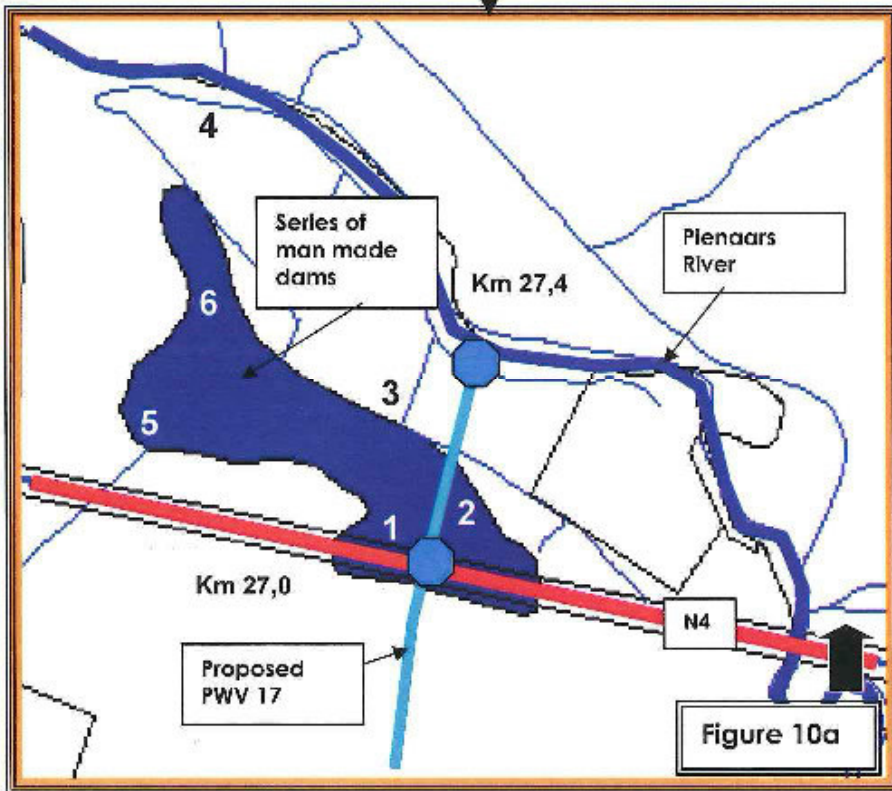
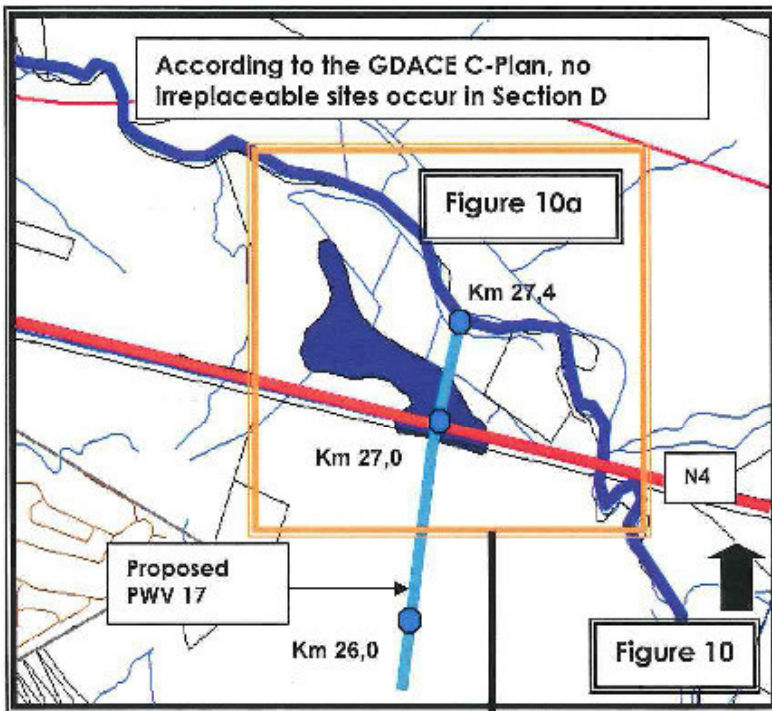
According to the vegetation specialist the natural vegetation of section D is very disturbed. *No red data plant species were identified during the site visits.*

Only a few indigenous plant species were observed. Most of the indigenous trees and shrubs were observed along the Pienaars River and furrows. Herbaceous species were observed in a narrow strip in a furrow below the dam wall. (Refer to Annexure B, Item 4.1, Table 1 for a list flora species recorded in Section D).

(b) Fauna

Although the natural vegetation of the study area was found to be very disturbed, the vegetation specialist regarded the wet areas as suitable habitat for some red data bird and mammal species. It was therefore suggested that fauna specialists visit the study area to do a red data bird species scan and a red data mammal scan.

Mr. Rihann Geyser (Ornithologist) was appointed to do the red data bird species scan and Dr. I.L. Rautenbach (a mammal specialist) was appointed to do the red data mammal species scan.



(i) The Red Data Bird Species Scan:

According to the bird species specialist, the dams and the adjacent wetland and grassland habitats might favour some of the red data bird species and they are:

- 1) Bird species associated with wetland systems such as the African Grass Owl (*Tyta capensis*); and
- 2) Bird species associated with a river and riverine vegetation habitat such as the African Finfoot (*Podica senegalensis*) and the Half-collared Kingfisher (*Alcedo semitorquata*).

There are also some birds that are likely to make use of the area for breeding and foraging purposes. The African Finfoot and the Half-collared Kingfisher have been observed along the Pienaars River in the past.

The surrounding wetland areas will also favour a large variety of more common and not so common bird species (without red data species status at this stage) associated with wetland and open water habitat. A large amount of waterfowl and birds associated with these habitats were observed during the scan.

According to the Ornithologist the construction of a freeway will result in a habitat loss for many bird species. The construction of the proposed freeway thus might have a negative effect on Red Data Bird species and in order to confirm this statement it was suggested that a full survey be done to establish the presence of red data bird species in Section D and to establish the effect of the proposed road on the habitat of the bird species. Only when the impact has been determined will it be possible to supply mitigation measures to minimize the impact of the proposed road. The identification of a "fatal Flaw" in Section D will therefore only be possible after the full survey has been conducted.

(ii) The Red Data Mammal Scan:

The mammal scan regard the man-made dam, the drainage furrows along the west and their associated seepage areas as potentially important habitats for many fauna species. In addition the nearby Pienaars River is an important consideration in terms of *lebensraum* and the dispersal of any Red Data warm-blooded species reliant on wetlands.

Due to the fact that the dam and drainage channels have been constructed long ago, the system has since evolved effectively into a mature wetland with established water grass and semi-aquatic vegetation along the shores. The land adjacent to the wetland system consists of dense stands of Highveld Grasses on sandy soil, providing shelter and grazing for a number of species.

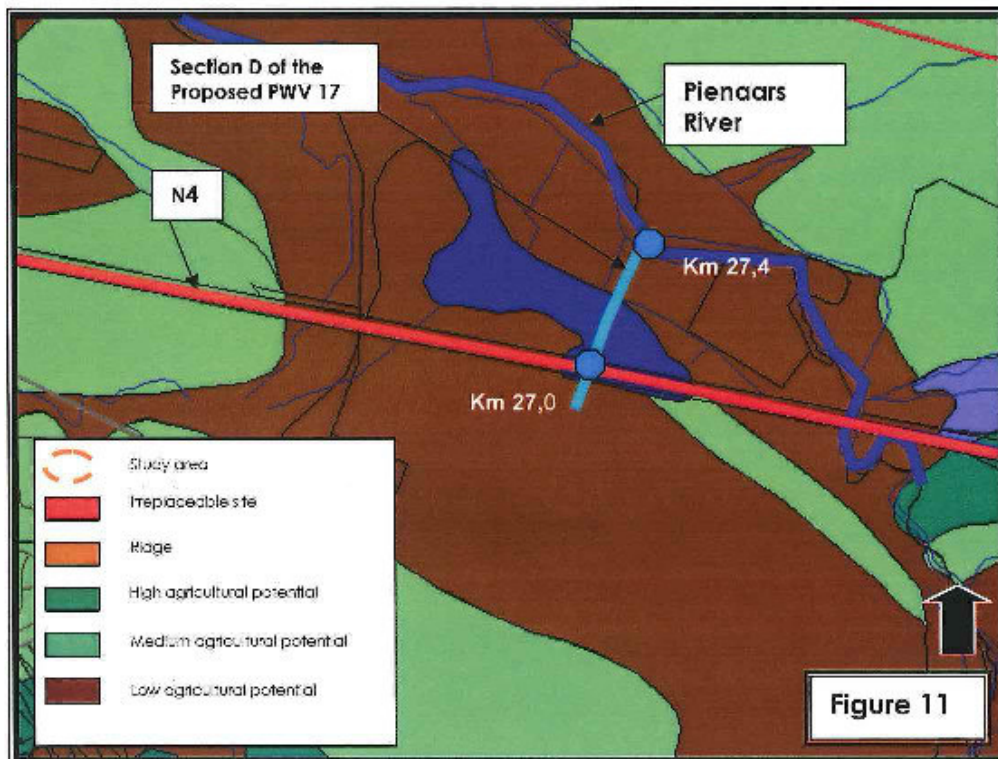
Fresh spoor of the Cape clawless otter and some antelope were found – confirming the expected occurrence of these non-threatened species. Some small mammal species are also bound to occur in the semi-aquatic vegetation and dense stands of grass along the wetland, none of which are recognised as threatened.

Although not found, the study area is nevertheless regarded as the ideal habitat for two Red Data mammal species namely the *Near Threatened* spotted necked otter and the *Critically Endangered* rough haired golden mole. The study area is also regarded as an ideal habitat for the giant bullfrog.

The mammal specialist suggested that full surveys be conducted to confirm the presence of the above-mentioned species and the impact of the proposed road on the species and their sensitive habitat. Only once the impacts have been determined will it be possible to identify "fatal flaws" and/or supply suitable mitigation measures for Section D.

The mammal specialist did, however, state that the destruction of the dam system will not be in the best interest of the birds and mammals currently relying on the system. It is hence concluded that some replacement of dam area lost to the construction of PWV17 should form part of the implementation programme for this road.

7.4.2 Social and Economical Environment



The impact on the social and economical environment will not be significant, because no houses, outbuildings or access roads will be affected, no communities will be divided and according to the GDACE C-Plan the agricultural potential of Section D is low.

7.5 Summary of the Environmental Issues Identified for the Section of the PWV 17 Freeway between the Bronberg and the Plenaars River just North of the N4

7.5.1 Issues Identified for Section A

Ecological

Not Significant.

- It is however important to note that the possible presence of the Juliana Golden Mole in close proximity of the Bronberg must be confirmed by a specialist.

Social and Economical

- In the short term the proposed road will have a negative impact on the rural character and "Sense of Place" of the area and it could cause the division of a community; and
- The agricultural potential of the soils is dominated by moderate agricultural potential soils.

7.5.2 Issues Identified for Section B

Ecological

Not Significant.

- Where the proposed freeway crosses the Swawelpoort Spruit, the vegetation consists of slightly disturbed moist grassland.

Social and Economical

- In the short term the proposed road will have a negative impact on the rural character and "Sense of Place" of the area and it could cause the division of a community. It is however important to note that the section between km 18,0 and km 20,0 has already been developed in accordance with the PWV 17 alignment in the area and it can therefore be assumed that many of the surrounding land-owners are already aware of the proposed freeway through the area; and

- The agricultural potential of the soils is dominated by moderate agricultural potential soils.

7.5.3 Issues Identified for Section C

Ecological

- A small ridge is located to the west of the proposed freeway (between km 22,0 and km 24,0) and the ridges policy must be taken into consideration when road planning is done for this section of the road.

Social and Economical

- In the short term the proposed road will have a negative impact on the rural character and "Sense of Place" of the area and it could cause the division of a community;
- The agricultural potential of the soils is dominated by moderate agricultural potential soils;
- Thirteen cultural and historical features were identified in and around the proposed PWW 17 alignment; and
- Some graves were also spotted in Section C.

7.5.4 Issues Identified for Section D

Ecological

- According to the bird species specialist, the dams and the adjacent seepage areas and grassland habitats might favour some of the red data bird species. They could be:
 - Bird species associated with wetland systems such as the African Grass Owl (*Tyta capensis*); and
 - Bird species associated with a river and riverine vegetation habitat such as the African Finfoot (*Podica senegalensis*) and the Half-collared Kingfisher (*Alcedo semitorquata*).
- There are also some birds that are likely to make use of the area for breeding and foraging purposes. The African Finfoot and the Half-collared Kingfisher have been observed along the Pienaars River in the past;

- The mammal scan regard the man-made dam, the drainage furrows along the west and their associated wetland systems are important habitats for many fauna species. In addition the nearby Plenaars River is an important consideration in terms of lebensraum and the dispersal of any Red Data warm-blooded species reliant on wetlands that might be present in the area;
- Due to the fact that the dam and drainage channels have been constructed long ago, the system has since evolved into a mature wetland with established water grass and semi-aquatic vegetation along the shores. The land adjacent to the wetland system consists of dense stands of Highveld Grasses on sandy soil, providing shelter and grazing for a number of species;
- Fresh spoor of the Cape clawless otter and some antelope were found – confirming the expected occurrence of these non-threatened species. Some small mammal species are also bound to occur in the semi-aquatic vegetation and dense stands of grass along the wetland, none of which are recognised as threatened;
- Although not found the study area is regarded as an ideal habitat for two Red Data mammal species namely the *Near Threatened* spotted necked otter and the *Critically Endangered* rough haired golden mole; as well as the giant bullfrog.

Social and Economical

Not Significant

8. CONCLUSION

Although no "fatal flaws" were identified in Sections A, B or C, there is a possibility that some "fatal flaws" might occur in Section D.

According to a cultural and historical study that was done in Section C, thirteen cultural and historical features were identified in and around the proposed PWV 17 alignment and some graves (not older than 60 years) were also identified in Section C. The cultural and historical specialist (Professor Huffman) did however indicate that it would still be possible to accommodate the proposed PWV 17 alignment in the area affected by these features. In order to mitigate the impact of the proposed road on the cultural and historical features, the specialist supplied the professional team with the waypoints of the features and the final alignment as indicated in this scan took these features into consideration.

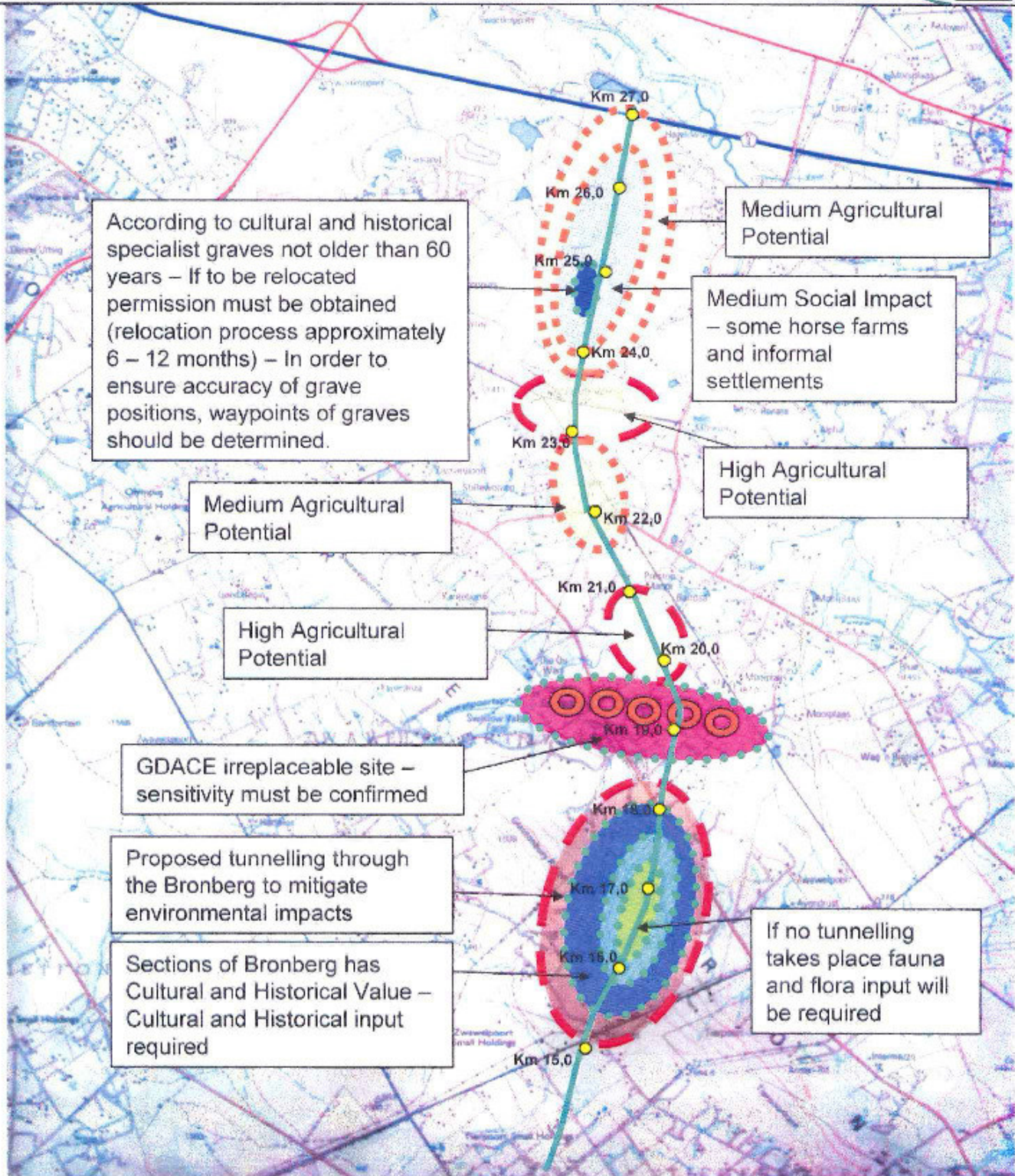
When looking at Section D, the bird and mammal specialists regard the disturbed artificial wetland to the north of the N4 as a potential suitable habitat for a some of red data bird and mammal species. The area is also regarded as a suitable habitat for the giant bullfrog. However, the presence of red data species have not been confirmed.

9. RECOMMENDATIONS

In order to confirm the possible occurrence of red data fauna species in Section D, it is recommended that more detailed fauna surveys be done. If the occurrence of red data species is confirmed and if the proposed freeway cannot be re-aligned (preferably to the east of the existing alignment) to avoid the sensitive fauna habitats, suitable mitigation measures should be supplied for the construction and operational phases of the road.

ANNEXURE A

PRELIMINARY SENSITIVITY MAP



PWV 17 Alternative 0: Preliminary Sensitivity Map



The route runs in a north-south direction, starting at the N4, ±800m west of Hazeldene, ±3 km east of Swartkoppies and ±2km east of Friesland, and ending ±5km to the west of Geesteveld Agricultural Holdings (±4km to the west of the R50.) The extent of alternative 0 is approximately 27,0 km.



High Sensitivity:



High Agricultural Potential:

Confirmed red data flora & fauna species: - 200m buffer zone around red data flora species applicable.

High Social Impact. & Cultural & Historical Value

Ridge.- Draft ridges policy applicable

Sensitive Wetland System – 200m buffer zone applicable unless proven otherwise.



Medium Sensitivity:



Moderate Agricultural Potential:

Medium Social Impact.

Disturbed/ Semi-Disturbed Wetland System.



Sensitivity to be determined by specialist:



Flora study required to determine ecological value, sensitive habitats and possible occurrence of red data species

Fauna study required to determine ecological value and possible occurrence of red data species

Fauna and flora study required – GDACE irreplaceable site

Cultural Historical Survey/ Input required