

Korana Wind Energy Facility and associated infrastructure, Northern Cape Province

Motivation for amendment of Environmental Authorisation

DEA Ref.: 14/12/16/3/3/2/682

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PROJECT DETAILS

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Client	:	South Africa Mainstream Renewable Power Development (Pty) Ltd
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PURPOSE OF THE REPORT

An Environmental Authorisation (EA) for the Korana Wind Energy Facility and associated infrastructure, in the Northern Cape Province (DEA ref: 14/12/16/3/3/2/682) was obtained by South Africa Mainstream Renewable Power Development (Pty) Ltd (Mainstream), issued on 28 May 2015 (as subsequently amended on 06 June 2018 and 02 March 2020). The project comprises a wind energy facility of up to 140MW and is intended to be bid into future rounds of the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme. The authorised access road referred to as the preferred alternative 1 (Namies Suid North) and assessed within the FEIR is no longer considered to be the most technically feasible access route to the site due to multiple alterations which will be required to this existing route. Access route Alternative 2 (Poortjies Suid) is considered to be the most suitable access route to the site in terms of technical and economic considerations as this option would require minimal alterations.

In this regard, South Africa Mainstream Renewable Power Development (Pty) Ltd (Mainstream) is considering the access route previously assessed as Alternative 2 within the EIA as the most technically feasible access route to the site instead of the authorised access route Alternative 1 (Namies Suid North), and is requesting the DEA to amend the Environmental Authorisation to reflect this.

In terms of Condition 5 of the Environmental Authorisation and Chapter 5 of the EIA Regulations of December 2014 (as amended on 07 April 2017 and 13 July 2018), it is possible for an applicant to apply, in writing, to the competent authority for a change or deviation from the project description to be approved. The amendment to the preferred access route alternative specifications is not a listed activity in itself, and will not trigger any new listed activities as both access routes fall within the originally authorised footprint of the facility and have not deviated from the initial routes presented and assessed within the EIA.

Savannah Environmental has prepared this Motivation Report in support of the amendment application on behalf of Mainstream. This report aims to provide detail pertaining to the impacts and significance of the proposed change to the access route to the wind energy facility site in order for interested and affected parties to be informed of the proposed amendments and provide comment, and for the competent authority to be able to reach a decision in this regard. This report is supported by specialist studies in order to inform the final conclusion regarding the proposed amendment (refer to **Appendix A to D** of this report). This main report must be read together with these specialist studies in order to obtain a complete understanding of the proposed amendment and the implications thereof.

This amendment motivation report has been made available to registered interested and affected parties for a 30-day period from **29 July 2020 to 31 August 2020**. The availability of the report was advertised in the Volksblad newspaper on **22 July 2020** (refer to **Appendix E4**).

The motivation report and associated appendices were made available for download at www.savannahsa.com and CD copies were distributed on request.

All comments received during the review period have been included within the Comments and Responses report (Appendix E5) to be submitted to the Department of Environmental, Forestry and Fisheries (DEFF) with this final amendment motivation report.

1. OVERVIEW OF THE PROJECT

1.1. Location

The authorised Korana Wind Farm is located 22 km south-west of Pofadder in the Northern Cape Province. The site falls within the Khai-Ma Local Municipality within the Namakwa District Municipality. The broader site can be accessed using the N14 via two alternative existing gravel access roads as previously assessed as alternatives within the EIA, namely Namies Suid and Poortjies South.

The wind energy facility is to be constructed within the project site which comprises the following farm portions:

- » Portion 1 and 2 of the farm Namies Suid 212; and
- » Portion 1 of the Farm Poortje 209

The following infrastructure was authorised following the EIA process and subsequent amendments:

- » A maximum of 42 wind turbines
- » The capacity of the facility will be up to 140MW.
- » Foundations to support the turbine towers.
- » Internal access roads (up to 8m in width).
- » Workshop area/office for control, maintenance and storage.
- » On-site substation (500m x 500m)
- » Preferred access route Alternative 1 (Namies Suid North).

Access Road Alternatives presented as per the FEIR (2015):

- » Alternative 1- Namies Suid North (Preferred route alternative) - this access alternative is an existing gravel road which is approximately 49.5km long with an average width of ~7.5m. For the Namies Suid North access adjustments to the width and vertical alignment will have to be undertaken before safe abnormal load access can be guaranteed. There are also sections through the proposed land parcels of the proposed access road that may require widening to accommodate abnormal load access. Approximately 5.3km of new road will have to be constructed within the site.
- » Alternative 2- Poortjies South (alternative assessed route alternative): - The Poortjies South access road is an existing gravel road that is approximately 63km long with an average width of ~ 10m. This access road is longer than Alternative 1 but has a more suitable vertical and horizontal alignment for abnormal load access. There is only one corner that may require horizontal re-alignment within the current road reserve. No new roads will have to be constructed within the site.

1.2. Potential Environmental Impacts as determined through the EIA Process

From the specialist investigations undertaken within the EIA process for the wind energy facility and access road alternatives (Savannah Environmental, 2015), the following environmental impacts relevant to the current amendment application were identified:

- » Impacts on fauna and flora (biodiversity);
- » Impacts on heritage aspects;
- » Impacts on surface hydrology; and
- » Noise impacts.

Key conclusions and recommendations of the original EIA pertinent to this application:

From the specialist investigations undertaken as part of the EIA for the wind energy facility and specifically the access route alternatives, it was concluded that the majority of impacts are of low significance with the implementation of appropriate mitigation measures. No environmental fatal flaws were identified on the site. However, areas of heritage significance were identified along the Namies Suid (Alternative 1) access route. Impacts on these sites can be and avoided through mitigation such as the proposed re-alignment of the route in certain sections. . Other areas of sensitivity identified during the EIA process include:

» **Fauna & Flora:**

The vegetation of the Korana WEF study area was sampled during a survey of Poortjie 209/1 and 209/RE and Namies South 212/1 & 212/2 in November 2014 when 43 sample waypoints were recorded. It was found that the vegetation was similar over extensive areas and had **low botanical sensitivity**. The only areas that required special attention were the seasonal drainage lines which should be treated as ecologically sensitive and should be avoided.

The site displayed a low level of Red List species occurring on site with regards to the fauna assessed in the report. Of these species the Black-footed cat, Aardvark, Bat-eared fox, Cape fox, Shortridge's Rat, Fisk's house snake, Ludwig's Bustard, Martial Eagle, Baboon spiders, Trapdoor spiders, Girdled lizards and Tent tortoises were likely to occur on site or were been found on site. The Tent tortoises were at most risk to be impacted by vehicles and the Black-footed cat, Aarvark, Bat-eared fox and Cape fox are most at risk to be impacted upon during the construction phase by digging and earthworks.

It was predicted that there would be some negative effect on ecological processes due to the construction of the proposed roads, substation, connector substation and wind turbines in the Korana wind energy facility. However, due to the scale of the project in relation to the extent of Bushmanland Arid Grassland, the effects were likely to be small since the receiving environment, apart from the areas identified as botanically sensitive (which equates to ecological sensitivity), is not perceived to be generally ecologically sensitive. In terms access roads, there was no preferred alternative.

» **Heritage:**

According to the heritage impact assessment report the main source of impact was determined to be the construction of access roads, lay-down areas and excavation of the footings the turbines and substation foundations.

No sites of significant heritage potential were identified in the proposed site and broader study area and there were no protected sites or structures within the study area that required mitigation. In terms of the information that had been collected, indications are that impacts to pre-colonial archaeological material will be limited. In terms of buried archaeological material, one can never be sure of what lies below the ground surface. However indications are that this is extremely sparse for the study area and that impacts caused by the construction of footings and other ground disturbance are likely to be negligible.

Colonial period heritage – that is buildings and historical sites of significance were not identified within the boundaries of the study area. The only area of concern is the proposed access road from the N14 which passes through the old Namies Village area, however no impacts on the area are expected. It was determined that the access road which passes through the site of the village of Namies (Namies Suid North- Alternative 1) will result in impacts if widened, and however potential impacts will still be **Low**.

Either access road alternative was deemed acceptable in terms of heritage impacts however the current access road passes through the middle of the ruined village of Namies. This area was of concern as there were components of the village (buildings and graves) that are located very close to the roads and could be impacted by any road widening. Depending on how the access road is designed, mitigation may be required. No alternative however was preferred. As per the findings of the heritage assessment the preferred access route Namies Suid North (Alternative) was realigned as suitable mitigation measure to avoid the graves and buildings associated with the village of Namies.

» **Surface Hydrology:**

The study area was characterised by several non-perennial water courses that are not always connected to any other main stem systems and typically only carry flows during high rainfall periods for short distances (200m – 10 km¹). Furthermore, during the site visit, no protected or species of special concern (fauna & flora) were observed within the aquatic areas. Therefore based on the site visit the significance of the impacts assessed for the aquatic systems after mitigation would be **Low**. It was determined that no activities would occur near or within 500m of any wetland boundary, thus any application to the Department would only require a General Authorisation not a Water Use License with regard the road crossing upgrades. There was therefore no preference between the access routes when considering surface hydrology.

» **Noise:**

The noise assessment indicated that the potential noise impact would be of a **low** significance during both the construction and operational phases. The land use in the study area was identified as mainly wilderness. No residential areas (suburban) were observed within 2 000m from the proposed wind energy facility with only two potential noise-sensitive receptors within 2 000m from the closest wind turbines of the proposed wind energy facility. Overall, noise impacts during construction would have a **low** impact on the identified potential noise-sensitive receptors. There exists a low risk of a noise impact developing during the operational phase of the development. There was also no differences in the significance of noise impacts for either of the alternative access routes. Therefore any of the two proposed alternatives were considered acceptable from a noise perspective.

» **Summary of EIA Findings:**

As part of the planning mitigation strategy, the applicant considered all the above-mentioned findings and sensitivities, and duly made the necessary amendments to the layout considered in the EIA in order to reduce impacts to an acceptable level. The access road alternatives as assessed during the EIA process is presented in **Figure 1.1**.

No environmental fatal flaws were identified to be associated with the proposed Korana Wind Energy Facility and the associated access roads alternatives. Impacts of **low** significance were identified for the

access road alternatives. Where impacts cannot be avoided, appropriate environmental management measures are required to be implemented to mitigate the impact. Environmental specifications for the management of potential impacts are detailed within the Environmental Management Programme (EMPr) submitted as part of the EIA Report.

1.3. Amendments of the Environmental Authorisation

Following the issuing of the EA in May 2015, two amendments were made to the Environmental Authorisation:

Amendment 1:

» Amendment issued on **06 June 2018**, the EA was extended by another **3 years**: *"The activity must commence within a period of three (3) years from the date of expiry of the EA issued on **28 May 2015 (i.e. the EA lapses on 28 May 2021)**. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made, provided that the activity is still listed."*

» In addition to this the contact person of the EA was changed; contact details were amended from:

Mr. Michael Mangnall
South African Mainstream Renewable Power Developments
PO Box 45063
CLAREMONT
7735
Tel Number: 021 657 4052
E-mail: mike.mangall@mainstreamrp.co.za

To
Mr. Eugene Marais
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PO Box 45063
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Tel Number: 021 657 4052
Cell number: 073 871 5781

E-mail: eugene.marais@mainstreamrp.co.za

Amendment 2:

- » The Amendment issued on the **02 March 2020**; the EA project description was amended to indicate the reduction in the number wind turbines from up to of 70 wind turbines to up to 42 wind turbines.
- » Additional conditions regarding the 1.5 km turbine free buffer zone around the Martial Eagles nest, the maximum number of turbines beyond the 4.5 km radius up to 6km from the nest and monitoring requirements were included within the amended EA.

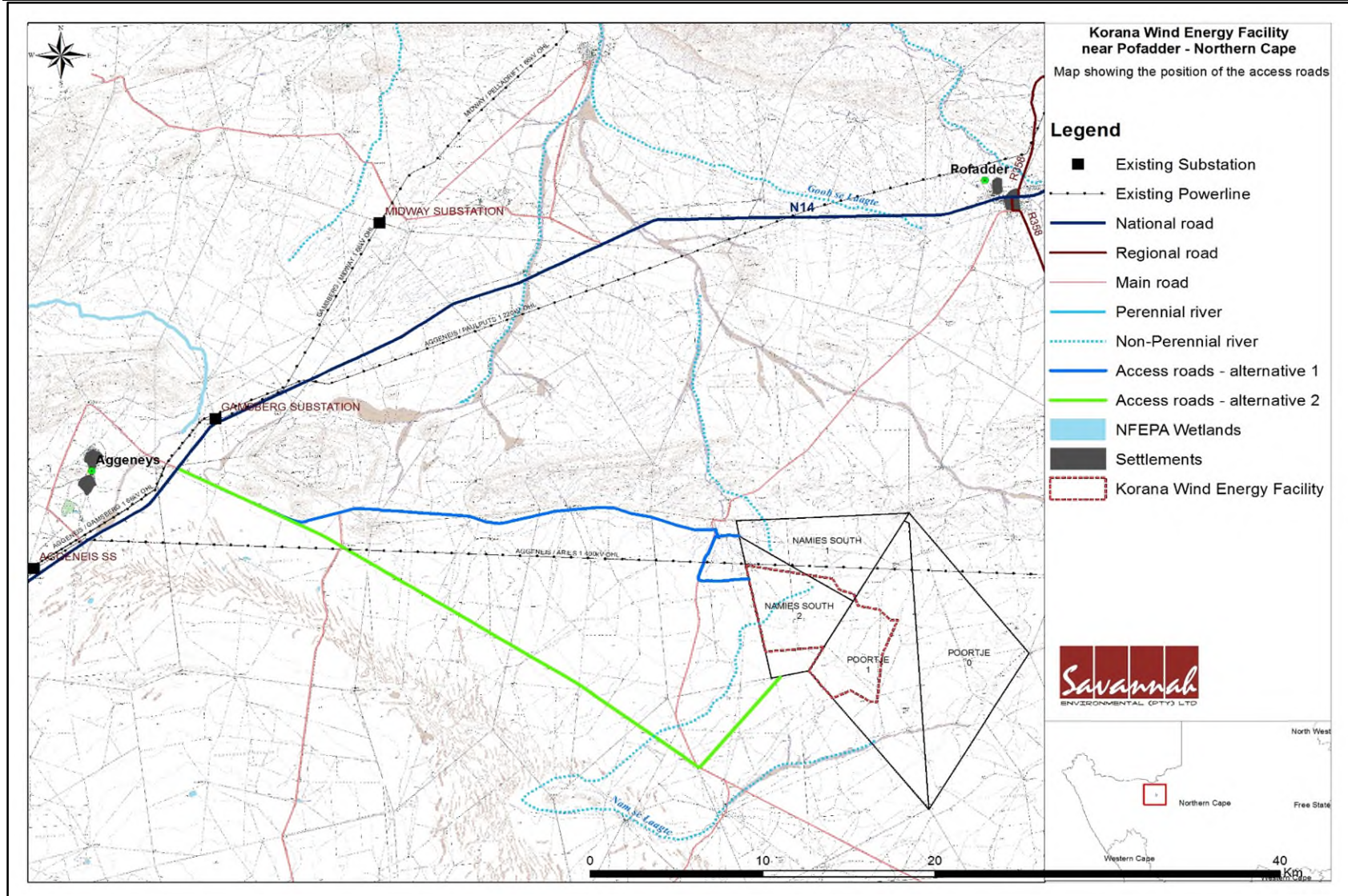


Figure 1.1: Access road alternatives layout previously assessed during the EIA process undertaken for the project in 2014/2015 (A3 Map included in **Appendix G**).

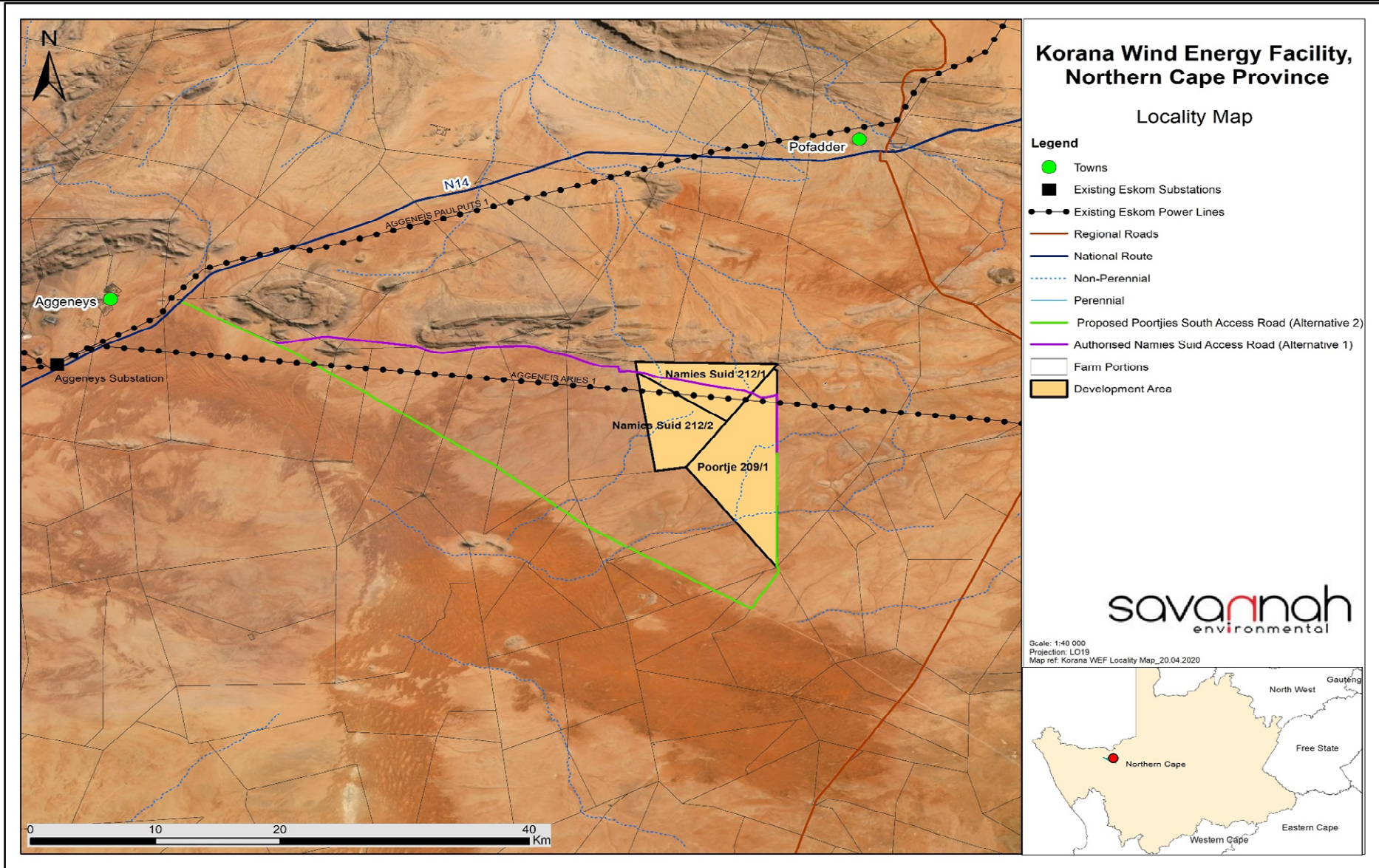


Figure 1.2. Access road alternatives locality map (2020) (A3 Map included in Appendix G).

2. DETAILS OF THE AMENDMENTS APPLIED FOR

The amendment being applied for relates to the authorised access route to the site as detailed in the EA dated 28 May 2015, as amended. This requested amendment will improve feasibility and technical efficiency of the development.

This section of the report details the amendments considered within this report and by the specialist investigations (refer to **Appendix A – D**). The amendment request is detailed below.

2.1. Amendment of the preferred access road alternative for the development

- a) It is requested that the access road alternative specifications on page 5 of the Environmental Authorisation be amended **from**:

Access road co-ordinates (Namies Suid)	Latitude	Longitude
Start	24°14.804'S	18°53.551'E
Middle	29°21.158'S	19°5.799'E
End	29°22.139'S	19°13.918'E

To:

Access road co-ordinates (Alternative 2- Poortjies South)	Latitude	Longitude
Start	24°14.804'S	18°53.551'E
Middle	29°21.210'S	19°4.628'E
End	29°22.984'S	19°14.405'E

- b) It is requested that the scope of authorisation on page 6 of the Environmental Authorisation be amended **from**:

1. *The proposed construction of a 140MW Wind Energy Facility "and preferred access route Alternative 1 located at Namies Suid North is authorised as per the above geographic co-ordinates."*

To:

1. *The proposed construction of a 140MW Wind Energy Facility ... "and access road Alternative 2 located at Poortjies South is authorised as per the above geographic co-ordinates."*

The amendment to the authorised access route alternative specifications is not in itself a listed activity and will not trigger any new listed activities as the both access routes are existing for the majority of their length, fall within the originally authorised footprint of the facility and have not deviated from the initial routes presented within the EIA.

3. MOTIVATION FOR THE PROPOSED AMENDMENTS

3.1. Technical Motivation for Amendment of the Authorised Access Road

The FEIR submitted to DEA in 2015 indicates the Preferred Alternative access route as Alternative 1, i.e. Namies Suid North. An alternative access route, Alternative 2 (Poortjies South) was also assessed within the EIA. The Environmental Authorisation for the Wind Energy Facility in 2015 included access road alternative 1 (Namies Suid) as the preferred access route alternative authorised.

The impacts of Alternative 1- Namies Suid North (Preferred route alternative) and Alternative 2- Poortjies South have both been assessed within the EIR for the development. There was no difference in the environmental impacts identified for the 2 alternatives. Therefore Alternative 1 was nominated as the preferred alternative by Mainstream from a technical feasibility perspective mainly due to its shorter length. Implementation of mitigation measures such as the re-alignment of Alternative 1 at certain sections to mitigate the impacts to the buildings and graves of the Namies villages were determined to be feasible at the time. Following considerations of the technical aspects of the project by the Developer regarding the access routes for the development as part of the more detailed design of the facility, it has been concluded that Alternative 2 (Poortjies South) is considered as the most feasible access route for the development. This is mainly as a result of the adjustments required for the two alternatives to accommodate the anticipated abnormal loads, as detailed below:

- Adjustments to the width and vertical alignment will have to be undertaken for the Namies Suid North (Alternative 1- Preferred Alternative) 49,5km long access before safe abnormal load access can be guaranteed. There are also sections through the proposed land parcels of the proposed access road that may require widening to accommodate abnormal load access. Approximately 5.3km of new road will have to be constructed within the site.
- The Poortjies South access road (Alternative 2) is longer (63km) but has a more suitable vertical and horizontal alignment for abnormal load access. There is only one corner that may require horizontal re-alignment within the current road reserve. No new sections of road will need to be constructed for this access road alternative. The Poortjies South access road completely bypasses the graves and buildings associated the Namies Village as this road will access the Korana Wind Energy facility from the South and therefore reduces any impacts associated with the destruction of areas of heritage significance.

In overview, the applicant is applying to amend the authorised access road Alternative in the Environmental Authorisation to Alternative 2 (Poortjies South) as it is the most feasible option from a technical perspective for the Korana Wind Energy Facility. In addition, the use of this alternative will reduce the potential for impact on areas of heritage significance.

4. CONSIDERATIONS IN TERMS OF THE REQUIREMENTS OF THE EIA REGULATIONS

In terms of Regulation 31 of the EIA Regulations 2014 (as amended on 07 April 2017 and 13 July 2018), an environmental authorisation may be amended by following the process in this Part (i.e. a Part 2 amendment) if it is expected that the amendment may result in an increased level or change in the nature of impact where such level or change in nature of impact was not:

- a) Assessed and included in the initial application for environmental authorisation; or
- b) Taken into consideration in the initial authorisation.

In this instance, the access road, Alternative 2 (Poortjies Suid) was not considered in the initial authorisation but has been assessed within the FEIR. The change does not however, on its own, constitute a listed or specified activity. Therefore, the application is made in terms of Regulation 31 (a).

5. POTENTIAL FOR CHANGE IN THE SIGNIFICANCE OF IMPACTS AS ASSESSED IN THE EIA AS A RESULT OF THE PROPOSED AMENDMENTS

Following communication, the DEA it was advised that this application is considered to be a Part 2 amendment as contemplated in terms of Regulation 32 of the EIA Regulations (2014, as amended on 07 April 2017 and 13 July 2018), as amended. In terms of Regulation 32(1)(a)(i), the following section provides an assessment of the impacts related to the proposed change. Understanding the nature of the proposed amendments and the impacts associated with the project (as assessed within the EIA), the following has been considered:

- » Impacts on surface hydrology;
- » Impacts on biodiversity
- » Heritage impacts; and
- » Noise impacts.

The change in the authorised access road alternative from Alternative 1 (Namies Suid) to Alternative 2 (Poortjies Suid) is expected to have **no effect** on the findings of the Avifaunal, Bat, Visual, Social, Soil & Agricultural Potential, Geotechnical and Traffic Management Assessments undertaken as part of the EIA process. Therefore, no Avifaunal, Bat, Visual, Social, Soil & Agricultural Potential, Geotechnical and Traffic Management Specialist Reports have been included as part of this report.

The potential for change in the significance and/or nature of impacts based on the proposed amendments as described within this motivation report is discussed below, and detailed in the specialists' assessment addendum letters (as applicable) contained in **Appendix A-D**. No additional mitigation measures were recommended as a result of the proposed amendments, or due to new legislative requirements. This section of the main report must be read together with the specialist addendum letters contained in **Appendix A-D¹** in order for the reader to obtain a complete understanding of the proposed amendments and the implications thereof.

5.1. Impacts on surface hydrology

The aquatic assessment (**Appendix A**) undertaken for the proposed amendments included the review and assessment of original reports and data, as well as the update of any previously assessed impacts and updated mitigation measures, where required.

The original Aquatic Specialist Study (Colloty et al. 2014) recorded no wetlands in close proximity (within 500m) to the proposed alignment or development site. Several features, based on the available aerial photographs resembled depressions or pans, but these were found to be various borrow-pits associated with the local roads, possibly used in their construction.

In summary, the waterbodies found within the study area were classified as follows:

¹ It must be noted that the original specialists who undertook the EIA studies have been used for these assessments as far as possible. However, where the original specialists were not available for whatever reason, suitably qualified and experienced specialists have been used to provide an assessment of the proposed amendments.

1. Perennial drainage lines and water courses, with or without riparian fringes
2. Broad perennial alluvial channels with or without riparian systems. It should be noted that one of these areas is particularly broad, and it will be advised that the powerline towers should be placed outside of the channel beds within these areas as is done by the existing transmission lines adjacent to the proposed line near Aggeneys.

No alluvial systems were located within the development site.

It was determined that the layout of the project area would seem to have a negligible impact on the aquatic environment. This was based on the assumption that no infrastructure would be placed directly within any active channels. Furthermore, during the site visit, no protected or species of special concern (fauna & flora) were observed within the aquatic areas. Therefore, based on the site visit the significance of the impacts assessed for the aquatic systems after mitigation would be **low**.

It was however recommended that the proponent does apply for the appropriate Section 21 c & i Water Use licenses from the Department of Water and Sanitation should any activities occur within a water course, e.g. access roads and/ or road crossings if unavoidable. However, no activities will occur near or within 500m of any wetland boundary, thus any application to the Department would only require a General Authorisation not a Water Use License with regard the road crossing upgrades.

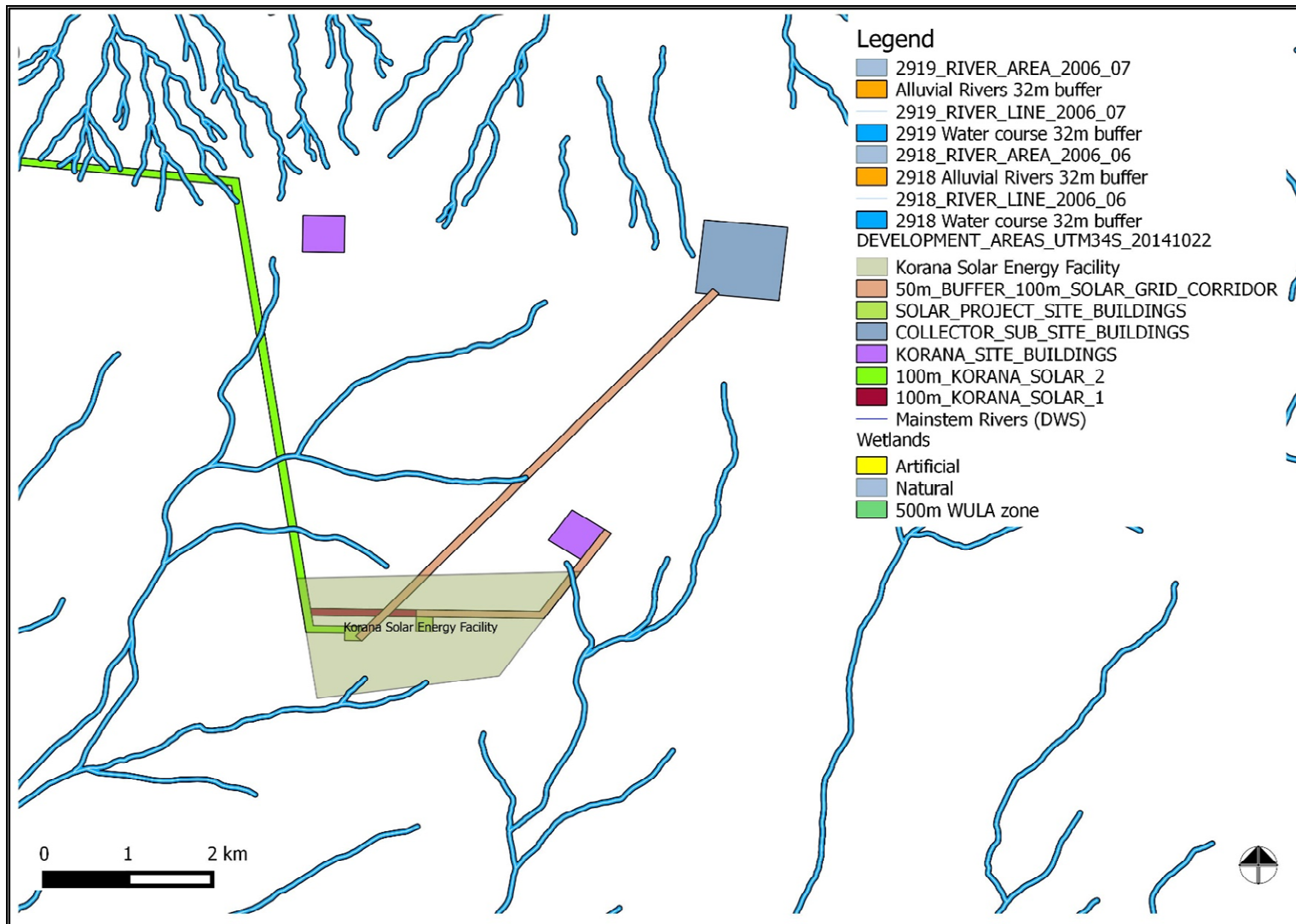


Figure 5.1: The proposed development site with access road Alternative 1 (Namies Suid) in relation to the aquatic systems within the study area (2014)

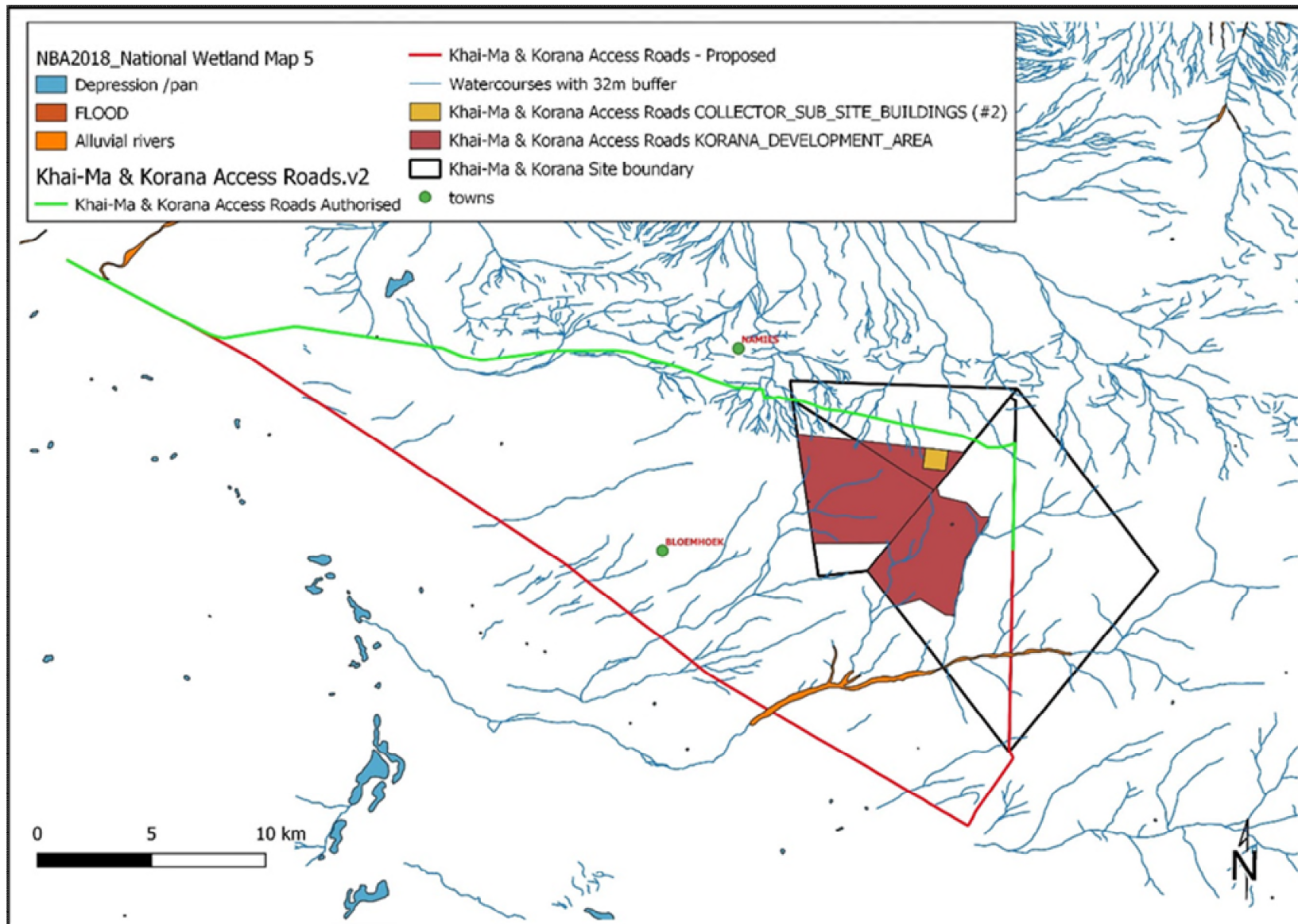


Figure 5.2. The proposed development site with access road Alternative 1 (Namies Suid) and Alternative 2 (Poortjies South) in relation to the aquatic systems within the study area (2020)

5.1.1. Comparative Assessment

When compared to the previous impact assessments, the overall risk, with mitigation were already low. The Poortjies South access road crosses far fewer minor drainage features than Namies Suid, however there is a single large and two smaller drainage lines that would be crossed by Poortjies South that are not crossed by Namies Suid. Therefore, the significance of the impact on the aquatic environment as a result of the proposed amendment would remain low after mitigation during the construction, operation and decommissioning phases of the project. This is based on the fact that the aquatic systems are ephemeral and only carry flows after heavy rainfalls. The amendment proposed will have no effect on the significance of impacts as predicted in the EIA and therefore no comparative impact tables were required to be included .

5.1.2. Cumulative Impact

In the assessment of potential cumulative impacts, no additional impacts or changes to the previously assessed impacts were identified for the proposed amendment to the preferred access road alternative.

5.1.3. Conclusion

The specialist concluded that the final impact of the proposed amendment on the aquatic environment with mitigation will remain unchanged from the original impact assessment, i.e. it will remain of low significance. Based on the findings of the aquatic assessment, the specialist has no objection to the approval of the proposed amendment. Similarly, in the assessment of potential cumulative impacts, no additional impacts or changes to the previously assessed impacts are expected due to the proposed amendment. No changes to the original mitigations or EMPr considerations are therefore required.

5.2. Impacts on biodiversity

In order to address any new potential impacts or change in impact associated with the amendment the specialist reviewed the original botanical and faunal studies conducted for the Korana Wind Energy Facility as well as closely inspected the proposed route alternatives in Google Earth in order to assess whether there are any material differences in sensitive features or potential impacts associated with each alternative (**Appendix B**).

The original vegetation assessment (Bergwind Botanical Surveys & Tours CC.2014) undertaken for the Korana WEF indicated that the study area was sampled during a survey of Poortjie 209/1 and 209/RE and Namies South 212/1 & 212/2 in November 2014 when 43 sample waypoints were recorded. It was found that the vegetation is similar over extensive areas and had low botanical sensitivity. The only areas that required special attention were the seasonal drainage lines which should be treated as ecologically sensitive and should be avoided.

The site displayed a low level of Red List species occurring on site with regards to the fauna assessed in the EIA report. Of these species the Black-footed cat, Aardvark, Bat-eared fox, Cape fox, Shortridge's Rat, Fisk's house snake, Ludwig's Bustard, Martial Eagle, Baboon spiders, Trapdoor spiders, Girdled lizards and Tent tortoises are likely to occur on site or have been found on site. The Tent tortoises are at most risk to be impacted by vehicles and the Black-footed cat, Aarvark, Bat-eared fox and Cape fox are most at risk to be impacted upon during the construction phase by digging and earthworks.

The vegetation found in the proposed Korana Wind Energy Facility area was uniform over large areas. Apart from the seasonal drainage lines (washes) or 'laagtes' which are considered sensitive due to their ecological-linkage value, the open plains have no special plant communities or plant species of conservation concern. The terrain also has low relief. Taken together these factors result in the receiving environment having a high 'absorption capacity'. In other words, there is a low probability of impacts being such that they negatively compromise the vegetation, local plants communities and habitats or ecological processes.

It was predicted that there would be some negative effect on ecological processes due to the construction of the proposed access roads, substation, connector substation and wind turbines in the Korana wind energy facility. However, due to the scale of the project in relation to the extent of Bushmanland Arid Grassland, the effects are likely to be small since the receiving environment, apart from the areas identified as botanically sensitive (which equates to ecological sensitivity), is not perceived to be generally ecologically sensitive..

5.2.1. Comparative Assessment:

The specialist reviewed the proposed amended access road in reference to both the authorised and alternative access roads, as well as the results of the original faunal and botanical studies for the development. The Botanical Study (Bergwind 2014), did not provide a statement as to the acceptability or preference in terms of the two access road alternatives. As no specific impact tables were provided in the EIA Report, no comparative impact tables are provided in this report.

The study made the following two general conclusions (among others) regarding the sensitivity of the site and the acceptability of the development:

- *Construction of the wind energy facility at Korana would also result in a **Low negative** impact on the vegetation and ecological processes due to the high absorptive capacity of the receiving environment.*
- *Construction of access roads should be designed for minimal impact and should not bisect drainage lines.*

As such, there do not appear to be any reasons to support one access road over the other. The study recommends that the "access roads should be designed for minimal impact and should not bisect drainage lines". Consequently, it is worth investigating the potential impact of each access road alternative on the drainage systems of the site. Alternative 1 (authorised alternative) is an existing gravel road which will require the construction of approximately 5.3km of new road within the project site and traverses a complicated gravel plain with numerous small washes and drainage lines as it crosses Namies 212/1. Alternative 2 which is an existing road and does not require any construction of new road within the site, traverses far fewer minor drainage features than Alternative 1, however there is a single large and two smaller drainage lines that would be crossed by Alternative 2 that are not crossed by Alternative 1. With the appropriate mitigation as proposed within the FEIR, which includes ensuring that the access road does not disrupt or alter the flow of water along these drainage lines, then it is likely that Access Road Alternative 2 will have low impacts on these features. As such, Alternative 1 is not viewed as being preferable to Alternative 2 in this regard and overall, the impact on hydrological features and their associated botanical communities are likely to be similarly low for each alternative.

As with the Botanical Study, the Terrestrial Fauna Study (Animalia 2014), did not state a preference with regards to the two access road alternatives and as such, it is assumed that these are equally acceptable. In terms of the faunal sensitivity map produced as part of the study, both alternatives traverse hydrological features considered to be of High faunal sensitivity. Based on the sensitivity map presented in the faunal study, it would appear that Alternative 2 is preferable to Alternative 1 in that Alternative 2 traverses significantly less habitat considered to be Moderate sensitivity and traverses only a single feature considered to be High sensitivity while Alternative 1 traverses several such features, which although smaller, result in a significantly greater extent of High sensitivity buffer area being affected. As such, the conclusion in terms of fauna, is that Alternative 2 is seen as preferable to Alternative 1.

The specialist studies for the Korana Wind Farm were produced in 2014 and since then, a new CBA map has been developed for the Northern Cape which replaces the one used on the EIA studies. The CBA map for the study area is depicted in Figure 5.5. Both alternatives include large areas of CBA 2 and Alternative 1 also includes significant portions of CBA 1. It is clear from the CBA map that Alternative 2 would be the preferred alternative in terms of potential impacts on CBAs. Although this map was not available at the time of the original studies, it bears relevance now in terms of which alternative should now be seen as the new preferred alternative under the current best available baseline information.

5.2.2. Cumulative Impacts

The main cumulative impact on ecological processes as a result of the construction of the access roads in the area would be related to the contribution to loss of vegetation and habitat for fauna species, as well as impacts on aquatic systems as identified within the FEIR (2015). Clearing of vegetation, landscaping and loss of smaller fluvial systems could potentially influence runoff and storm water flow patterns and dynamics, which could cause excessive accelerated erosion of plains and possibly impact larger fluvial systems within the region. These impacts would result largely from on-site construction activities.

The cumulative impact on the Bushmanland Arid Grassland vegetation type and habitats in the area are not likely to be significant as the affected vegetation types and associated habitats are widespread and of low sensitivity. It is unlikely that the projects would impact on the conservation status of this vegetation type. Cumulative impacts would be expected to be low negative and remain unchanged from the cumulative impacts identified within the FEIR (2015).

5.2.3. Conclusion

The specialist concluded that the change from Access Road Alternative 1 to Access Road Alternative 2 as the preferred alternative would not result in any significant changes to the ecological impacts associated with the Korana Wind Energy Facility as originally assessed. Alternative 2 was determined to have lower risks of impact on CBAs and based on the current CBA maps, Alternative 2 would now be the preferred route. As there would not be any changes to the assessed impacts, the amendment is supported from an ecological perspective as it would not increase or change any impacts or lead to new impacts associated with the change in road alternative.

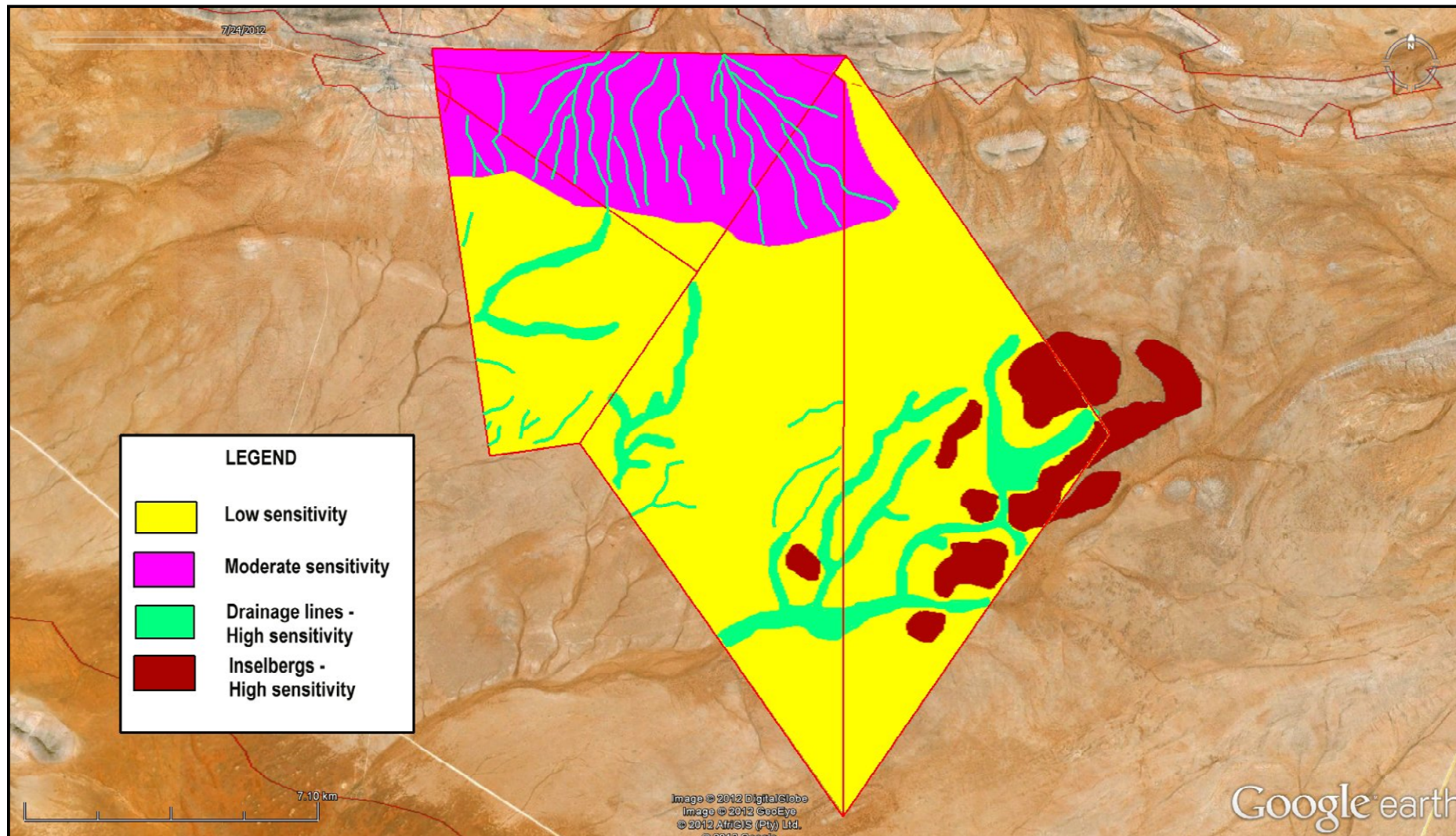


Figure 5.3: Botanical sensitivity map for the greater wind energy facility site (2014)

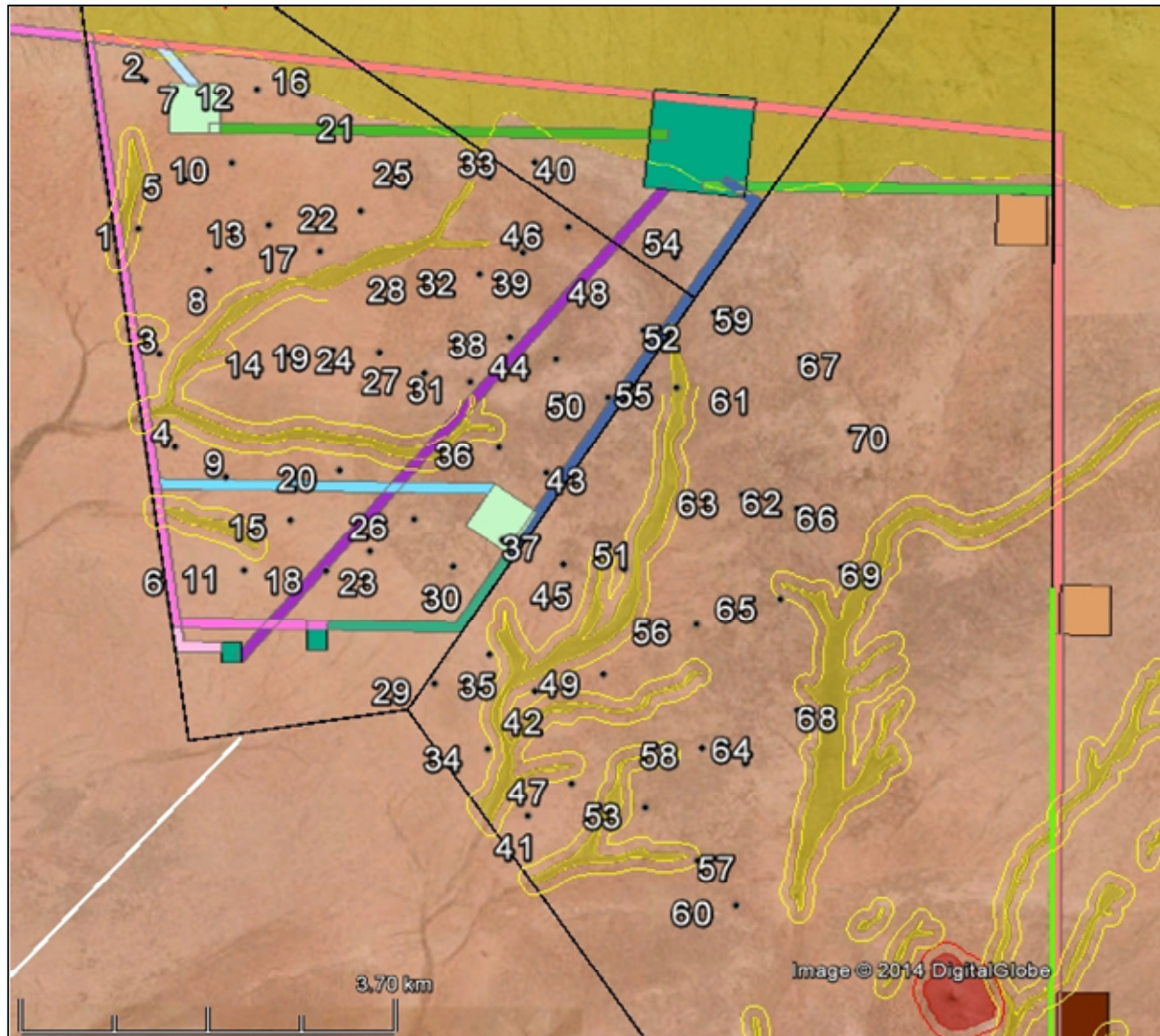


Figure 5.4: Fauna sensitivity map of Korana wind energy facility development and associated infrastructure, showing both alternatives for the access roads. (2014)

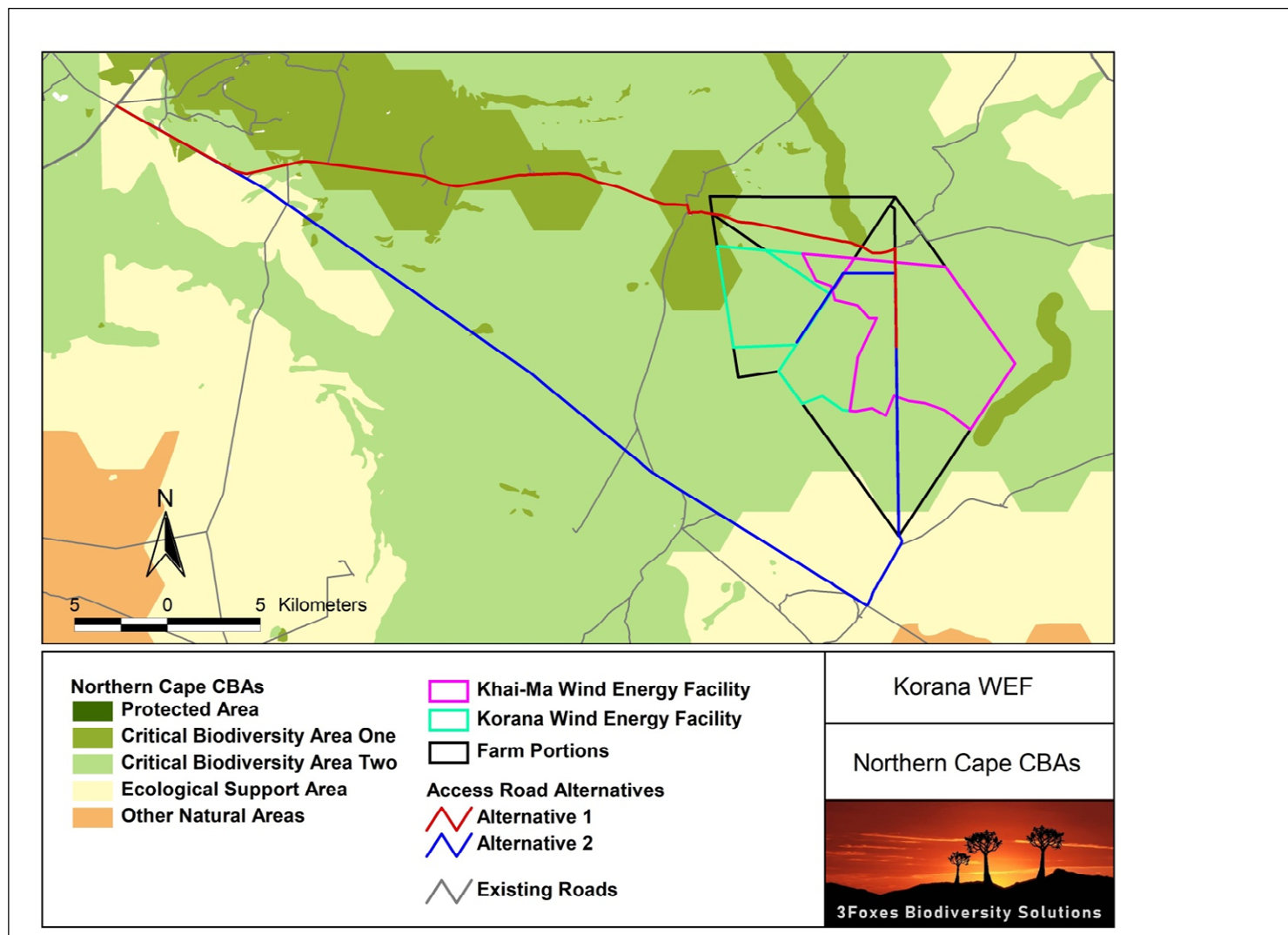


Figure 5.5: Extract from the CBA map for the Northern Cape, showing the location of the two access route alternatives (2020)

5.3. Heritage Impact

In terms of the information that had been collected within the initial HIA undertaken as part of the FEIR (ACO Associates, 2014), it was determined that impacts to pre-colonial archaeological material would be limited. In terms of buried archaeological material, one can never be sure of what lies below the ground surface. However, indications were that this is extremely sparse for the study area and that impacts caused by the construction of footings and other ground disturbance are likely to be negligible. Colonial period heritage – that is buildings and historical sites of significance - were not been identified within the boundaries of the study area. The only area that posed a concern was the existing west-east access road from the N14 passes very close to the historic site of Namies (refer to Figure 9) Widening or changing the alignment of this road could result in impacts to graves and ruins at the settlement. This route would require extensive mitigation in terms of recording, rescue archaeology and grave relocation if widened, however potential impacts were determined to be low. The HIA indicated that moving the route south of Namies as proposed would be adequate mitigation. The addendum letter (Appendix C), undertook to determine the potential change to the significance of impacts associated with the amendment to the preferred access road to the site.

5.3.1. Comparative Assessment

In terms of the impact assessment already completed, it was found that the heritage of the project areas for both access road alternatives was mostly of an archaeological nature and consists of multiple dispersed and ancient scatters of Middle Stone Age material and artefacts of low significance. Such material is well represented within and around the project areas with the result that the envisaged impacts were considered acceptable and did not constitute an unacceptable loss. For Alternative 1 (Namies Suid) an additional archaeological heritage resource which is the remains of the old Namakwaland village of Namies, of which the school along with numerous ruins and foundations are visible today was identified. This was considered a potentially important heritage site worthy of conservation which was reflected in the original HIA and found to be a potential restriction. Mitigation was identified that involved re-aligning the Namies Suid access road to avoid the Namies village. The amended choice of access road, Poortjies South is not in the vicinity of the Namies Village and is supported as the heritage risks are lower than those previous determined for Alternative 1 (Namies Suid North). The amendment proposed will have no impacts on the sites of heritage significance it will avoided by the use of Alternative 2 (Poortjies South).

5.3.2. Cumulative Impacts

Archaeological sites are non-renewable and impact on any archaeological context or material will be permanent and destructive. Very sparse heritage traces were found on the site and from an archaeological perspective the observed heritage resources may be regarded as being of generally low significance as identified within the FEIR (2015). Therefore, the change in cumulative impact due to the change in the preferred access route to Alternative 2 is expected to be limited. It still remains important for the mitigation measures to be observed and to incorporate any sensitive heritage features into the layout plans where possible. No additional cumulative impacts were identified further to those identified within the FEIR (2015).

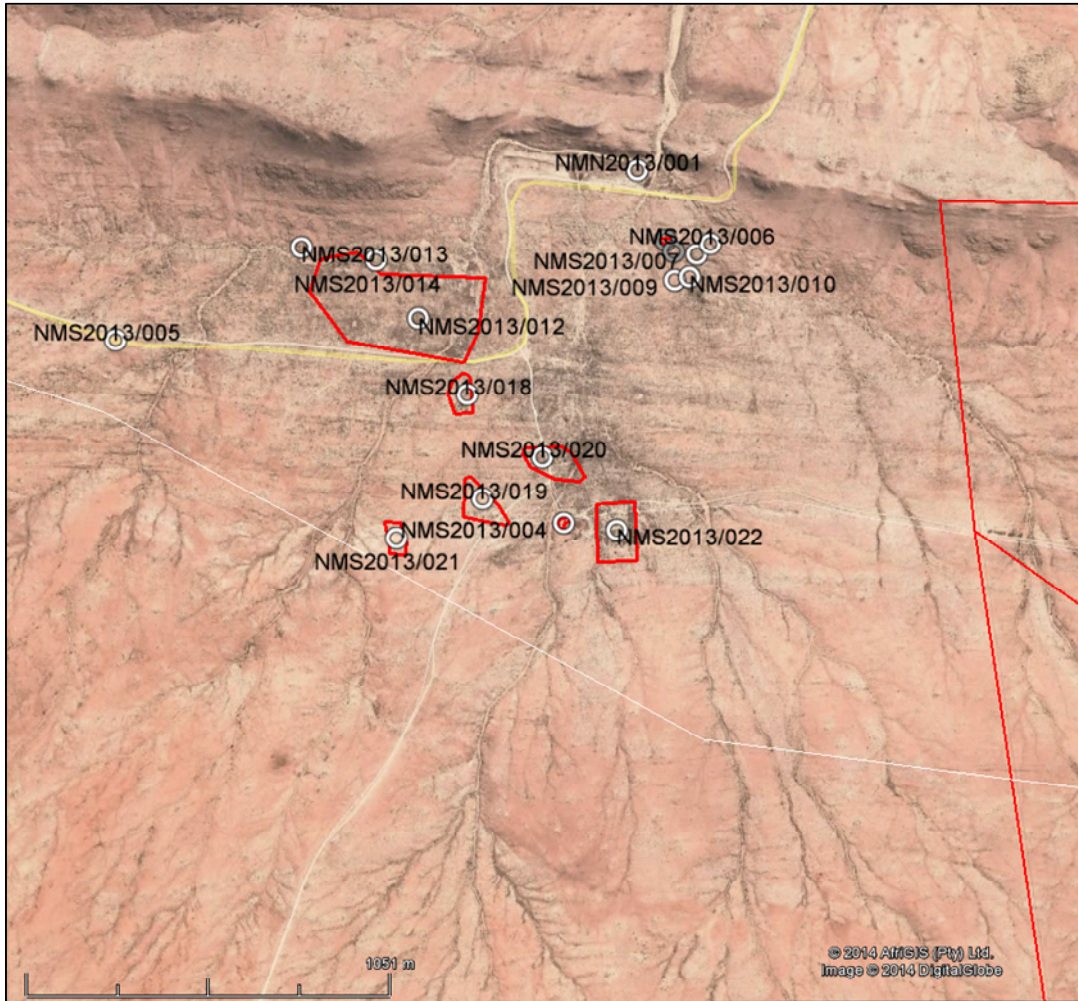


Figure 5.6. Sensitive heritage areas associated with Namies village and the existing access road. The proposed route south of Namies will avoid these (after Webley and Orton 2013).

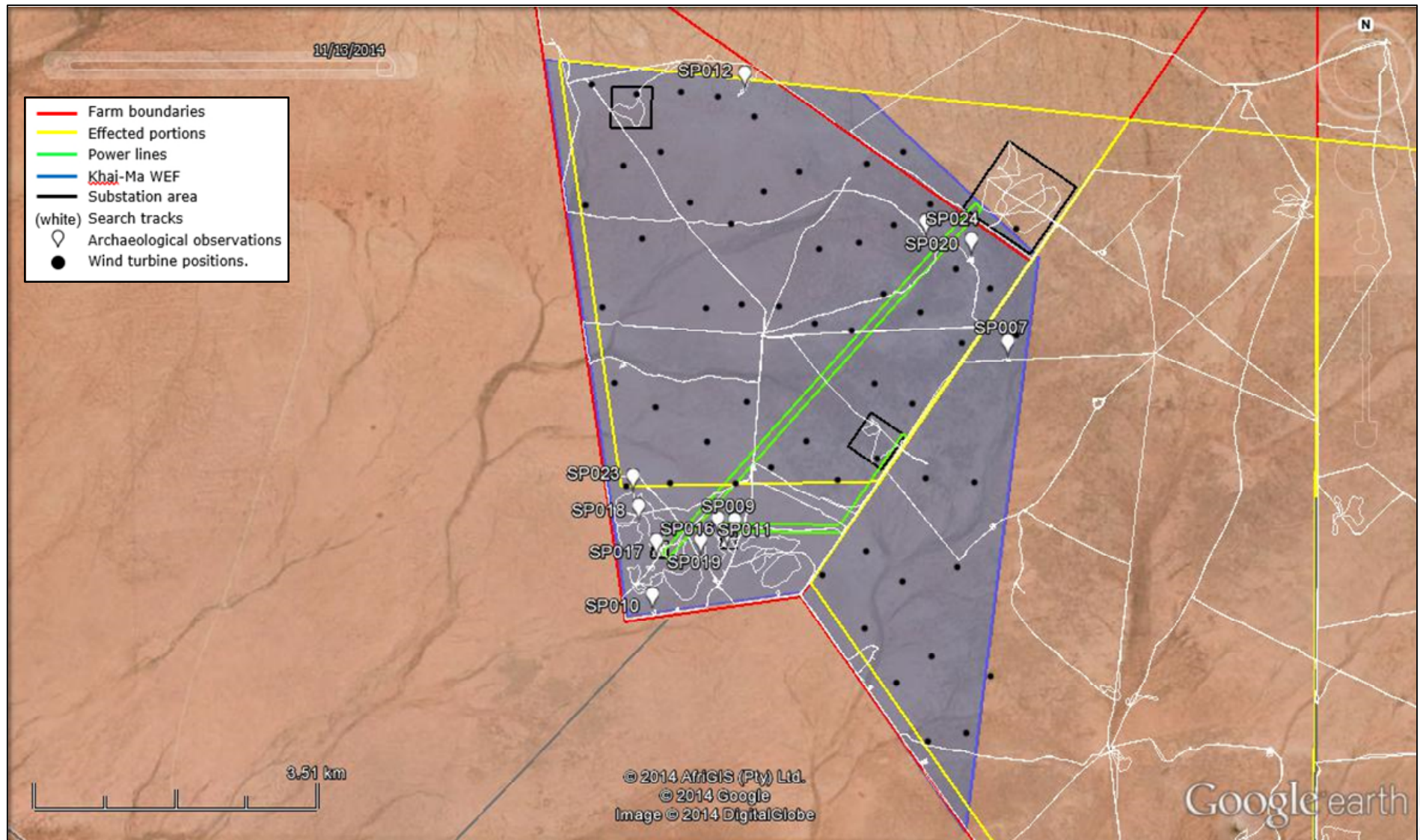


Figure 5.7: Map of the Korana proposed wind energy facility indicating search paths and denser archaeological occurrences (2014).

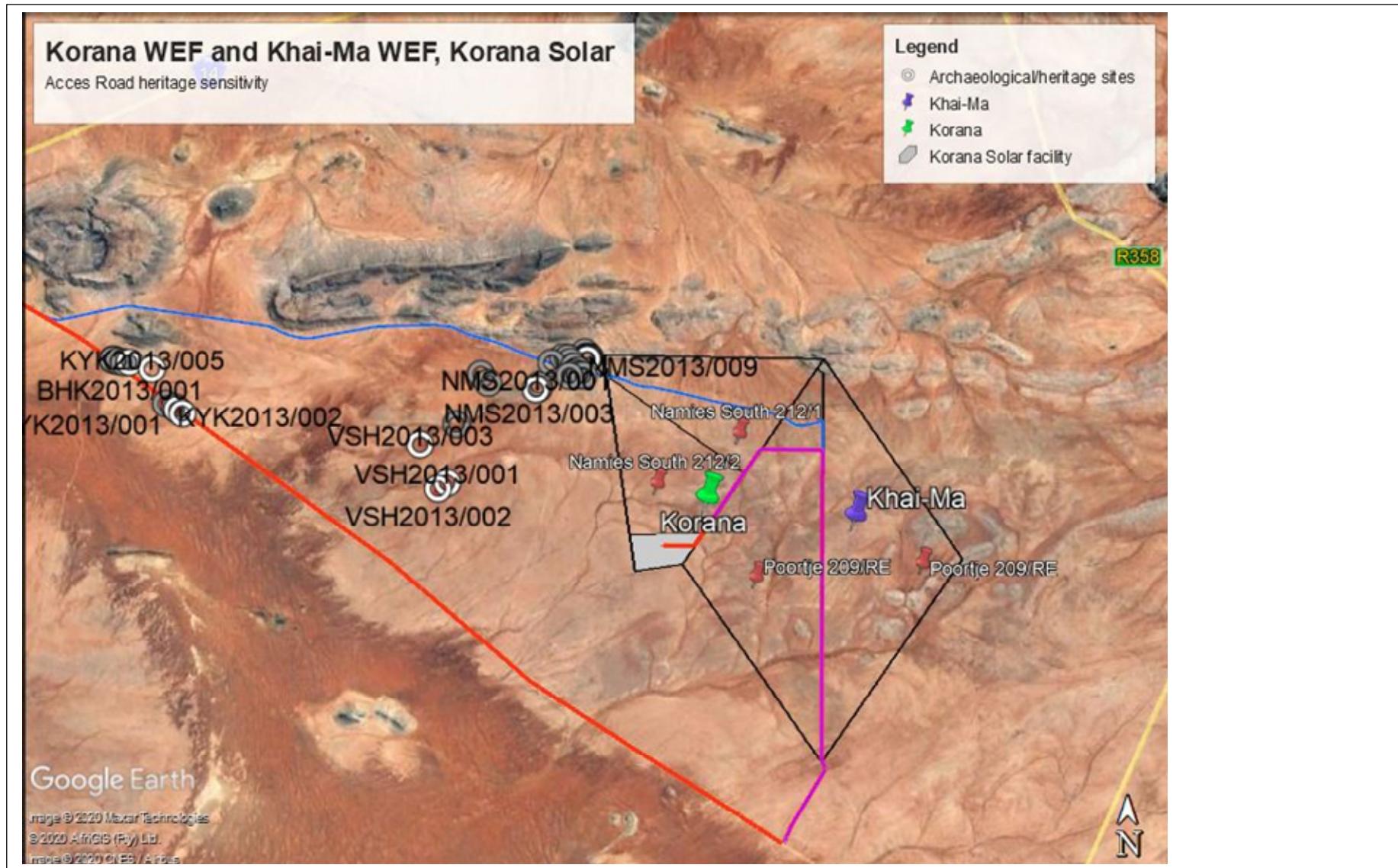


Figure 5.8: Map of the proposed Korana wind energy facility indicating search paths and denser archaeological occurrences (2020)

5.3.3. Conclusion

No important heritage sites occur within the development footprint of the proposed access road Alternative 2 (Poortjies South) for the Korana Wind Energy Facility. As Alternative 2 (Poortjies South) lies south of the Namies Village remains as identified in the FEIR (2015) it is concluded that, from a heritage perspective, selection of this route would result in lower risks to heritage resources. There are no objections to the amendment as the heritage risks are lower and no mitigations for that choice of route are necessary.

5.4. Noise impact

The 2014 Noise Impact Assessment undertaken for the FEIR (2015) indicated that there will be no differences in the significance of noise impacts for either of the alternative access routes. The noise amendment comment letter (**Appendix D**) addresses the potential changes in noise impact significance in terms of the proposed amendments by comparison with the original assessment undertaken in 2014 as part of the EIA process. Therefore any of the two proposed alternatives are considered acceptable from a noise perspective.

5.4.1. Comparative Assessment

There are no potential noise-sensitive developments (NSD) living within 200m from Alternative 2 (Poortjies South) and there will be no risk of a noise impact. The change on road alternatives would actually reduce the noise levels related to increased construction traffic at NSD01, as it will remove this temporary noise source from passing this receptor. The amendment proposed will have no effect on the significance of impacts as predicted in the EIA and therefore no comparative impact tables were required to be included. No additional mitigation measures are recommended.

5.4.2. Cumulative Impacts

As there are no potential noise-sensitive developments (NSD) living within 200m from Alternative 2 (Poortjies South) and there will be no risk of a noise impact. The change on road alternatives would actually reduce the noise levels related to increased construction traffic at NSD01, as it will remove this temporarily noise source from passing this receptor. Therefore cumulative impacts will be reduced for the proposed change in the preferred access road alternative.

5.4.3. Conclusion

Considering that the change in access road alternative to Poortjies South would avoid noise impacts at NSD01, the specialist concluded that change to road alternatives would reduce the noise levels related to increased construction traffic at NSD01, as it will remove this temporary noise source from passing this receptor. The change will not alter (i.e. increase) the significance of the noise impact and the impacts will remain of a **low** significance. The amendment is acceptable from a noise perspective and no additional mitigation measures are required.

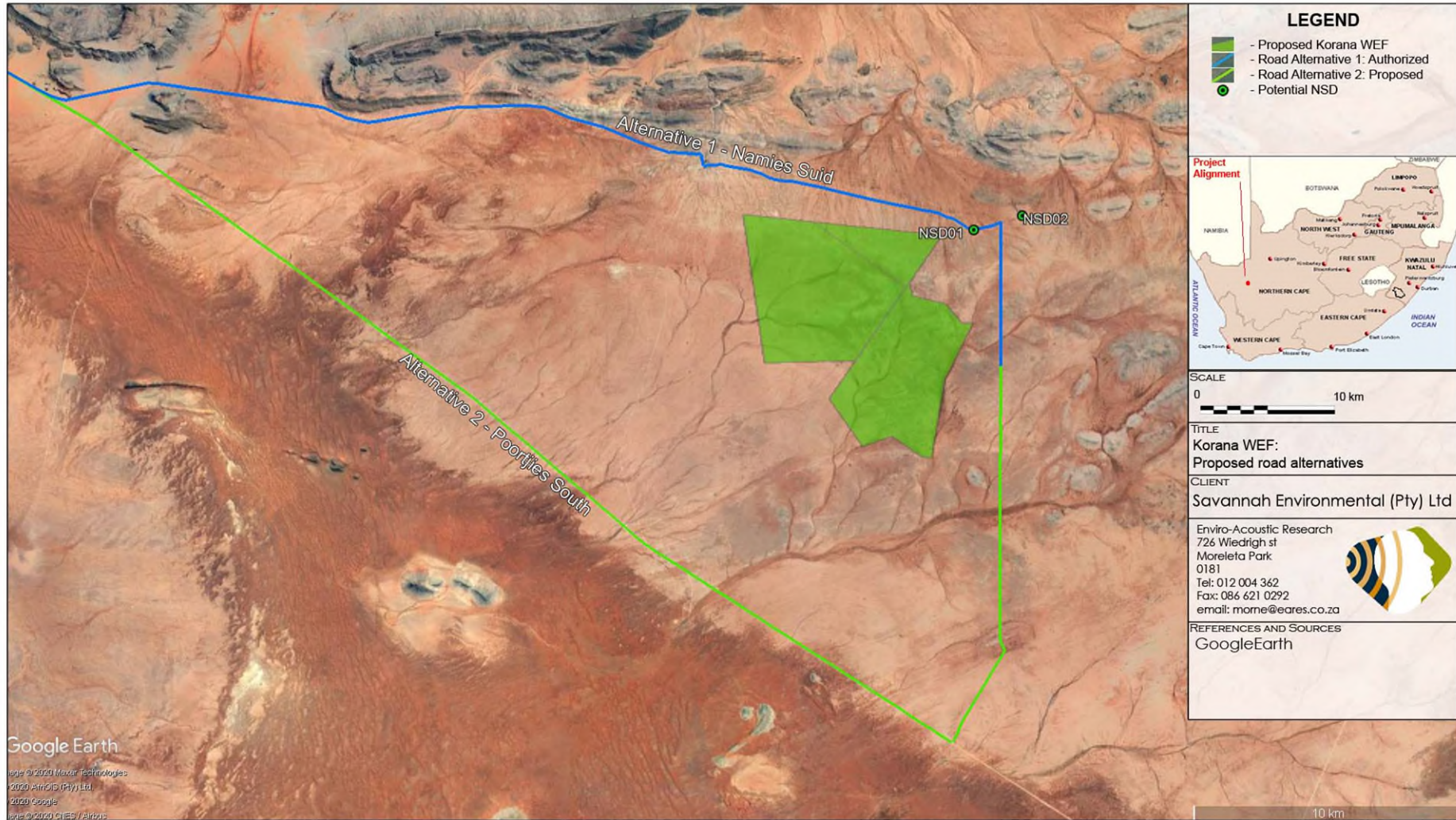


Figure 5.9: NSD in relation to the wind turbines of the Korana WEF (2020)

6. ADVANTAGES AND DISADVANTAGES OF THE PROPOSED AMENDMENTS

In terms of Regulation 32(1)(a)(ii), this section provides details of the advantages and disadvantages of the proposed amendment.

Advantages of the amendment	Disadvantages of the amendment
General	
<p>The selection of Alternative 2 (Poortjies South) which has a more suitable vertical and horizontal alignment for abnormal load access will result fewer construction activities associated with widening and realignment of the road and therefore decreases the overall negative environmental impacts on the surrounding environment.</p>	<p>None</p>
Noise	
<p>The change to access road alternatives would reduce the noise levels related to increased construction traffic at NSD01, as it will remove this temporary noise source from passing this receptor.</p>	<p>None.</p>
Heritage	
<p>The amended choice of access road to Alternative (Poortjies South) is supported as the heritage risks are lower and no mitigations for that choice of route are necessary. The amendment will reduce the risk of disturbance to the Namies Village remains</p>	<p>None.</p>
Biodiversity	
<p>The proposed amendment will not change the significance rating and the biodiversity impacts will remain the same. In light of the latest CBA information available for the area. Alternative 2 is the preferred alternative in terms of potential impacts on CBAs. No additional mitigation measures or changes to the EMPr mitigation measures would be required in terms of this amendment because no significant change to impacts or new impacts will occur</p>	<p>None</p>
Aquatic	
<p>The proposed amendment on the aquatic environment with mitigation will remain unchanged from the original impact assessment, i.e. it will remain of low significance. No additional impacts or changes to the previously assessed impacts would be required due to the proposed amendment.</p>	<p>None</p>
Water Resources	
<p>The proposed amendment on water resources within the project site with mitigation measures will remain unchanged from the original impact assessment despite findings that a single large and two smaller drainage lines that would be crossed by Alternative 2 that are not crossed by Alternative 1. With the appropriate mitigation as proposed within the FEIR, which includes ensuring that the access road does not disrupt or alter the flow of water along these drainage lines, it was determined that is Access Road Alternative 2 will have low impacts on these features.</p>	<p>None</p>

Based on the above, it can be concluded that the advantages of the proposed change outweigh the disadvantages from an environmental and technical perspective. Based on the latest information available for the area, which was not available at the time of undertaking the EIA, Alternative 2 is considered to be the preferred Alternative from the specialist investigation undertaken.

7. REQUIREMENTS FOR ADDITIONAL MITIGATION AS A RESULT OF THE PROPOSED AMENDMENTS

As required in terms of Regulation 32(1)(a)(iii), consideration was given to the requirement for additional measures to ensure avoidance, management and mitigation of impacts associated with the proposed change. From the specialist inputs provided into this amendment motivation, it is concluded that no additional mitigation measures other than those proposed within the EIA would be required to manage potential impacts within acceptable levels.

8. PUBLIC PARTICIPATION

A public participation process is being conducted in support of a Part Two application for amendment of the Environmental Authorisation for the Korana Solar Energy Facility and associated infrastructure, Northern Cape Province. This public participation has been undertaken in accordance with the approved Public Participation plan (refer to **Appendix E7**) for the project and includes:

- » Placement of site notices at the site on **24 June 2020** (refer to **Appendix E4**).
- » Placement of process notices at the Pofadder KLK filling station on the **24 June 2020**. (refer to Appendix E4).
- » A poster describing the project activities and details and a short presentation will be made available on onto Savannah's user friendly stakeholder engagement portal on <https://www.savannahsa.com/public-documents/other/>. from the **29 July 2020**. Where requested, these will be emailed to stakeholders or made available on CD.
- » The draft motivation report being made available for public review on <https://www.savannahsa.com/public-documents/other/>. from **29 July 2020 to 31 August 2020**. Where requested, this report will be made available on CD.
- » Written notification to registered I&APs regarding the availability of the amendment motivation report was distributed on **27 July 2020** (refer to **Appendix E2**).
- » Placement of advertisements the Volksblad newspaper on **22 July 2020** (refer to **Appendix E4**)
- » All project documentation was also uploaded onto Savannah's user friendly stakeholder engagement portal (<https://www.savannahsa.com/public-documents/other/>).

Comments received during the public review period have been included in the final submission to the DEFF for consideration in the decision-making process. Comments were only received from Eskom and the DEFF, and have been responded to in the Comments and Responses Report (to be included as **Appendix E5**). No changes to the content of the report were necessary to address these comments. Proof of attempts made to obtain comments from relevant Organs of State and key stakeholders have also been included in **Appendix E3**.

9. CONCLUSION

Based on the specialist findings, it is concluded that the proposed amendments to the access road alternatives are not expected to result in an increase to the significance ratings (i.e. low) for the identified potential impacts within the EIA. No other new impacts have been identified under the current amendment and all other impact ratings remain the same. Based on the latest information available for the area, which was not available at the time of undertaking the EIA, Alternative2 is considered to be the preferred Alternative from the specialist investigation undertaken.

In terms of aspects relating to noise, biodiversity, heritage and surface hydrology the proposed changes to the EA will not increase the significance of impacts originally identified in the EIA report or lead to any additional impacts.

The amendment in itself does not constitute a listed activity. The mitigation measures described in the original EIA document are adequate to manage the expected impacts for the project.

Given the above, it is requested that the authorised access road Alternative in the Environmental Authorisation be amended to reflect Alternative 2 (Poortjies South) as the preferred alternative.

Taking into consideration the conclusions of the studies undertaken for the proposed amendment associated, with the access road alternatives (as detailed in **Appendix A – D**), **it is concluded that this amendment is considered acceptable from an environmental perspective, provided that the original mitigation measures stipulated in the EMPr are implemented.**

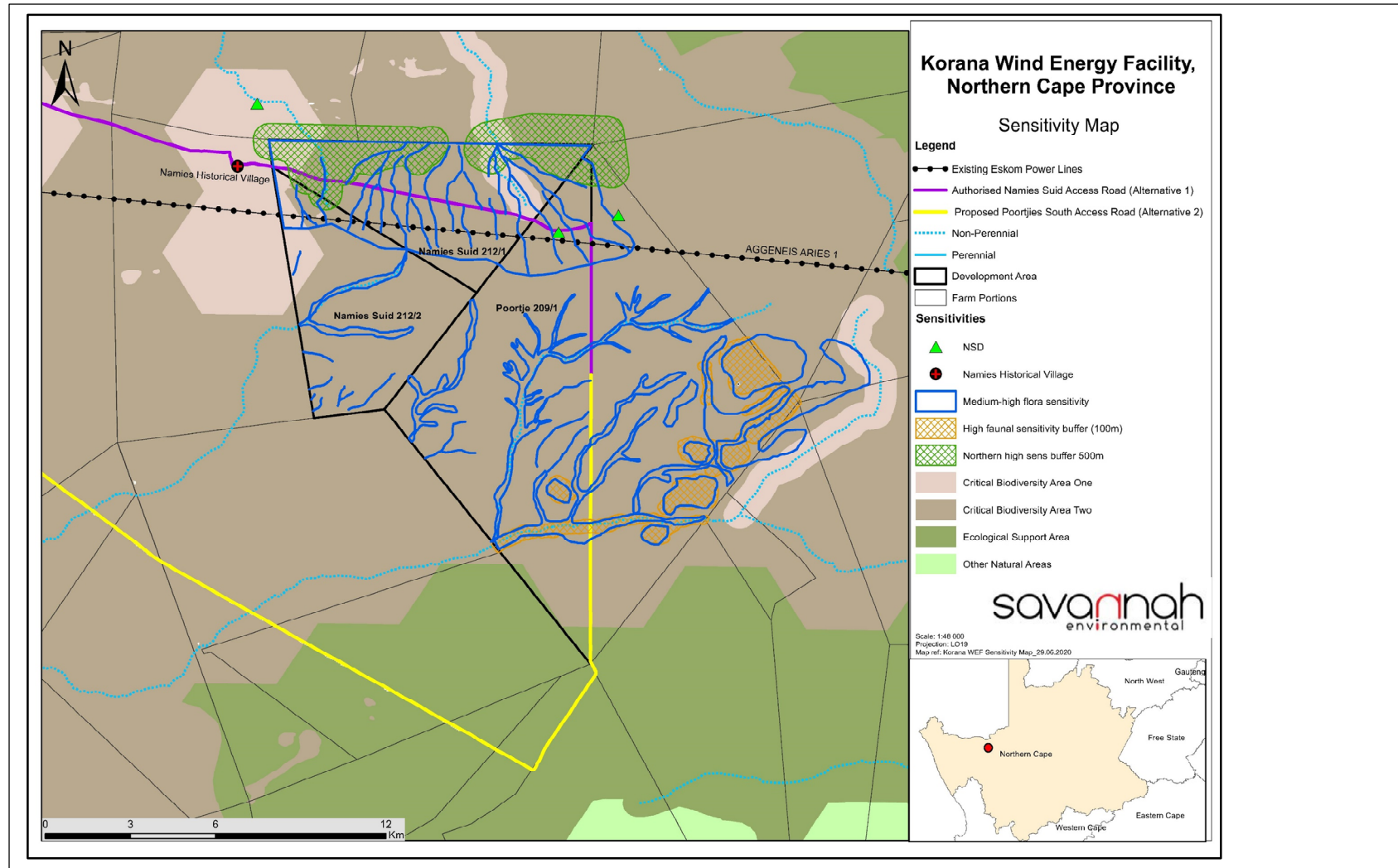


Figure 9: Korana Wind farm layout with specialist environmental sensitivities (A3 Map included in **Appendix G**)

