
Appendix J:

Additional Information



Environmental Management Group (Pty) Ltd

Specialists in Environmental Management Integrating Industry and Infrastructure with the Environment

Site Sensitivity Verification Report



PROPOSED UPGRADE OF THE DR3342 BETWEEN DR3463 NEAR GASESE AND N14 NEAR WASHINGTON, NORTHERN CAPE PROVINCE

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Date: 23 October 2025

RE: SITE SENSITIVITY VERIFICATION REPORT FOR BASIC ASSESSMENT APPLICATION FOR PROPOSED UPGRADE OF THE DR3342 BETWEEN DR3463 NEAR GASESE AND N14 NEAR WASHINGTON, NORTHERN CAPE PROVINCE.

On 20 March 2020 the Minister of Forestry, Fisheries and the Environmental published the general requirements for undertaking site sensitivity verification for environmental themes for activities requiring environmental authorisation (Government Gazette No. 43110). In terms of these requirements, prior to commencing with a specialist assessment, the **current land use** and **environmental sensitivity** of the site under consideration by the screening tool must be confirmed by undertaking a site sensitivity verification by either an EAP or a specialist.

The report uses national datasets to identify site sensitivities and potential specialist studies that may be required for any particular development. Since the datasets are not necessarily ground-truthed, there may be instances where the required specialist study is in actual fact not necessary.

Prior to commencing with a specialist assessment, the **current use of the land** [must be verified] and the environmental sensitivity of the site under consideration identified by the screening tool [must be verified] by undertaking a **site sensitivity verification** (SSV).

According to the Assessment Protocol for specialist involvement, if any part of the proposed development falls within an area of ‘high’ or ‘very high’ sensitivity, the requirements prescribed for such sensitivity must be followed.

1. The Site Sensitivity Verification (SSV) must be undertaken by an EAP or a specialist
 -  The SSV report has been compiled by the EAP and SACNASP registered specialist (if required).
2. A preliminary on-site inspection must be undertaken
 -  The preliminary on-site inspection has been undertaken
3. A desktop analysis, using satellite imagery, must be undertaken, alongside any other applicable/ relevant information.
 -  Consideration has been given to relevant GIS data and Google Earth.

The outcome of this site sensitivity verification report:

- a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
- b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
- c) submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

1. General Site Information

The proposed development entails the upgrading of approximately 100km of existing gravel road to a surfaced road. The layout of the proposed development spans in a general Northwest to Southeast orientation. The proposed development is anticipated to fall within the Joe Morolong Local Municipality which is under the jurisdiction of the John Taolo Gaetsewe District Municipality (Appendix A: Locality Maps).

The proposed development is envisioned to stretch from the village of Washington, past the villages of (amongst others) Logobate, Ga-Moseki, Ga-Disane, Ga-Diboye and Tlapeng before passing through Tsineng and approaching Hotazel (Appendix B: Layout Maps).

1.1. Vegetation Types:

The proposed development would span across four vegetation types (Figure 1: Vegetation Map):

- Kathu Bushveld:
- Kuruman Mountain Bushveld:
- Kuruman Thornveld:
- Kuruman Vaalbosveld:

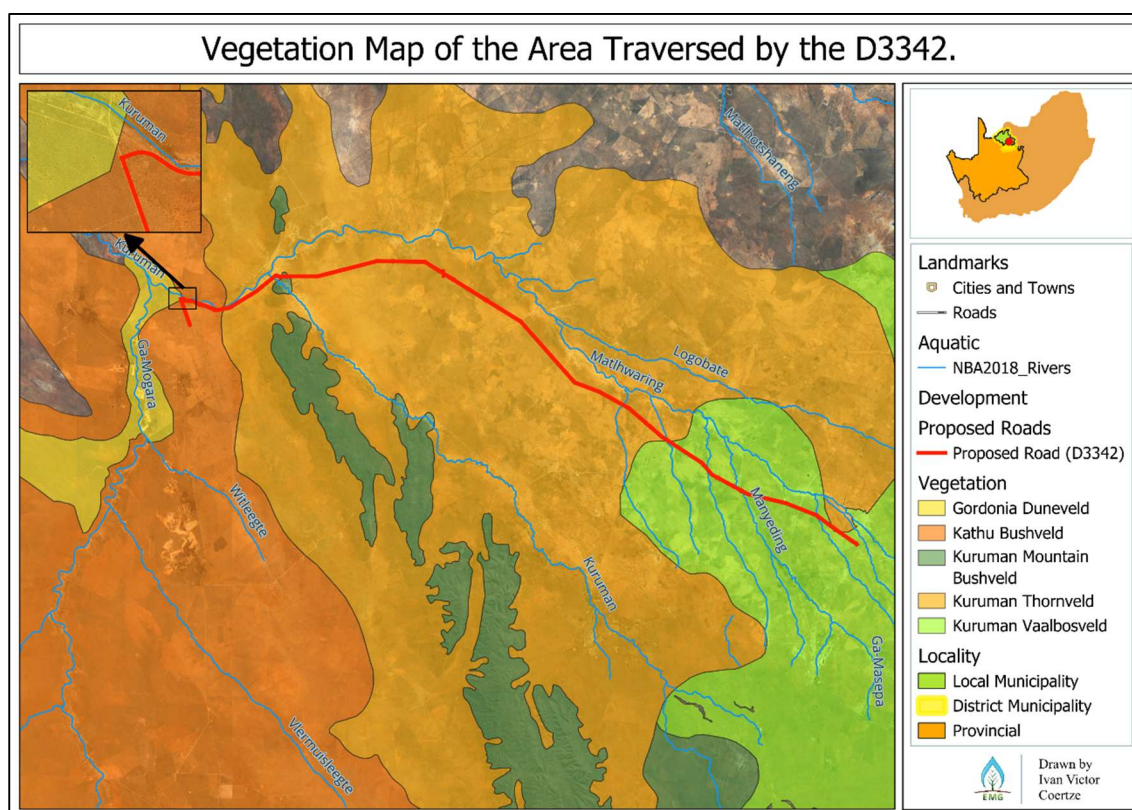


Figure 1: Vegetation Types Crossed by the D3342, proposed to be Upgraded.

1.2. Climate

The project development area, as noted in the inception report, experiences a semi-arid climate, with hot (30 °C -35°C) summer months from November to February with peaks reaching 38°C. Winter months are noted to be cold and dry with daytime temperatures averaging around (17°C-22°C). Rainfall occurs predominantly through short intense thundershowers flowed by long periods of dry weather. The area experiences an average rainfall of 400mm to 550mm. The Kuruman area falls in the Köppen Geiger Climate Zone of BWh which corresponds to a hot dry desert climate in which evaporation and transpiration exceed precipitation.

1.3. Soil and geological conditions

The D3342 which is proposed to be upgraded passes through two geological formations namely the

Khalari and Ongeluk. Typical soils characteristics are described in Mucina and Rutherford (2006) per vegetation type as follows:

Gordonia Duneveld:

Aeolian sand underlain by superficial silcretes and calcretes of the Cenozoic Kalahari Group. Fixed parallel sand dunes, with Af land type almost exclusively.

Kathu Bushveld:

Aeolian red sand and surface calcrete, deep (>1.2 m) sandy soils of Hutton and Clovelly soil forms. Land types mainly Ah and Ae, with some Ag.

Kuruman Mountain Bushveld:

Most common land type Ib, followed by Ae, Ic and Ag. Soils are shallow sandy soils, of the Hutton form.

Kuruman Thornveld:

Mostly younger, superficial Kalahari Group sediments, with red wind-blown (0.3-1.2 m deep) sand. Locally, rocky pavements are formed in places. Most important land types Ae, Ai, Ag and Ah, with Hutton soil form.

Kuruman Vaalbosveld:

Carbonates and chert of the Vaalian Griqualand. Flat, rocky, sandy plains with shallow (0.1-0.6 m) red aeolian sands, stony and underlain by rock. Dominant land types Ae and Fc, with Hutton, Clovelly and Mispah soil forms common.

2. Screening Tool Results

According to the Screening Tool Report that was run on **21 October 2025**, the following summary of the development footprint environmental sensitivities is identified (Table 1).

Table 1 Summary of the development footprint environmental sensitivities.

Theme	Very high sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agricultural Theme			X	
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme		X		
Civil Aviation Theme		X		
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

2.1. Agriculture (Medium Sensitivity)

The Screening Tool identified the agricultural sensitivity theme as “**Medium**” (Figure 1) in terms of the sensitivity features listed in Table 2.

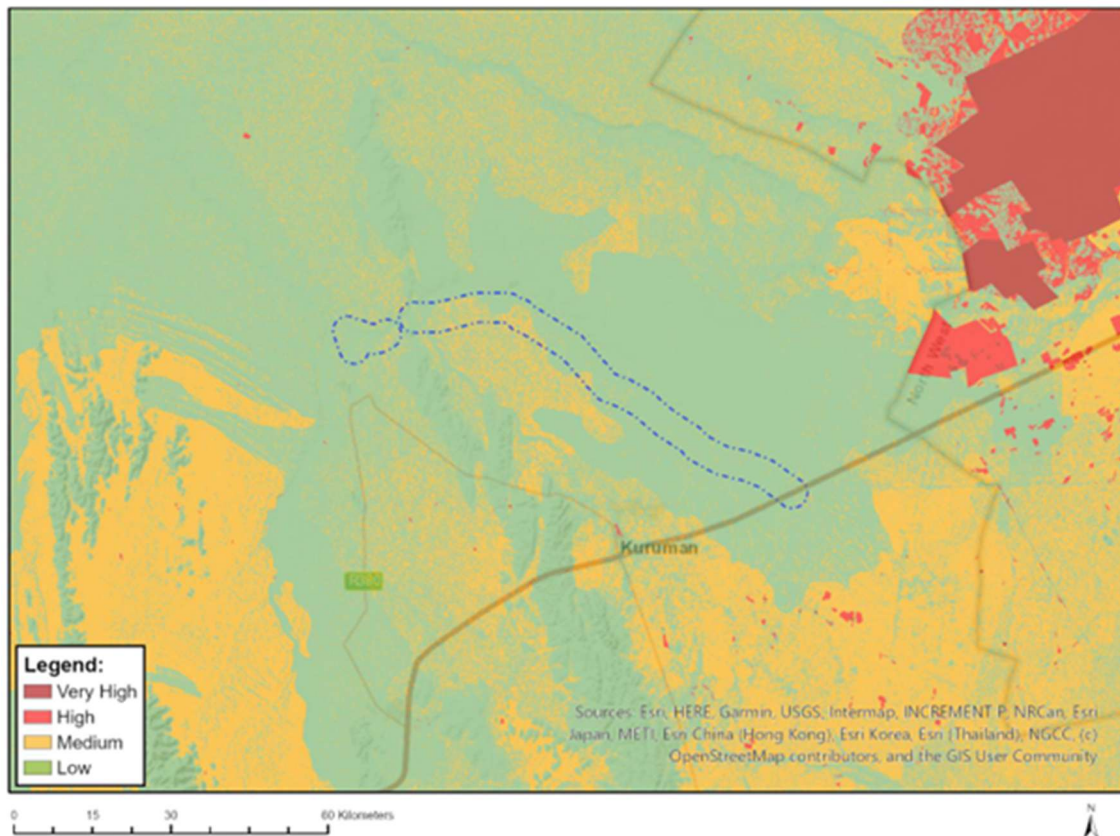


Figure 2: Image from Screening Tool identifying agricultural theme sensitivity for the property.

Table 2: Agricultural theme Sensitivity Features.

Sensitivity	Feature(s)
Low	04. Low-Very low
Low	05. Low
Low	03. Low-Very low
Medium	06. Low-Moderate

The proposed development entails the upgrading of an already existing road with a well-established servitude. The proposed development area in the regions noted to have low-moderate agricultural potential per the DFFE Screening tool are largely modified by the already existing gravel road and provides no agricultural value. Observed agricultural practices in the area comprises primarily of livestock noted to graze on surrounding land and in the road servitudes. While the creation of bypasses may contribute to minor disturbance to this practice in the servitude area itself, this would be temporary in nature and would not prevent access of livestock to surrounding areas that offer equal grazing opportunities. Thus, it is argued that a **“low”** sensitivity would be more representative of the inherent risk to agriculture.



Photo 1: The road proposed to be upgraded is already thoroughly disturbed, compacted with road margins disturbed by prior road construction and maintenance and overgrazing.

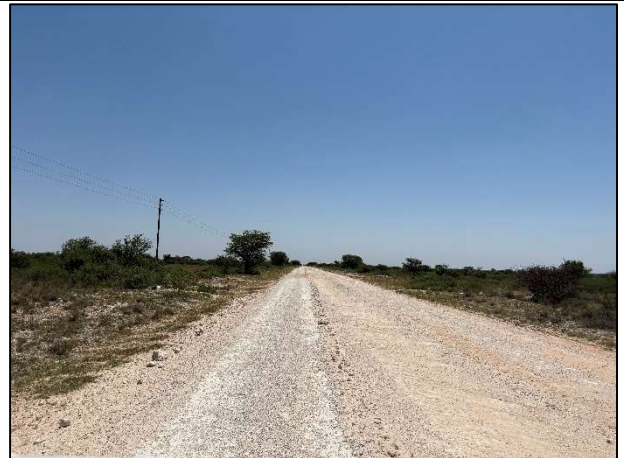


Photo 2: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint.



Photo 3: The same observations as noted at



Photo 4: It was noted in the terrestrial ecological

photo location 1 was pertinent throughout most of the development footprint.

assessment that a throughout walkthrough of the development footprint should be conducted to identify any protected flora before the commencement of development. This will take place to identify whether relocation permits need be applied for. Protected plant and SCC observation reporting procedures have also been included in the EMPr (Appendix G).



Photo 5: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint.



Photo 6: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint.

2.2. Animal Species (High Sensitivity)

The screening tool identified the sensitivity for animal species, to be “High” on account of the potential presence of several species of birds (Aves) in several areas traversed by the development footprint. (Table 3).

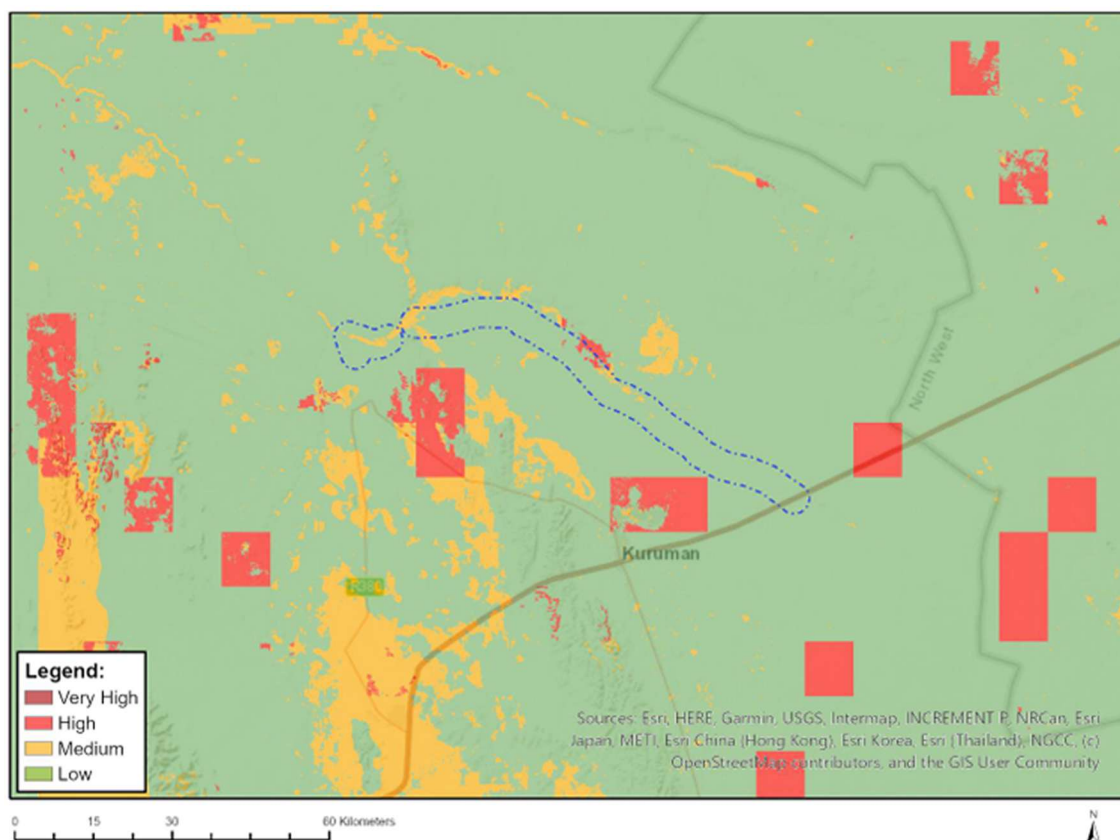


Figure 3: Image from Screening Tool identifying Animal Species theme sensitivity for the property.

Table 3: Sensitivity features of the Animal Species Theme.

Sensitivity	Feature(s)
High	Aves-Gyps africanus
Low	Subject to confirmation
Medium	Aves-Hydropogne caspia
Medium	Aves-Sagittarius serpentarius
Medium	Aves-Aquila rapax
Medium	Aves-Gyps africanus

Aves – Gyps Africanus (White-backed vulture): Noted to be critically endangered by IUCN Redlist (2015), this species of vulture is noted to have undergone an 80% population size reduction in the last three generations. *Gyps africanus* is noted to be threatened by poisoning incidents, poaching, harvesting for the traditional medicine (this includes all vulture species), electrocution through interactions with power lines, and occasional drowning noted in concrete reservoirs.

Aves – Hydropogne caspia (Caspian tern): With a diet of primarily fish, and in some instance large insects, the Caspian tern have a wide distribution and prefer coastal areas where they breed mainly in colonies. The Caspian tern has, however, been known to utilise larger inland waterbodies. Given the extent of prior disturbance of the development area as well as the arid conditions of the development area, with the exception of the Manyeding consisting of almost entirely ephemeral watercourses, it is highly unlikely that any Caspian terns would be detrimentally affected by the proposed development.

Aves - Sergattarius serpentarius (Secretary bird): It prefer savannas, scrub, and open grassland with scattered thorn trees for roosting and nesting (SANBI 2021). This species is Vulnerable according to the IUCN Red List (2015). The primary threat to the *S. serpentarius* population is noted to be habitat loss driven by agriculture and urban development. Excessive burning and overgrazing of grasslands

are also noted to potentially reduce carrying capacity by reducing the availability of prey species.

Aves – *Aquila rapax* (Tawny eagle): The regional population of Tawny Eagle is noted to have decreased more than 50% over three generations with a regional population of less than 1 000 birds undergoing a continuous decline greater than 20% in two generations thus satisfying two thresholds for considering Tawny Eagles to be regionally endangered. Noted to be one of the most threatened eagles in South Africa the primary threat is associated with land transformation which they are noted to be particularly sensitive to (they are noted to be fairly sedentary with no discernible seasonal movement) (SANBI, 2015).

Given that:

- the scope of the proposed development entails the upgrade of an already existing road which has an already well-established servitude
- the degree of land transformation being anticipated to be minimal primarily caused by the temporary creation of bypasses,

it is argued that there is not a large risk associated with permanent habitat degradation and transformation. Furthermore, the area being noted to be actively overgrazed by livestock belonging to the nearby communities renders the presence of *S. serpentarius* and *A. rapax*, less probable. It is thus argued that a “**low**” sensitivity would be better reflective of the inherent risk associated with the bird species of conservation concern posed by the proposed development.

While acknowledging the mentioned factors which is argued to reduce the risk associated to bird species of conservation concern, some areas might still entail the expansion of the servitude which would constitute the permanent clearance of vegetation. Thus, it should remain necessary to ensure that the appropriate mitigation measures should be stipulated in the EMPr and employed in vegetation clearance. These should include:

- **redirecting by-passes as far as possible to avoid clearance of trees**
- **rehabilitating the bypasses with indigenous grasses typical of the natural vegetation types of the area**
- **entirely avoiding the removal of trees which have active nests.**

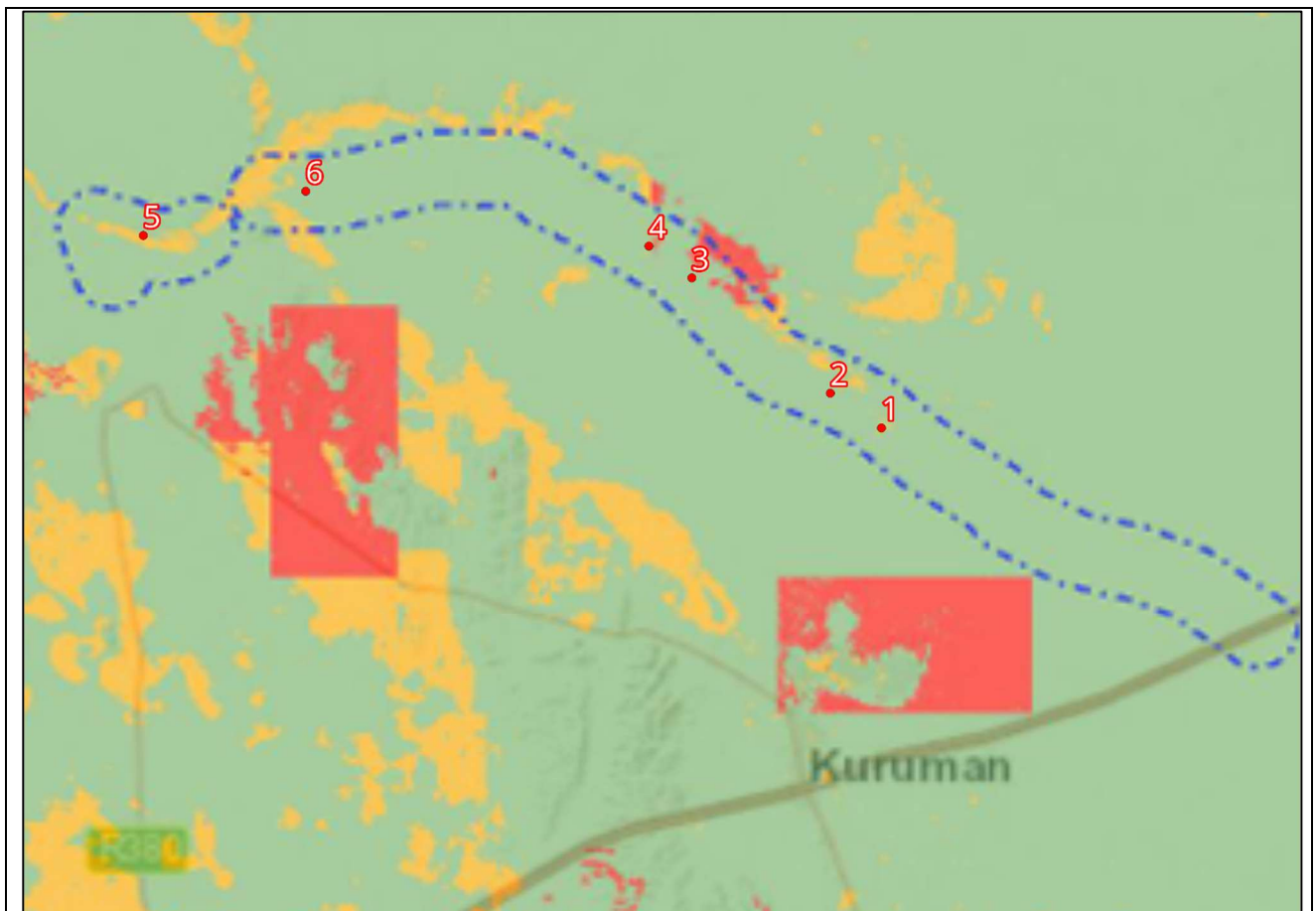


	
Photo 1: The road proposed to be upgraded is already thoroughly disturbed, compacted with road margins disturbed by prior road construction and maintenance and overgrazing.	Photo 2: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint.
	
Photo 3: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint	Photo 4: The same observations as noted at photo location 1 was pertinent throughout most of the development footprint
	
Photo 5: Some areas adjacent to the proposed development were notably more pristine than others, such as when approaching the Mathwaring River. The development area itself, however, remains compacted, and cleared of vegetation being a gravel road.	Photo 6: A greater degree of anthropogenic disturbance (mostly constructions) was observed in some areas adjacent to the proposed development area, notably as one enters into the town of Tsineng.

2.3. Aquatic Biodiversity (Very High Sensitivity)

The screening tool identified the aquatic biodiversity theme as “**Very High**” on account of the presence of wetland-depressions (pans), wetlands and rivers in the development footprint (Figure 3).

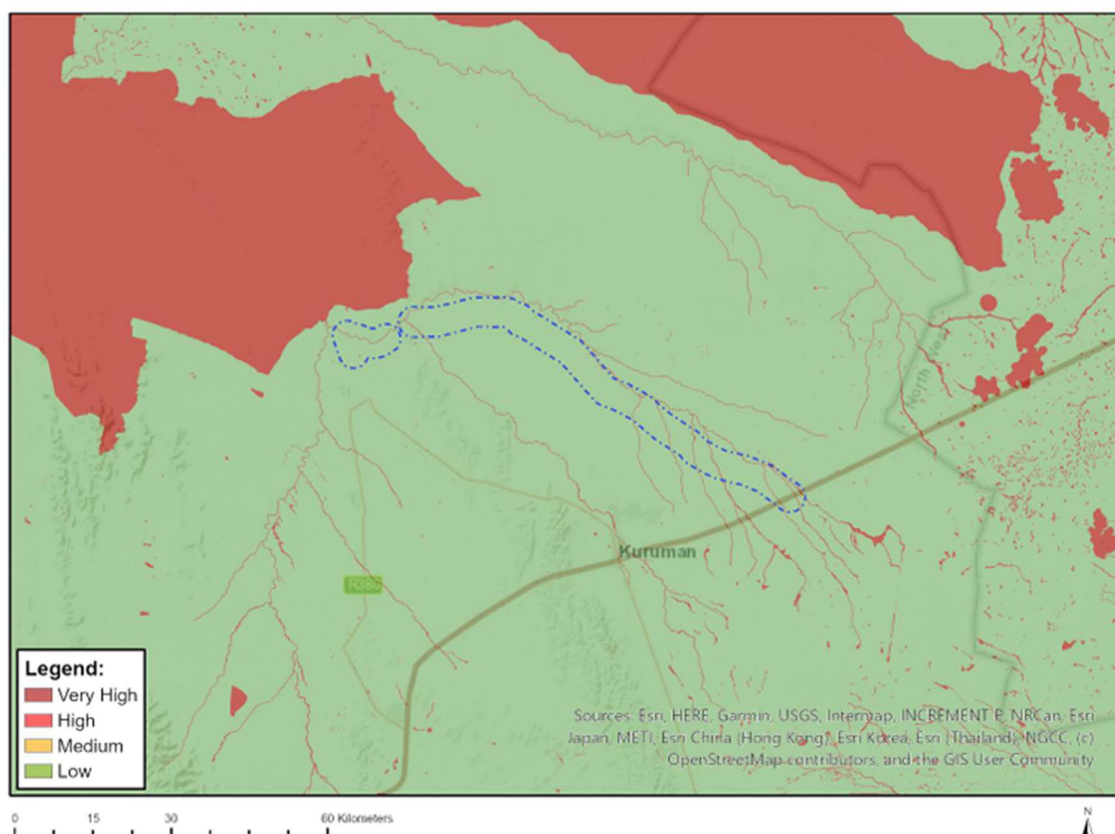


Figure 4: Image from Screening Tool identifying Aquatic Biodiversity theme sensitivity for the property.

Table 4: Aquatic Biodiversity theme Sensitivity Features.

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Wetlands-depression
Very High	Wetlands-river
Very High	Rivers

Numerous watercourses (primarily ephemeral) were noted to be concentrated to especially the first 30km as well as 24km upon leaving Tsineng. While it is agreed that there are numerous features in the development footprint which requires delineation, assessment and adequate mitigation measures during construction to ensure minimal detrimental impacts to River health and all of the secondary effects that arise as result. However, in an assessment of the main river system (Kuruman River) identified in the area, anticipated to be impacted by construction activities, an aquatic specialist noted the Index of Habitat Integrity to be of category C: Moderately Modified for both the instream IHI as well as the Riparian IHI. Additionally, a WET-Health assessment was conducted for the floodplain wetland system associated with the Manyeding River to improve the accuracy of the findings of the Index of Habitat Integrity Assessment. The findings of the WET-Health assessment corroborated the findings of the IHI indicating a present ecological state of Category C: Moderately Modified. The degraded state of the tested watercourses were noted to be associated with the impacts of overgrazing, erosion and higher sediments input as well as the deficiency in the current road infrastructure to accommodate the watercourse flow regimes.

Despite the modified Present Ecological State of the watercourse, on account of:

-  the artesian origins of some of the affected watercourses
-  the watercourses being in an ecological support area supporting critical biodiversity
-  the noted sensitivity to flow and habitat modifications and the status of the watercourses
-  being listed on the National Freshwater Ecosystem Priority Areas database

(NFEPA),

the ecological importance and sensitivity of the potentially affected watercourse is argued to be **'high'**.

Thus, cumulatively, this EAP is of the opinion that the **'very high'** category assigned by the DFFE screening tool should instead be **'high'**. No fatal flaws were identified by the aquatic specialist and mitigations were included to ensure that any detrimental impact on the watercourses should be minimal and reversible.

Furthermore, it should be noted that one of the major findings of the aquatic specialist report was to note the observed detrimental effect of the current infrastructure on account of the inadequacy of the culverts to accommodate the natural flow regimes at river crossings. This has also been noted by the design team who as part of the proposed upgrading of the D3342, propose to replace the current culverts with culverts with an increased throughput capacity where found to be historically inadequate.



Photo 1: The Matlwharing River to the North of the development area. Multiple drainage lines were observed in this area.



Photo 2: A culvert at a point at which the proposed development would cross an ephemeral watercourse (South-facing).



Photo 3: A culvert at a point at which the proposed development would cross an ephemeral watercourse (North-facing).



Photo 4: A point at which the proposed development would cross an ephemeral watercourse (South-facing).



Photo 5: A point at which the proposed development would cross an ephemeral watercourse (North-facing), with evidence of overgrazing.



Photo 6: A culvert at a point at which the proposed development would cross a seasonal watercourse (North-facing).

Photo 7: A culvert at a point at which the proposed development would cross a seasonal watercourse (South-facing).

2.4. Archaeological & Cultural Heritage (High Sensitivity)

The screening tool identified this theme as being “High” (Figure 4).

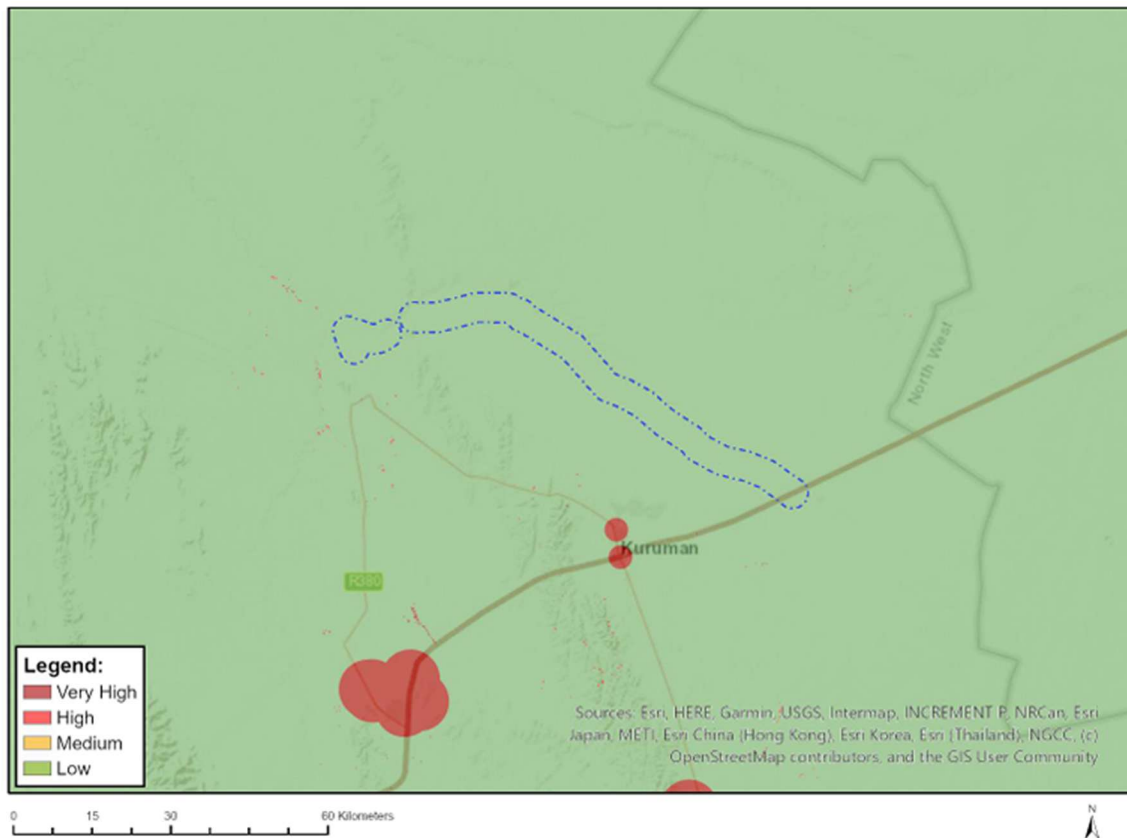


Figure 5: Image from Screening Tool identifying Archaeological and Cultural Heritage theme sensitivity for the property.

Table 5: Archaeological and Cultural Heritage theme Sensitivity Features.

Sensitivity	Feature(s)
High	Within 50m of a grade IIIc Heritage Site
Low	Low Sensitivity

While the proximity to features with a grade IIIc heritage site is not disputed, it should be noted that the proposed upgrading of the existing road will not necessitate a development area so large that features within 50m are conceivably affected by the proposed upgrading. In a Heritage Impact Assessment conducted (Appendix D of the BAR) it was noted that the project surface area was noted to be capped predominantly by severely degraded limestone and residual soils resulting from the previous construction of the existing road. Furthermore, in a Heritage Impact Assessment conducted, it was identified that there were *“no indications of any in situ archaeological material, capped or distributed as surface scatters on the landscape”*, nor were there any *“stonewalled structures, graves of historically significant buildings older than 60 years within the boundaries of the footprint corridor”*. Thus, it was noted that the anticipated impact would be negligible and require no mitigation, provided that the proposed upgrading remains within the development area.



Photo 1: Fenceline indicating the edge of the road reserve within which the proposed development will take place.



Photo 2: Phone cables, compacted road and livestock grazing indicating evidence of disturbance.



Photo 3: The typical appearance of the proposed development area (as noted in the Heritage



Photo 4: The typical appearance of the proposed development area (as noted in the

Impact Assessment) with degraded limestone and wind-blown soils of no discernible conservation value at the location of photo 3.



Photo 5: The typical appearance of the proposed development area (as noted in the Heritage Impact Assessment) with degraded limestone and wind-blown soils of no discernible conservation value at the location of photo 5.

Heritage Impact Assessment) with degraded limestone and wind-blown soils of no discernible conservation value at the location of photo 3.



Photo 6: The typical appearance of the proposed development area (as noted in the Heritage Impact Assessment) with degraded limestone and wind-blown soils of no discernible conservation value at the location of photo 6.

2.5. Civil Aviation (High Sensitivity)

The screening tool identified this theme as being **“High”** (Figure 5).

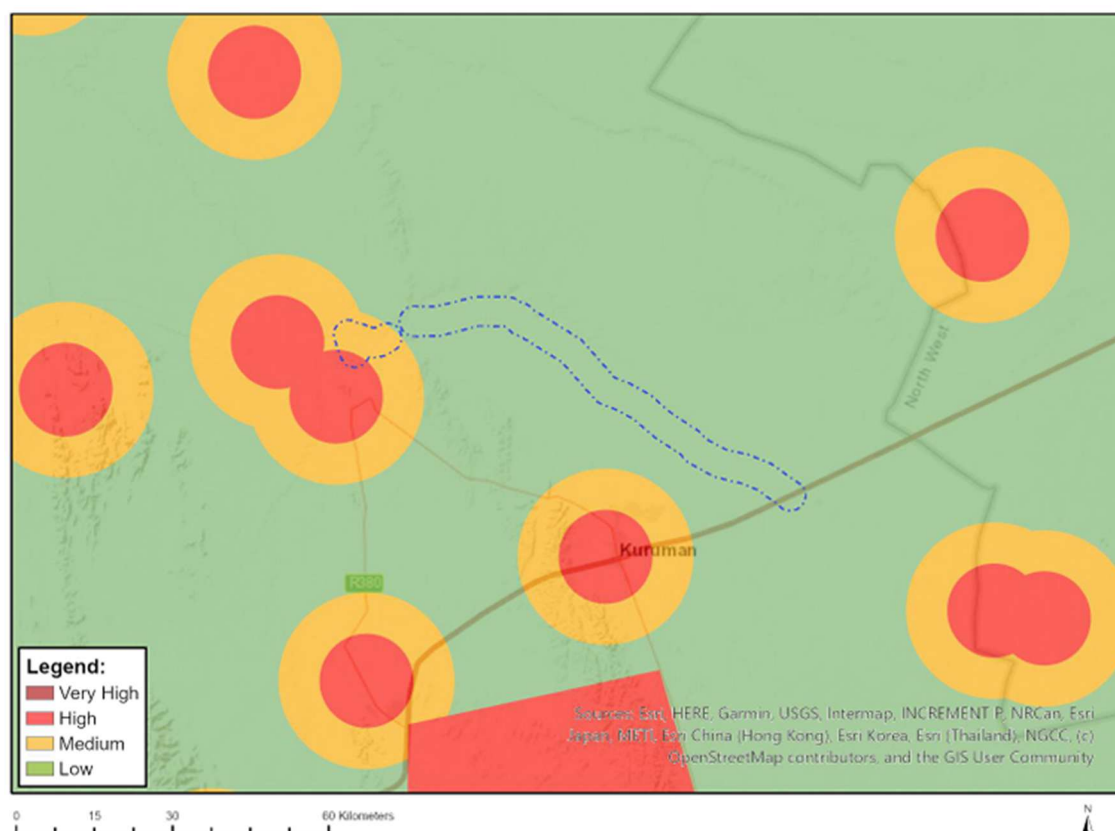


Figure 6: Image from Screening Tool identifying Civil Aviation theme sensitivity for the property.

Table 5: Civil Aviation theme Sensitivity Features.

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome
Low	Low Sensitivity
Medium	Between 8 and 15km of other civil aviation aerodrome

The upgrading of the D3342 will not trigger the obstacle collision / potential hazard requirements as set out by the CAA, i.e.

- Buildings or other objects which will constitute an obstruction or potential hazard to aircraft moving in the navigable air space in the vicinity of an aerodrome, or navigation aid, or which will adversely affect the performance of the radio navigation or instrument landing systems,
- There are no buildings or objects higher than 45 metres above the mean level of the landing area;
- No building, structure or object which projects above a slope of 1 in 20 and which is within 3000 metres measured from the nearest point on the boundary of an aerodrome;
- No building, structure or other objects will project above the approach, transitional or horizontal surfaces of an aerodrome.

On account of there being no conceivable detrimental impacts to civil aviation posed by the development, it is argued that the risk rating should instead be **‘low’**.

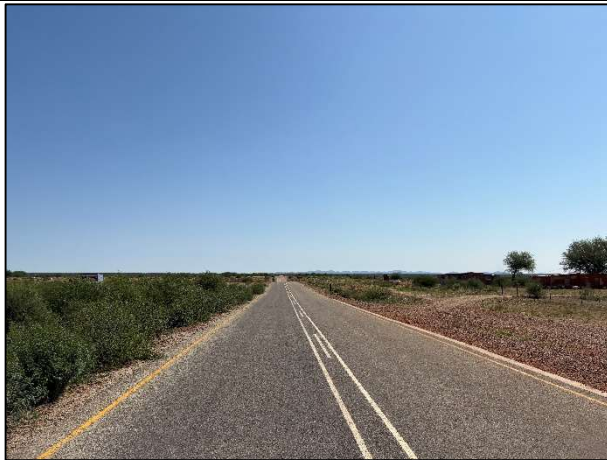
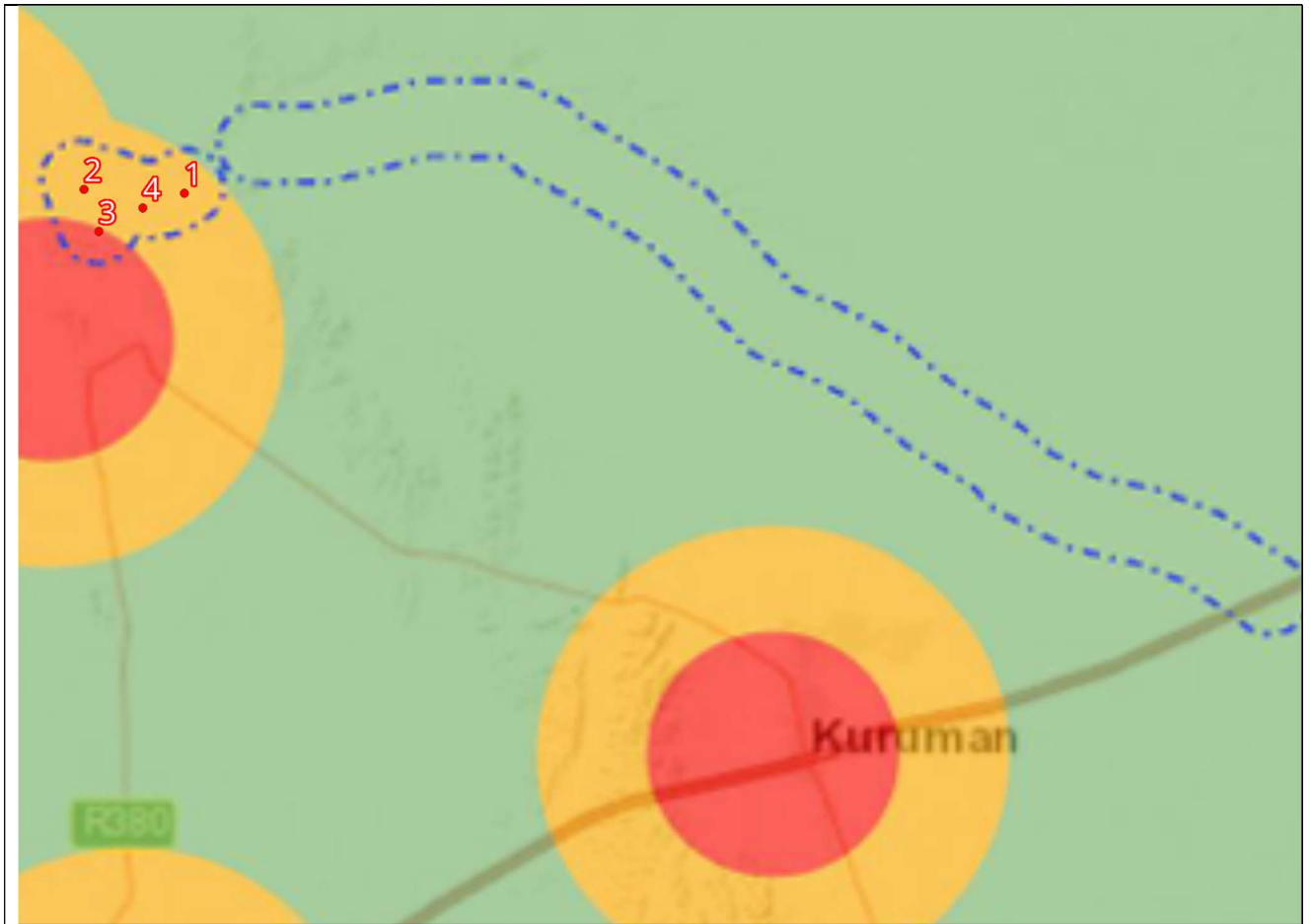


Photo 1: The low current road which approximates the height of the proposed development (being a road) between 8 and 15km of an aerodrome.



Photo 2: The low current road which approximates the height of the proposed development (being a road) between 8 and 15km of an aerodrome.



Photo 3: The low current road which approximates the height of the proposed development (being a road) within 8km of an aerodrome.

Photo 4: The low current road which approximates the height of the proposed development (being a road) between 8 and 15km of an aerodrome.

2.6. Defence (Low Sensitivity)

The screening tool identified this theme as being “**Low**” (Figure 6).

On account of the proposed upgrading of the road having no identifiable detrimental impact on the defence theme, with the nearest site of concern to defence being 28km away, the ‘**low**’ impact as identified by the DFFE screening tool is concurred with.

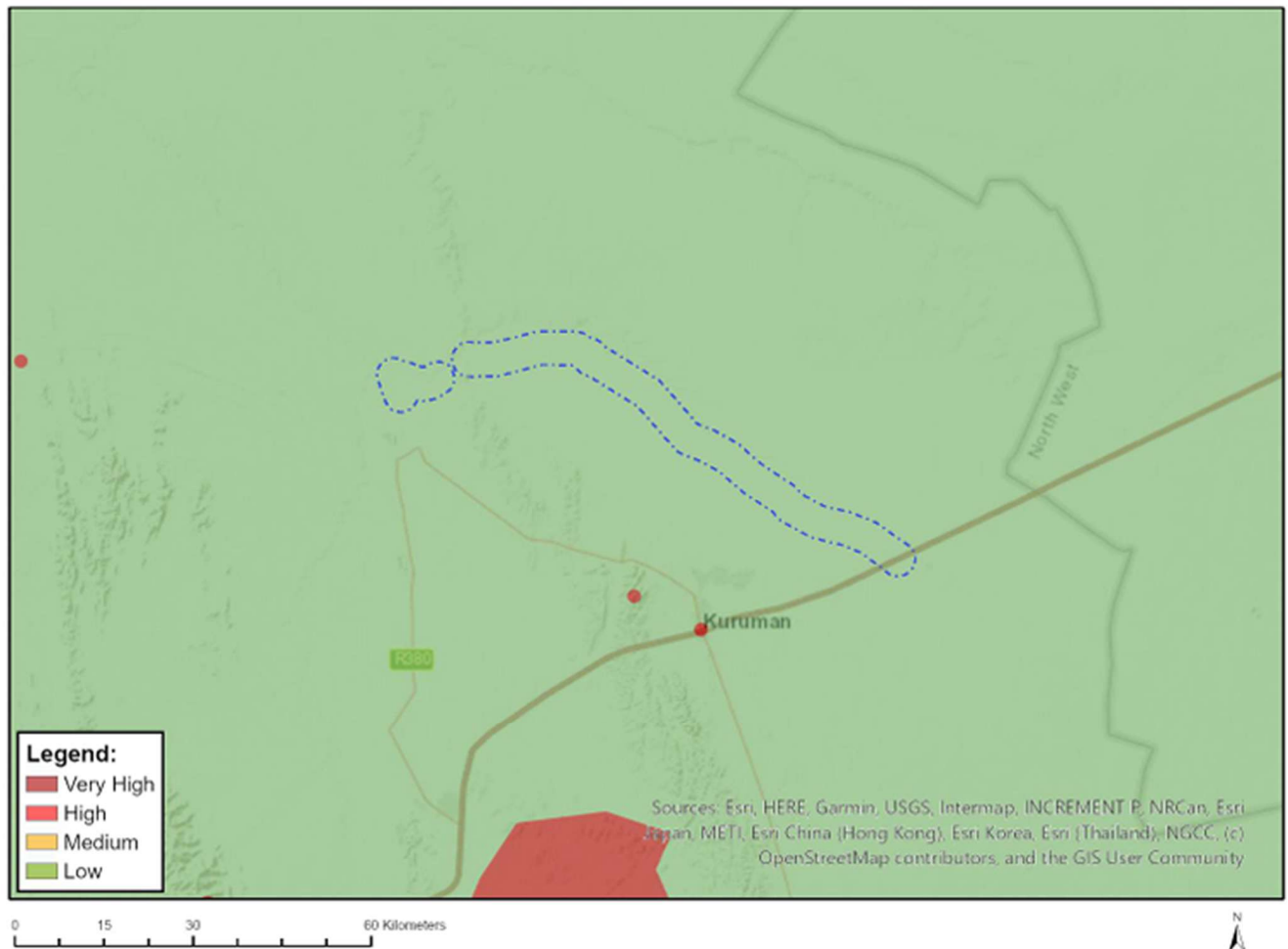


Figure 7: Image from Screening Tool identifying Defence theme sensitivity for the property.

Table 5: Aquatic Biodiversity theme Sensitivity Features.

Sensitivity	Feature(s)
Low	Low Sensitivity

2.7. Palaeontology (Very High sensitivity)

The screening tool identified this theme as being “**Very High**” (Figure 7) with multiple areas noted to have ‘very high’ sensitivity with regards to palaeontology being traversed by the proposed development.

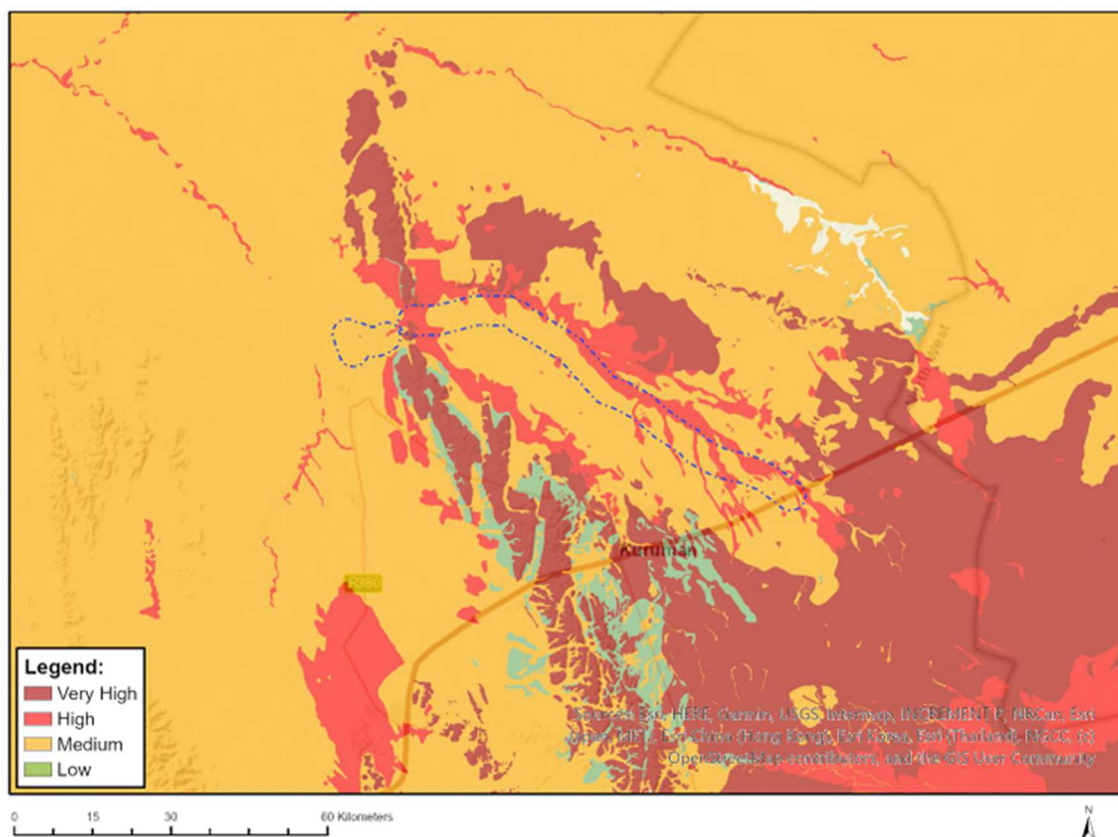


Figure 8: Image from Screening Tool identifying Palaeontology theme sensitivity for the property.

Table 5: Palaeontology theme Sensitivity Features

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity
Very high	Features with a Very High paleontological sensitivity

While the palaeontological significance of the area is noted and not disputed, as per the findings of the heritage impact assessment, the development entails the upgrading of an already existing road. Any expansion will take place in the existing road reserves which are primarily capped by severely degraded surface limestone rubble and residual soils which resulted from the historical construction of the road. Thus, it is argued, in line with findings of the Heritage Impact Assessment, that the upgrading of the D3342 poses a '**low**' risk (provided that the proposed development area is adhered to).

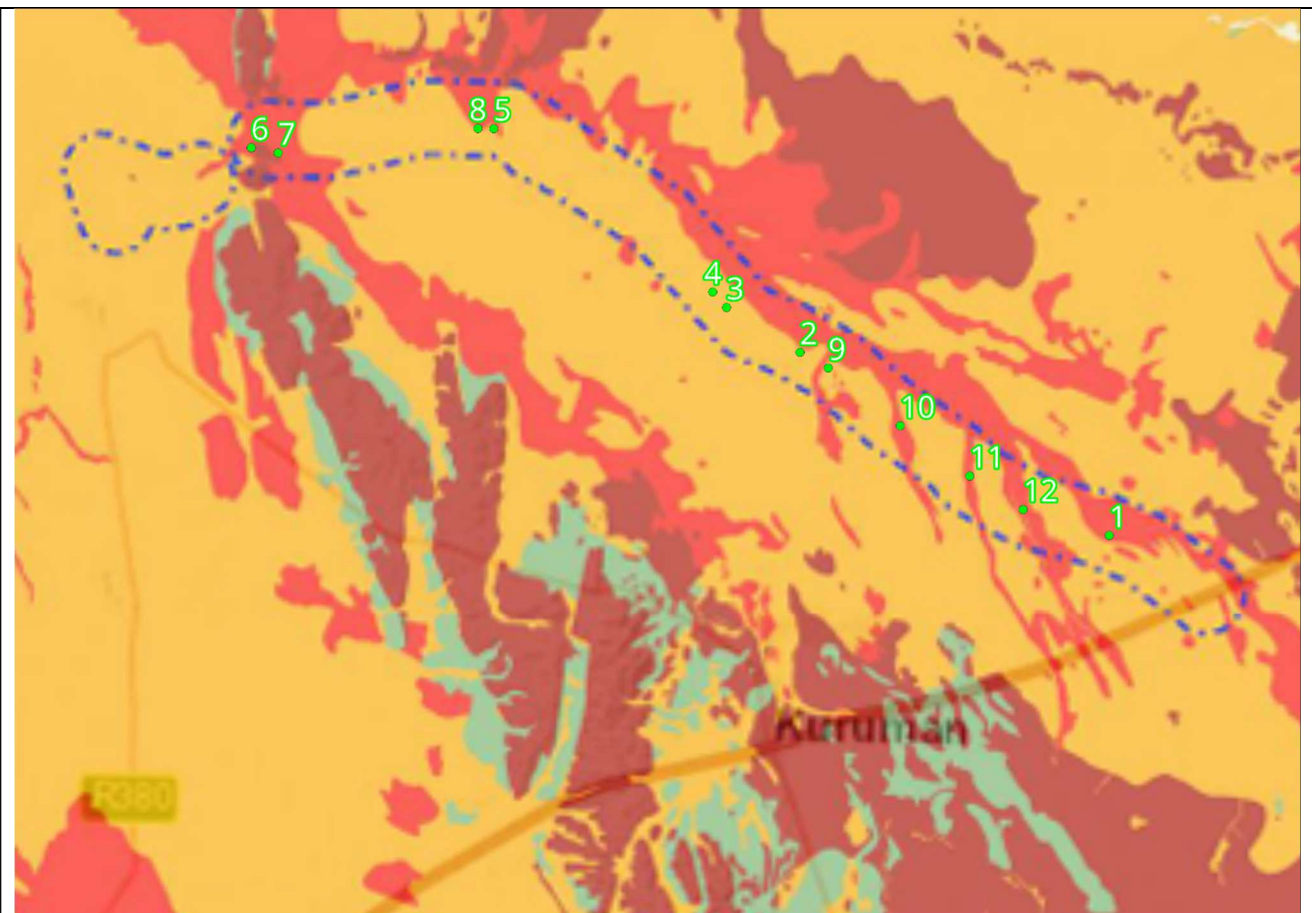


Photo 1: A thoroughly compacted gravel road surface displaying severely degraded limestone and windblown soils of no discernible conservation value typical of the proposed development area at photo location 1.



Photo 2: A thoroughly compacted gravel road surface displaying severely degraded limestone and windblown soils of no discernible conservation value typical of the proposed development area at photo location 2.



Photo 3: A thoroughly compacted gravel road surface displaying severely degraded limestone and windblown soils of no discernible conservation value typical of the proposed development area at photo location 3.



Photo 4: A thoroughly compacted gravel road surface displaying severely degraded limestone and windblown soils of no discernible conservation value typical of the proposed development area at photo location 4.



Photo 5: A thoroughly compacted gravel road surface displaying severely degraded limestone and windblown soils of no discernible conservation value typical of the proposed development area at photo location 5.



Photo 6: Surrounding landscape outside of the proposed development area indicating a watercourse (greenery beyond the drop off of the road) with which the palaeontological sensitivity is closely aligned.



Photo 7: The road surface with the visible a disturbed road reserve (beyond which is the area anticipated by the DFFE screening tool to have a high palaeontological sensitivity).



Photo 8: The landscape surrounding the road which the DFFE screening tool demarcates as having a high palaeontological sensitivity into which the development is not anticipated to expand.



Photo 9: The landscape surrounding the road which the DFFE screening tool demarcates as having a high palaeontological sensitivity into

Photo 10: Surrounding landscape outside of the proposed development area indicating an ephemeral watercourse with which the

which the development is not anticipated to expand.	palaeontological sensitivity is closely aligned.
	
Photo 11: Overgrazing activities seen in an ephemeral watercourse contributing to the area's disturbed nature.	Photo 12: Surrounding landscape outside of the proposed development area indicating a watercourse with which the palaeontological sensitivity is closely aligned.

2.8. Plant Species (Medium Sensitivity)

The screening tool identified this theme as being ‘**medium**’ (Figure 8) on account of the potential presence of 2 species of conservation concern noted to be present in the development area, namely *Dicoma kurumanni* and sensitive species 149.

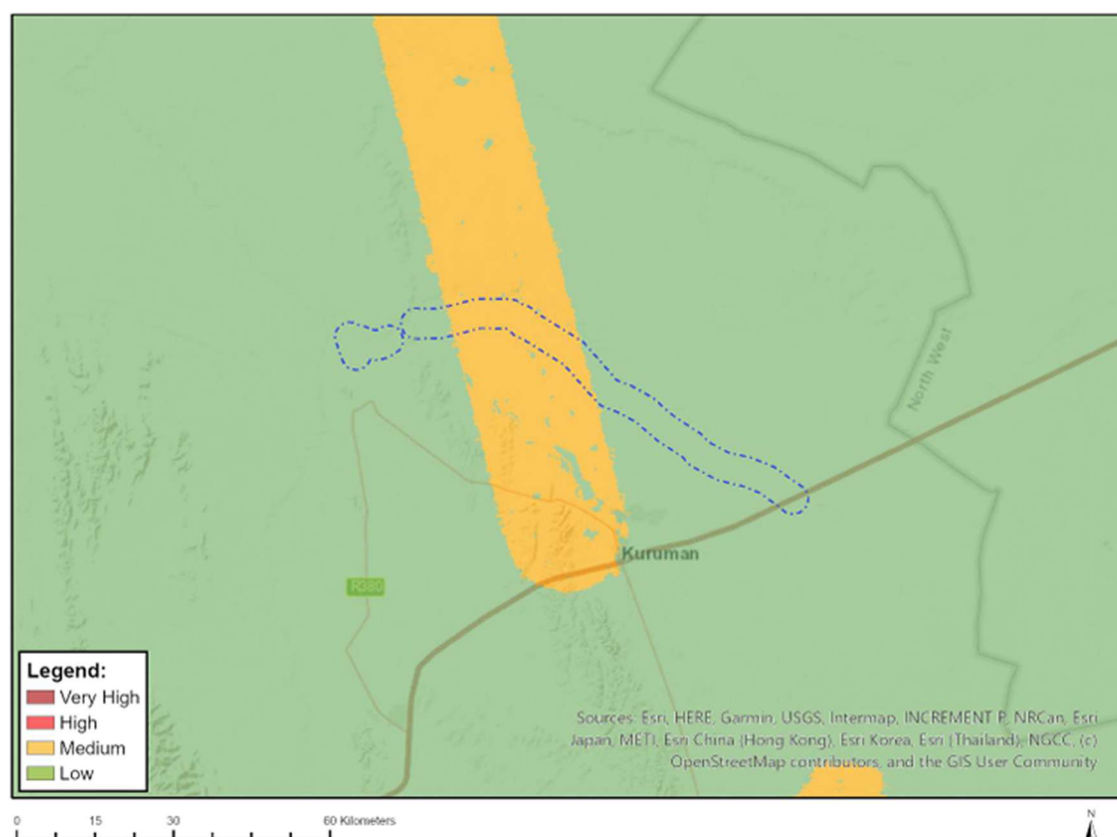


Figure 9: Image from Screening Tool identifying Plant Species theme sensitivity for the property.

Table 6: Sensitivity features of the Plant Species sensitivity theme

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	<i>Dicoma kurumanni</i>
Medium	Sensitive species 149

During a terrestrial ecological assessment for the proposed upgrade of the D3342, pertinent observable vegetation was identified for 20m on either side of the road for the 100km stretch of road. During this process four (4) provincially protected species and five (5) specially protected species were identified.

During the terrestrial assessment the area was divided into four (4) different vegetation units aligning with vegetation types or ecotones of the vegetation types in which they are found. In assessment of these vegetation unit's (VU's) unit sensitivity by assessment of:

- 🌿 Conservation importance
- 🌿 Functional Integrity
- 🌿 Biodiversity Importance, and
- 🌿 Resilience Category

It was determined that they all have a ‘**medium**’ unit sensitivity.

However, it should be noted that:

- 🌿 no fatal flaws were identified during the study
- 🌿 the 20 m on each side of the road's central line is likely going to be in excess of what is actually cleared in most places.
- 🌿 All of the noted concerned impacts namely:
 - Habitat loss

- Loss of CBA and ESAs
- Loss of indigenous floral and faunal diversity
- Loss of floral and faunal species of conservation concern

were noted to have either a low or very low pre-mitigation rating and a very low post mitigation rating.

Thus, given the vegetation unit sensitivities of **'medium'** across all of the vegetation units as well as the presence of protected plant species observed in the development area it is concurred that the area (at least without mitigations) is accurately described as **'medium'** with regards to plant species sensitivity. However, it should be noted that if mitigations are indeed implemented that there would be a **'very low'** associated risk associated with the theme of 'plant species'.



Photo 1: The thoroughly compacted and disturbed road surface typical of the proposed development surface area at photo location 1.



Photo 2: The thoroughly compacted and disturbed road surface typical of the proposed development surface area at photo location 2.



Photo 3: The thoroughly compacted and disturbed road surface typical of the proposed development surface area at photo location 3.



Photo 4: A thorough walk-through by a botanist has been recommended as a mitigation in the terrestrial ecological assessment which will determine the need for any removal or relocation permits for protected flora.



Photo 5: The thoroughly compacted and disturbed road surface typical of the proposed development surface area at photo location 5.



Photo 6: The thoroughly compacted and disturbed road surface typical of the proposed development surface area at photo location 6.

2.9. Terrestrial Biodiversity (Very High Sensitivity)

The screening tool identified this as being “**Very High**” (Figure 9), on account of the current road which is proposed to be upgraded is noted to traverse a CBA 1 and 2 as well as ESAs.

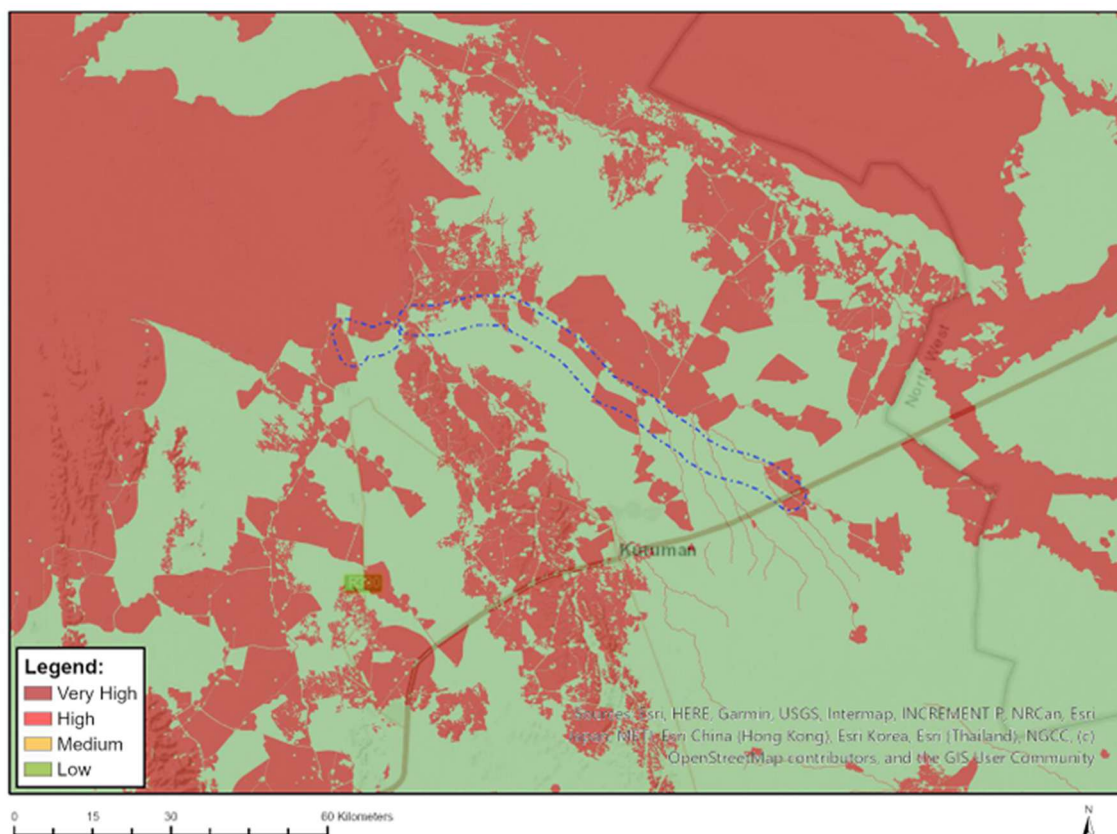


Figure 10: Image from Screening Tool identifying Terrestrial Biodiversity theme sensitivity for the property.

Table 7: Terrestrial Biodiversity theme Sensitivity Features

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	CBA 1
Very High	CBA 2
Very High	ESA

The ecological support areas and critical biodiversity area (CBA 2) are all noted to be associated with aquatic systems (ESAs with Rivers and CBA 2 with pans). Using the Northern Cape Biodiversity Spatial Plan data, it was apparent that while the current road proposed to be upgraded does indeed traverse numerous ESAs and one CBA 2, it does not traverse any CBA 1's.

It was noted in the Terrestrial Ecology Assessment Report that for an area to constitute a CBA it must remain in a largely natural ecological condition while ESAs are required to be at least in a semi-ecological condition.

It is acknowledged that, given the association of the ESAs with river systems that downstream impacts are indeed conceivably possible. It should, however, be noted that the development entails the upgrading of an already existing road with all the disturbance anticipated to be limited to the historically disturbed servitude area. This would entail minimal loss or impact on CBAs or ESAs. Furthermore, detrimental impacts on the natural hydrology of the water courses in the area is currently being brought about by the reported insufficiency of the culverts to accommodate the river flow. The proposed upgrading entailing the upgrading of stormwater infrastructure including culverts, should, if abiding by all of the required mitigations outlined in both the Wetland Assessment and the Terrestrial Ecological Assessment, improve on the status quo of the associated watercourses and by implication their surrounding habitat which make up the noted Ecological Support Areas (A complete list of current culverts and the proposed dimensions of new culverts are attached as appendix 13 in the application).

In taking into consideration that:

-  The Riparian Index of Habitat Integrity reflect as Category C: Moderately Modified.
-  The WET-Health Assessment conducted on the floodplain wetland system associated with the Manyeding concurs with the IHI reflecting a present ecological state (PES) of category C: Moderately Modified
-  The Ecological Importance and Sensitivity (EI&S) Rating is High.
-  That the status quo entails that the current insufficiency of the culverts is in part at fault for the altered hydrological operation of the watercourses crossed by the existing road.
-  The absence of any noted fatal flaws as well as the mitigations offered to facilitate minimising damage caused to the biodiversity (from both the Terrestrial Ecological Assessment and the Wetland Assessment).

It is concluded that while there is a non-negligible risk associated with the proposed development, that would impact disproportionately the river systems crossed by the development and its associated terrestrial riparian habitat, the risks are reduced by the disturbed state of the current area and that the proposed upgrading might in some respects improve the accommodation of the natural river flow at culverts. Thus, it is argued that a risk score of **'high'** is a more indicative risk rating of the risk posed by the proposed upgrading of the D3342 to the area's terrestrial biodiversity. However, that there are no fatal flaws noted in the proposed development, and that it should be able to continue provided that the mitigation measures outlined in the specialist reports (Appendix D of the BAR) and the EMPr (Appendix G of the BAR) are adhered to.

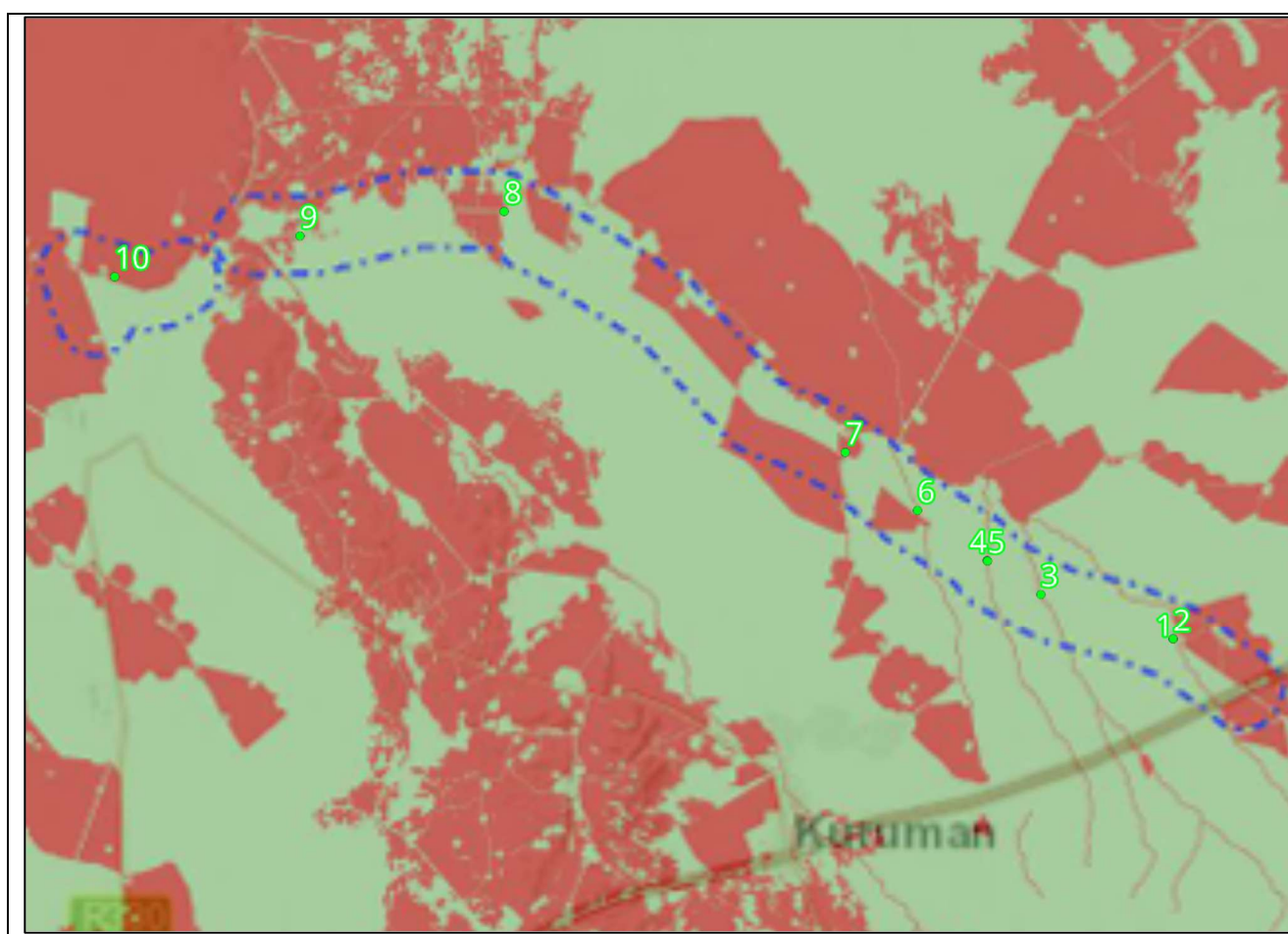




Photo 1: Anthropogenic land clearance with associated stockpiles accompanied by gravel access roads in an ephemeral watercourse.



Photo 2: Access road leading to the stockpiles soil seen in photo 1.



Photo 3: Gravel road adjacent to ephemeral watercourse which is crossed by the proposed development.



Photo 4: Dry ephemeral watercourse adjacent to the current gravel road proposed to be upgraded downstream of where the watercourse is crossed by the proposed development.



Photo 5: Indicators of overgrazing (cattle) and anthropogenic disturbance (powerlines) in the dry ephemeral watercourse.



Photo 6: Dry ephemeral watercourse adjacent to the current gravel road proposed to be upgraded downstream of where the watercourse is crossed by the proposed development.

	
Photo 7: Dry ephemeral watercourse adjacent to the current gravel road proposed to be upgraded downstream of where the watercourse is crossed by the proposed development.	Photo 8: Overview of the CBA 1 associated with the 500m buffer around the pans observed below the horizon.
	
Photo 9: Overview of the ESA noted at 9.	Photo 10: The Kuruman River running adjacent to the proposed development (the location of which being the current gravel road observed).

3. Specialist Assessments

It is important to note that specialist involvement is needed when the environment could be **significantly affected** by the proposed activity, where that environment is **valued by, or important to society** and/or where there is **insufficient information** to determine whether impacts would be significant.

The scope of specialists' contribution (if required) depends on the **nature of the project**, the environmental context of the proposed road to be upgraded from near Washinton to near Hotazel, and the amount of available information (SANBI datasets, input from aquatic specialists, Screening Tool), and does not always entail detailed studies or assessment of impacts (*Source: Guideline for the review of specialist input in EIA processes, 2005*).

Based on the selected classification and broad environmental sensitivities of the development footprint, the following list is a summary by the EAP on the studies identified in the Screening Tool:

The identified specialist assessments are as follows:

1. Agricultural Assessment

An agricultural impact assessment is **not deemed necessary** for the proposed development due to the proposed development that will occur in disturbed areas with no significant agricultural activities taking place. The section identified for the proposed development is situated in an area already disturbed by anthropogenic activities and overgrazed by livestock. Furthermore, the activity entailing the modification (upgrading) of an existing road which acts as an access road to numerous villages, it is not envisaged that there would be infringement onto land likely to be used for agricultural purposes in the future. Therefore, the necessity for an agricultural impact assessment or compliance statement

is disputed.

2. Archaeological and Cultural Heritage Impact Assessment

A Heritage Impact Assessment (HIA) was conducted by Dr Rossouw on account of the National Heritage Resources Act (NHRA) 25 of 1999, which requires a heritage specialist study for: “(a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length* (section 38(1)).” As outlined in the HIA (Appendix D of the BAR) and section 2.4 of this sensitivity verification report, negligible impact is anticipated to artifacts or structures of archaeological importance.

3. Palaeontology Impact Assessment

The Heritage Impact Assessment discussed in point 2, additionally entails an assessment of the presence of artefacts or indicators of palaeontological sensitivity in which it was noted that any “Ghaap Group carbonate rocks, surface calcretes and geologically recent windblown sandy overburden is considered low” provided that the proposed development remained within the proposed development footprint.

4. Terrestrial Biodiversity Impact Assessment

A Terrestrial Ecology Assessment was conducted by one Mrs Emma Swanepoel (née Ferreira) and Mr Ricus Nel. In it, consideration of the sensitivity to disturbance of the vegetation units identified on site was given. The risks associated with:

- Habitat loss
- Loss of CBA and ESAs
- Loss of indigenous floral and faunal diversity
- Loss of floral and faunal species of conservation concern,

were considered and ascribed pre and post-mitigation risk scores.

It was identified that in spite of the ‘medium’ vegetation unit sensitivity ascribed across all vegetation units using the Species Environmental Assessment Guidelines (SANBI, 2020), that there was an anticipated ‘very low to low’ anticipated impact ascribed to the mentioned risks associated with construction even without mitigation. This was largely on account of the proposed development entailing the modification of an already existing road rather than the development of a new road, thus entailing (comparatively) minimal vegetation clearance. The already ‘very low to low’ anticipated impact was further reduced to ‘very low’ with mitigations implemented.

5. Aquatic Biodiversity Impact Assessment

A Wetland Assessment was conducted in which numerous watercourses were inspected. The watercourse which were identified as being likely affected by construction activities entailed the following:

-  The Kuruman River is the main river system with all others draining into it, and which will be crossed by the road upgrade.
-  The Manyeding River is the second largest system which is also being fed by an artesian fountain and containing perennial flow.
-  Several large, but unnamed tributaries will also be crossed by the proposed road.
-  Several smaller drainage lines will also be affected by the road upgrade.
-  A few small depression wetlands occur in close proximity to the road and was also considered in the Wetland Assessment Report.

It was found that the Kuruman River System had an Instream and Riparian Index of Habitat integrity of Category C: Moderately Modified, and the Manyeding River had a Present Ecological State of C: Moderately Modified on account of numerous impacts such as overgrazing, erosion, higher sediment inputs, existing roads acting as barriers to the natural flow regime due to inadequate culverts, In spite of this it was identified that the Ecological Importance and Sensitivity of the affected watercourses was still high, sensitive to flow and habitat modifications. No fatal flaws were identified with the proposed upgrading of the D3342. Several mitigation measures were recommended.

6. Geotechnical Assessment

A geotechnical investigation was conducted by one Mr Stephen Potgieter in December 2025. Various potential sources were assessed for useable source material by a weighted system which assessed variables such as material quality, available volume, haul distance, ease of winning, land access, environmental constraints, geological variability, and hazard potential. The provisional findings have been made available to consulting engineers associated with this proposed development. The necessary scoping and EIA processes will be followed and the required licences and permits applied for at the appropriate government departments once the finalised list of viable material sources have been determined.

7. Socio-Economic Assessment

The current context of the road entails a state of disrepair which makes for difficult navigation, typically bringing the road users down to 40km/h. Together with the sparse population, and reduced navigability of the road, the traffic volume is typically low. Given the low traffic volume, it is not anticipated that the development should have a significant impact on reducing the accessibility to the area and is envisioned to significantly improve accessibility once the road has been completed. Job creation is also anticipated during the construction phase. As result of the net benefit positive impact and no discernible detrimental impact, a socio-economic assessment is not deemed necessary.

8. Plant Species Assessment

An assessment of the prevalent botany was conducted during the Terrestrial Ecological Assessment the findings of which are discussed under point 4. It may further be noted that, per the findings of the Terrestrial Ecological Assessment as implemented into the EMPr (Appendix G of the BAR) that the anticipated impact on the loss of protected plants species will be 'very low'. A site walkthrough has, however, been recommended and implemented into the EMPr (Appendix G of the BAR). This be performed before any development takes place. Protected species will be avoided as far as possible. The appropriate permits will be applied for at the appropriate environmental authority (DAERL) if deemed necessary.

9. Animal Species Assessment

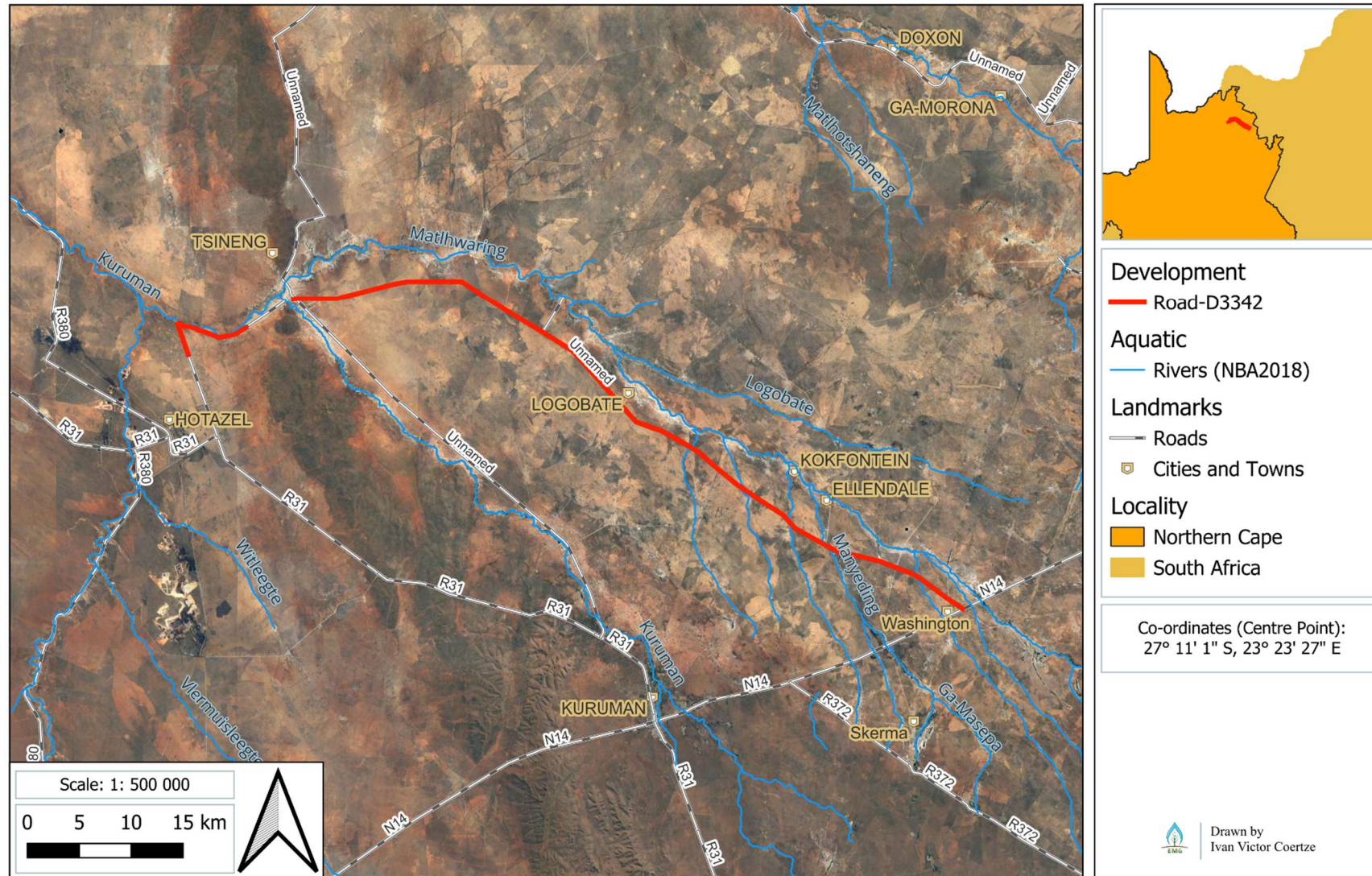
Given that the type of proposed development entails the upgrading of an already existing road it is not anticipated that the habitats of the noted animals of conservation concern will be significantly detrimentally impacted. Furthermore, the current over-grazing practises and anthropogenic alterations to the environment renders the presence of the birds of conservation concern in the proposed development footprint unlikely. Therefore, the necessity for an animal species assessment or compliance statement is disputed.

10. Traffic Assessment

An analysis of traffic was conducted as part of the inception stages of the development. It was found that the first stretch from Washington to the Kuruman to Maphiniki Intersection had a Annual Average Daily Equivalent Vehicle Units (AAD EVU) of 35 during high traffic periods. The remaining stretch of the road was found to have an AAD EVU of between 728 and 936. The proposed upgrading was planned accordingly to accommodate not only current traffic volume but also future predicted traffic volume.

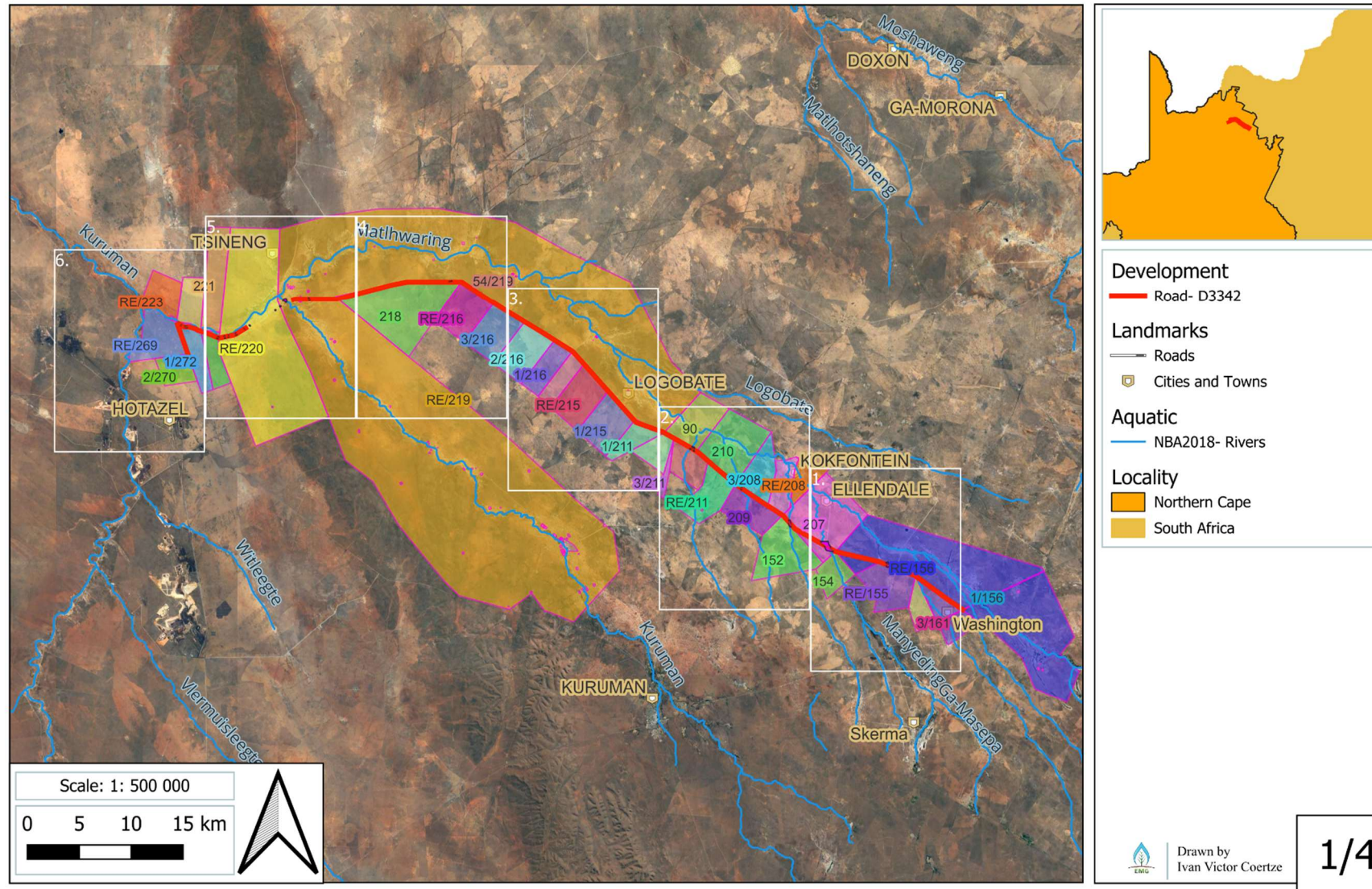
Appendix A: Locality Maps

Locality Map of the D3342 Proposed to be Upgraded

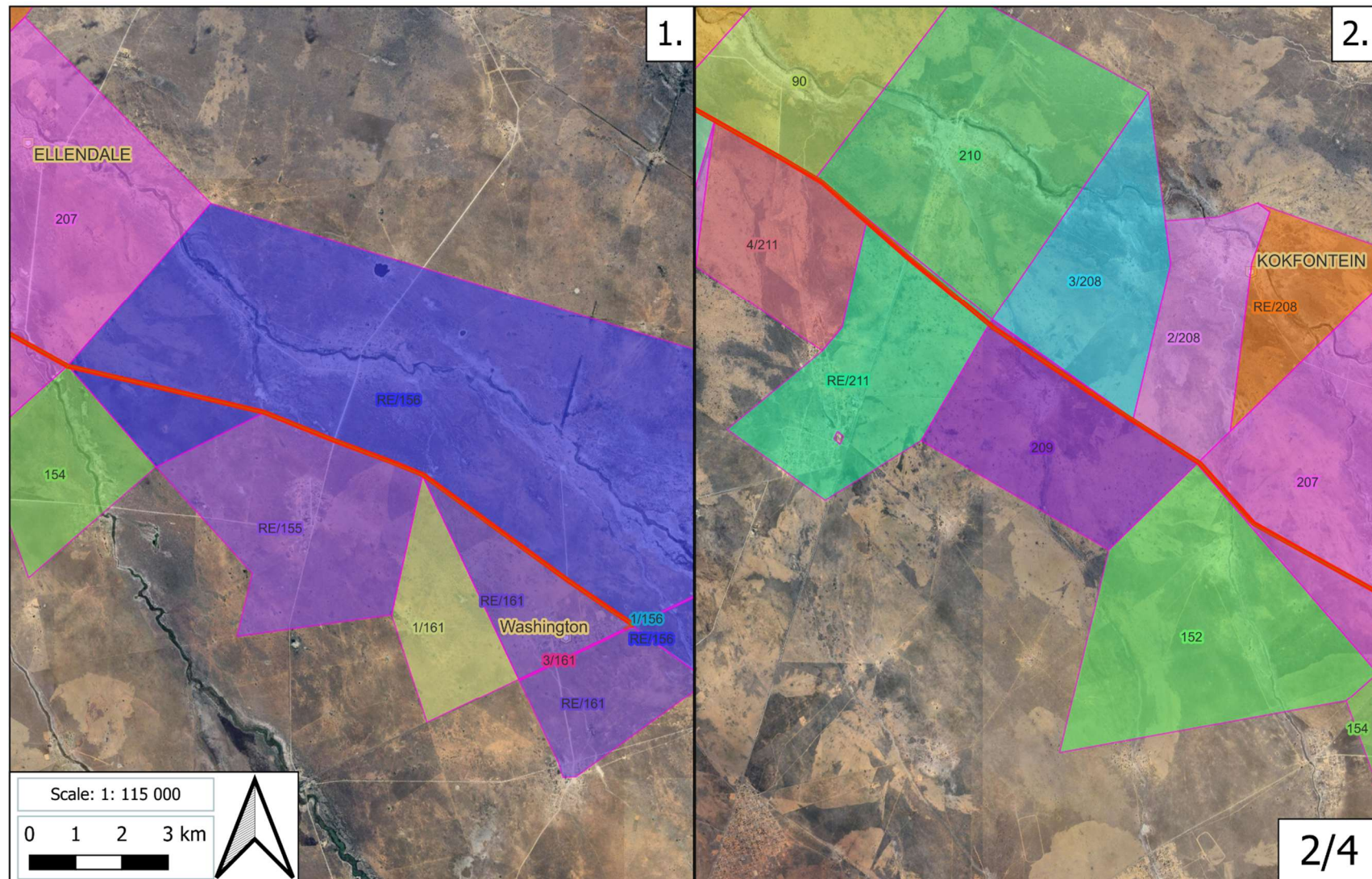


Appendix B: Layout Maps

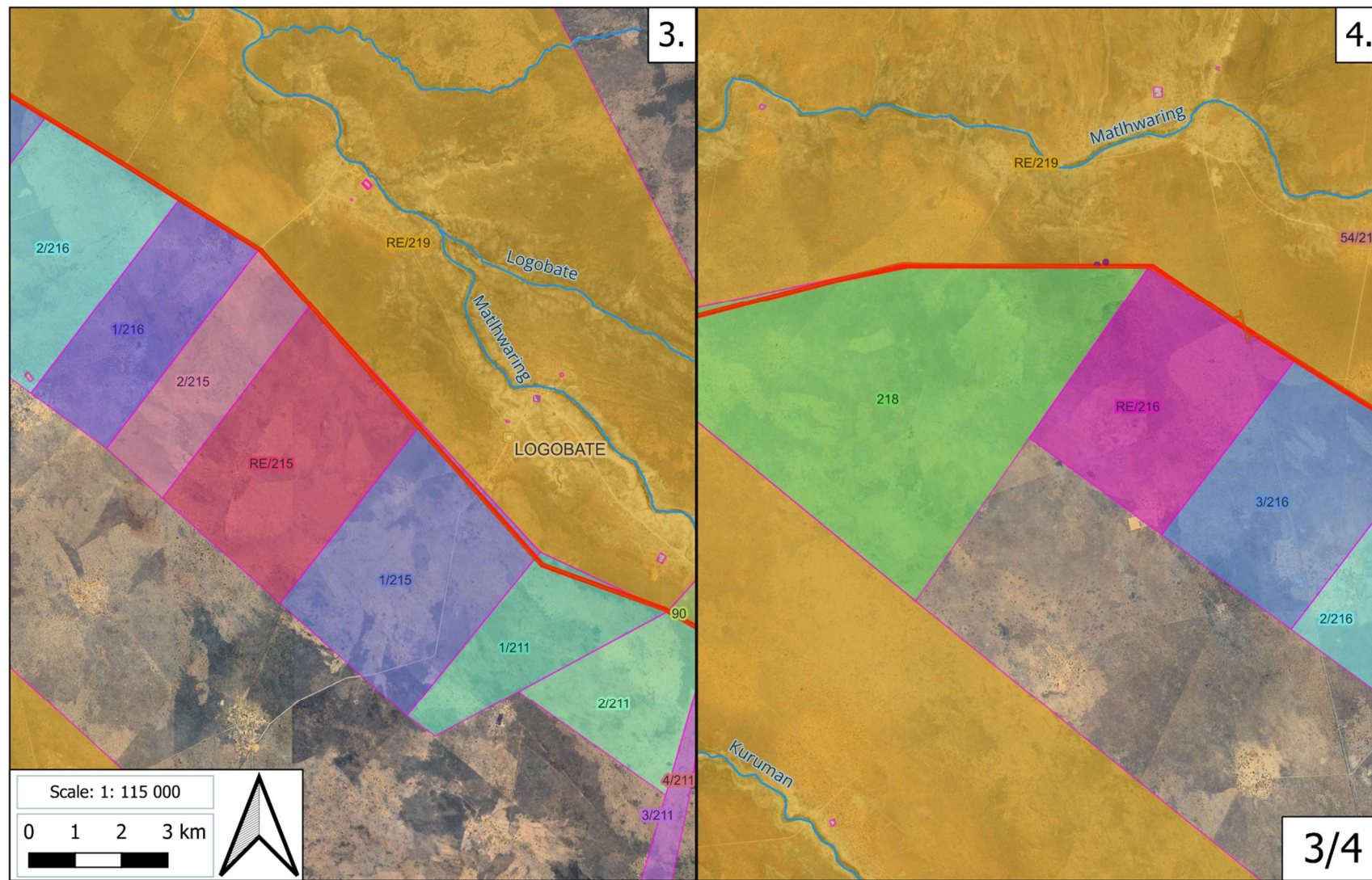
Layout Map of the D3342 Proposed to be Upgraded



Layout Map of the D3342 Proposed to be Upgraded



Layout Map of the D3342 Proposed to be Upgraded



Layout Map of the D3342 Proposed to be Upgraded

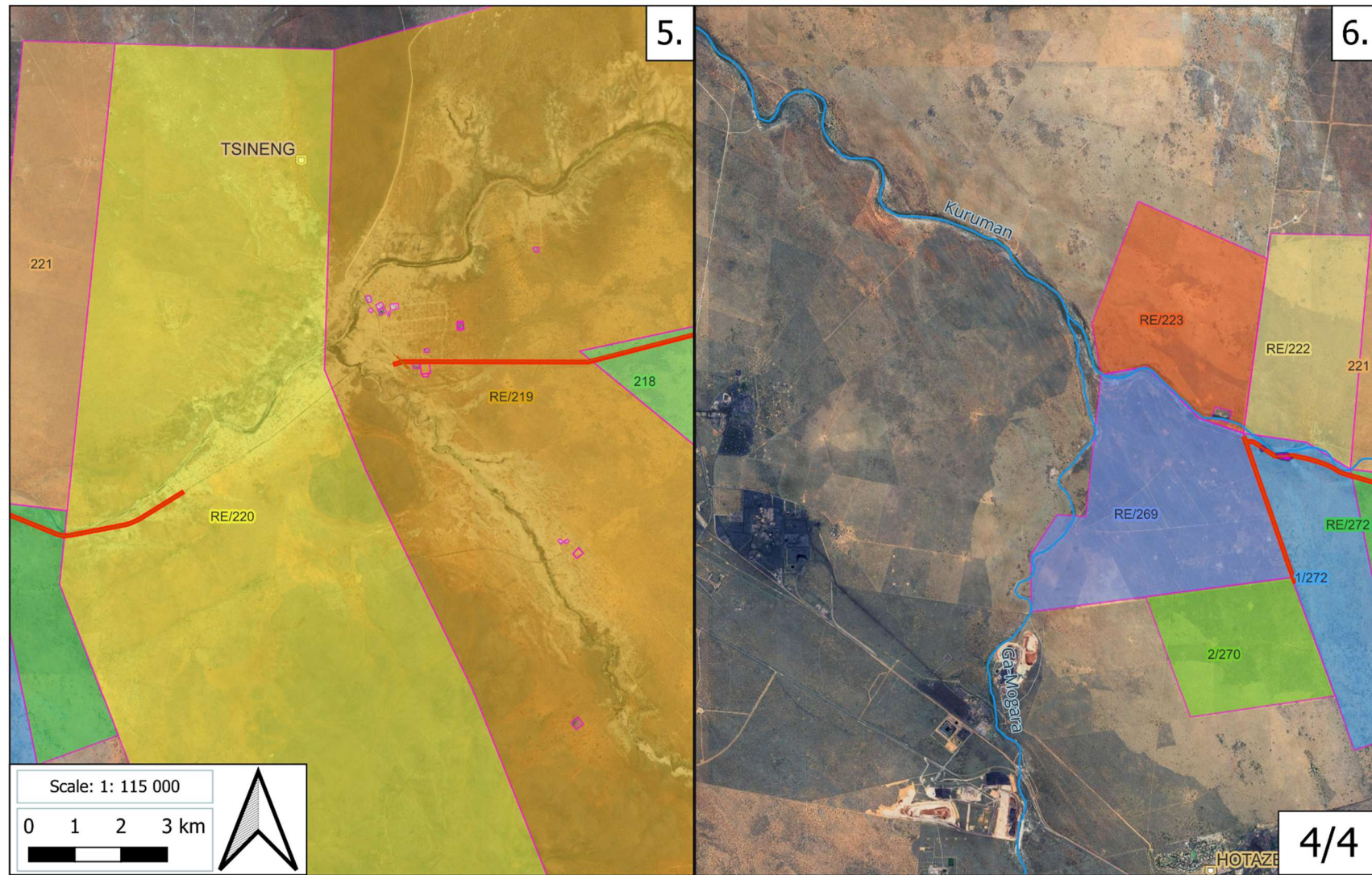
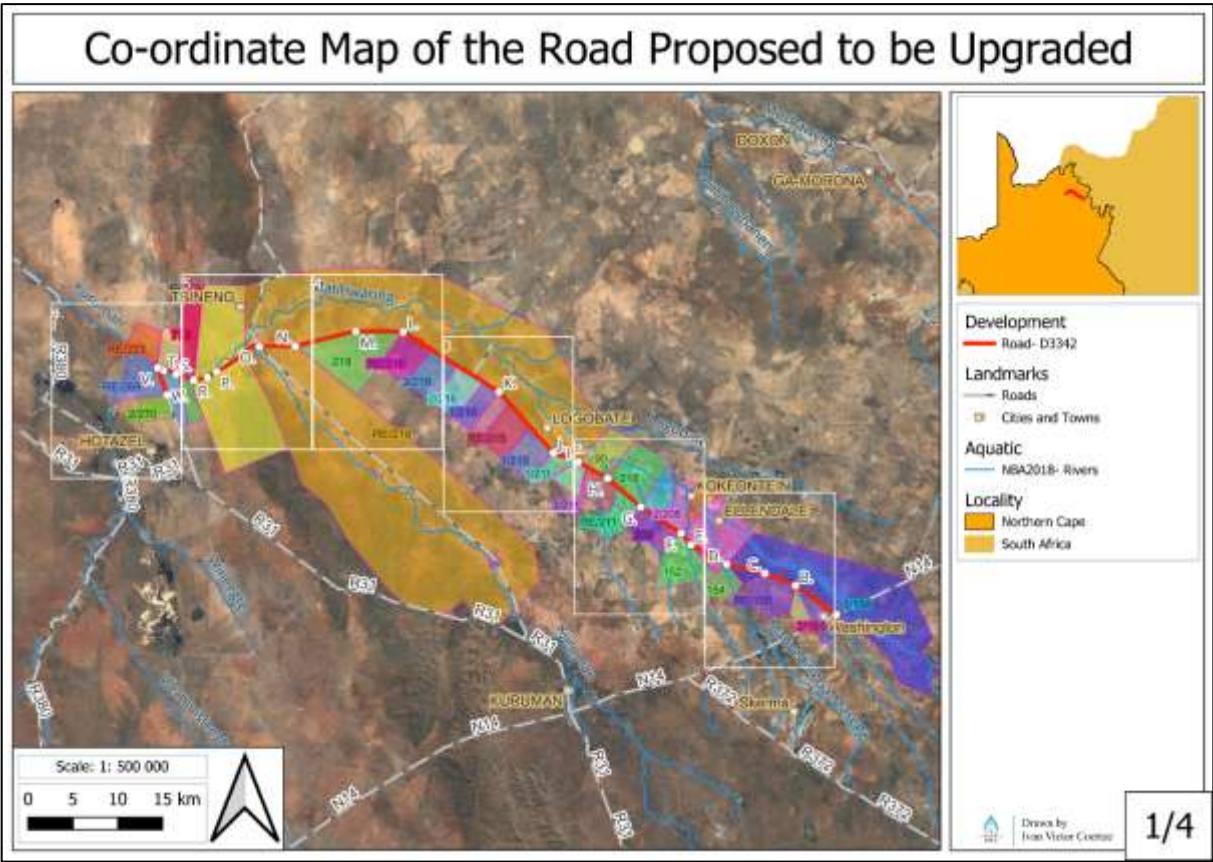


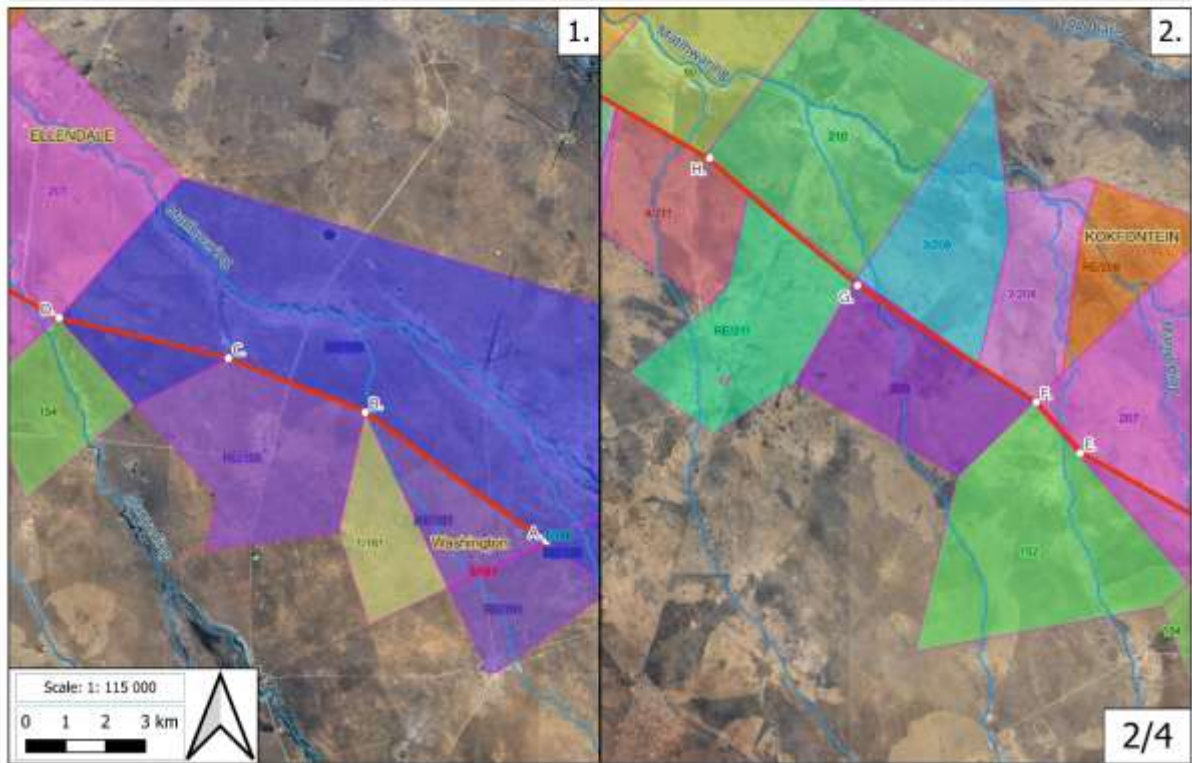
Table 1: List of SGIDs associated with the proposed properties

	Farm Name	No.	Portion	SG Number
1	TSAEENGWE	161	1/161	C04100000000016100001
2	KOOKFONTEIN	208	3/208	C04100000000020800003
3	KOOKFONTEIN	208	2/208	C04100000000020800002
4	KOOKFONTEIN	208	RE/208	C04100000000020800000
5	ELLEDALE	207	0	C04100000000020700000
6	CHURCHILL	211	4/211	C04100000000021100004
7	CHURCHILL	211	3/211	C04100000000021100003
8	CHURCHILL	211	2/211	C04100000000021100002
9	CHURCHILL	211	1/211	C04100000000021100001
10	GARA DEA CHOMO	209	0	C04100000000020900000
11	RHODES	269	RE/269	C04100000000026900000
12	EAST	270	2/270	C04100000000027000002
13	GASESA	272	1/272	C04100000000027200001
14	MATLIPANI	222	RE/222	C04100000000022200000
15	ARDATH	218	0	C04100000000021800000
16	BOWDEN	223	RE/223	C04100000000022300000
17	PLAAS	216	2/216	C04100000000021600002
18	CHURCHILL	211	RE/211	C04100000000021100000
19	EWBANK	215	2/215	C04100000000021500002
20	PLAAS (Wingate)	216	3/216	C04100000000021600003
21	PLAAS (Wingate)	216	1/216	C04100000000021600001
22	PLAAS (Wingate)	216	RE/216	C04100000000021600000
23	EWBANK	215	1/215	C04100000000021500001
24	EWBANK	215	RE/215	C04100000000021500000
25	COTTENEND	90	0	C0410000000009000000
26	PLAAS (Makethle)	155	RE/155	C04100000000015500000
27	MOTONTONYANE	154		C04100000000015400000
28	EVERTON	152		C04100000000015200000
29	BOTHETHELESA RESERVE	156	1/156	C04100000000015600001
30	BOTHETHELESA RESERVE	156	RE/156	C04100000000015600000
31	TSAEENGWE	161	RE/161	C04100000000016100000
32	TSAEENGWE	161	3/161	C04100000000016100003
33	GASESA	272	RE/272	C04100000000027200000
34	EXTENSION OF LOWER KURUMAN NATIVE RESERVE	220	RE/220	C04100000000022000000
35	CARDINGTON	210	0	C04100000000021000000
36	THE FARM	219	RE/219	C04100000000021900000
37	TITANIC	221	0	C04100000000022100000

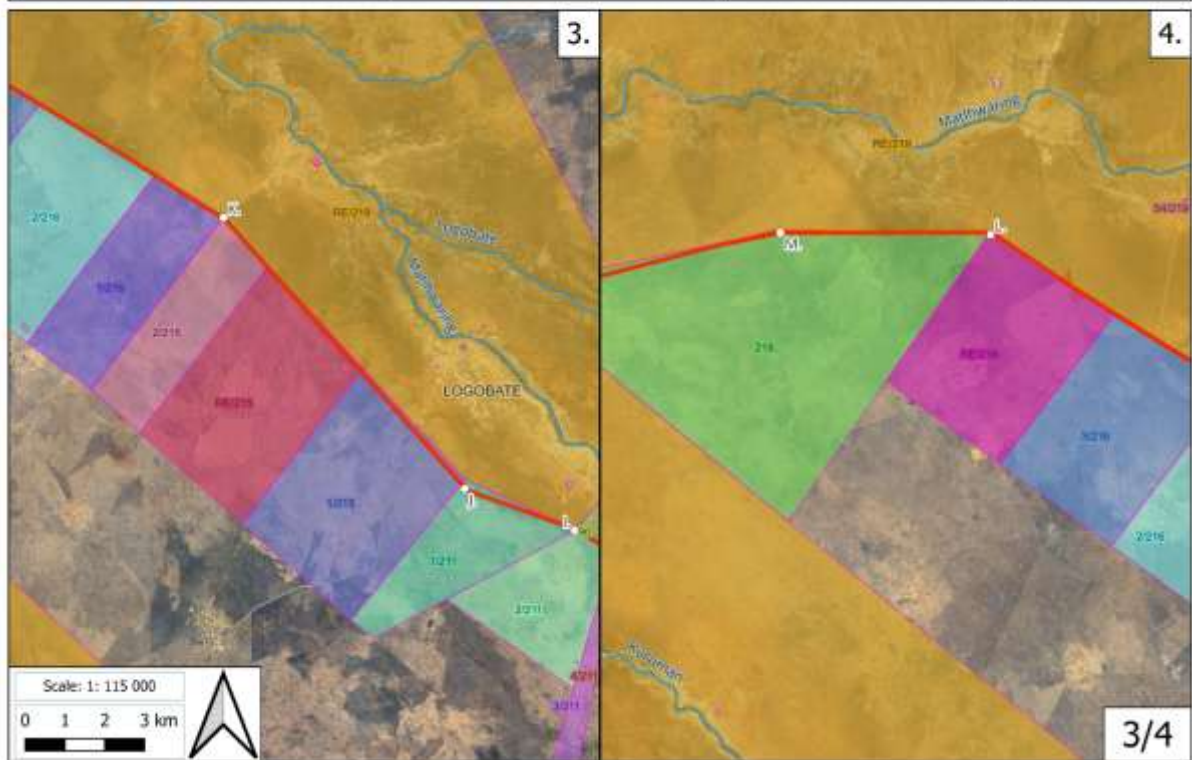
Figure 1: Co-ordinate Maps (1-4) Showing Co-ordinates of Turning Points and Properties Traversed.



Co-ordinates Map of the Road Proposed to be Upgraded



Co-ordinates Map of the Road Proposed to be Upgraded



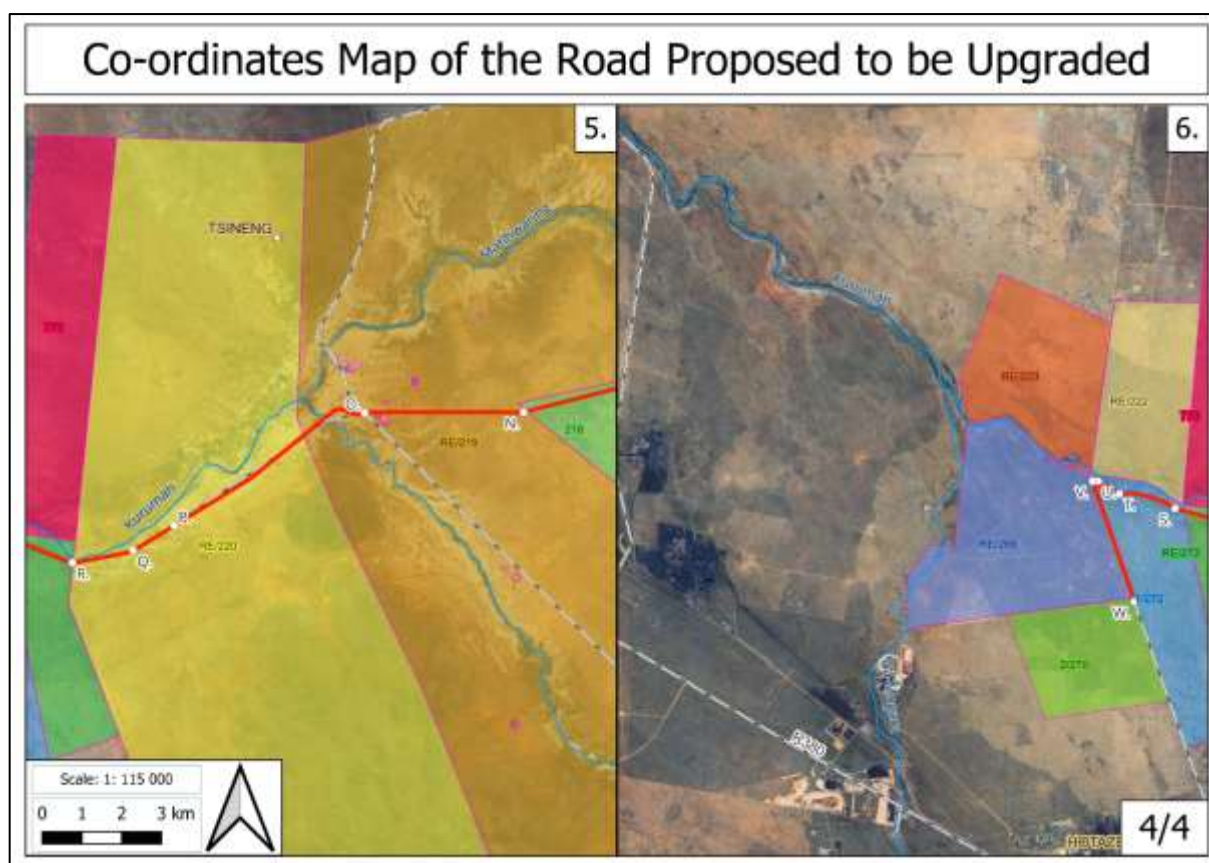


Table 2: List of co-ordinates of the turning points of the road proposed to be upgraded.

Symbol	Co-ordinate
A.	27° 21' 57" S, 23° 43' 58" E
B.	27° 20' 13" S, 23° 41' 13" E
C.	27° 19' 29" S, 23° 39' 8" E
D.	27° 18' 56" S, 23° 36' 34" E
E.	27° 17' 46" S, 23° 34' 10" E
F.	27° 17' 5" S, 23° 33' 29" E
G.	27° 15' 30" S, 23° 30' 47" E
H.	27° 13' 47" S, 23° 28' 32" E
I.	27° 12' 48" S, 23° 26' 33" E
J.	27° 12' 14" S, 23° 24' 52" E
K.	27° 8' 34" S, 23° 21' 12" E
L.	27° 4' 59" S, 23° 14' 44" E
M.	27° 4' 57" S, 23° 11' 32" E
N.	27° 5' 51" S, 23° 7' 26" E
O.	27° 5' 51" S, 23° 5' 1" E
P.	27° 7' 23" S, 23° 2' 7" E
Q.	27° 7' 43" S, 23° 1' 30" E
R.	27° 7' 53" S, 23° 0' 35" E
S.	27° 7' 31" S, 22° 59' 24" E

T.	27° 7' 19" S, 22° 58' 33" E
U.	27° 7' 9" S, 22° 58' 13" E
V.	27° 7' 9" S, 22° 58' 8" E
W.	27° 8' 46" S, 22° 58' 46" E