

DRAFT BASIC ASSESSMENT REPORT

FOR THE

PROPOSED NIGEL ACCESS ROAD, LOCATED ON THE
REMAINING EXTENT OF FARM 533 IMVUBUKAZI, WARD 19,
UMZIMKHULU LOCAL MUNICIPALITY, HARRY GWALA
DISTRICT MUNICIPALITY, KWAZULU-NATAL.

EDTEA Reference: TBC



April 2021

Applicant:	Environmental Consultant:
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GREENBELT
PROJECTS

TITLE:

PROPOSED NIGEL ACCESS ROAD, LOCATED ON THE REMAINING EXTENT OF FARM 533 IMVUBUKAZI, WARD 19, UMZIMKHULU LOCAL MUNICIPALITY, HARRY GWALA DISTRICT MUNICIPALITY, KWAZULU-NATAL.

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By Authored and Approved by	Principal Environmental Scientist	Steven Whitaker		21 April 2021



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1 Introduction

Greenbelt Projects (Pty) Ltd has been commissioned to undertake an environmental impact assessment for the proposed Nigel Access Road. The proposed development will require an Application for Environmental Authorisation in the form of a Basic Assessment (BA), which includes a Basic Assessment Report (BAR) and a Comments and Responses Report (CRR) Report which will be submitted to the Department of Economic Development Tourism and Environmental Affairs (DEDTEA) for Environmental Authorisation (EA).

This Basic Assessment process is being undertaken in accordance with Sections 19 – 20 in terms part 2 of chapter 4 of the National Environmental Management Act (Act No 107 of 1998), as amended, and the Environmental Impact Assessment Regulations of December 2014, as amended 2017. These Regulations identify various activities which may have a substantial detrimental effect on the environment. In addition, the Regulations list procedures for assessing potential associated environmental impacts. Public participation and the scoping of issues form part of these procedures, the results of which are captured in this, the Basic Assessment Report.

1.1 Details of the EAP

Greenbelt Projects (Pty) Ltd was established in 2021 and has a record of undertaking independent environmental processes for a range of clients in compliance with the requirements of the various competent authorities. In this respect we reiterate the declaration of independence made in the application form for this project assented to and lodged with the competent authority.

Contact Details	Environmental Assessment Practitioner (EAP)
Business name of EAP:	Greenbelt Projects (Pty) Ltd
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Postal code:	4320
Telephone:	071 140 8350 / 087 701 6514
E-mail:	steven@greenbeltprojects.co.za
Cell:	071 140 8350

Names and details of the expertise of each representative of the EAP involved in the preparation of this report are provided below. Curricula vitae will be provided on request.

Name of representative of the EAP	Educational qualifications	Professional affiliations	Environmental assessment experience (yrs)
Steven Whitaker	B.Sc. (Hons)	EAPASA (2019/1492), IAIA (2285)	14 years

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix C
Ryan Edwards	MSc. Pr.Sci.Nat	Terrestrial and Aquatic Ecology	Appendix C	Wetland and Riparian/Aquatic Assessment Report Nigel Access Road
Frans Prins	MA (Archaeology)	Heritage and Cultural	Appendix C	Heritage impact Assessment for the Nigel Access Road
Prof Marion Bamford	PhD	Palaeobotany	Appendix C	Palaeontological Impact Assessment for the Nigel Access Road



1.2 Location of the Activity

The project is situated in Ward 19 of the Umzimkhulu Local Municipality, Harry Gwala District Municipality. The site is located approximately, 13km south west of Umzimkhulu town. The site is located at co-ordinates 30°15'12.70"S 29°49'52.54"E. The proposed project is located on the Remaining extent of Farm 533 Imvubukazi SG 21 Digit Code: N0ES00000000053300000.

Table 1: Project Proponent and Site Details

Applicant	
Trading name	Umzimkhulu Local Municipality
Contact person	Zweliphansi Stanley Sikhosana
Postal address	Private bag 53, Umzimkhulu
Telephone	(039) – 259 5000
E-mail	zssikhosana@umzimkhululm.gov.za
Property Details	
Property Details	Remaining extent of Farm 533 Imvubukazi
Property Owner	SA Government
SG 21 Code	N0ES00000000053300000
Land Use / Zoning	Vacant / Unspecified
Title Deed	DU1000/800
Coordinates	30°15'12.70"S 29°49'52.54"E
Local Municipality	Umzimkhulu Local Municipality
District Municipality	Harry Gwala District Municipality
Province	KwaZulu-Natal
Neighbouring Landuses	
North	Rural area
East	Rural area
West	Rural area
South	Rural area
Water Catchment Management Area	T52C Quaternary catchment. uMvoti to uMzimkhulu WMA 11
Quaternary Drainage Region	T52C Quaternary catchment

1.3 Development Proposal

The Umzimkhulu Municipality have proposed the construction of a new 3.4km gravel road within the village of Nigel. The new proposed road includes a watercourse crossing which traverses the uMvubukazi River which is a perennial stream, draining to the east towards the Umzkhulu collector River. The watercourse crossing will provide formal access and an efficient link between the villages of eMvubukazi and Mountain Home. The project also aims to allow local residents to have improved, formalised vehicular access to their homes, schools, shops and the extended road network, particularly during high rainfall periods when access is limited.

The proposed new road section traverses the perennial uMvubukazi river at 30°16'11.13"S 29°50'16.93"E, where a new watercourse crossing portal culvert causeway is proposed. The culvert causeway will comprise 3 rows of 1500mm x 2100mm culverts to cater for peak flow periods. Ingress and egress points at the wingwalls will be shaped to conform with the new gravel road elevation. The watercourse crossing will be founded on a concrete base to support portal culverts and road pavement structure. The culvert causeway structure is proposed at 5180mm wide by 7803mm long. Wing walls and base foundation will be 3000mm and the ingress and egress points and extend the total length to 13 803mm.



The proposed road construction will be constructed and complete with formal stormwater infrastructure, cut-off drains and a watercourse crossing structure. The proposed road width is expected to be a 4m wide cambered gravel access road, with 1m servitudes on either side, having a total width of 6m.

The construction phase will involve the establishment of a formal site camp. Chemical serviceable toilets will be utilised.



Plate 1. Image looking south east showing an overview of the existing informal track proposed for upgrade to a gravel road.



Plate 2. Image looking north overlooking the Proposed road alignment at the uMvubukazi River watercourse crossing towards the mid-point of the road construction.

1.4 Description of the Scope of the Proposed Activity

The proposed development triggers identified activities in terms of Listing Notice 1, Government Notice No. 327, as amended 2017, and Listing Notice 3 Government Notice No. 324, as amended 2017, of the National Environmental Management Act, 1998 (No. 107, 1998).



Description of Listed Activity	Applicability
<p>Listing Notice 1 No. 327, as amended, 2017 Activity 12. The development of – (iii) bridges exceeding 100 square metres in size; (xii) infrastructure or structures with a physical footprint of 100 square metres or more Where such development occurs – (a) Within a watercourse (b) In front of a development setback; or (c) If no development setback exists, with 32m of a watercourse, measured from the edge of the watercourse.</p> <p>The proposed infrastructure will exceed 100m² in size, within 32 metres of a watercourse, therefore, activity 12 is triggered.</p>	<p>The proposed new road section traverses the perennial uMvubukazi River at 30°16'11.13"S 29°50'16.93"E. The major watercourse crossing will comprise 3 rows of 1500mm x 2100mm portal culverts together with a base foundation and wing walls. Ingress and egress points at the wingwalls will be shaped to conform with the new gravel road elevation.</p> <p>The proposed road and watercourse crossing infrastructure will exceed 100m² in size, within 32 metres of a watercourse, therefore, activity 12 is triggered.</p>
<p>Listing Notice 1 No. 327, as amended, 2017 Activity 19. The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from – (i) A watercourse.</p>	<p>The proposed new road section traverses the perennial uMvubukazi River at 30°16'11.13"S 29°50'16.93"E. The major watercourse crossing will comprise 3 rows of 1500mm x 2100mm portal culverts together with a base foundation and wing walls. Ingress and egress points at the wingwalls will be shaped to conform with the new gravel road elevation.</p> <p>The construction of the proposed road and watercourse crossing structures, will require the infilling, depositing, and excavation of more than 10m³, therefor activity 19 is triggered.</p>

1.5 Approach

In order to meet the objectives of the environmental assessment study, the following activities were undertaken:

- Consultation with representatives of Umzimkhulu Local Municipality to establish the nature and extent of the proposed activity
- Identification of legislation, regulations and guidelines pertaining to the proposed activity
- A baseline desktop survey
- Site visits to the area to determine the nature of the affected environment and to identify potential issues of concern
- An identification and assessment of the physical, biological, social, economic and cultural aspects of the environment that may be affected by the proposed activity
- The identification and assessment of any feasible and reasonable alternatives
- Identification and liaison with key Interested and Affected Parties (IAP)
- Advertisement in the local press, placement of notices on site, distribution of pamphlets and Background Information Documents (BIDs); and,
- The compilation of this document the Basic Assessment Report.
- Circulation of the Draft Basic Assessment Report for comment
- Updating of the Draft Basic Assessment Report to Final to include all comments received.



2 Need and Desirability of the Proposed Development

The project aims to provide safe vehicular and pedestrian access across a perennial tributary of the uMvubukazi River within ward 19 while improving the safety and access for the local community. The perennial tributary of is currently traversed via an informal tracks with no vehicular crossing. Vehicular and pedestrian access across the perennial tributary can be challenging during times of average to high rainfall. At present, there is no formal infrastructure to cater for high rainfall periods and the crossing is in a state of dis-repair resulting in an unsafe environment for the local inhabitants, school children and livestock when crossing the river. The proposed gravel road and crossing structure will provide a formal link between villages in the surrounding area. Improved and efficient access to hospitals, emergency services, community halls and the extended road network will be established through the implementation of the Nigel Access Road.

3 Preferred Site, Activity and Technologies

As the preferred site already has an existing track road leading towards and from either side of the perennial tributary of the uMvubukazi River, it is preferable to develop this site, rather than developing at an entirely new location crossing at an alternative position, with associated clearing and access from either side of the proposed watercourse crossing. The proposed Nigel Access Rod Route is the route which the local communities utilise between villages, schools and the local road network, as such the track follows contours which are easily traversed. The current watercourse crossing consists of an informal stone crossing with rudimentary drainage that does not accommodate moderate to high rainfall periods. The proposed formal road and associated watercourse crossing will help to ensure an adequate and safe crossing area during high rainfall and flood events. Alternative methodologies may be available; however, the proposed method is deemed the most cost-effective and sustainable solution. Please see Appendix B for detailed design.



4 Alternatives

4.1 Site Alternatives

No alternative sites have been considered as the proposed Nigel Access Road is site specific so as to service the communities of ward 19 and surrounding areas. The proposed road and crossing will provide a vehicular pedestrian link between the villages in the eMvubukazi and Mountain Home area, as well as an efficient route to the extended regional transportation network.

4.2 Technological/Design Alternatives

The current informal access track and rudimentary stone crossing are not considered infrastructure but rather informal wearing of access routes and informal placement of stones within the watercourse. These are likely succumb to damage by blockage from flood debris and other accumulated waste and vegetation.

Design, layout and configuration of South African roads is standard and are ordinarily employed by developers such as the Municipality; alternatives are likely to be inferior. The proposed option is considered to be the most cost effective option in order to provide basic infrastructure services.

4.3 No-Go Alternative

Leaving the access track and watercourse crossing in its current condition is regarded as the No-Go Alternative. This alternative would have the least direct impact on the environment, as none of the construction related impacts would occur. Indirectly however, this alternative may eventually result in the loss of life during flood events. This alternative may also result in the complete erosion of the watercourse and eventual wash-away of the rock and stone crossing point. It is unlikely that the road is heavily utilised by vehicles, but the government and the municipality's responsibility to its constituents remains. The No-Go Alternative has therefore not been assessed.

4.4 Preferred Alternative

Considering the site and the technological alternatives which are available, and the feasibility of each, the preferred alternative is, therefore, the site and preferred technological alternative as proposed in the development proposal description ([Section 1.3](#)). As the only feasible option, only the preferred alternative has been assessed.

5 Public Participation Process

5.1 Objectives of the Public Participation Process

The objectives of the public participation process (PPP) are to:

- Identify and inform potential IAPs of the proposed development
- Provide them with the opportunity to register any issues or concerns regarding the proposal, and
- Identify mitigatory and management options to address issues and concerns raised, where appropriate.

5.2 Details of the PPP

In undertaking the public participation process, all known, relevant facts pertaining to the proposed project were made available to registered and identified IAPs so that they could participate in a meaningful manner. The approach included:



- Ongoing technical liaison with relevant local municipal officials and the project facilitators regarding the proposed development
- Preparing a Background Information Document, (BID), for circulation to IAPs. (Refer to Appendix D)
- Identifying potential IAPs during discussions with the project facilitators and representatives
- Giving written notice to organs of the state (municipality, DWS) having jurisdiction over the proposal
- Giving written notice to Non-Governmental Organisations (NGO), Community Based Organisations (CBO) etc. who might have an interest in the proposal
- Placing an advert in a local newspaper (Ilanga Newspaper on the 26/11/2020) calling for IAPs not previously identified to identify themselves and make an input into the process (see copy of advert in Appendix D).
- Keeping IAPs informed, keeping a register of all IAPs and allowing them the opportunity to make comment on the proposed activity (see table below of registered IAPs)
- The Draft Basic Assessment will be made available for 30 days to all identified Stakeholders and placed at the Umzimkhulu Municipal Library for comments.

The following IAPs were identified or identified themselves:



Organisation	Contact Person	Contact Details
Department of Water and Sanitation	Ms RJ Madibe	Tel: 031 336 2700 / 2765 Mngoma-Madibe Jabulile Mngoma-MadibeJ@dws.gov.za
Department of Agriculture Forestry and Fisheries (DAFF) Forestry Regulations and Support	Ms Karen Moodley	nandiphas@nda.agric.za KarenM@daff.gov.za Tel: 033 392 7739; Fax: 033 342 8783 P/Bag X 9029, Pietermaritzburg, 3200
Ezemvelo KZN Wildlife	Nerissa Pillay Jenny Longmore	Nerissa.pillay@kznwildlife.com Phindile.Langazane@kznwildlife.com Dominic.Wieners@kznwildlife.com Jenny.Longmore@kznwildlife.com PO Box 13053, Cascades, 3202
KZN Department of Transport Transportation Engineering Sub-Directorate	Michele Schmid Judy Reddy Roy Ryan	michele.schmid@Kzntransport.gov.za judy.reddy@kzntransport.gov.za Private Bag X 9043, Pietermaritzburg, 3200 Tel: 033 355 8600; Fax: 033 342 3962 Ref: T10/2/2/3922/2
Eskom	M. Nicol	Nicolm@eskom.co.za P O Box 66, New Germany, 3620 Tel: 031 710 5404 MtawaINP@eskom.co.za
Telkom SA SOC Limited Network Engineering and Build Eastern Region Wayleave Management Section	S. Mchunu	Private Bag X 54326, Durban, 4000 Tel: 033 342 1591; Fax: 033 345 6126 wayleaves2@telkom.co.za PortiaN2@openseve.co.za
Amafa	Bernadet Pawandiwa Annie van de Venter Radford	amafaddps@amafapmb.co.za bernadetp@amafapmb.co.za
Ingonyama Trust Board	Suewellan Ellis	EllisS@ingonyamatrust.org.za
Ward Councillor Ward 19	Mr Khanbula	khambulat@umzimkhulum.gov.za
Harry Gwala District Municipality	Mrs Thuthukile MaNgcobo Sithole	Water Services Department Reaserch, Planning & Design Unit Administrative Assistant Tel No.: 039 834 3939/2485 Email: ngcobot@harrygwalandm.gov.za
Ugu District Municipality	noloyiso.walingo@ugu.gov.za	Janine.Blackbeard@ugu.gov.za noloyiso.walingo@ugu.gov.za PO Box 33, Port Shepstone, 4240 Physical 28 Connor Street, Port Shepstone Tel 039 688 5700; 039 688 5794 Fax 039 682 1720 Web www.ugu.gov.za PO Box 33, Port Shepstone, 4200

5.3 Summary of the Issues Raises by IAPs

Comments received have been included in the Comments and Response Report (CRR) (Appendix D). These comments are documented individually with a response to each identified issue also provided in the CRR.

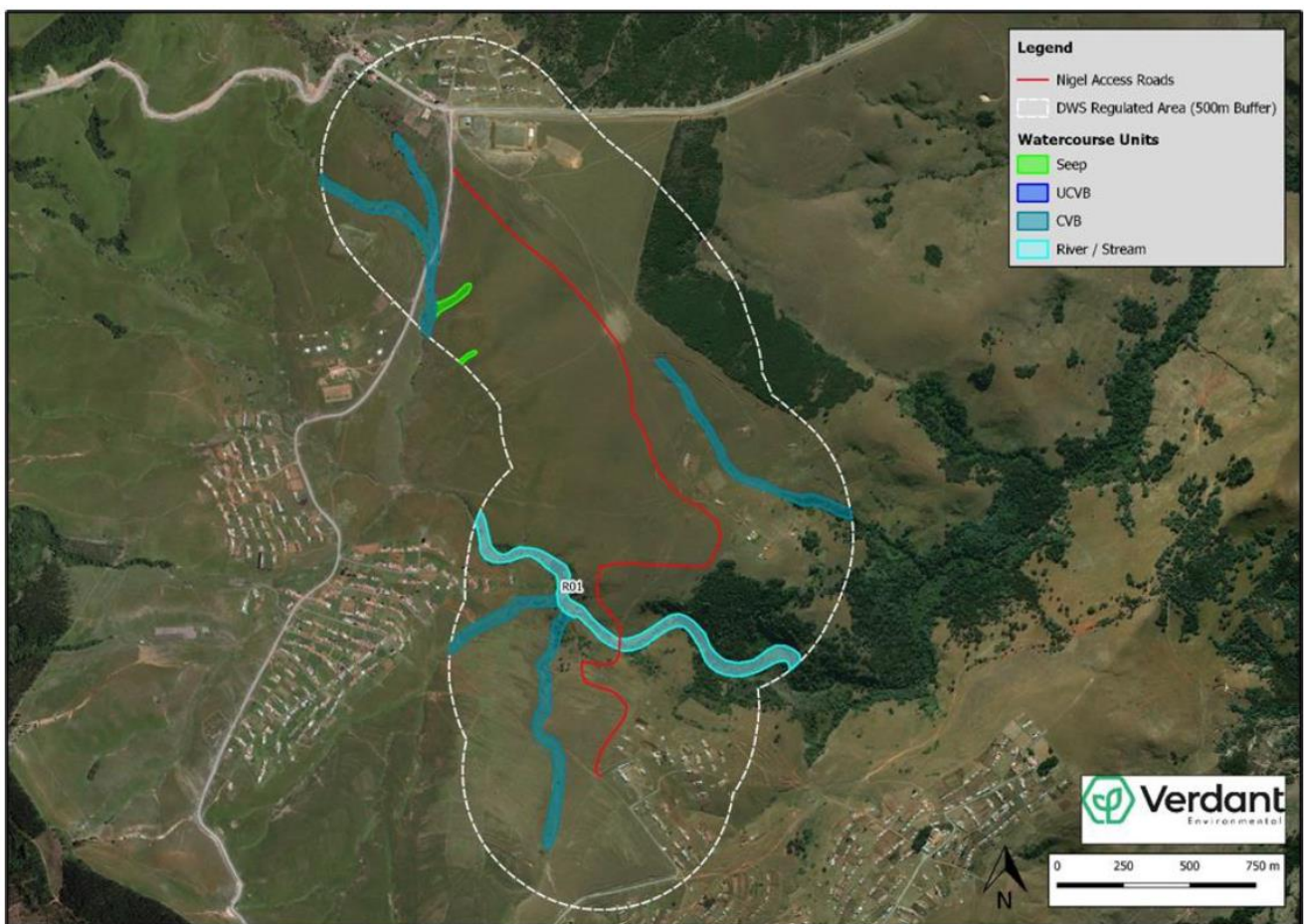


6 The Receiving Environment (All Alternatives)

6.1 Geographical and Physical Environments

6.1.1 Topography and Hydrology

The study area is undulating with a central valley incised by the uMvubukazi River. The project high point is at 1271masl near the start point and low-point of 1153 masl at the watercourse crossing, at the mid-point. The site is an incised valley with gentle to moderately steep gradients. The proposed road alignment traverses one perennial watercourses of the Umvubukazi River, and is located within the T52C quaternary catchment of the uMvoti to Umzimkhulu Water Management Area (11). The Mvubukazi River is a right-bank tributary of the uMzimkhulu River located some 12km east of the road alignment. The Wetland and Riparian Assessment undertaken by Verdant identified Seep, Un-channelled Valley Bottom, Channelled Valley Bottom, and River /Stream watercourse units within 500m metres of the proposed development.



6.1.2 Geology and Soils

Karoo supergroup mudstones dominate this area, those of the Volkstrust Formation occurring to the south and those of the Adelaide Subgroup to the north. Jurassic dolerite dykes are also present. The dominant soils are mottled and poorly drained, with a depth of 300-500mm. the clay contents of these areas usually range from 15-35%.

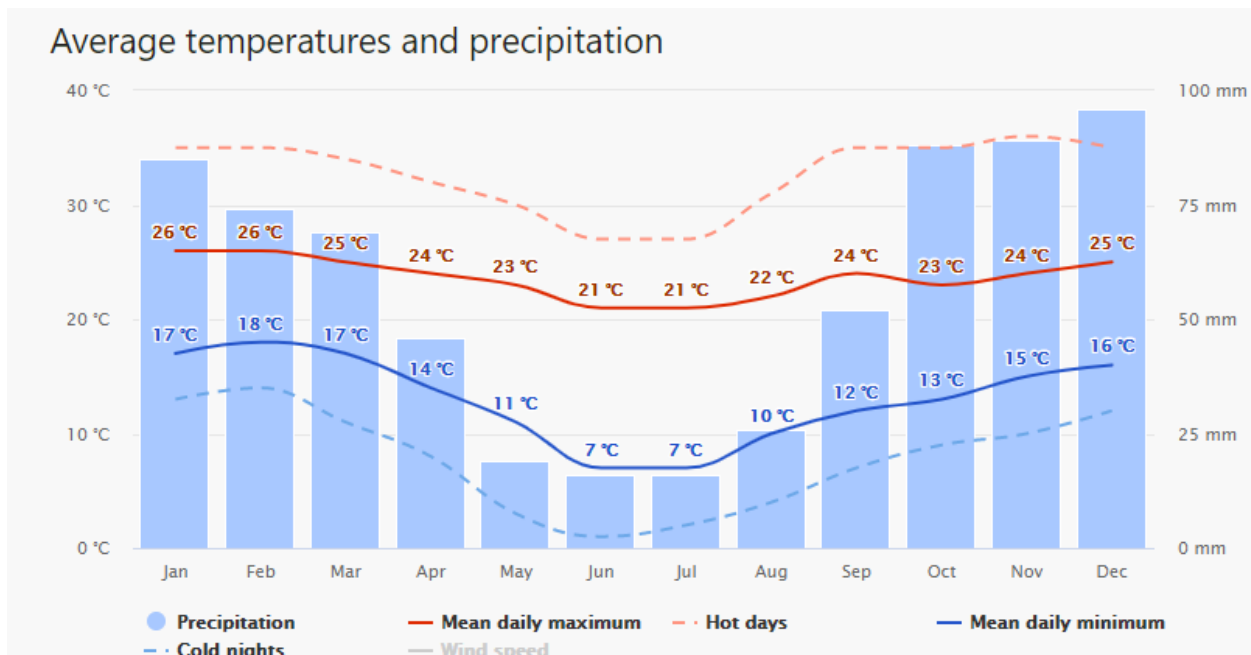


Geology and Soils – Specific Site Conditions

A shallow water table (less than 1.5m deep) occurs on site.
Dolomite, sinkhole or doline areas were not found on site.
Seasonally wet soils (often close to water bodies) occur on site.
Unstable rocky slopes or steep slopes with loose soil were not found on or near the site.
Dispersive soils (soils that dissolve in water) are not likely to occur on site.
Soils with low clay content (clay fraction more than 40%) occur on site.
No other unstable soil or geological features were noted on site.
An area sensitive to erosion was noted

6.1.3 Climate

The study area mainly receives summer rainfall with some winter rainfall. Infrequent frosts do occur. Some valleys are sheltered and may show weak rain shadow effects. The average annual precipitation ranges from 700mm to 1100mm. Temperatures are variable with winter temperatures close to 0°C and summer temperatures in excess of 30°C being a common occurrence.



Blue bars - median monthly precipitation.

Upper and lower red lines – mean daily maximum and minimum temperature

MAP – Mean Annual Precipitation

MAT – Mean Annual Temperature

7 Biological Environment

7.1 Flora and Fauna

According to The Vegetation of South Africa, Lesotho and Swaziland, the vegetation in the study area can be classified as Southern KwaZulu-Natal Moist Grassland, (Gs11). The vegetation and landscape features are generally sloping valley bottom of tall mixed veld which is dominated by *Hyparrhenia hirta* and sparsely scattered *Acacia sieberiana*. *Themeda triandra* is the dominant grass on veld that has been well managed. Overgrazed areas become dominated by *Eragrostis curvula*, *Eragrostis Plana*, *Sporobolus africanus* and *Sporobolus pyramidalis*. Selective overgrazing causes certain wiregrass species to become abundant. The vegetation unit is described as Vulnerable with a 23% conservation target.



Invasive plants species were noted to have established adjacent to existing tracks and nearer to disturbed settlement areas. These invasives comprised Black Wattle, (*Acacia Mearnsii*), Bugweed (*Solanum mauritianum*), Rag weed (*Ambrosia artemisiifolia*) and Bracken fern (*Pteridium aquilinum*).

The Riparian Assessment reveals that woody riparian tree species, mixed with a number of alien invasive trees, acacia mearnsii in particular, characterise the banks of the river, with a series of rocky cascades and sandy beds along its course. Hydrophytic sedges, grasses and wetland plants also characterise the banks and temporary fringes of the riparian habitat.

The nature of the topography, watercourse and riparian habitat are illustrated in Images 3 to 10 overleaf.



Image 3. The nature of the uMvubukazi River channel at the proposed crossing.



Image 4. Image looking north west upstream) showing the watercourse crossing point and riparian vegetation.



Image 5. Image looking south east showing the existing track near the start point of the proposed road..



Image 6. Image looking north showing the approximate end-point of the proposed road. Note informal tracks being utilised by the community.

7.1.1 Riparian Habitat Assessment

The Riparian Delineation and Assessment reveals that the riparian habitat present was generally limited in extent and closely associated with the channel and immediate surrounds. A number of disturbances were noted that are likely to have reduced riparian cover and integrity over time. The riparian zone was assessed as being of moderate importance in terms of biodiversity maintenance and for the supply of water to local residents and for cattle. Livestock watering is the primary factor that the community is dependent on. In terms of the provision of regulating services¹, the riparian zone was assessed as being of low importance. This is largely because the riparian zones are narrow and steep and thus are not that effective at trapping sediment and pollutants.

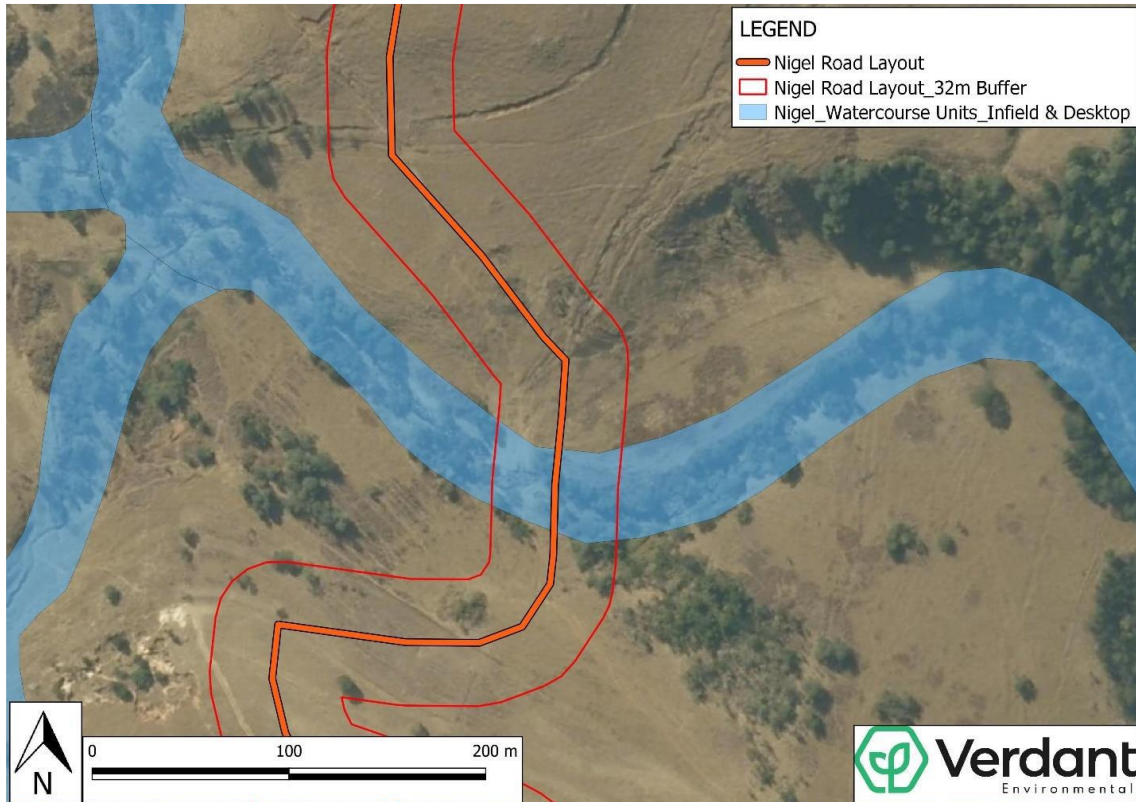


Figure 1. Map showing extent of the riparian channel.

7.1.2 Wetland and Aquatic Assessment

Present Ecological State

PES is defined as a measure of the similarity or deviation from a natural or reference state (Macfarlane et al., 2020). The relevant reach of the river unit was assessed as being moderately to largely modified and falling within PES Class C/D. A summary of the relevant impact and health scores is provided in Table 6 below. The major impacts are the direct disturbances to the bed and banks of the habitat by local residents and livestock using the springs for the provision of their water, and the infestation of alien invasive plants and tree species into the habitat (Edwards, 2021).

River Unit	Instream Habitat Integrity Score	Riparian Habitat Integrity Score	Overall PES Score	PES Rating & Class
W01	3.69 (C)	4.42 (D)	3.98 (C/D)	Moderately-Largely Modified (C/D)

Figure 2. Present Ecological State Rating

Ecological Importance and Sensitivity

Ecological Importance (EI) is the expression of the importance of wetlands and rivers in terms of the maintenance of biological diversity and ecological functioning at a local and landscape level (Kotze et al., 2020). Ecological Sensitivity (S) refers to ecosystem fragility or the ability to resist or recover from disturbance (Kotze et al., 2020). The EIS scores were interpreted using the categories and descriptions provided in Table 9 below.



Importance Category	
Very Low	0-0.79
Low	0.8 – 1.29
Moderately-Low	1.3 – 1.69
Moderate	1.7 – 2.29
Moderately-High	2.3 – 2.69
High	2.7 – 3.19
Very High	3.2 - 4.0

Figure 3. EIS categories

The relevant reach of Unit W01 was assessed as being of moderate EIS due to the provision of water supply benefits of moderate importance and having a moderate EIS.

Unit	EIS Score	Regulating Services Importance Score	Provisioning and Cultural Services Importance Score	Integrated EIS Score	Integrated EIS Rating
	1.75	1.2	2.2	2.2	Moderate

Figure 4. Summary of EIS Rating

Recommended Ecological Category

The recommended ecological category (REC) is the target or desired state of freshwater ecosystems required to meet water resource management objectives and quality targets. It is determined through the consideration of the PES, EIS and realistic opportunities to improve the PES that is driven by the context / setting.

Watercourse Unit	PES	EIS	REC	Management Objective
W01	C/D	Moderate	C/D	Regional: Maintain Project level: Maintain

Figure 5. Recommended Ecological Category

Data adapted from: Wetland and Ecosystem Impact Assessment Report Riparian Assessment Report for the Proposed Nigel Access Road, Verdant, February 2021.

7.2 Socio-Economic Environment

The villages of eMvubukazi and Mountain Home, proposed to be serviced by the new road construction, are rural in nature. The mid-section of the proposed road is new road construction which is undeveloped and un-occupied. Subsistence agricultural grazing land is the dominant landuse, with smaller subsistence cultivated gardens closer to homesteads. The socio-economic structure can be classified as primarily low income. At present, there is no formal infrastructure to cater for high rainfall periods and the road and watercourse crossing. The crossing is in a state of dis-repair resulting in an unsafe environment for the local inhabitants, school children and livestock when crossing the river. The proposed road will provide an efficient and safe link to exiting infrastructure.



7.3 Culture and Heritage Environments

No sites of cultural significance were noted within the site or within close proximity to the site. The project details and reports will be submitted to AMAFA for comment.

In line with Section 38(1) of the National Heritage Resources Act, Act 25 of 1999, (NHRA), the project does trigger the activities identified. Heritage Impact Assessments (HIAs) as required by the National Environmental Management Act 107 of 1998 as amended (NEMA), in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA). Section 38(1) of the NHRA may require such an assessment in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity which will change the character of a site –

(i) exceeding 5 000m² in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority (PHRA);

the re-zoning of a site exceeding 10 000m² in extent; or

any other category of development provided for in regulations by SAHRA or a PHRA.

A phase one cultural heritage survey undertaken by Active Heritage for the proposed Nigel Access Road, Umzimkhulu Local Municipality, identified no heritage sites on the footprint. Some heritage sites are located in the nearby town of Umzimkhulu but these are not threatened by the proposed development and no mitigation is necessary. The area is also not part of any known cultural landscape. There is no general heritage or archaeological reason why development may not proceed as planned. The phase one paleo desktop study indicates that the footprint is situated in an area with a high fossil sensitivity. A desktop survey by an accredited palaeontologist, followed by a potential ground survey, will be required before development may proceed. Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal & Amafa Research Institute Act (Act no 5 of 2018) which, requires that operations that expose archaeological or historical remains and fossils should cease immediately, pending evaluation by the provincial heritage agency.

A Palaeontological Impact Assessment was requested for the proposed construction of an access road, Nigel Road, near Lusizini, Mountain Home and Nolangeni, Kokstad area, southwestern KwaZulu Natal. In order to comply with the regulations of the South African Heritage Resources Agency (SAHRA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA), a desktop Palaeontological Impact Assessment (PIA) was completed for the proposed project.

The proposed site lies on the non-fossiliferous dolerite of the Jurassic dykes (volcanic origin), and on the dark grey shales of the Volksrust Formation (Ecca Group, Karoo Supergroup). The latter is potentially fossiliferous but fossils are extremely rare and scattered because this stratum represents deep water deposits. Fragmentary plants of the Glossopteris flora might occur, or the marine bivalve, Megadesmus, could occur. Therefore, a Fossil Chance Find Protocol should be added to the EMPr. Based on this information it is recommended that no palaeontological site visit is required unless fossils are found once excavations for the road foundations have commenced.



8 Environmental Impact Assessment of the Proposed Activity

8.1 Geographical and Physical Environments

8.1.1 Topography and Drainage

The topography of the area will not be affected because of the site specific nature of the proposed development.

Drainage will be affected during construction and post construction if not correctly managed. The proposed development is within a watercourse, and will thus affect the flow of the perennial tributary of the uMvubukazi River during construction. This will be managed through the use of temporary stream diversion, if required. The flow will not be stopped at any time, and, where possible, the majority of the construction work will take place within the dry season.

8.1.2 Hydrology and Geomorphology

Edwards (2021) explains that with poor mitigation, increased rates of erosion and sedimentation are likely to occur because of the direct impacts to wetland soils, flow, and vegetation during the construction phase.

Firstly, increased rates of erosion and sedimentation within the channel is inevitable as a result of the clearing of vegetation, the loss of soil cohesion and disturbance to the channel bed within the construction corridor. The objective of mitigation should be to minimise the intensity and extent of such impacts through the application of appropriate method statements and the installing of appropriate erosion and sediment control measures. If such measures are poorly implemented, gulley erosion could occur which may migrate upstream, with resulting sedimentation downstream.

The need to create a dry working area within the river to establish the culverts will necessitate some form of temporary flow diversion and/or impoundment and bunding of the working areas. Temporal impoundment will result in the temporary cessation of flow downstream and some reduced soil saturation rates for a short period. Furthermore, there is also a risk that the removal of the dam could send a pulse of water down through the system that could lead to gully erosion and associated impacts. Similarly, flow diversions will likely increase the velocity of water that could result in bank or bed scour and/or increased aquatic habitat turbidity. Working area dewatering could also result in bank and bed erosion and/or sedimentation downstream of the working area if the pumped water is discharged back into the wetland in an uncontrolled or inappropriate manner.

Furthermore, increased inundation is expected for a short period upstream of the dammed / banded area, which could result in increased stress to the shorter marginal hygrophilous species that are submerged as well as later the predominant flow characteristics and levels of turbidity.

Increased rates of erosion and sedimentation will result in increased local sediment loads and turbidity, and increased rates of deposition downstream of the working area. The ultimate result will be the degradation of local aquatic habitat integrity. In terms of predicted PES changes, Unit W01 is likely to experience a moderate reduction in PES for the short reach scale under a poor mitigation scenario.

8.1.3 Geology and Soils

The proposed development will have little to no negative impact on the geology and soils of the area. Construction activities may temporarily increase erosion during excavation for bridge culverts, and stream sedimentation and may also result in soil compaction both within, and alongside the watercourse. Access to culvert bases areas and across the perennial tributary of the uMvubukazi River



may increase erosion and sedimentation during construction. The relevant mitigation measures to help to reduce this impact, will be incorporated into the project EMP.

8.1.4 *Climate*

No measurable affect is anticipated.

8.2 **Biological Environments**

8.2.1 *Direct ecosystem modification*

The proposed road upgrade project will involve the development of a new access road across the Mvubukazi River. The establishment of the new road crossing will involve the direct and permanent infilling of small areas of aquatic, bed and riparian habitats within the road development footprint and the direct and temporary modification of the channel in the vicinity of the road footprint during the construction phase.

The loss of cumulative river area will likely result in a very small reduction in the condition (PES) of the local reach. However, the PES class of the wetland units are unlikely to change. The impacts to the provision of regulating ecosystem services will be negligible.

8.2.2 *Habitat connectivity and edge disturbance*

During the construction phase, there will be a temporary reduction in ecological connectivity within river reach because of clearing and earthworks activities along the construction corridor that bisects the unit. The constriction corridor will physically block the movement of aquatic and riparian fauna. In addition, construction activities are likely to result in elevated levels of noise and dust, and increased alien invasive plant invasion due to soil disturbance and vegetation clearing and/or poor rehabilitation. Such indirect impacts could result in the alteration in the composition of biotic communities, habitat degradation, and/or the displacement of fauna sensitive to human presence and noise pollution.

8.2.3 *Water Pollution*

Contaminants such as hydrocarbons and solids may be generated during the construction phase from several potential sources (examples include petrol/diesel, oil/grease, paint, cement/concrete and other hazardous substances).

In this case, the volume of hazardous pollutants is expected to be low. If pollutants are washed into the local river reach, there will be small impacts to the downstream aquatic habitats in terms of increased stress and possibly mortality to sensitive aquatic fauna.



8.3 Socio-Economic Environment

8.3.1 Social

The proposed construction of a formal Nigel Access Road will benefit the local community, as it will enable a formal vehicular, pedestrian and livestock passage across the existing gravel road during moderate to high rainfall events. The local community may also benefit through the provision of 20 temporary employment opportunities during the construction phase. The safety of the local inhabitants will need to be considered during construction and access to the construction area must be regulated.

Proposed Development Socio-Economic Statistics	
Expected capital value of the activity on completion:	R 5,070,306.99
Expected yearly income that will be generated by or as a result of the activity:	R 5,070,306.99
The activity will contribute to service infrastructure.	
The activity is a public amenity.	
Number of new employment opportunities that will be created in the development phase of the activity:	20 people
Expected value of the employment opportunities during the development phase:	R 418, 000.00
Percentage of this which will accrue to previously disadvantaged individuals:	100 %
Number of employment opportunities that will be created during the operational phase of the activity:	10
Expected current value of the employment opportunities during the first 10 years:	N/A
Percentage of this will which accrue to previously disadvantaged individuals:	100%

8.3.2 Traffic

The proposed road upgrade and construction provides a formal gravel access road with complete watercourse drainage infrastructure. The proposed road will be new road construction adjoining the D2426 at start point 30°15'13.15"S 29°49'53.70"E. The end point is at 30°16'27.22"S 29°50'14.41"E and will link to the L2302 Road at Umvubukazi Primary school. The site is accessed off the P601-2 road. The proposed development is unlikely to impact any provincial or national road, although slow turning construction traffic and the generation of dust may have an impact during construction phase. The size of the trucks transporting goods to and from the site will not exceed the size of the trucks utilised in the construction of the provincial roads itself. The trucks will also comply with local road regulations and weight specifications. The number of trucks gaining access to the site is not known at this stage. If the speed (and weight) limits on the haulage roads are adhered to no impacts different from the impact of the current traffic are envisaged. This will include the generation of noise, dust and potential safety issues.

8.3.3 Emissions – Waste, Smoke, Dust, Noise

Dust and noise emitted during construction from vehicle movement and excavations are inevitable but will be of short duration. Dust originating from the gravel roads giving access to the site is likely to occur especially if construction takes place during the drier winter months as is recommended to help to reduce the impacts on the watercourse. If the amount of dust on the gravel access road becomes a problem, the road may be sprayed with water to settle the dust (as a last resort only). Any water utilised must be from an approved source with documentation as proof.

It is not expected that the emissions will cause an impact on the residents in the surrounding areas or exceed the levels stipulated in the National Environmental Management: Air Quality Act (No.39 of 2004).



Waste generated during construction will include construction rubble and general waste, all of which will be disposed of at the nearest registered landfill site. The Umzimkhulu Municipal Waste Disposal Facility is the nearest waste disposal facility. Recycling must be encouraged.

8.3.4 *Heritage and Cultural Environment*

Heritage Impact Assessments (HIAs) as required by the National Environmental Management Act 107 of 1998 as amended (NEMA), in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA). Section 38(1) of the NHRA may require such an assessment in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
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 - (i) exceeding 5 000m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority (PHRA);
- the re-zoning of a site exceeding 10 000m² in extent; or
- any other category of development provided for in regulations by SAHRA or a PHRA.

A phase one cultural heritage survey of the proposed Nigel Access Road undertaken by Active Heritage, identified no heritage sites on the footprint. Some heritage sites are located in the nearby town of Umzimkhulu but these are not threatened by the proposed development and no mitigation is necessary. The area is also not part of any known cultural landscape. There is no general heritage or archaeological reason why development may not proceed as planned. The phase one paleo desktop study indicates that the footprint is situated in an area with a high fossil sensitivity. A desktop survey by an accredited palaeontologist, followed by a potential ground survey, will be required before development may proceed. Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal & Amafa Research Institute Act (Act no 5 of 2018) which, requires that operations that expose archaeological or historical remains and fossils should cease immediately, pending evaluation by the provincial heritage agency.

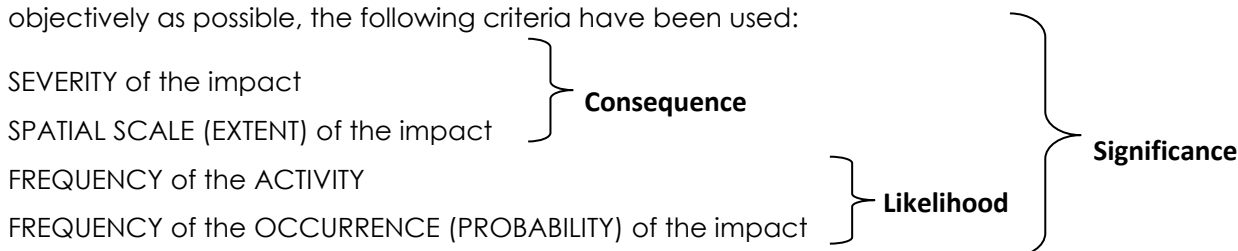


9 Environmental Risk Assessment Methodology

The purpose of the Environmental Risk Assessment (ERA) is to identify the potential environmental risks and impacts associated with the installation of the proposed Access Road. This provides a basis to identify the key risk drivers and make informed decisions on the way forward in order to ensure that these risks do not result in unacceptable social, environmental or reputational risk.

9.1 Risk Assessment Methodology

The potential environmental impacts associated with the proposed development have been evaluated using a recognised semi-quantitative risk assessment methodology. This methodology has been developed to ensure all procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment as set out in National Environmental Management Act (No. 107 of 1998) [NEMA] 24(4b) are met. In order to assess the significance as objectively as possible, the following criteria have been used:



This system derives environmental significance on the basis of the consequence of the impact on the environment and the likelihood of the impact occurring. **Tables 4 to 8** describe the process in detail. The significance rating of potential risks is outlined in **Table 8**. Significance is calculated as the product of consequence and likelihood.

9.2 Determining Consequences

In terms of this project, consequence is determined based on the consideration of a combination of severity, extent and duration of the environmental impact. Consequence is determined as the average of the three values (i.e. (severity + extent + duration) / 3) (**Table 4**).

Table 4: Assessment of Consequences

Rating	Description		
	Severity	Spatial Extent (Scale)	Duration
1	Negligible / non-harmful / minimal deterioration	Within immediate area of activity	Less than 1 month / quickly reversible
2	Minor / potentially harmful / measurable deterioration	Surrounding area within project boundary	Less than 1 year / quickly reversible
3	Moderate / harmful / moderate deterioration	Beyond project boundary	More than 1 year / reversible over time
4	Significant / very harmful / substantial deterioration	Regional / provincial	More than 10 years / reversible over time / life of project or facility
5	Irreversible / permanent	National / international	Beyond life of project of facility / permanent

9.3 Determining Likelihood



Likelihood considers the frequency of the activity together with the probability of an environmental impact associated with that activity occurring. Likelihood is determined as the average of the two values (i.e. (frequency + probability / 2) (**Table 5**).

Table 5: Assessment of Likelihood

Rating	Description	
	Frequency	Probability
1	Less than once a year	Almost impossible
2	Once in a year	Unlikely
3	Quarterly	Probable
4	Weekly	Highly likely
5	Daily	Definite

9.4 Determining Overall Impact Significance

Overall significance is determined using professional judgement based on a clear understanding of the nature of the impact, its severity, the duration and degree to which the impact can be reversed as well as the extent of the impact. These aspects define the impacts consequence which must be considered against the likelihood of the impact occurring in order to assign an overall significance of the impact. Significance ratings of the identified impacts have been based on the implementation of mitigation measures as per the proposed Environmental Management Plan (EMPr).

The status of the impact must be defined, and the impact can either be positive, neutral or negative. A positive impact is where an activity will have a social / environmental / economic benefit. A neutral impact is when an activity will have no effect. A negative impact is when an activity will be harmful socially / economically / environmentally. Significance should be assigned according to the definitions in the table below (**Table 6**).

Table 6: Description of Impact Significance

Rating	Significance	Description
L (1 – 4.9)	Insignificant	A potential issue which was found to have no impact when evaluated
LM (5 – 9.9)	Very Low	Impacts will be site specific and temporary with no mitigation necessary
M (10 – 14.99)	Low	Impact will have a minor influence on the biophysical and/or social environment, and will not have an influence on the decision.
MH (15 – 19.9)	Medium	Impact will have a moderate influence on the biophysical and/or social environment, and it should have an influence on the decision unless it is mitigated.
H (20 – 25)	High	Impact will have a major influence on the biophysical and/or social environment, and would influence the outcome regardless of any possible mitigation.



10 Environmental Impact Assessment Matrix

The purpose of the environmental impact assessment (EIA) is to identify the potential impacts and associated risks posed by the project on the environment. The outcomes of the EIA will provide a basis to identify the key risk drivers and make informed decisions on the way forward in order to ensure that these risks do not result in unacceptable social, environmental or reputational risk to the Umzimkhulu Local Municipality.

The potential environmental impacts in terms of NEMA are assessed in the risk matrix below (**Table 7**) according to the criteria described in the consequences, likelihood and significance tables provided above. The reasons for selecting each is covered under the qualification of the potential impact; the associated recommendations, findings and / or mitigation measures are also provided.

Table 7: Environmental Impact Risk Matrix



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxl)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
<p>10.1 Geographical and Physical Environments (Preferred Alternative)</p>											
Decrease in surface water quality	A decrease in surface water quality is expected during the construction phase owing to an accumulation of suspended sediment and excess sediment deposition from potential sediment release associated with the construction methodology.	2	2	2	2	2	2	2	4	-	The proposed construction methodology is considered "best practice" as it makes use of the most appropriate technologies. Notwithstanding the above, mitigation and rehabilitation measures and recommendations will be incorporated into the Environmental Management Programme. For example: Construction within the active channel will require temporary stream diversion to help reduce erosion and sedimentation. Any excavations or excavated material must be protected from erosion if it is anticipated that it will remain exposed for any length of time. Stockpiles of this material must be positioned away from the watercourse, keeping the topsoil and the sub-soil separate (where applicable). As a result, a long-term decrease in surface water quality is not expected; the impact is likely to be very low (negative). Insignificant.
	With mitigation:	2	2	1	1.6	1	2	1.5	-	2.4	
Impact on surface water flow	Alteration of surface flow conditions owing to physical obstruction of the culvert causeway.	1	1		1	1	1	1	1	-	



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxl)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
	With mitigation:	1	1	1	1	1	1	1	-	1L	<p>The proposed construction is not expected to significantly affect surface water flow during the construction phase. This phase is expected to be short in duration, and management measures must be employed during the construction phase to help to ensure that the surface water flow is maintained as far as possible.</p> <p>The impact post mitigation is expected to be very low/(negative). This impact can be reduced further if construction takes place within the dry months.</p>
Increased sedimentation	Increased sedimentation of the watercourses owing to disturbances / alterations to the bed and banks could potentially cause an increase in transportation and deposition of sediments to the watercourse, leading to a reduction in water quality.	2	2	2	2	2	2	2	4	LM	<p>The probability for this impact to occur will be increased during high rainfall periods. The potential impact of sedimentation is expected to be of a very low significance if the recommendations in the EMPr are implemented. In addition, construction will be limited to the dry (low rainfall) winter months. Based on the above, the potential impact on surface water resources is likely to be very low (negative).</p>
	With mitigation:	2	1	1.5	1.5	2	2	2	.	4.5	L



Qualification of Potential Impacts (Nature)			Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxl)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
Decrease in groundwater quality	in water	The installation method could result in contamination of ground water arising from the construction plant, oils/grease, cement, building materials etc.	3	3	3	3	3	3.5	3.25	9.75 LM	.	There is the potential for contamination of groundwater owing to uncontrolled releases of cement, hydraulic fluid, oil, diesel during construction. The potential impact of groundwater contamination is expected to be of a low (negative) significance if the recommendations in the EMPr are not implemented and very low after mitigation. Please refer to recommendations regarding hazardous material and spill management in the EMPr.
		With mitigation:	2	2	2	2	2.5	2.5	2.5	.	5 LM	
Decrease in groundwater quality	soil and water	The development of a construction site could result in damage to soil and ground water contamination.	3	2	2	2.3	3	3	3	7 LM	.	



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations: - Degree to which impact can be managed - Possible Mitigation Measures and level of residual risk Positive and Negative Impacts
	With mitigation:	2	2	2	2	2	2	2	.	4 L	<p>The clearing and development of the site may cause soil compaction and contamination, and ultimately erosion, as well as ground water contamination as a result of the movement of heavy vehicles and the uncontrolled release of hydrocarbons, cement and other hazardous materials. Bunded areas must be set up from the outset to help to ensure all spillages are contained. Any spillages must be immediately cleaned up and disposed of at the nearest registered landfill only, with proof of correct disposal. During construction continuous monitoring of containers, bunded areas, surface runoff and air emissions must be undertaken by a responsible person. The proposed development areas must be kept to a minimum where possible. At the site camp and ingress and egress points of the culvert, topsoil should be removed from the proposed construction site prior to establishment. The compacted soil must be ripped up, the topsoil replaced, and rehabilitated with indigenous vegetation once construction has been completed. This impact is of low (negative) significance without mitigation, and of very low, (no) significance if mitigated.</p>



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
Increased soil erosion	The road construction and watercourse crossing installation method may exacerbate erosion of the perennial tributary of the uMvubukazi River banks and bed.	3	3	2	2.6	4	3	3.5	9.1 LM	.	There is the potential for soil erosion to occur because of excavation activities within the perennial tributary of the uMvubukazi River during construction. The probability for this impact to occur is increased during high rainfall periods. The impacts from erosion are expected to be very low pre-mitigation and very low if the soil erosion and surface water protection measures recommended in the EMPr are implemented (negative) . In addition, construction of the crossings will be limited to the dry winter months.
	With mitigation:	2	2	2	2	3	3	3	.	6 LM	
Compaction of soils	Compaction of the soils from heavy vehicles.	2	2	2	2	3.5	3	3.2 5	6.5 LM	.	



With mitigation:												<p>Compaction of soils in and along the edges of the watercourse and wetlands must be minimised as far as possible. Areas excluded from development (riparian and wetland zones) must be clearly demarcated and indicated to construction staff. Compacted soil must be broken up, raked loosely, and then re-vegetated or packed with large boulders and stones (within the river bed). Use of gabions and reno mattresses must also be considered. The impact is thus expected to be very low (negative) both pre and post mitigation.</p> <p>Crossing of the river must be avoided as far as possible to help limit impact. If crossing is necessary, simple surface and temporary structures to limit damage to the river must be utilised. Reno mattresses, gabion baskets and biodegradable sand bags may be utilised. No plastics must be utilised. At completion, ALL imported material must be cleared up. All waste must be correctly disposed of with proof of correct disposal.</p>
		2	1	2	1.7	3	3	3	.	5.7L M		

10.2 Biological Environments (Preferred Alternative)

Ecological impacts – river banks and beds	Modifications to the channel banks and beds from the construction process may result in a loss of wetland habitat. Wetland habitat will be disturbed and potentially lost	5	2	4	3.6	4	5	4.5	16.5 MH	.	Revegetation of adjacent areas disturbed during construction, but not permanently transformed. Limit the construction footprint. Implement erosion and sediment control measures. The topsoil must be removed and stockpiled / stored separately from the
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Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
	during construction. The additional permanent habitat loss will be minimal, as the site is disturbed by the existing crossing.										
	With mitigation:	2	1	4	2.3	4	3	3.5	.	5.8 M	underlying sub-soil prior to construction on the banks of the watercourse. The backfill process must ensure that the material is returned in the same order that it was removed i.e. the sub-soil replaced first, followed by the topsoil material closer to the surface. The impact is thus expected to be Moderate (negative) , pre mitigation and low post mitigation.
Ecological impacts – alien invasive vegetation	Disturbance of vegetation and the encroachment of alien invasive plant species	4	4	4	4	4	4	4	16 M	.	It is critical that vegetation is established over disturbed areas immediately after construction is complete. Groundcover that were removed during the initial phases of construction along the river banks must be replanted on completion of construction. An approved local indigenous grass seed mixture must be applied in conjunction with the sods if it is deemed that establishment of the vegetation from the sods is unlikely to be successful. Pre mitigation the impact is expected to be medium and post mitigation low (negative) .
	With mitigation:	3	3	4	3.3 3	3	3	3	.	10 LM	
Ecological impacts – loss of riparian habitat	Disturbance of sections of riparian habitat.	2	2	2	2	2	3	2.5	5LM	.	



Qualification of Potential Impacts (Nature)	Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations: - Degree to which impact can be managed - Possible Mitigation Measures and level of residual risk Positive and Negative Impacts
With mitigation:	3	2	2	2.3	3	3	3	.	7 LM	<p>The proposed working area must be clearly demarcated prior to the commencement of the works. The width of the working area within the watercourse must be kept to a strict minimum to ensure that impacts on the freshwater systems and the watercourse are minimised. All activities must be restricted to within the demarcated working area.</p> <p>The reinstatement of the watercourse and banks must be carried out immediately after the culverts have been installed. The backfill material must be returned in the same order that it was removed i.e. the sub-soil replaced first, followed by the topsoil material closer to the surface. Re-vegetation must be carried out immediately after backfilling, and the establishment of alien invasive plants must be prevented. The use of engineered mechanisms (reno and gabions), biodegradable sand bags or large rocks and boulders, will also assist in stabilising the soil and river beds and banks. The impact is then expected to be kept within the very low range (negative) pre-mitigation, and very low if mitigation measures are employed.</p>



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
10.3 Socio-Economic Environment (Preferred Alternative)											
Potential Safety and security impact	Exposure of local residents (and livestock) to potentially dangerous site conditions (open excavations) during construction	4	3	2	3	3	3	3	9 LM	.	The proposed crossing will expose the local residents to potentially dangerous conditions during the construction phase if excavations are left accessible and unguarded during construction hours and after hours. Local residents must be informed of the proposed construction activities and warned to stay away. Where possible the site must be fenced off. Communication keeping the local residents/IAPs informed will be important throughout the construction phase. The impact is likely to be very low (negative) pre and post mitigation.
	With mitigation:	2	3	2	2.3	3	2	2.5	.	5.8 LM	
Changes in the social fabric	The influx of construction workers may create social issues such as conflict, conflict for work, changes in financial outlook, changes in domestic cohesion.	3	3	2	2.6	3	3	3	8 LM	.	The proposed development will expose the local residents to potential conflict situations if construction work is only available to some, and if social and domestic cohesion is compromised. It is suggested that the construction workers be advised of these pitfalls in order to help avoid them. This impact is expected to be of very low (negative) significance both pre and post mitigation.
	With mitigation:	2	2	2	2	3	2	2.5	.	5 LM	



Qualification of Potential Impacts (Nature)		Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (CxD)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations:
Improved social amenity	The construction of the proposed road will provide improved and safer access for residents, pedestrians, school children.	5	3	4	4	4	4	4	16 MH	.	The current crossing may become difficult and dangerous to cross during high rainfall and flood events, the construction of a culvert causeway will improve safety and access for local residents. This is a positive impact of Medium Significance.
	With mitigation: Not required										
Construction Phase Waste, and Effluent,	Waste may be produced during the construction phase	3	3	3	3	5	4	4.5	13.5 M	.	A small quantity of waste in the form of construction rubble, overburden and general waste may be created during the construction phase. This will be disposed of appropriately at the nearest registered waste disposal site. Low impact is expected during construction and very low post mitigation.
	With mitigation:	2	2	2	2	4	3	3.5	.	7 LM	
Construction Phase Emissions and Noise	Noise and Dust may be created by the construction vehicles and machinery	3	3	3	3	4	3	3.5	10.5 M	.	



Qualification of Potential Impacts (Nature)	Severity	Extent	Duration	Consequence (S+E+D)/3	Frequency	Probability	Likelihood (F+P)/2	Significance (No Mitigation) (Cxt)	Significance (With Mitigation)	Impact Assessor Comments and Recommendations: - Degree to which impact can be managed - Possible Mitigation Measures and level of residual risk Positive and Negative Impacts
With mitigation:	2	2	2	2	3	2	2.5	.	5 LM	<p>Noise and dust may be created by construction vehicles during the construction phase (the access roads are dirt and gravel roads). This must be prevented by ensuring that the vehicles travel at reduced speeds. Wetting the roads and dusty areas down is an option but must only be considered as a last resort in extreme cases. Noise must be reduced through the use of silencers and correctly maintained equipment.</p> <p>These impacts are likely to be of short and intermittent duration, and are not considered intolerable. There are residents and a school located close to the site, so noise and dust must be correctly managed. The impact is thus low during construction and very low (negative) post mitigation.</p>



10.4 Cumulative Impacts

The majority of the impacts were found to be of a medium to low negative significance, prior to mitigation. Cumulatively, the impacts assessed are not expected to significantly alter the environmental condition, especially if the mitigation measures are employed.

10.5 Degree to which the Impacts can be reversed

All the significant impacts identified can be reversed, other than the permanent impact of the installation of the proposed Nigel Access Road. In some instances, a positive outcome is anticipated such as improved, safer vehicular and pedestrian access across the uMvubukazi River.

10.6 Degree to which Impacts may cause Irreplaceable Loss of Resources

None of the impacts will result in an irreplaceable loss of resources.

10.7 Outcome of the Site Selection Matrix

The preferred site and technology/design was assessed. The proposed development is site specific as an efficient link across a perennial tributary of the uMvubukazi River. The proposed Nigel Access has been sited to optimise the existing vehicular transportation routes and foot paths through the valley and improve the safety of motorists and pedestrians.

11 Environmental Impact Statement

11.1 Assumptions, Uncertainties and Gaps in Knowledge

Detailed description of the construction methodology (aside from the diagrams provided in Appendix B) was not available.

11.2 Summary of Findings

11.2.1 Summary of the Positive and Negative Impacts and Risks

Table 8: Summary of Impacts and Risks (Preferred Alternative)

Please refer to Table 8 overleaf.


Table 8: Summary of Impacts and Risks (Preferred Alternative)

Potential Environmental Impacts	Qualification of Potential Impacts (Nature)	Impact Significance
Decrease in surface water quality	A decrease in surface water quality is expected during the construction phase owing to an accumulation of suspended sediment and excess sediment deposition from potential sediment release from erosion associated with the construction activities.	Very low (negative) during and with mitigation measures Very low (negative) .
Impact on surface water flow	Alteration of surface flow conditions owing to physical obstructions.	The potential impact on surface water resources is likely to be very low (negative) prior to mitigation. The impact post mitigation is expected to be very low (negative) .
Increased sedimentation	Increased sedimentation of the watercourses owing to disturbances / alterations to the bed banks could potentially cause an increase in transportation and deposition of sediments to the watercourse, leading to a reduction in water quality.	Very low significance if the recommendations in the EMP are implemented. The potential impact on surface water resources is likely to be very low (negative) prior to mitigation.
Decrease in groundwater water quality	The installation method could result in contamination of ground water arising from the construction plant, oils/grease, cement, building materials etc.	The potential impact of groundwater contamination is expected to be of a very low (negative) significance if the recommendations in the EMP are not implemented and very low after mitigation.
Decrease in soil and groundwater water quality	The development of a construction site could result in damage to the soil and ground water contamination.	This impact is of very low (negative) significance without mitigation, and of no significance if mitigated..
Increased soil erosion	The installation method may exacerbate erosion of the river banks and bed.	The potential impact on surface water resources is likely to be very low (negative) both pre and post mitigation.
Compaction of soils	Compaction of the soils from heavy vehicles.	The impact is expected to be very low (negative) both pre and post mitigation.
Ecological Impact – temporary loss of habitat	Disturbance of the aquatic ecosystem and loss of adjacent wetland fringes as a result of a construction activities.	The impact is expected to be Moderate (negative) without mitigation and low with mitigation. Low .
Ecological impacts – river banks and beds	Modifications to the channel banks and beds from the construction process.	The impact is expected to be low (negative) , pre-mitigation and low post mitigation.
Ecological impacts – alien invasive vegetation	Disturbance of vegetation and the encroachment of alien invasive plant species	Pre-mitigation, the impact is expected to be medium (negative) . The post mitigation impact is expected to be low .


Table 8: Summary of Impacts and Risks (Preferred Alternative)

Potential Environmental Impacts	Qualification of Potential Impacts (Nature)	Impact Significance
Ecological impacts – loss of riparian habitat	Loss of sections of riparian habitat.	The impact is expected to be kept within the low range (negative) pre-mitigation, and very low if mitigation measures are employed.
Potential Safety and security impact	Exposure of local residents (and livestock) to potentially dangerous site conditions (open excavations) during construction	The impact is likely to be very low (negative) pre and post mitigation.
Changes in the social fabric	The influx of construction workers may create social issues such as conflict, conflict for work, changes in financial outlook, and changes in domestic cohesion.	This impact is expected to be of very low (negative) significance both pre and post mitigation.
Improved social amenity	The construction of the causeway over the river will provide improved and safer access for residents.	This is a positive impact of Medium Significance.
Construction Phase Waste, Effluent, Emissions and Noise	Waste may be produced during the construction phase	Low impact during construction and very low (negative) impact post mitigation.
	Noise and Dust may be created by the construction vehicles and machinery	Low impact during construction and very low (negative) impact post mitigation.

11.3 Key Impact Management Measures

11.3.1 Mitigation Measures to be included in EMPr

Mitigation measures as presented in the Risk Assessment, (**Table 7**) (amongst others) above will be included in the EMPr.

11.3.2 Mitigation Measures Identified in Specialist Reports

- Wetland and Aquatic Assessment Report for the Proposed Nigel Access Road, Verdant, February 2021.
- Heritage Impact Assessment for the Nigel Access Road, Active Heritage, January 2020.



11.4 Aspects Conditional to the Findings

No conditional aspects have been identified.

11.5 Reasoned Opinion on Proposed Development

The Basic Assessment Study has made extensive use of desktop and field data, and input from IAPs, and reveals typical impacts associated with the proposed Nigel Access over a perennial tributary of the uMvubukazi River.

The impact of the proposed development on the receiving biophysical environment will be permanent (lifetime of the facility) but low provided the development is implemented as proposed and all reasonable steps to implement the proposed development using standard best practices and that the proposed mitigations included in a comprehensive Environmental Management Programme (EMPr) are put in place and correctly adhered to.

The operational maintenance of the proposed culvert causeway is vital to ensure the longevity of the development, as well as to help reduce potential operational impacts on the geophysical, biophysical and social environments.

The information contained in this report and the documentation attached hereto is sufficient to make a decision in respect of the activity applied for.

12 Conclusion

The proposed development site and their surroundings reveal signs of previous disturbance owing to current and previous uses and anthropogenic changes. From a biophysical perspective, the most significant factor to take into consideration is the disturbance of the perennial tributary of the uMvubukazi River and associated riparian and watercourse habitats. This includes storm-water runoff and potential erosion during construction and prior to rehabilitation of the perennial tributary banks taking effect. The combination of these factors is a matter of some concern and allowances for these issues must be made in the comprehensive EMPr that must be put in place for the construction and operation of the infrastructure.

Considering the impacts associated with the proposed development, the following recommendations are provided:

- The requirement for additional specialist studies is not anticipated
- Implementation must follow the proposed EMPr and adhere to standard best practices
- All proposed mitigations or reasonable alternatives must be adopted
- During implementation continuous monitoring of containers, bunded areas, surface runoff and air emissions must be undertaken by a responsible person, appointed or approved by the Department of Economic Development, Tourism and Environmental Affairs, to ensure that specifications are being duly regarded.
- Regular construction monitoring will be required to measure compliance with mitigation measures and the project EMPr.

Provided that the recommendations and mitigation measures as proposed in this report and in the EMPr are implemented, it is the opinion of the EAP that the development may proceed as envisaged.



13 Timeframes

13.1 Environmental Authorisation Timeframes (if no Operational aspect)

- Period for which Environmental Authorisation is required: 5 years
- Date on which the Activity will be concluded: Unknown at this stage
- Date on which the Post Construction Monitoring Requirements will be finalised: Unknown

14 EAP Affirmation

Oath / Affirmation by the EAP:

The Environmental Assessment Practitioner hereby confirms that the information provided in this report is to our knowledge, correct, and includes all comments and inputs from IAPs, EAP responses to these comments, and recommendations from specialists (where relevant).

15 Financial Provisions

Details of any financial provisions for Rehabilitation (where applicable), closure, ongoing post decommissioning management of negative impacts: **Not available at this stage.**

Rehabilitation of the site will take place during and after construction during the environmental management process of the development. The cost of this process will be factored into the construction cost.

16 Any Other Specific Information

Additional information is provided in the attached appendices. Any further information can be requested from the EAP as necessary.

References

Mucina. L & Rutherford. MC (eds) 2006. *The Vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. South African National Biodiversity Institute. Pretoria.

Wetland and Aquatic Assessment Report for the Proposed Nigel Access Road, Verdant, February 2021.

Heritage Impact Assessment for the Nigel Access Road, Active Heritage, January 2020



Appendix A – Mapping

- Figure 1: Locality Plan
- Figure 2: Topocadastral Map
- Figure 3: Site Plan
- Figure 4: Cadastral Map
- Figure 5: Watercourses Map
- Figure 6: Quarternary Catchment Map
- Figure 7: EKZNW TSCP Map
- Figure 8: SANBI Vegetation Map
- Figure 9: Landuse
- Figure 10 Service Map

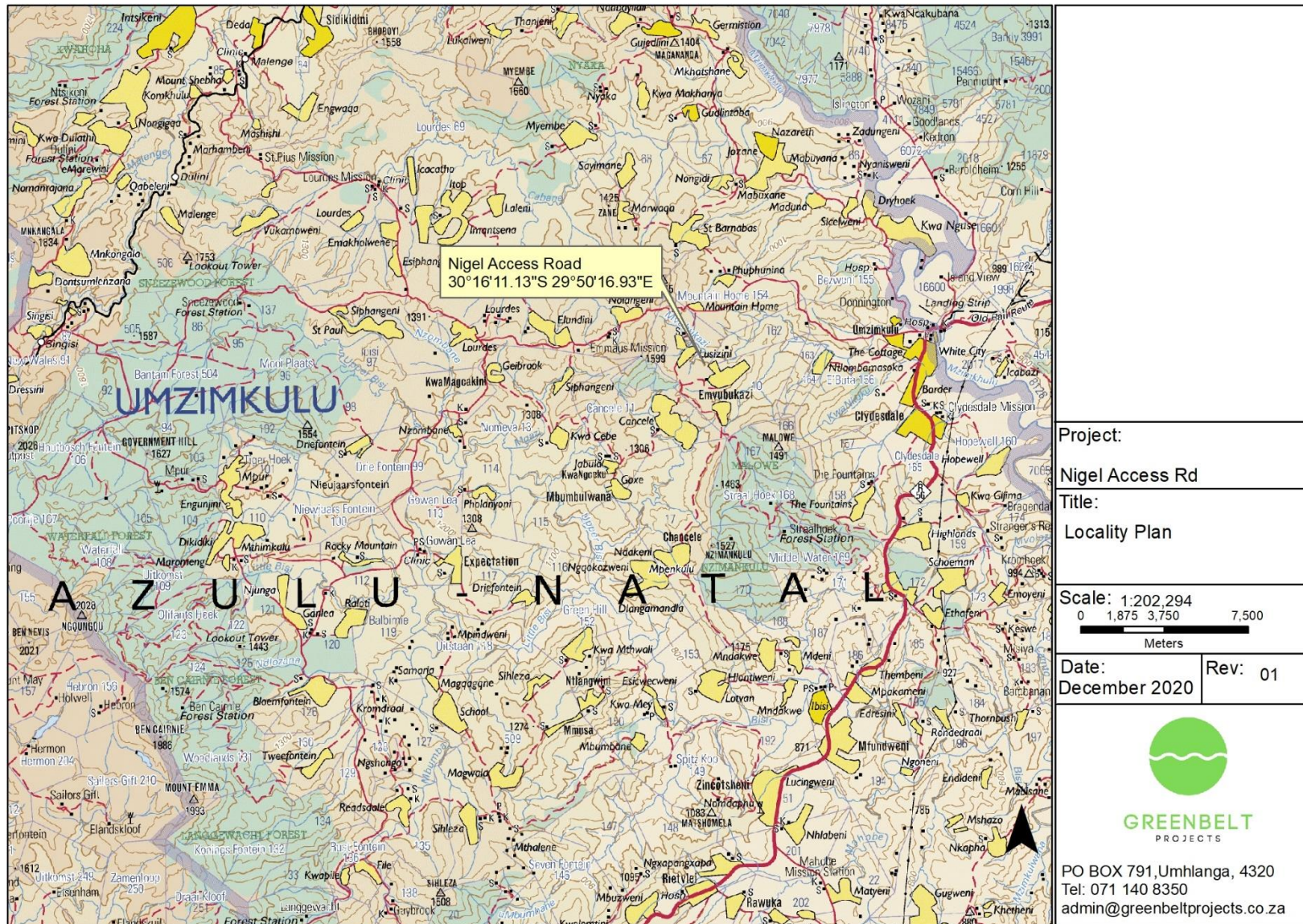


Figure 6: Locality Plan

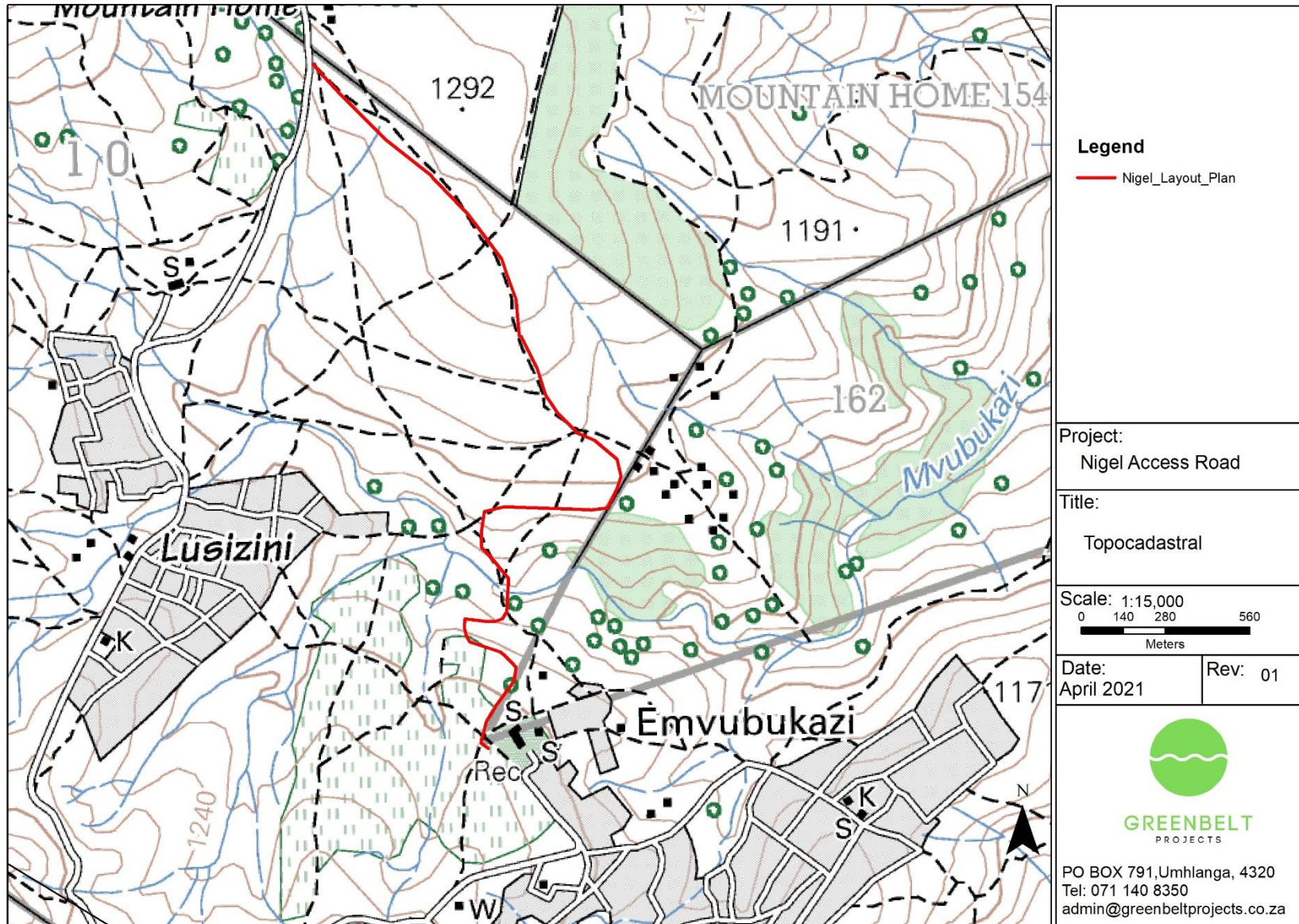


Figure 2: Topocadastral Plan

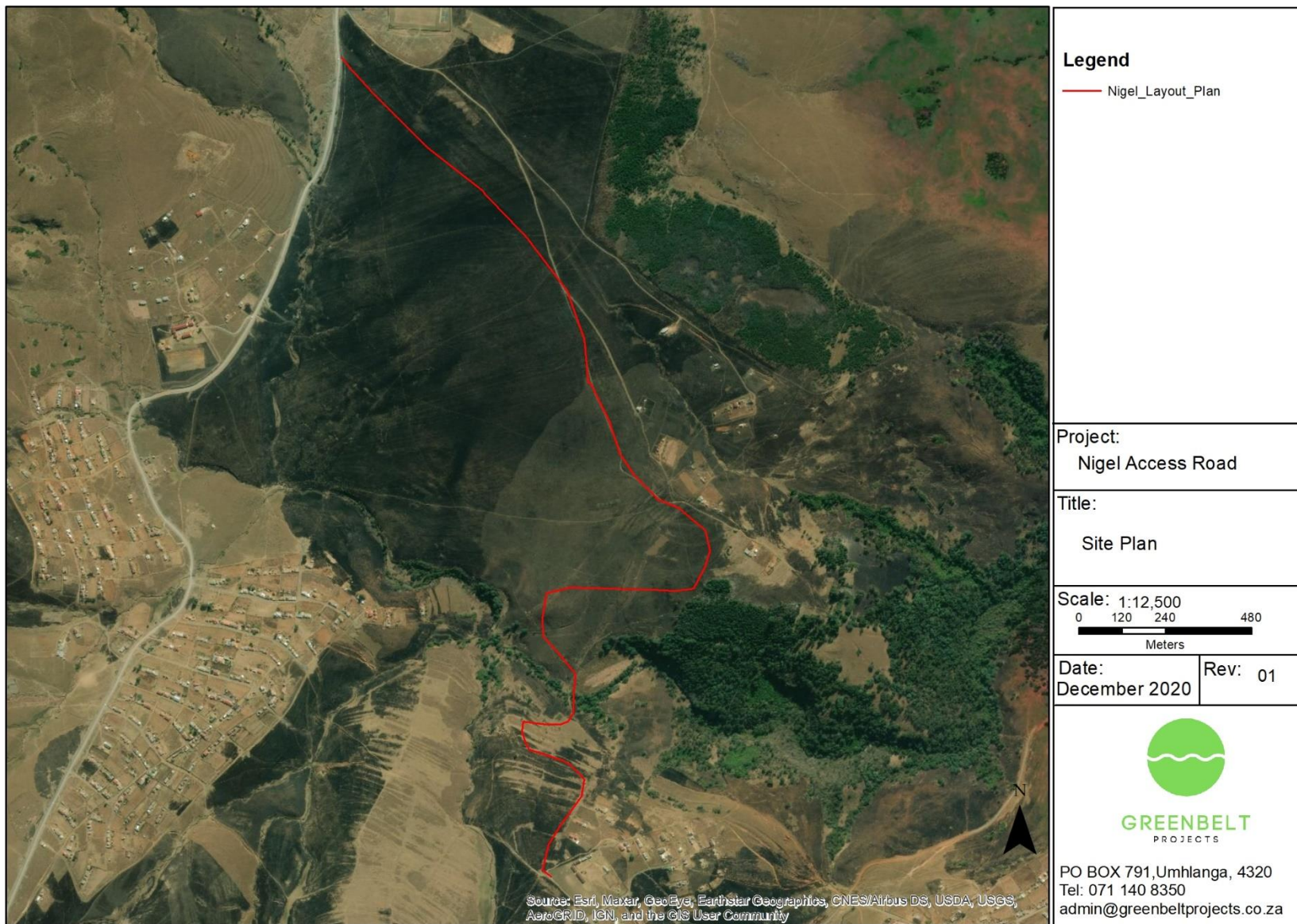


Figure 3: Site Plan (Preferred Alternative)

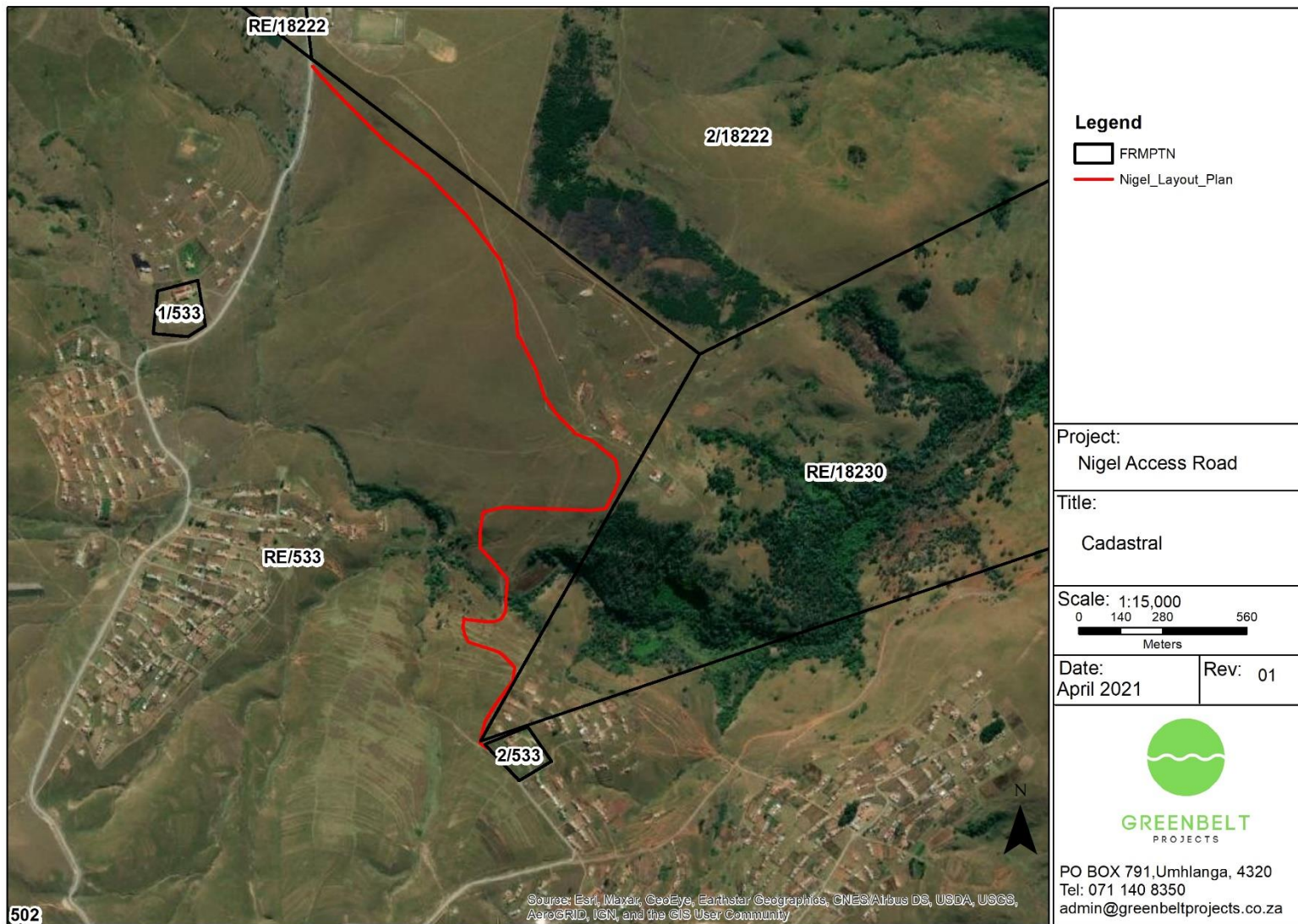


Figure 4: Cadastral Map

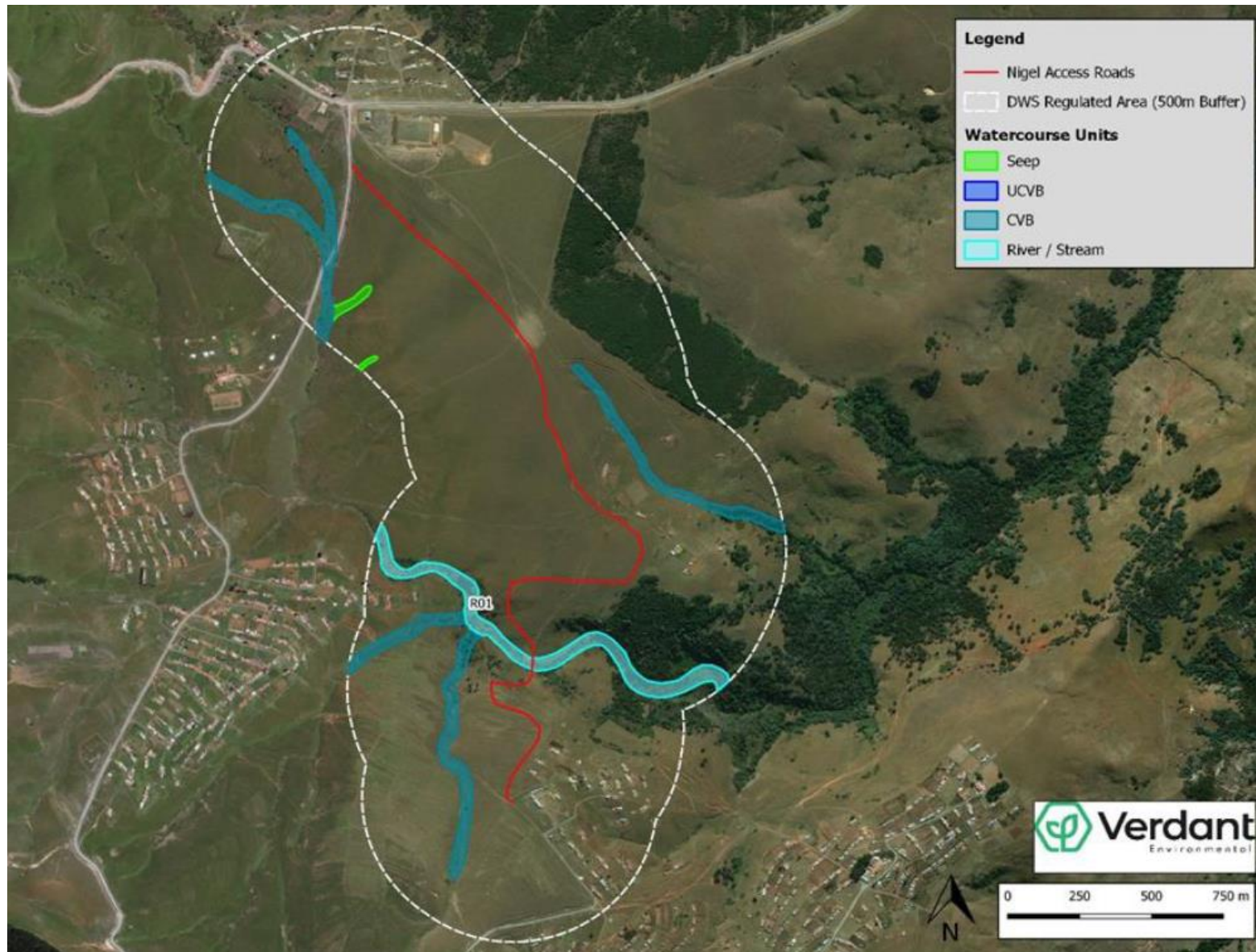


Figure 5: Watercourses

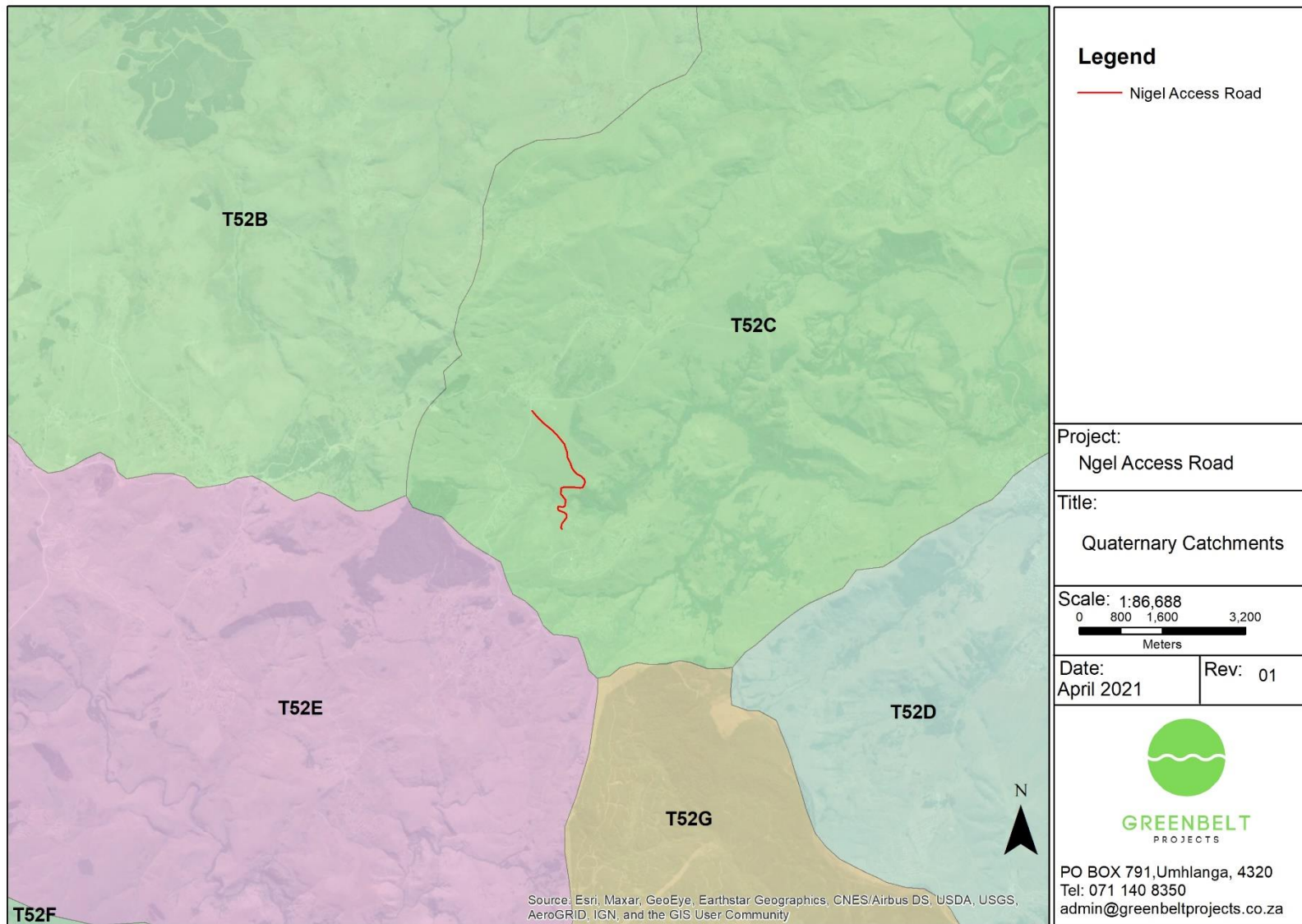


Figure 6: Quaternary Catchment Map

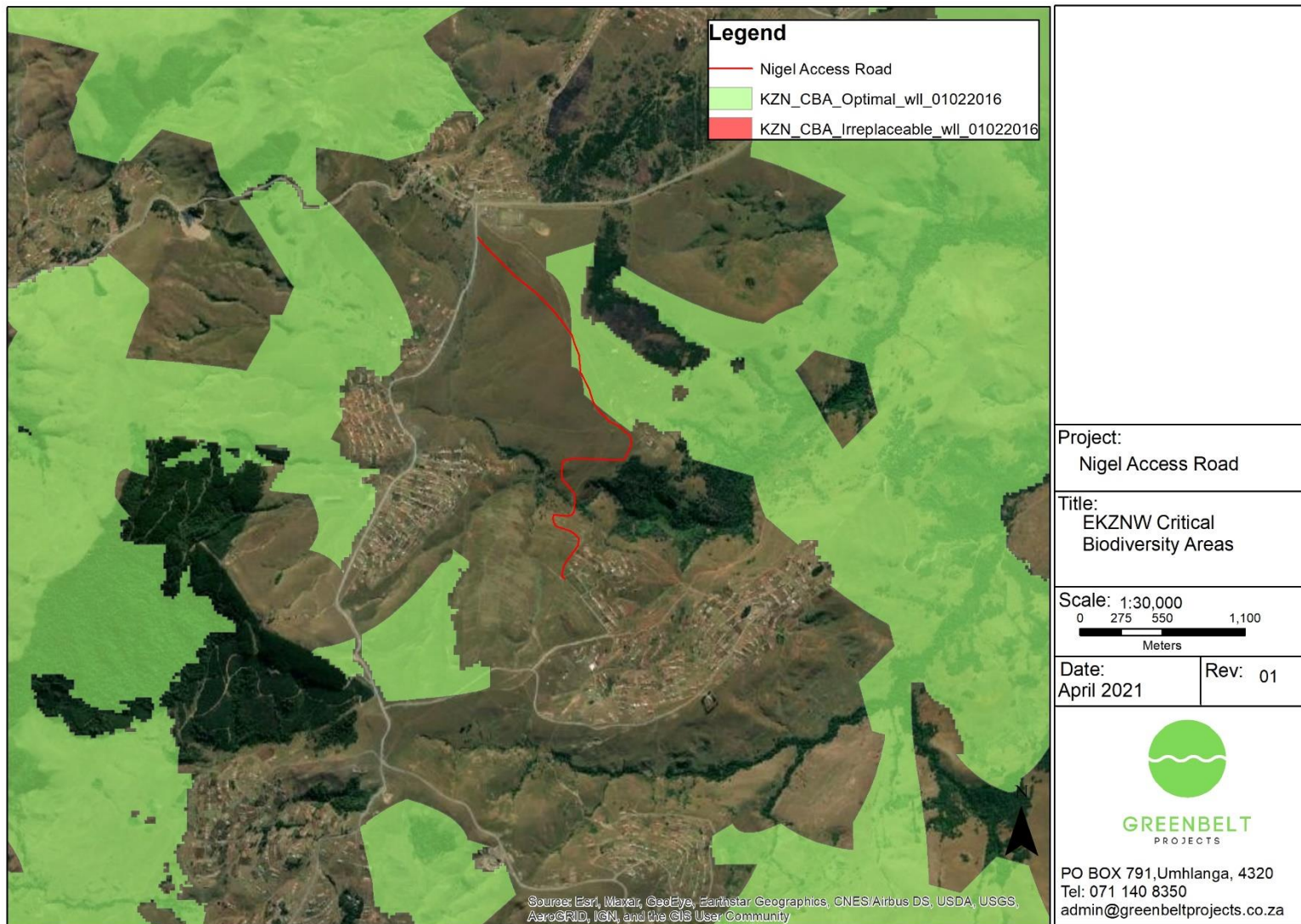


Figure 7: EKZNW Critical Biodiversity Areas (2010)

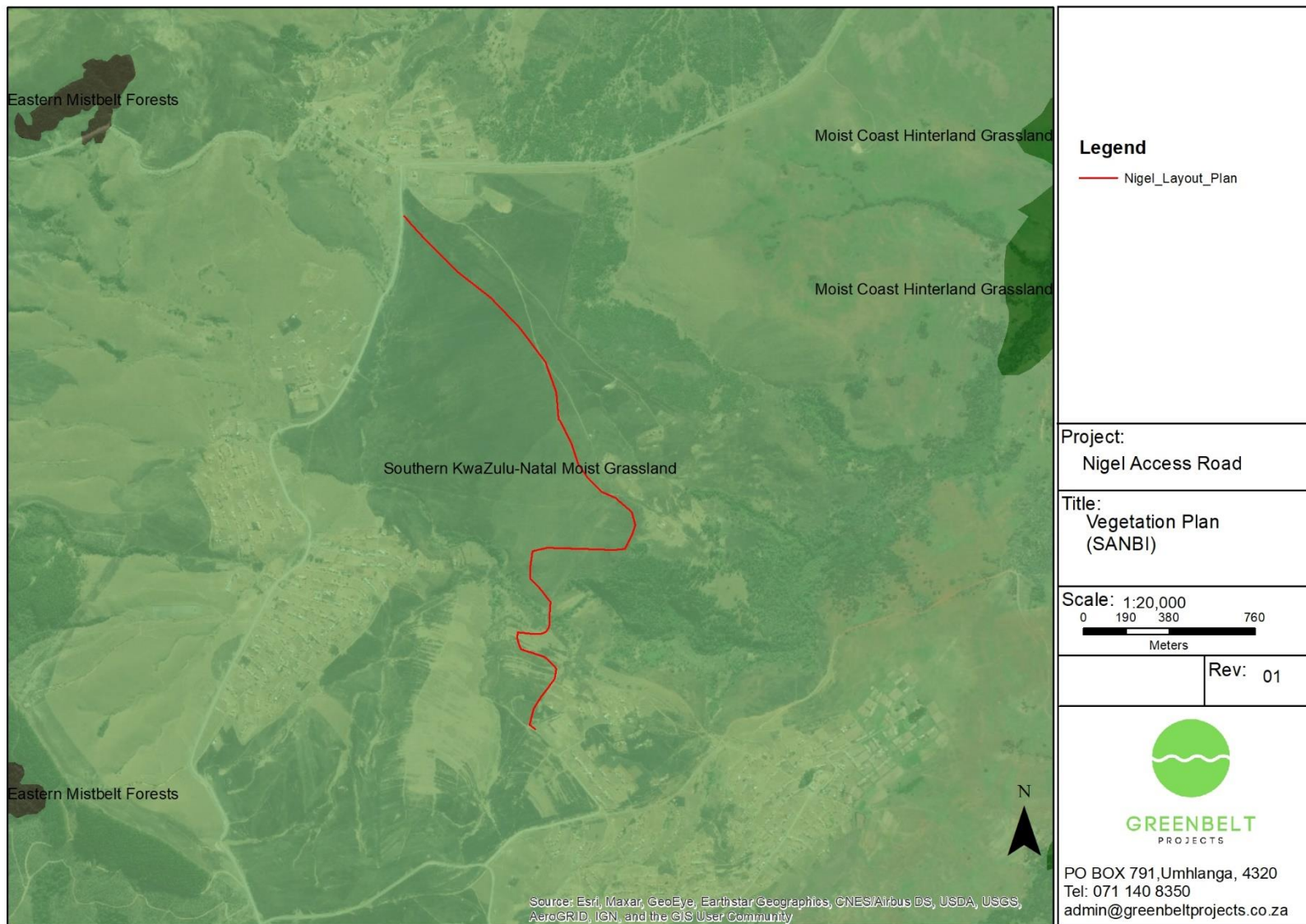


Figure 8: SANBI Vegetation Plan

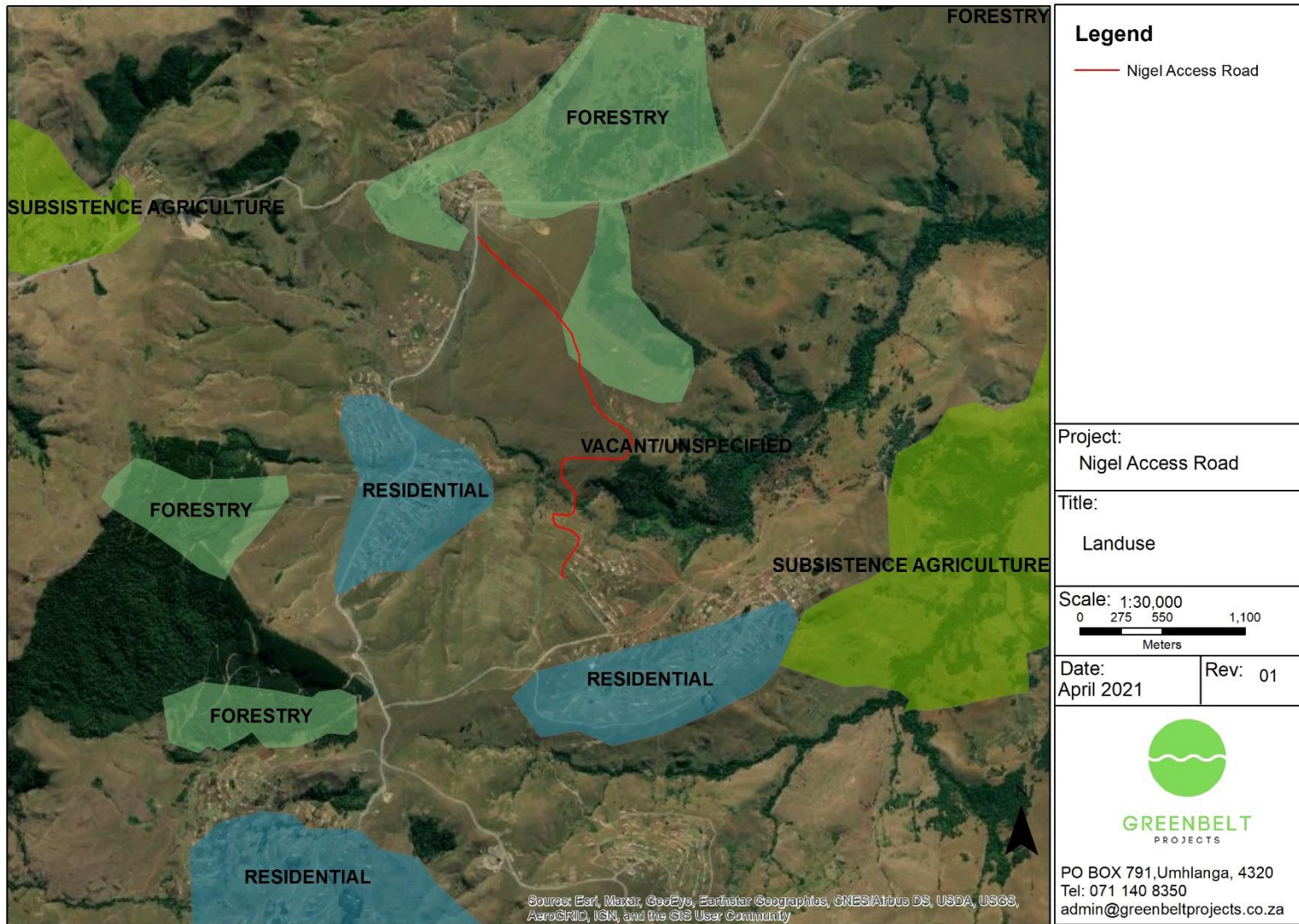


Figure 9: Landuse Map

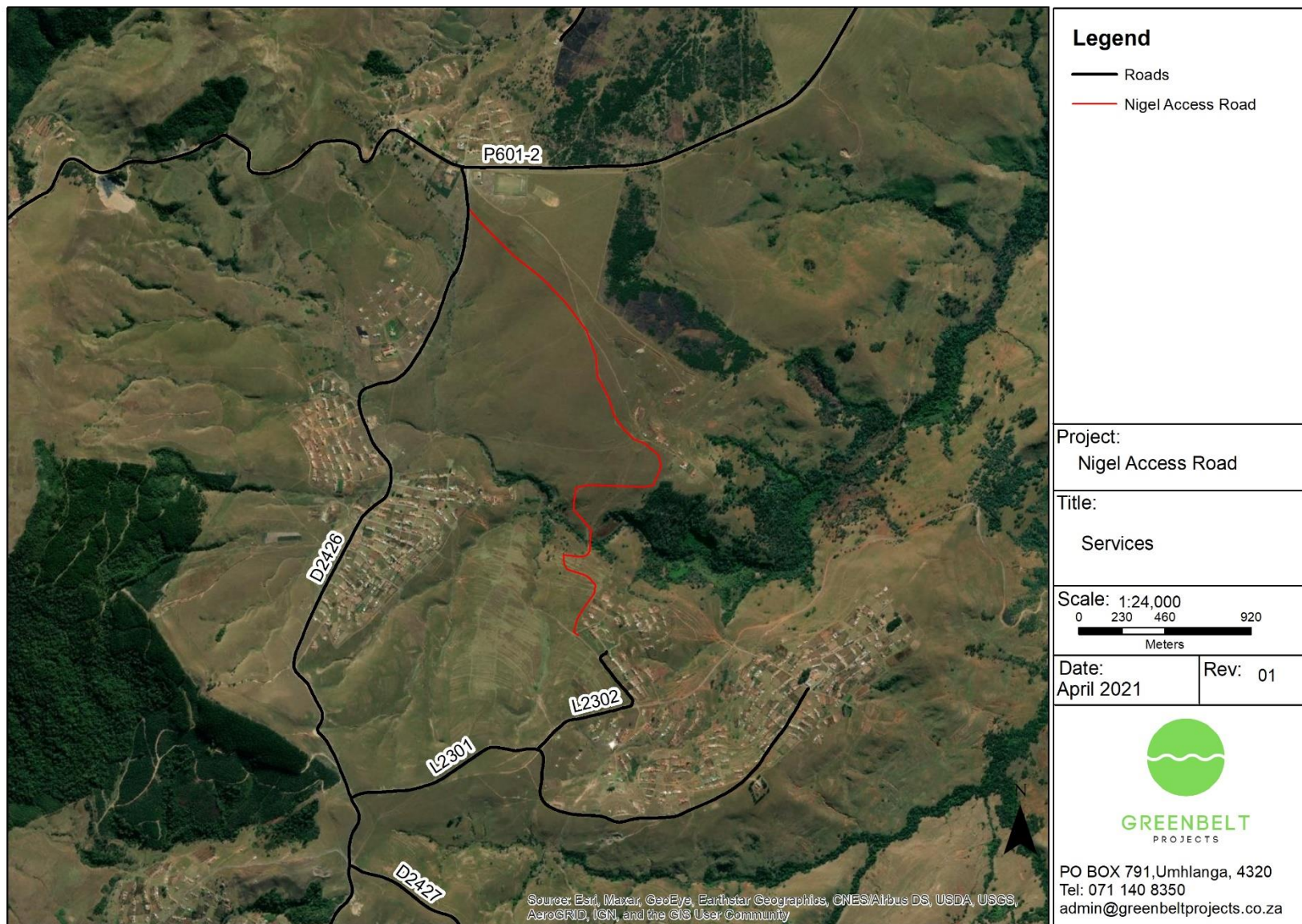


Figure 10: Services Map



Appendix B – Development Proposal (Diagram)

Nigel Access Road:



Appendix C – Specialist Investigations

- Wetland and Aquatic Assessment Report for the Proposed Nigel Access Road, Verdant, February 2021.
- Heritage Impact Assessment for the Nigel Access Road, Active Heritage, January 2021
- Palaeontological Impact Assessment for the Nigel Access Road. February 2021



Appendix D – Public Participation

- Copy of Newspaper Advertisement
- Site Notices
- Background Information Document (BID)
- Correspondence with IAPs
- Stakeholder Meeting Minutes
- Comments and Response Report



Nigel Access Road

Comments and Response – Interested and Affected Parties

April 2021



Organisation	Contact Person	Contact Details
Department of Water and Sanitation	Ms RJ Madibe	Tel: 031 336 2700 / 2765 Mngoma-Madibe Jabulile Mngoma-MadibeJ@dws.gov.za
Department of Agriculture Forestry and Fisheries (DAFF) Forestry Regulations and Support	Ms Karen Moodley	nandiphass@nda.agric.za KarenM@daff.gov.za Tel: 033 392 7739; Fax: 033 342 8783 P/Bag X 9029, Pietermaritzburg, 3200
Ezemvelo KZN Wildlife	Nerissa Pillay Jenny Longmore	Nerissa.pillay@kznwildlife.com Phindile.Langazane@kznwildlife.com Dominic.Wieners@kznwildlife.com Jenny.Longmore@kznwildlife.com PO Box 13053, Cascades, 3202
KZN Department of Transport Transportation Engineering Sub-Directorate	Michele Schmid Judy Reddy Roy Ryan	michele.schmid@Kzntransport.gov.za judy.reddy@kzntransport.gov.za Private Bag X 9043, Pietermaritzburg, 3200 Tel: 033 355 8600; Fax: 033 342 3962 Ref: T10/2/2/3922/2
Eskom	M. Nicol	Nicolm@eskom.co.za P O Box 66, New Germany, 3620 Tel: 031 710 5404 MtawalNP@eskom.co.za
Telkom SA SOC Limited Network Engineering and Build Eastern Region Wayleave Management Section	S. Mchunu	Private Bag X 54326, Durban, 4000 Tel: 033 342 1591; Fax: 033 345 6126 wayleaves2@telkom.co.za PortiaN2@openseve.co.za
Amafa	Bernadet Pawandiwa Annie van de Venter Radford	amafaddps@amafapmb.co.za bernadep@amafapmb.co.za
Ingonyama Trust Board	Suewellan Ellis	EllisS@ingonyamatrust.org.za
Ward Councillor Ward 19	Mr Khanbula	khambulat@umzimkhulum.gov.za
Harry Gwala District Municipality	Mrs Thuthukile MaNgcobo Sithole	Water Services Department Research, Planning & Design Unit Administrative Assistant Tel No.: 039 834 3939/2485 Email: ngcobot@harrygwalandm.gov.za
Ugu District Municipality	noloyiso.walingo@ugu.gov.za	Janine.Blackbeard@ugu.gov.za noloyiso.walingo@ugu.gov.za PO Box 33, Port Shepstone, 4240 Physical 28 Connor Street, Port Shepstone Tel 039 688 5700; 039 688 5794 Fax 039 682 1720 Web www.ugu.gov.za PO Box 33, Port Shepstone, 4200



Department of Water and Sanitation (DWS)	Ms RJ Madibe	Tel: 031 336 2700 / 2765 Mngoma-Madibe Jabulile Mngoma-MadibeJ@dws.gov.za
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Comments: Re BID 09/02/2021

Reference is made to the above-mentioned document sent to this Office via email on the 05 February 2021.04.21 This Department would like the following to be addressed in the Basic Assessment Report:

1. The management of solid waste and wastewater generated during both the construction and operational phase of the project.
2. Stormwater Management Plan/system during and after construction;
3. Wastewater and sewage management and/or management including the type of toilet facilities to be provided for construction workers and for the establishment post-construction;
4. Environmental Management Programme for the construction phase of the project
5. Erosion control measures to be implemented; and
6. Wetland/water resource delineation, functionality and its proximity to the project site is required
7. A Geotechnical Study must be included to ascertain the stability of bridges

It is the responsibility of the Applicant to identify all water uses triggered by the undertakings in terms of Section 21 of the NWA and ensure that all applicable water uses are authorised as such. The Applicant is required to consult the Department if clarity is needed with regards to Water Uses identification and Water Use Authorisations. These Water Uses are Listed in Table 1:

Table 1: Water Uses requiring Authorisation

s21(a)	taking water from a water resource;
s21(b)	storing water;
s21(c)	impeding or diverting the flow of water in a watercourse;
s21(d)	engaging in a stream flow reduction activity (currently only commercial afforestation);
s21(e)	engaging in a controlled activity – activities which impact detrimentally on a water resource (activities identified in s37(1) or declared as such under s38(1)) namely: <ul style="list-style-type: none"> > irrigation of any land with waste or water containing waste which is generated through an industrial activity or a waterwork; > an activity aimed at the modification of atmospheric precipitation; > a power generation activity which alters the flow regime of a water resource; or > intentional recharge of an aquifer with any waste or water containing waste
s21(f)	discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
s21(g)	disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource;
s21(h)	disposing in any manner of water which contains waste from, or has been heated in, any industrial or power generation process;
s21(i)	altering the bed, banks, course or characteristics of a watercourse;
s21(j)	removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
S21(k)	using water for recreational purposes

This Department awaits a copy of the Basic Assessment Report for further comments.

Response:

All of the above points noted and will be incorporated into the DBAR and EMP if not already present. Site observations by the project design Engineer has revealed that the Geotechnical conditions at watercourse crossing bridge structure location exhibits a shallow bedrock for founding of the watercourse crossing culvert structure. Please refer to letter From WNA Consulting Engineers dated 22 April 2021.

The requirements for a WULA are noted and a Water Use Licence Application is being undertaken by the applicant for the project. A pre-application has been undertaken with Mr Siphesihle Ngcobo on the 02/02/2021.



Department of Agriculture Forestry and Fisheries (DAFF) Forestry Regulations and Support	Ms Karen Moodley BID Sent: 30 July 2019	ThembalakheS@daff.gov.za KarenM@daff.gov.za PMBResourceCentre@daff.gov.za Tel: 033 392 7739 Fax: 033 342 8783 P/Bag X 9029, Pietermaritzburg, 3200
<p>Comments: re BID10/02/2021</p> <p>The Department of Environment, Forestry and Fisheries appreciates the opportunity given to register an interested and affected party for the Background Information Document (BID) for the a mentioned project. DEFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act No. 84 of 1998 by regulating the use of natural forests and protected trees species in terms of the said Act.</p> <p>With reference to the document received on 05/02/2021, DEFF (KwaZulu-Natal Forestry Manager) concerns pertain to the indigenous vegetation on site i.e. if there are natural forests or protected trees that occur within the proposed project footprint and will be affected by any of the project phase (construction, operational and decommissioning etc.) in terms of sections 7 and/or 15 of the National Forests Act No. 84 of 1998 as amended.</p> <p>Therefore, should there be any natural forests and/or protected species of concern that has been identified within the site, a vegetation assessment study has to be undertaken to determine the impact of the proposed project on the natural forests or protected tree species. The Draft Basic Assessment report and supporting studies should be forwarded to DEFF offices (KZN Forestry Management) for final review and comments. If there are no concerns as per NFA mandate, DEFF (KZN Forestry Manager) will not provide further comments on the proposed project.</p> <p>Should any further information be required, please do not hesitate to contact this office. This letter does not exempt you from considering other legislations.</p>		
<p>Response: Comments noted. The proposed project is likely to impact Riparian Zone, however, there are no vegetation units comprising natural forests or identified protected species. The dominant species noted is <i>Acacia Mearnsii</i>. Please also see Wetland and Riparian Assessment undertaken by Verdant.</p>		
Ezemvelo KZN Wildlife	BID Sent: 05 Feb 2021 Comments Received: No comments received	nerissa@kznwildlife.com PO Box 13053, Cascades, 3202
<p>Comments:</p>		
<p>Response: None required.</p>		
KZN Department of Transport Transportation Engineering Sub-Directorate	Michele Schmid Judy Reddy BID Sent: 05/02/2021	Private Bag X 9043, Pietermaritzburg, 3200 Tel: 033 355 8600 Fax: 033 342 3962



Comments: Re BID 22 April 2021

Dear Mr Whitaker

Thank you for forwarding the Background Information Document for the abovementioned application to Ezemvelo KZN Wildlife (Ezemvelo) for review and comment. Based on a rapid screening of the information supplied, Ezemvelo does not anticipate that the proposed activity would result in significant negative impacts upon local biodiversity, provided that best practice mitigation measures are implemented during the construction and operational phase.

Please be informed that Ezemvelo does not require additional documentation with regards to this project, except when additional biodiversity information becomes available and/or additional biodiversity impacts are identified which are not presented in the abovementioned report. In this regard, it is respectively requested that the new biodiversity information is highlighted in the cover letter for any further reports.

We trust that all the appropriate measures to safeguard the ecological integrity of the receiving environment will be implemented in accordance with the sustainable development principles of the National Environmental Management Act 107 of 1998.

Response: None required.

Eskom	Brian Akkiah BID sent 05/02/2021	P O Box 66, New Germany, 3620 akkiahb@eskom.co.za Tel +27 (0)31 710 5369 Cell +27 84 233 4610
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**Comments:**

Please see comments below, as per your request received by Eskom on 5th February 2021. We confirm that an investigation has been carried out with regard to the supply of electricity, as well as any encroachment into Eskom's Servitudes, in respect to the application as set out above referring to KML file supplied by Greenbelt Projects.

Please note that the proposed Access Road will cross Eskom's 22kV Overhead Reticulation Line namely, Umzali NB71 at two places. Eskom's infrastructure and the supplied access road line is shown on the attached drawing number ER_INV_59_2021. It is very important to note that Eskom's LV data is not reflected on the drawing supplied. It is advisable you contact Eskom immediately, should you physically detect any conductors and/or underground cables on the ground and not reflected on the drawing. Eskom's call centre number is 08600 37566. It is imperative that you make contact with Eskom's Senior Supervisor, Mr Sifiso Ndlovu on 039 797 2282 / 079 316 6141 and email NdlovuSf@eskom.co.za before construction close to Eskom's infrastructure.

Eskom wishes to advise you that in the event of your client wanting to move any Eskom Infrastructure, it will be at the applicant's / developer's cost. Taking the above statements into consideration, Eskom has no objection to the proposed application as long as the conditions listed below are adhered to. Please direct all correspondence to the Lands & Rights Manager Mr SS Nsele on email NseleSi@eskom.co.za

As per Eskom regulations for a 22kV Overhead Power Line please note:-

Building Restrictions for a 22-kV Overhead Power line

No building or structures may be erected or installed above or below the surface of the ground, neither may any material which might endanger the safety of this power line be placed within 12 (twelve) meters from the center line of this power line, on either side (overall servitude width 24 meters), without prior written confirmation from Eskom.

Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the stipulated area by the applicant, his/her agent, contractors, employees, successors in title, and assigns. The applicant indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the applicant's equipment. The applicant's attention is drawn to the Electricity Act, 1987, (Act 41 of 1987, as amended in 1994), Section 27(3), which stipulates that the applicant can be fined and/or imprisoned as a result of damage to Eskom's apparatus.

No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the applicant must give at least seven working days prior notice of the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued.

The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993). Equipment shall be regarded electrically live and therefore dangerous at all times.

A developer taking a new supply from Eskom, an increase of supply or line deviation is required to make an application to Eskom via the Eskom toll free number 0860037566. This application will be processed in terms of Eskom's standard customer connection tariffs, conditions and policies at the developer's cost. There is an attached indemnity form that you are required to complete and return to Land Development as part of your acknowledgement.

Response: Comments noted, None required.



Telkom SA SOC Limited Network Engineering and Build Eastern Region Wayleave Management Section	Wayleaves BID Sent: 05/02/2021	Private Bag X 54326, Durban, 4000 Tel: 033 342 1591; Fax: 033 345 6126 SthembisoM@openseve.co.za PortiaN2@openseve.co.za RaymondC@openseve.co.za RampeRR@telkom.co.za; mchunusr@telkom.co.za wayleaves2@telkom.co.za
<p>Comments:</p> <p>Wayleave Ref : EWIP_XUKL0504_21</p> <p>Wayleave Officer : Portia Mkhathini</p> <p>Requestor : Greenbelt Projects (Pty) Ltd</p> <p>Contact No. :</p> <p>Email : steven@greenbeltprojects.co.za</p> <p>Customer Ref : TBC</p> <p>Exchange : XUKL</p> <p>Address : -30°1512.70 29°4952.54</p> <p>Description : PROPOSED NIGEL ACCESS, WARD 19, UMZIMKHULU LOCAL MUNICIPALITY, HARRY GWALA DISTRICT MUNICIPALITY</p> <p>Wayleave Type : Service Request</p>		
<p>Response: None required.</p>		
AMAFA	Bernadet Pawandiwa BID Sent	bernadep@amafapmb.co.za amafaddps@amafapmb.co.za bernadep@amafapmb.co.za
<p>Comments: No comment received</p>		
<p>Response: None required.</p>		
Ingonyama Trust Board	Ms Suewellan Ellis/Tashveer Bothath BID sent 05/02/2021	EllisS@ingonyamatrust.org.za/ bothatht@ingonyamatrust.org.za
<p>Comments:</p> <p>Hi Steven,</p> <p>Please see attached Map and Deeds Office Search.</p> <p>It appears to be that the portions of land in question do not fall under the ownership of the ITB.</p>		



Response: No comments required.		
Harry Gwala District Municipality	BID Sent: 05/02/2021	Mrs Thuthukile MaNgcobo Sithole Water Services Department Research, Planning & Design Unit Administrative Assistant Tel No.: 039 834 3939/2485 Email: ngcobot@harrygwaladm.gov.za
<p>Comments: Re Bid 18/03/2021 Dear Mr Whitaker</p> <p>Please note that as the Municipality , we do not have any objections on the upcoming development however the municipality have the existing infrastructure on the ground (pipes, taps, spring protection, boreholes and pump house) You are kindly requested to contact/liase with Superintendent or Plumber before the project can start, who will assist in showing all the lines and infrastructure on site. The contact details for the Plumber will be provided as soon as You start with the project.</p> <p>As for the future development related comments you can contact Mr Lucky Zondi in the Development and Planning Unit on 039 834 8700 or alternatively email at zondil@harrygwaladm.gov.za</p> <p>Should you have any difficulties or need further clarity please contact Mr Nicholas Nyide (Technician) on 060 993 0361 or email at nyidenathi@gmail.com/nyiden@harrygwaladm.gov.za</p> <p>Regards,</p> <p>Mrs Thuthukile MaNgcobo Sithole Water Services Department Research, Planning & Design Unit Administrative Assistant Tel No.: 039 834 3939/2485 Email: ngcobot@harrygwaladm.gov.za</p>		
Response: Comments noted. None Required.		
Ward Councillor	Mr Kambhula BID Sent: 06 February 2021	khambulat@umzimkhululm.gov.za
<p>Comments: Re BID 06/02/2021 I recieved your email address about nagel access road. As a ward councillor I have no objection you continue whatever you want</p>		
Response: Noted		



Appendix E – Site Photographs

- Current Site Photographs



Nigel Access Road – Photographs.



Plate 1. Image looking south east from the approximate start point overlooking the proposed road alignment.



Plate 2. Image looking south at 300m, note existing track.



Plate 3. Image showing rural community who will be serviced by the new Nigel Access Road.



Plate 4. Image looking south showing the approach to the uMzimvubu River crossing. Note the existing tracks, which has been utilised in the preferred road alignment.



Plate 5. Image looking east, downstream at the watercourse crossing. Note the boulders and exposed rock, suggesting shallow bedrock conditions for culvert causeway founding.



Plate 6. Image looking north west showing an overview of the Riparian zone associated with the watercourse, looking towards the start point in the background.



Plate 7. Image showing the site notice placement at the endpoint of the proposed Nigel Access Road.



Plate 8. Image showing the site notice placement outside the Mountain Home community hall, near the start point.



Plate 9. Image showing the site notice placement outside the Emvubukazi Primary School.



Appendix F – Environmental Management Programme