PROPOSED UPGRADE OF BALENI ROAD NEAR EDENDALE, MSUNDUZI LOCAL MUNICIPALITY, KWAZULU-NATAL

Phase 1 Heritage Impact Assessment

25 April 2022

FOR: ENVIROPRO

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EXECUTIVE SUMMARY

The uMsunduzi Local Municipality proposes to upgrade Baleni Road (L1459) from existing gravel to asphalt surfacing. Baleni Road is located in Ward 3 of the Municipality's jurisdictional area. The project entails the upgrade of the existing 4m wide sub-standard gravel-surfaced road to a 5m wide asphalt surfaced road inclusive of upgraded stormwater drainage facilities.

The road upgrade is approximately 2.3 km in length therefore it triggers section 41 (1)(a) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that require an HIA. Section 41 (1)(a) refers to the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length.

Baleni Road falls within the boundary of Ward 3 of the uMsunduzi Local Municipality and is located in Edendale and about 26km west of the Pietermaritzburg city centre. The inspection of the proposed road upgrade was undertaken on 20 April 2022. Site conditions were good.

The road upgrade was inspected on foot and the specialist spoke to several residents during the inspection. An area was found on the eastern side of the road which had been used to cut timber. A resident of the homestead opposite the area pointed out the site of an old grave. He said that there used to be a home near the grave but no remains of the home could be found. The grave is a slightly raised mound of grass with a few rocks on it. The grave is situated 10m from the road and could be impacted by the road upgrade.

An abandoned house was found east of Baleni road. A resident indicated that there were graves between the house and the road in an area overgrown with vegetation. Due to the thick undergrowth, the graves were not visible and it could not be determined how close the graves are to the road but they could be located as close as 5m to the road.

Towards the northern end of Baleni Road, a road diverts to the left. Residents stated that there are old graves located in the small plantation of trees to the west of the road. The graves are no longer visible and the area is overgrown. The graves are located west of the power lines and about 15m from the road. A resident also pointed out several grave sites towards the northern end of Baleni Road which could be impacted by the upgrade if they are not clearly marked and protected.

The desktop palaeontological study indicates that the road falls partly on the Volksrust Formation which is highly sensitive and partly on the non-fossiliferous dolerite of Jurassic age. Dolerite does not preserve fossils. There are no records from the Volksrust Formation of plant or animal fossils in this region. Surface activities may impact upon the fossil heritage if preserved in the development footprint. The geological structures suggest that the rocks are either the wrong kind or might contain fossils such as bivalves or fragments. Since there is an extremely small chance that fossils from the underground Volksrust Formation may be disturbed, it is recommended that a Fossil Chance Find Protocol be included in the project's EMPr. It was assessed that the potential impact to fossil heritage resources would be extremely low.

Several grave sites were found during the site inspection with some located close to Baleni Road. Graves are protected in terms of section 39 (1) of the KwaZulu-Natal Amafa and Research Institute Act. Graves are highly significant to many people and there are many traditional, cultural and personal sensitivities and norms concerning damage to graves or the relocation of graves. It is generally recommended that graves are not moved; however, two grave sites that are located 10m or less from the road may need to be relocated. If it is decided to relocate the graves, then the procedure provided in section 5 of the Draft KwaZulu-Natal & Research Institute Regulations, 2021 must be followed.

The assessment of impacts indicated that the level of impact on graves pre-mitigation was on the borderline between a medium impact and a high impact. A high impact is an indication that the impact must have an influence on the decision to develop in the area. A medium impact is such where the impact could influence the decision to develop in the area unless it is effectively mitigated. The level of impact post-mitigation was assessed as a medium impact. The mitigation measures provided in this report must be strictly implemented to avoid damage to those graves located close to the proposed road upgrade.

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APPENDIX 1

Desktop palaeontological study

I, Jean Beater, act as an independent specialist for this project and I do not have any vested interest either business, financial, personal or other, in the proposed activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.

SPECIALIST DETAILS

Name	Qualification	Professional Registration
Jean Beater	MA (Heritage Studies)	Member of Association of
	MSc (Environmental Management)	South African Professional Archaeologists (No. 349)
		Member of IAIAsa (No. 1538)

1. INTRODUCTION

The uMsunduzi Local Municipality proposes to upgrade Baleni Road (L1459) from existing gravel to asphalt surfacing. Baleni Road is located in Ward 3 of the Municipality's jurisdictional area. The project entails the upgrade of the existing 4m wide sub-standard gravel-surfaced road to a 5m wide asphalt surfaced road inclusive of upgraded stormwater drainage facilities.

A Phase 1 Heritage Impact Assessment (HIA) was undertaken of the proposed road upgrade in order to assess whether activities associated with the upgrade will impact heritage resources.

2. LEGISLATIVE BACKGROUND

The road upgrade is approximately 2.3 km in length therefore it triggers section 41 (1)(a) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that require an HIA. Section 41 (1)(a) refers to the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length.

The upgrade of Baleni road may also impact graves, protected structures, archaeological and palaeontological resources that are protected in terms of sections 37, 38, 39, and 40 of the KwaZulu-Natal Amafa and Research Institute Act, 2018.

In terms of section 3 of the NHRA, heritage resources are:

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including—
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and

- (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) of significance relating to the history of slavery in South Africa;
- (i) movable objects, including:
- (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
- (ii) objects to which oral traditions are attached or which are associated with living heritage;
- (iii) ethnographic art and objects;
- (iv) military objects;
- (v) objects of decorative or fine art;
- (vi) objects of scientific or technological interest; and
- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

3. LOCATION

Baleni Road falls within the boundary of Ward 3 of the uMsunduzi Local Municipality and is located in Edendale and west of Pietermaritzburg. The road is situated about 26km from Pietermaritzburg city centre and about 2km north of Henley Dam (see **Fig. 1**).

4. TERMS OF REFERENCE

Undertake a Phase 1 HIA in order to determine whether the proposed project will impact heritage resources (if any). Provide mitigation measures to limit or avoid the impact of the proposed bridge upgrade on heritage resources.

Submit the Phase 1 HIA report to the provincial heritage resources authority, the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute), for their assessment and comment.

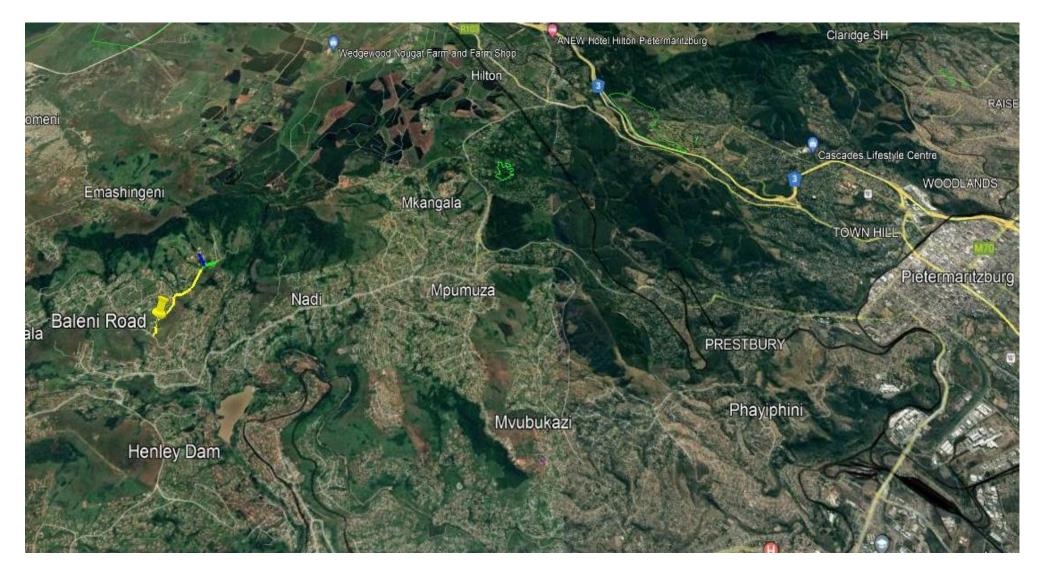


Figure 1: Baleni Road upgrade in relation to Pietermaritzburg and surroundings



Figure 2: Closer image of road upgrade

5. METHODOLOGY AND CONSTRAINTS

A survey of literature, including other heritage impact assessment reports completed for the surrounding area, was undertaken in order to ascertain the history of the area and what type of heritage resources have or may be found in the area of development.

Historical aerial images and topographic maps of the area were consulted that were retrieved from the Department of Rural Development and Land Reform's CDNGI Geospatial Portal (www.cdngiportal.co.za).

The inspection of the proposed road upgrade was undertaken on 20 April 2022. Site conditions were good.

6. HISTORICAL BACKGROUND OF PROJECT AND SURROUNDING AREA

The greater Pietermaritzburg area and surrounds have a long history of occupation by Stone Age hunter gather groups, Iron Age farming communities and colonial settlers. Middle Stone Age sites occur around the greater Pietermaritzburg area and are often located in rock shelters. The arrival of Nguni speaking farming communities from Western Africa during the first half of the 1st millennium AD marks the end of the Stone Age in Southern Africa. During the Early Iron Age, settlements were situated on valley floors and next to rivers. The Later Iron Age period is characterised by stone walled settlements. These Later Iron Age communities in KwaZulu-Natal were the direct ancestors of the present-day Zulu people (NGT Holdings 2018: 24-26).

During the historical period the KwaZulu-Natal region was often left in turmoil due to wars and conflict between the different cultural groups that settled in the area. In the beginning of the 19th century various Nguni-speaking settled on the larger Umngeni Valley area which is located to the north of Pietermaritzburg. During the Mfecane/Difaqane at the end of the 18th and beginning of the 19th centuries, communities who had settled in KwaZulu-Natal were displaced and forced to move by wars between the Zulu chiefdoms (NGT Holdings 2018:26).

Voortrekkers, who became dissatisfied with British rule, started to move from the Cape and in 1837 Piet Retief led the Voortrekkers into Natal, where he met with King Dingane to arrange for permission to settle in Natal (NGT Holdings:26). After the Battle of Ncome/Blood River, the Voortrekkers settled across the province and named Pietermaritzburg after their leaders Piet Retief and Gert Maritz. In 1843, the town was taken over by the British and became an important staging post in the Colony of Natal (Derwent 2006:58).

Edendale was founded in 1851 when Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin under the leadership of the missionary Reverend James Allison settled on a farm called Welverdiend. 'The farm was purchased on a share basis between Allison and 90 members of the community when they seceded from the Wesleyan Church in 1850. Its name was changed from Welverdient(d) to Edendale. The primary goal of the mission was to create a Christian community. This farm was purchased from the Voortrekker leader, Andries Pretorius, who was awarded the farm for leading the victory at the battle of Ncome / Blood River. Over time, Edendale becoming a multiracial community. However, during apartheid with the implementation of the Group Areas Act, members of Edendale were forcibly removed according to their racial classification (Gwala 2019:81 - 82).

The 1967 aerial image of the road and surroundings shows dwellings near the road and especially towards the northern half of the road as well as extensive cultivation to the west of the road.

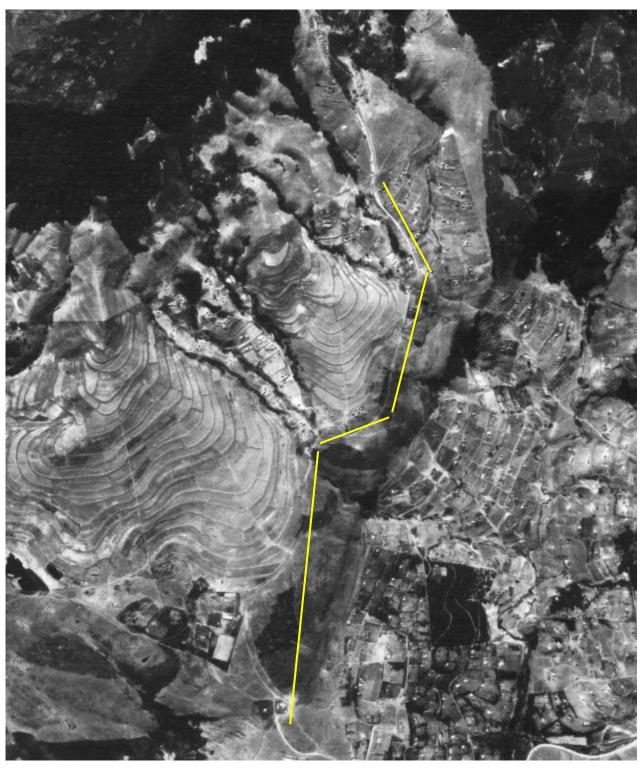


Figure 3: 1967 aerial image of road and surroundings

7. SITE INSPECTION

The road upgrade was inspected on foot starting at the southern end/start of the road near Zwartkop Primary School. The specialist spoke to several residents during the inspection. Most of the homesteads are located to the west of the road as can be seen in **Fig. 6**.

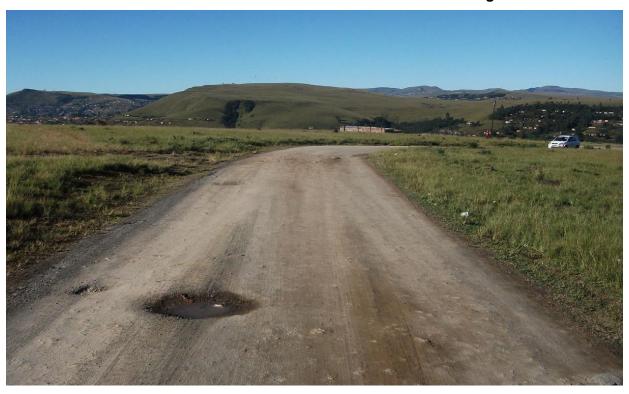


Figure 4: Looking southwards along Baleni Road

At the start of the inspection, the specialist spoke to Thembekile Mbanjwa who said that most graves are located within the boundaries of homesteads such as the four graves pictured in **Fig.** 8 below. These graves are located over 30m west of the road and will not be impacted by the road upgrade.



Figure 5: View of condition of Baleni Road looking northwards



Figure 6: View of Baleni Road and surroundings

The gardens and fields of some homesteads abutt the road as can be seen in Fig. 7.



Figure 7: Fields next to road

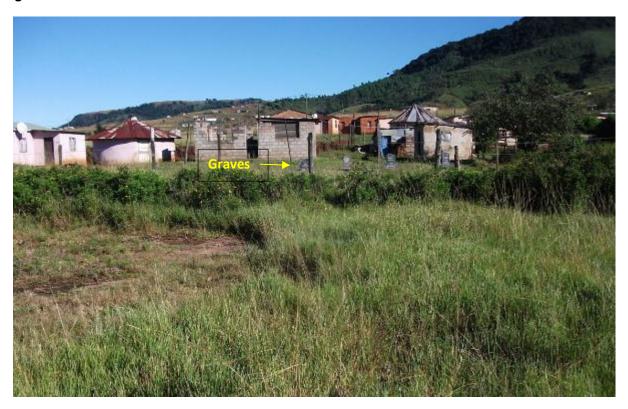


Figure 8: Graves within boundary of homestead

An area was found on the eastern side of the road which had been used to cut timber. Some machinery was still on the site as well as the remains of the cut timber. A resident of the homestead opposite the site, Sbusiso Mkhize, pointed out the site of an old grave. He said that

there used to be a home near the grave but there are no remains of the home apart from a slight indentation in the ground. The grave is a slightly raised mound of grass with a few rocks on it. The grave is situated 10m from the existing road and could be impacted by the road upgrade.



Figure 9: Area used to cut timber with machinery still on site



Figure 10: Old grave on eastern side of road

A house that has collapsed was noted during the inspection. According to residents, Zamathlangu Mhlangu and Andile Khanyile, there are two graves situated between the collapsed house and structure behind it which is located even further back from the road (over 30m) so the graves should not be impacted by the road upgrade.

An abandoned house was found east of Baleni road. A resident, Sintu Nqambi, indicated that there were graves between the house and the road in an area overgrown with dense vegetation. Due to the thick undergrowth (see **Fig. 12**), the graves were not visible and it could not be determined how close the graves are to the road but they could be located as close as 5m to the road.



Figure 11: Abandoned structure to east of Baleni Road

Towards the northern end of Baleni Road, a road diverts to the left which is indicated in blue on **Fig. 2** above. This section of road was inspected. Both Andile Khanyile and Sibusiso Zuma indicated that old graves were located in the small plantation of trees to the west of the road. The graves are no longer visible and the area is overgrown. The graves are located west of the power lines and about 15m from the road. Existing infrastructure for water reticulation was visible along this road.



Figure 12: Dense vegetation where graves are reportedly located



Figure 13: Road in relation to small plantation of trees

The extension of Baleni Road (indicated in green in **Fig. 2**) was inspected. Ntombithula Phakathi showed the specialist several graves along this road. The graves are mounds of ground without additional markings. The graves situated closest to the road are 16m north of Baleni Road. Some

of the graves are situated in an open field and could be impacted by upgrade activities if they are not clearly marked and protected.



Figure 14: Mound indicating site of grave



Figure 15: Northern end of Baleni Road looking in a south-westerly direction

Heritage sites found during the site inspection are listed below.

Table 1: Heritage sites found during site inspection

No.	Description	Coordinates	Significance	Mitigation
1	One grave	29°36'26.3" S 30°13'54.9" E	High heritage significance	Located 10m south-east of road; grave to be fenced with 5m buffer to ensure grave is not impacted by road upgrade
2	Four graves with headstones	29°36'21.7" S 30°13'56.1" E	High heritage significance	Located >30m west of road within homestead boundary; should not be impacted by proposed upgrade
3	Graves between residences	29°36'20.8" S 30°13'56.2" E	High heritage significance	Located >30m west of road; will not be impacted by road upgrade
4	Graves	Approx. location 29°36'12.4" S 30°14'00.0" E	High heritage significance	Located less than 5m from road; area to be cleared of vegetation prior to any upgrade work being done; confirmation of graves to be done with assistance of residents; graves to be fenced off with 5m buffer to avoid impacts
5	Graves in small plantation of trees	29°36'05.4" S 30°13'58.7" E	High heritage significance	Located 18m west of road; should not be impacted by road upgrade; area to be fenced off with 5m buffer
6	Three graves	29°36'05.9" S 30°14'07.0" E	High heritage significance	Located 16m north of road; 5m buffer around graves to prevent upgrade activities from impacting graves
7	Graves	29°36'05.5" S 30°14'07.3" E	High heritage significance	Located 26m north of road; they are located in an open field which may be used for construction camp therefore graves to be fenced with 5m buffer
8	One grave	29°36'05.5" S 30°14'07.8" E	High heritage significance	Located 20m north of road; as it is located in an open field which may be used for construction camp, the grave to be fenced with 5m buffer
9	One grave	29°36'05.3" S 30°14'07.9" E	High heritage significance	Located 30m north of road; as it is located in an open field which may be used for construction camp, the grave to be fenced with 5m buffer

The desktop palaeontological study (**Appendix 1**) indicated that the road falls partly on the Volksrust Formation which is highly sensitive and partly on the non-fossiliferous dolerite of Jurassic age. Dolerite is an intrusive volcanic rock and does not preserve fossils. There are no records from the Volksrust Formation of plant or animal fossils in this region. Surface activities may impact upon the fossil heritage if preserved in the development footprint. The geological structures suggest that the rocks are either the wrong kind or might contain fossils such as bivalves or fragments. Furthermore, the material to be excavated is soil and sand and these do not preserve fossils. Since there is an extremely small chance that fossils from the underground Volksrust Formation may be disturbed, it is recommended that a Fossil Chance Find Protocol be included in the Environmental Management Programme (EMPr) for the planned road upgrade. It was assessed that the potential impact to fossil heritage resources would be extremely low (Bamford 2022:9-12).

8. ASSESSMENT OF SIGNIFICANCE OF IMPACTS

The assessment of significance of impacts on heritage resources found during the site inspection of the area proposed for coal prospecting activities was undertaken in terms of the following criteria:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be footprint (1) (limited to the immediate area), site of development (2), local (3), regional (4) or national (5).
- The **duration**, wherein it will be indicated whether:
 - the lifetime of the impact will be of a very short duration (0–1 years) assigned a score
 of 1:
 - the lifetime of the impact will be of a short duration (2-5 years) assigned a score of
 2;
 - medium-term (5–15 years) assigned a score of 3;
 - o long term (> 15 years) assigned a score of 4; or
 - o permanent assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease),

and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.

- The **probability** of occurrence, which shall describe the likelihood of the impact occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- The **status**, which will be described as either positive, negative or neutral.
- The degree to which the impact can be mitigated.

The following formula was applied to calculate the impact significance after the factors were ranked for each impact: SP = (magnitude + duration + scale) x probability.

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- >60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

Table 2: Assessment of impacts on graves

	Without mitigation	With mitigation
Extent	Site (2)	Site (2)
uration	Permanent (5)	Permanent (5)
lagnitude	High (8)	Moderate (6)
robability	Highly probable (4)	Probable (3)
ignificance	60 (Medium/High)	39 (Medium)
tatus (positive or negative)	Negative	Negative
eversibility	None	Low
replaceable loss of resources	Yes	Yes
an impacts be mitigated?	Yes	

Mitigation measures

- 5m buffer fence around grave/s in which no construction activities may take place.
- The buffer area must be clearly demarcated and highly visible to construction crews and vehicles.
- Where there is limited space between the proposed buffer and road then strict precautions must be taken to avoid
 damaging graves such as no machinery been used in those sections of the road or consideration must be given to
 moving grave sites No. 1 and 4 as listed in **Table 1**, where the one grave is located 10m from the road and the other
 could be located less than 5m from the road.
- If grave/s are damaged during construction, then work must stop in the immediate vicinity and the grave must be
 rehabilitated to its previous condition. If the grave/s is >60 years, then the Institute must be informed and the
 necessary permits obtained from the Institute for the repair to the grave/s.
- If it is decided that grave/s are to be moved, then the procedure stipulated in section 5 of the Draft KwaZulu-Natal & Research Institute Regulations, 2021 must be followed. The section refers to the application process to be undertaken for the damage, alteration, exhumation or removal from its original position or any other disturbance of a grave in a traditional burial place or not located in a formal cemetery

Cumulative impacts: Low

9. DISCUSSION AND CONCLUSION

Several grave sites were found during the site inspection. Some graves are located within homestead boundaries; however, several were found close to Baleni Road. In terms of section 39 (1) of the KwaZulu-Natal Amafa and Research Institute Act, graves or burial grounds older than 60 years or deemed to be of heritage significance by a heritage authority- (a) not otherwise protected by the above Act and (b) not located in a formal cemetery managed or administered by a local authority, may not be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute.

Graves are highly significant to many people and there are many traditional, cultural and personal sensitivities and norms concerning damage to graves or the relocation of graves. It is generally recommended that graves are not moved; however, two grave sites that are located 10m or less from the road may need to be relocated as the upgrade of the road could very likely impact them. If it is decided to relocate the graves, then the procedure provided in section 5 of the Draft KwaZulu-Natal & Research Institute Regulations, 2021 must be followed.

The assessment of impacts indicated that the level of impact on graves pre-mitigation was on the borderline between a medium impact and a high impact. A high impact is an indication that the impact must have an influence on the decision process to develop in the area. A medium impact is such where the impact could influence the decision to develop in the area unless it is effectively

mitigated. The level of impact post-mitigation was assessed as a medium impact. The mitigation measures provided both in **Table 1 and in Chapter 10** of this report have to be strictly implemented to avoid damage to those graves located close to the road including the exclusion of the use of machinery in the sections of road close to graves 1 and 4 as listed in **Table 1**.

10. MITIGATION MEASURES

- For any chance heritage finds, all work must cease in the area affected and the Applicant /
 Contractor must be immediately informed. A registered heritage specialist must be called to
 site to inspect the finding/s. The relevant heritage resource agency (the Institute) must be
 informed about the finding/s.
- The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Permits must be obtained from the Institute if heritage resources are to be removed, destroyed or altered.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any recent remains be found on site that could potentially be human remains, the South African Police Service as well as the Institute must be contacted. No SAPS official may remove remains (recent or not) until the correct permit/s have been obtained.
- The Fossil Chance Find Protocol (included in the desktop palaeontological report) must be adhered to.

11. REFERENCES

Bamford, M. 2022. Palaeontological Impact Assessment for the proposed upgrade of Baleni Road, KwaNxamalala, KwaZulu Natal Province Desktop study (Phase 1)

Derwent, S. 2006. KwaZulu-Natal Heritage Sites. A guide to some great places. David Philip Publishers: Claremont

Gwala, N. 2019. Once upon a time in Edendale in Natalia 49 (2019) Natal Society Foundation 2019 (https://www.natalia.org.za)

NGT Holdings. 2018. Heritage Impact Assessment report for the proposed development of a SMME Training Centre and Youth Enterprise Park on Erf 1977 Edendale-CC located in the Msunduzi Local Municipality, Pietermaritzburg, KwaZulu-Natal Province, South Africa