

**TOYOTA STORMWATER CULVERT TO OUTFALL
PROJECT, PROSPECTON, ETHEKWINI
MUNICIPALITY, KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

28 July 2022

**FOR: SAT Environmental Consultants (Pty) Ltd
Sheldon Singh**

**AUTHOR: JLB Consulting
Jean Beater**

EXECUTIVE SUMMARY

The eThekweni Municipality Coastal, Stormwater and Catchment Department is proposing to construct a new stormwater box canal to outfall in the eastern Prospecton area in order to reduce the risk of flooding on the N2 highway and in the Isipingo area, as well as flooding of the car manufacturer, Toyota, during storm events. The proposed culvert will be 751m in length, with a height of 1.5m by 2m width.

The proposed culvert is approximately 751m in length hence 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 may 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 study area is located in the eThekweni Municipality within the suburb of Prospecton which is situated south-west of the Durban Central Business District. The upgrade is located between Joyner Road and Clark Road and south-east of the N2 highway

An inspection of the route of the proposed culvert was undertaken on 19 July 2022. Site conditions were, in general, good.

The inspection began at the start of the proposed culvert in Joyner Road. The culvert is to be located between existing industries and these areas were inspected on foot where access was available. Most the properties have high walls between them with some structures situated close to the proposed culvert. None of the structures/warehouses that are located along the culvert route are over 60 years. Many of the sites have concrete paving over much of the property together with machinery, drains, plumbing, packaging, etc.

The proposed route of the culvert emerges from the industrial area to cross Ernest Clokie Road and then run through an informal settlement that is called Dakota Beach or Isipingo Beach settlement. The culvert ends at Clark Road above the beach. The remains of what could have been a tidal pool can still be seen. No middens or other heritage resources were seen on the beach or in the dunes during the inspection. It is recommended that the construction of the outfall and rehabilitation of the dune are monitored by an archaeologist in case of chance heritage finds.

A palaeontological exemption application statement indicated that part of the project falls into an area of low fossil sensitivity and a part of the culvert (between Ernest Clokie Road and Clark Road) falls into an area of moderate sensitivity corresponding to aeolian sand which is beach

sand and possibly related to the Holocene aged Sibayi Formation, Maputaland Group. The route of the culvert is very disturbed with the section falling into a moderate fossil sensitivity going through an industrial area and an informal settlement as well as disturbance caused by modern vegetation and urban development. Any fossils would be dune or marine shells like the modern fauna, and probably only fragments of these. It was recommended that a Fossil Chance Find Protocol should be added to the EMPr for the construction of the proposed culvert. It was concluded that no further palaeontological assessment was required and that the project should proceed.

During the site inspection no heritage sites were found. The route for the proposed culvert is located in an industrial area and an informal settlement hence the area is highly disturbed by industrial and residential development. Many of the properties in the industrial area are covered with concrete, warehousing, high walls and associated equipment. The structures along the culvert route are less than 60 years in age. The informal settlement starts to appear on the 2002 / 2003 Google Earth images with structures along Clark Road having been demolished / flattened. It is recommended that the construction of the proposed stormwater culvert proceed from a heritage perspective.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS	iv
1. INTRODUCTION	6
2. LEGISLATIVE BACKGROUND	6
3. LOCATION	7
4. TERMS OF REFERENCE	7
5. METHODOLOGY	10
6. HISTORICAL BACKGROUND OF AREA	10
7. RESULTS OF SITE INSPECTION	13
8. DISCUSSION AND CONCLUSION	20
9. MITIGATION MEASURES	20
10. REFERENCES	21

FIGURES

Figure 1: Location of proposed culvert indicated in red	8
Figure 2: Section of culvert between Joyner Road and Ernest Clokie Road.....	9
Figure 3: Culvert route between Ernest Clokie Road and Clark Road.....	10
Figure 4: Relevant sections of 1:50 000 maps.....	12
Figure 5: 1967 aerial photograph of area with approximate position of culvert.....	13
Figure 6: Boundary wall between businesses at Joyner Road start of culvert.....	14
Figure 7: Culvert route 200m south-east of Figure 6	14
Figure 8: Machinery near route of culvert	15
Figure 9: Abandoned vehicles where culvert is proposed	15
Figure 10: Culvert route on boundary of properties.....	16
Figure 11: Proposed route of culvert through settlement.....	16
Figure 12: Culvert route eastwards towards beach	17
Figure 13: Culvert route between informal settlement and Terick Heights	17
Figure 14: Area below outlet point of culvert	18
Figure 15: Photograph locations between Joyner and Ernest Clokie Roads.....	19
Figure 16: Photograph locations between Ernest Clokie and Clark Roads	19

APPENDIX 1

Palaeontological exemption application statement

I, **Jean Lois 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, 2017.

SPECIALIST DETAILS

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

1. INTRODUCTION

The eThekweni Municipality Coastal, Stormwater and Catchment Department is proposing to construct a new stormwater box canal to outfall in the eastern Prospecton area in order to reduce the risk of flooding on the N2 highway and in the Isipingo area, as well as flooding of the car manufacturer, Toyota, during storm events. The proposed culvert will be 751m in length, with a height of 1.5m by 2m width.

A Phase 1 Heritage Impact Assessment (HIA) was undertaken to establish if any heritage resources will be impacted by the proposed stormwater culvert project.

2. LEGISLATIVE BACKGROUND

The proposed culvert is approximately 751m in length hence 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 may 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 project 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 National Heritage Resources Act 1999 (Act No 25 of 199), 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

The study area is located in the eThekweni Municipality within the suburb of Prospecton which is situated south-west of the Durban Central Business District (CBD). The upgrade is located between Joyner Road and Clark Road and south-east of the N2 highway (**Fig. 1**). **Fig. 2** is a closer view of the section of the proposed culvert located between Joyner Road and Ernest Clokie Roads and **Fig. 3** is a closer image of the section of the proposed culvert between Ernest Clokie and Clark Roads.

4. TERMS OF REFERENCE

Undertake a Phase 1 HIA in order to determine the possible existence of heritage resources, as listed above, that could be impacted by the proposed stormwater culvert to outfall project. Provide mitigation measures to limit or avoid the impact of the project on heritage resources (if any).

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



Figure 1: Location of proposed culvert indicated in red



Figure 2: Section of culvert between Joyner Road and Ernest Clokie Road



Figure 3: Culvert route between Ernest Clokie Road and Clark Road

5. METHODOLOGY

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.

An inspection of the route of the proposed culvert was undertaken on 19 July 2022. Site conditions were, in general, good.

6. HISTORICAL BACKGROUND OF AREA

Site records from the archaeological database of the KwaZulu-Natal Museum indicate that pre-colonial settlement of the Durban South Basin (SDB) area included ephemeral Early and/or Middle Stone Age occupation of higher-lying areas around the former Durban International Airport site. Later Stone Age and Early and Late Iron Age middens (concentrations of remains of shellfish, stone and bone) have also been recorded in the primary dune cordon. This settlement pattern probably reflects sporadic or seasonal pre-colonial exploitation of the rocky coastline and

surrounding ecotypes. Seasonal inundation of the area between the uMlazi and Isipingo River mouths until well into the twentieth century created swamp-like conditions that discouraged permanent human occupation. Most pre-colonial archaeological sites have been destroyed by modern industrial and residential developments (eThembeni Cultural Heritage 2014: 23-24).

According to the South Coast Sun newspaper (2021:3-4), in 1927, residents of Isipingo Beach were fore-warned of a “wall of water” that was rapidly making its way down the Umlaas River as a result of torrential rains. The wall of water left dead donkeys, cows and other debris over a foot high along the beach. In 1935, four days of torrential rain left the area from Umbogintwini to Merebank like a lake.

Prospecton falls into the South Durban Basin (SDB), an area of mixed industrial/residential use, is located in the southern half of the eThekweni municipality. Described as the economic heartland of Durban, the SDB is an environmental ‘hotspot’ containing areas of heavy industry and residential development located in close proximity to one another in a topographically contained region. The SDB is home to auto manufacturers, oil refineries, paper mills, and various other forms of light and heavy industrial activity (Smith, Yunus *et al*, undated:1).

The production of Toyota vehicle models at the Motor Assemblies plant in Prospecton began in 1962 or 1963 (Wikipedia 2022:1) and has continued ever since.

The project area falls along the boundary of the following 1:50 000 maps: 2930DD_2931CC and 3030BB. The 1940 and 1938 maps respectively (**Fig. 4**) show the project area to have been under sugar cane farming with no industries shown and with some structures visible near outfall point of the culvert near Dakota Beach / Isipingo Beach. These structures are no longer standing with an informal settlement, the remains of Clark Road and a block of apartments (Terick Heights) in their place.

The 1967 aerial photograph of the project area (**Fig. 5**) shows that much of the route of the proposed culvert was still under sugar cane farming further from the beach. The area closer to the beach is disturbed by farming activities and some structures. This area is now highly disturbed by the informal settlement.

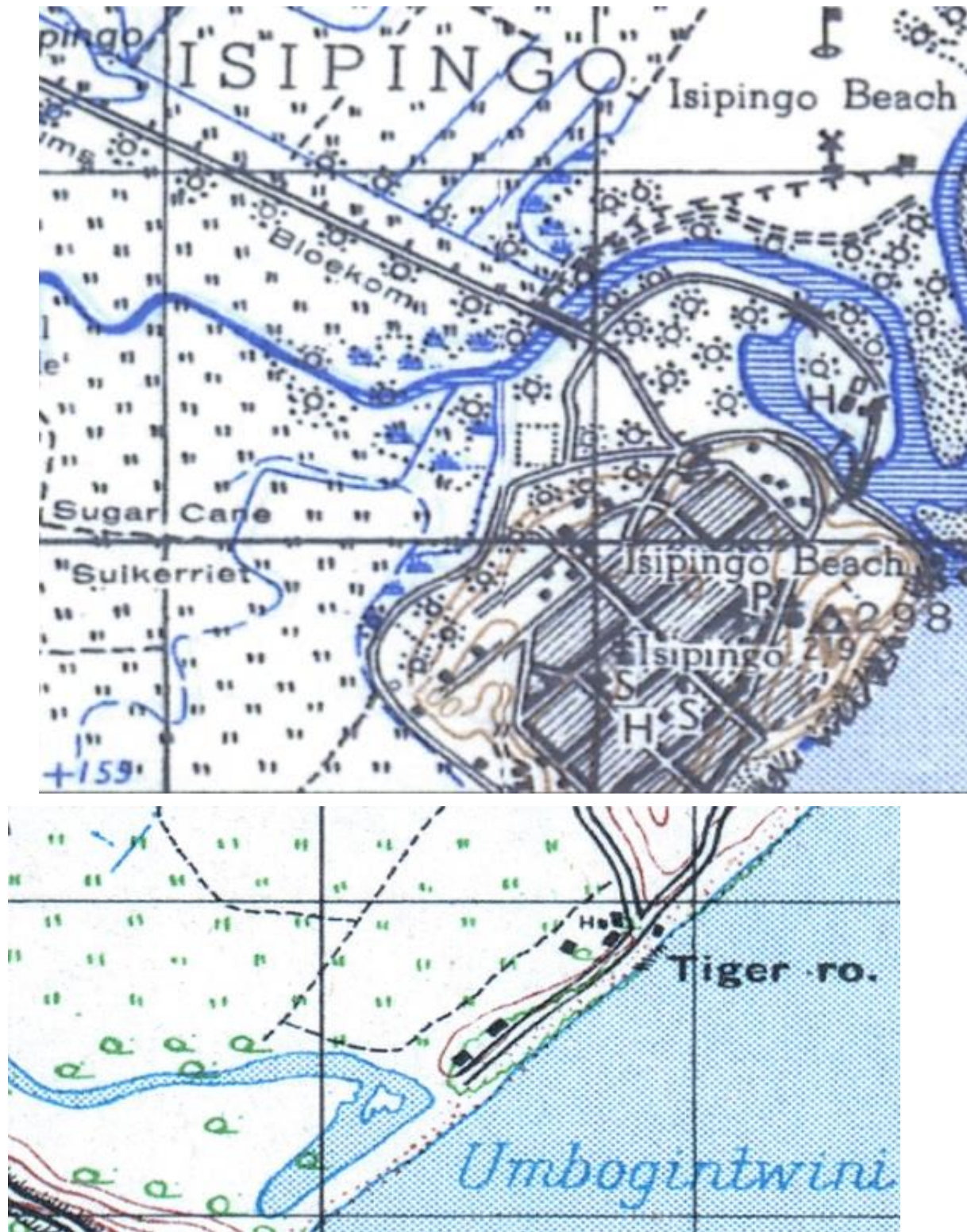


Figure 4: Relevant sections of 1:50 000 maps



Figure 5: 1967 aerial photograph of area with approximate position of culvert

7. RESULTS OF SITE INSPECTION

The inspection began at the start of the proposed culvert in Joyner Road. The culvert is to be located between existing industries and these areas were inspected on foot where access was available. Most the properties have high walls between them with some structures situated close to the proposed culvert. None of the structures/warehouses that are located along the culvert route are over 60 years. Many of the sites have concrete paving over much of the property together with machinery, drains, plumbing, packaging, etc. There is still some evidence of the flooding that took place earlier this year.

The location of where photographs (**Figs. 6 – 14**) were taken are indicated in **Figs. 15 and 16**.



Figure 6: Boundary wall between businesses at Joyner Road start of culvert



Figure 7: Culvert route 200m south-east of Figure 6



Figure 8: Machinery near route of culvert



Figure 9: Abandoned vehicles where culvert is proposed



Figure 10: Culvert route on boundary of properties

The proposed route of the culvert emerges from the industrial area to cross Ernest Clokie Road and then run through an informal settlement that is called, according to a resident, Dakota Beach / Isipingo Beach settlement.



Figure 11: Proposed route of culvert through settlement



Figure 12: Culvert route eastwards towards beach



Figure 13: Culvert route between informal settlement and Terick Heights

The culvert ends at Clark Road above the beach. The remains of what could have been a tidal pool can still be seen. No middens or other heritage sites were seen on the beach and in the dune

during the inspection. The beach and dune are used for dumping of litter from the settlement above it.



Figure 14: Area below outlet point of culvert

A palaeontological exemption application statement (**Appendix 1**) compiled by Prof. Marion Bamford indicated that part of the project falls into an area of low fossil sensitivity and a part of the culvert (between Ernest Clokie Road and Clark Road) falls into an area of moderate sensitivity corresponding to aeolian sand which is beach sand and possibly related to the Holocene aged Sibayi Formation, Maputaland Group. The route of the culvert is very disturbed with the section that falls into a moderate fossil sensitivity going through an industrial area and an informal settlement between Ernest Clokie Road and Clark Road as well as disturbance caused by modern vegetation and urban development. Any fossils would be dune or marine shells like the modern fauna, and probably only fragments of these. It was recommended that a Fossil Chance Find Protocol should be added to the Environmental Management Programme (EMPr) for the construction phase of the proposed culvert. It was concluded that no further palaeontological assessment was required and that the project should proceed (Bamford 2022:1-2).



Figure 15: Photograph locations between Joyner and Ernest Clokie Roads

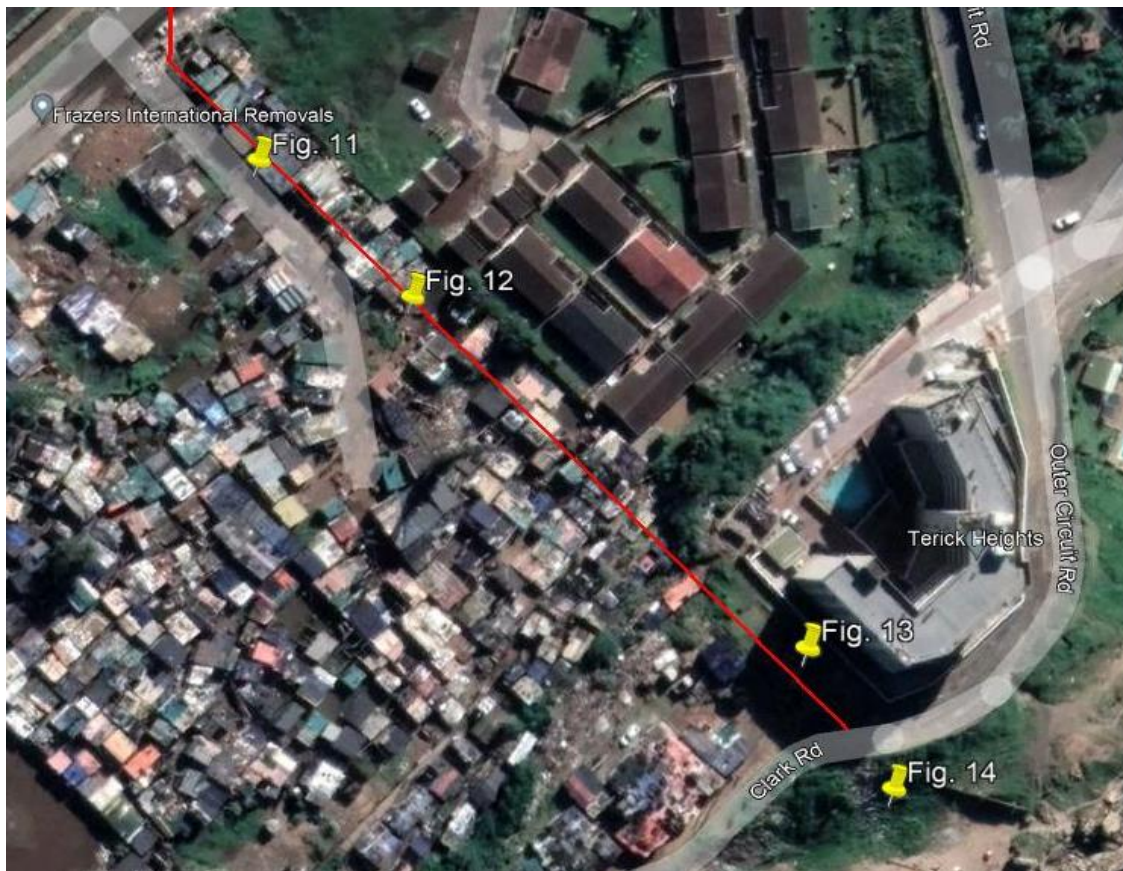


Figure 16: Photograph locations between Ernest Clokie and Clark Roads

8. DISCUSSION AND CONCLUSION

During the site inspection no heritage sites were found. The route for the proposed culvert is located in an industrial area and an informal settlement hence the area is highly disturbed by industrial and residential development. Many of the properties in the industrial area are covered with concrete, warehousing, high walls and associated equipment. The structures along the culvert route are less than 60 years in age. The informal settlement starts to appear on the 2002 / 2003 Google Earth images with structures along Clark Road having been demolished / flattened.

Although no heritage resources were found during the inspection of the dune and beach, it is recommended that the construction of the culvert outlet and the rehabilitation of the dune is monitored by an archaeologist in case any heritage remains are found.

It is recommended that the construction of the proposed stormwater culvert proceed from a heritage perspective.

9. MITIGATION MEASURES

- For any chance heritage finds, all work must cease in the area affected and the Contractor must immediately inform the Project Manager. A 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 specialist will assess the significance of the resource/s 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 the project 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.
- A Fossil Chance Find Protocol, as provided in **Appendix 1**, must be included in the EMP for the construction of the proposed culvert.

10. REFERENCES

Bamford, M. 2022. *Request for Exemption of any Palaeontological Impact Assessment for the proposed construction of a stormwater Culvert for the Toyota plant between Prospecton and Isipingo Beach, KwaZulu Natal*

eThembeni Cultural Heritage. 2014. *Phase 1 Heritage Impact Assessment Report: Proposed Upgrade of the Southern Wastewater Treatment Works, Merewent, eThekwini Metropolitan Municipality, KwaZulu-Natal*

Smith, Yusuf, et al. Undated. *Urban farming in the South Durban Basin*. (<https://www.semanticscholar.org/paper/Urban-Farming-in-the-South-Durban-Basin-Smith-Yusuf/7f7d35c9ccc4dbcbd202ffb69a8b5b3aed5cdcc9>)

Wikipedia. 2022. Toyota South Africa Motors. (https://en.wikipedia.org/wiki/Toyota_South_Africa_Motors)