

DRAFT BASIC ASSESSMENT REPORT

**The Proposed Establishment of a 15 ha Mixed-Use Development, Located on Erf 234, New England (220 Murray Road), within the Msunduzi Local and uMgungundlovu District Municipality, Pietermaritzburg, KwaZulu-Natal**

REF NO:  
*TO BE CONFIRMED*

PREPARED FOR:  
*SHANBAR PROPERTY DEVELOPMENT CC*

DATE:  
*20 SEPTEMBER 2022*





*Residential  
Commercial  
Industrial  
Agriculture  
Linear  
Service*

**Postal:** PO Box 1170 Hilton, 3245  
**Physical:** Block H, Quarry Office Park, 400 Old Howick Road, Hilton, 3245  
**Phone:** 033 343 4176 **Fax:** 033 343 4201  
**Cell:** 072 181 4236  
**Email:** rebecca@greendoorgroup.co.za  
**Website:** www.greendoorgroup.co.za

## CONTACT DETAILS

APPLICANT	
Company / Department	Shanbar Property Development CC
Contact Person	Andrew Barnes
Postal Address	PO Box 12102 Dorpspruit 3206
Tel Number	033 344 1105
Cell Number	083 255 7505
Email Address	andrew@barnesprop.co.za
ENVIRONMENTAL ASSESSMENT PRACTITIONER	
Name	Dr Rebecca Bowd
Company	Green Door Environmental
Postal Address	PO Box 1170 Hilton 3245
Tel number	033 343 4176
Fax number	033 343 4201
Cell number	072 181 4236
Email address	rebecca@greendoorgroup.co.za
Professional Affiliations	EAPASA, IAIA, SAIIEA, IWMSA, WISA, SSAG, Pr. Sci. Nat.
ENVIRONMENTAL CONSULTANT	
Name	Hannah Markham
Company	Green Door Environmental
Postal Address	PO Box 1170 Hilton 3245
Tel number	033 343 4176
Fax number	033 343 4201
Email address	hannah@greendoorgroup.co.za
Professional Affiliations	IAIASA

## DOCUMENT CONTROL

ACTION	NAME	DATE	SIGNATURE
Report Compiled By	Hannah Markham	31 August 2022	
Report Reviewed By	Dr Rebecca Bowd	15 September 2022	

---

## EXECUTIVE SUMMARY

The Applicant, Shanbar Property Development CC, is proposing the establishment of a 15 ha mixed-use development, located on Erf 234, New England (220 Murray Road), within the Msunduzi Local and uMgungundlovu District Municipality, Pietermaritzburg, KwaZulu-Natal. The property is currently zoned as "Future Residential". However, the Applicant will apply for a mixed-use zoning if the proposed development is approved.

The property is accessed off Murray Road and is located at GPS Coordinates 29°37'32.87" S and 30°25'48.90" E. It is approximately 15 ha in extent and is surrounded by residential developments and the Hesketh Conservancy, which is designated as a municipal open space area. The property is located within a transformed area that consists primarily of alien plant infestations, weeds, and some indigenous vegetation.

On 09 March 2011, Environmental Authorisation (Reference No: DC22/0066/08) was granted for the establishment of the Hlatshana Retirement Village on Erf 234, New England (220 Murray Road). The Applicant at the time was the Pietermaritzburg and District Council for the Care of the Aged (PADCA). The retirement village was to comprise ablutions, kitchen, dining, office, workshop and administration facilities, a hall, swimming pool, heritage garden, maintenance yard, a chapel, and servicing infrastructure which included attenuation ponds, a sewer pump station, roads and other associated infrastructure. When the current property owner (Shanbar Property Development CC) purchased the property, they chose not to proceed with the retirement village.

The proposed mixed-use development is to comprise of:

- A residential estate of approximately 5 ha in extent;
- A school with associated facilities of approximately 5 ha in extent;
- A shopping centre of approximately 3.5 ha in extent;
- A filling station with a convenience store of approximately 0.5 ha in extent;
- A fast-food outlet of approximately 400 m<sup>2</sup>; and
- Road servitudes (a portion of the property is proposed to cater for the new Hesketh Drive extension).

The proposed residential estate will occupy an area of approximately 5 ha in extent and will comprise of 1- and 2-bedroom apartments targeting a medium income group. It is anticipated that there will be 350 apartments.

The proposed school will be a private school from Grade RR to Grade 12 and will occupy an area of approximately 5 ha in extent. It is anticipated that the school will have 500 scholars. The school will also comprise of the associated educational facilities such as a swimming pool, sports fields and other related sports facilities.

The proposed shopping centre will occupy an area of approximately 3.5 ha in extent. This will include a parking area, toilet facilities and an area allowing for multiple shops. The proposed parking area will allow for 524 parking bays, and the commercial retail space will be 1 ha in extent.

The proposed filling station will include a convenience store covering an area of approximately 0,5 ha. It also proposed that there will be a fast-food outlet of approximately 0.04 ha. It is proposed that 7x 23 000L tanks be installed.

In terms of the National Environmental Management Act (NEMA, Act No.107 of 1998) and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended 2017 and 2021), published in Government Notices No. R. (GNR) 327, 325 and 324 of 2014 (as amended 2017 and 2021), the proposed project requires a Basic Assessment Process to be conducted.

---

The main issues raised to date during the public participation process for the proposed project include:

- Need and desirability for another filling station;
- Water, ground, air, noise and light pollution;
- Ecological and other biophysical impacts;
- Security;
- Concerns about crime in the area;
- Concerns about water, sewerage and electricity supply;
- The alteration of the sense of place and nature of the site and surrounding area; and
- Traffic implications.

The following Specialist Studies have been undertaken for the proposed project:

- |                                      |             |
|--------------------------------------|-------------|
| • Biodiversity Assessment            | Appendix D1 |
| • Wetland Assessment                 | Appendix D2 |
| • Geotechnical Assessment            | Appendix D3 |
| • Socio-Economic Assessment          | Appendix D4 |
| • Heritage Impact Assessment         | Appendix D5 |
| • Palaeontological Impact Assessment | Appendix D6 |
| • Stormwater Management Plan         | Appendix D7 |
| • Traffic Impact Assessment          | Appendix D8 |
| • Bulk Services Report               | Appendix D9 |

The Environmental Assessment Practitioner (EAP) concludes that no fatal-flaws have been identified during the Basic Assessment Process, and, provided the Environmental Management Programme (EMPr) and recommendations made in this report are strictly adhered to, there should be no significant, detrimental impacts on the environment.

---

## TABLE OF CONTENTS

<b>1. PROJECT &amp; ACTIVITY DESCRIPTION</b> .....	<b>8</b>
1.1 PROJECT TITLE .....	8
1.2 LISTED ACTIVITIES .....	8
1.3 LIST OF LEGISLATION, POLICIES AND/OR GUIDELINES THAT ARE RELEVANT TO THE APPLICATION .....	9
1.4 SG 21 DIGIT CODE(S) OF THE PROPERTIES.....	11
1.5 PHYSICAL ADDRESS & FARM NAME .....	11
1.6 COORDINATES OF THE BOUNDARY OF THE PROPERTY .....	11
1.7 DETAILED PROJECT DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN .....	12
<b>2. NEED AND DESIRABILITY</b> .....	<b>26</b>
<b>3. ALTERNATIVES</b> .....	<b>34</b>
<b>4. PUBLIC PARTICIPATION PROCESS</b> .....	<b>40</b>
4.1 PROTECTION OF PERSONAL INFORMATION ACT (POPIA, ACT NO. 14 OF 2013) .....	40
4.2 NOTIFICATION OF THE PROPOSED PROJECT .....	40
4.3 INTERESTED AND AFFECTED PARTIES .....	40
4.4 BACKGROUND INFORMATION DOCUMENT .....	40
4.5 PRE-APPLICATION MEETING .....	71
4.6 PUBLIC INFORMATION SESSION .....	71
4.7 CIRCULATION OF THE DRAFT BASIC ASSESSMENT REPORT (DBAR) .....	75
4.8 SUMMARY OF ISSUES RAISED .....	75
<b>5. POTENTIAL IMPACTS ON THE SOCIAL AND ECONOMIC ENVIRONMENTS</b> .....	<b>76</b>
5.1 LOCAL ECONOMY AND EMPLOYMENT OPPORTUNITIES / NEED AND DESIRABILITY .....	76
5.2 PLANNING INITIATIVES .....	78
5.3 CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES .....	79
5.4 SURROUNDING LANDUSE AND AESTHETICS.....	81
5.5 TRAFFIC, ROADS AND ACCESS.....	82
5.6 CONSTRUCTION ACTIVITIES, NOISE AND DUST .....	84

5.7	SECURITY .....	85
5.8	CORONA VIRUS (COVID-19) PANDEMIC .....	86
<b>6.</b>	<b>POTENTIAL IMPACTS ON THE BIOPHYSICAL ENVIRONMENT.....</b>	<b>86</b>
6.1	TOPOGRAPHY .....	86
6.2	CLIMATE .....	87
6.3	CLIMATE CHANGE .....	89
6.4	GEOLOGY AND SOILS .....	90
6.5	GROUND WATER .....	91
6.6	SURFACE WATER .....	91
6.7	FLORA .....	93
6.8	FAUNA .....	94
<b>7.</b>	<b>SPECIALIST STUDIES: KEY FINDINGS AND RECOMMENDATIONS .....</b>	<b>96</b>
7.1	BIODIVERSITY ASSESSMENT .....	96
7.2	WETLAND ASSESSMENT .....	97
7.3	GEOTECHNICAL ASSESSMENT .....	98
7.4	SOCIO-ECONOMIC ASSESSMENT .....	102
7.5	HERITAGE IMPACT ASSESSMENT.....	104
7.6	PALAEONTOLOGICAL IMPACT ASSESSMENT .....	105
7.7	STORM WATER MANAGEMENT PLAN .....	105
7.8	TRAFFIC IMPACT ASSESSMENT.....	106
7.9	BULK INTERNAL SERVICES AND ENGINEERING REPORT.....	109
<b>8.</b>	<b>ASSESSMENT OF ENVIRONMENTAL IMPACTS .....</b>	<b>113</b>
<b>9.</b>	<b>ENVIRONMENTAL MANAGEMENT PROGRAMME .....</b>	<b>129</b>
<b>10.</b>	<b>POSITIVE AND NEGATIVE IMPLICATIONS OF THE PROPOSED PROJECT .</b>	<b>130</b>
10.1	POSITIVE AND NEGATIVE IMPLICATIONS OF THE IDENTIFIED ALTERNATIVES.....	131
<b>11.</b>	<b>EAP RECOMMENDATIONS &amp; CONCLUSION .....</b>	<b>136</b>
<b>12.</b>	<b>APPENDICES.....</b>	<b>138</b>

---

## APPENDICES

- Appendix A: Site Mapping & Layout Plans
- Appendix B: Draft Environmental Authorisation Application Form
- Appendix C: Public Participation Documents
- Appendix C1: I&AP List*
  - Appendix C2: Advertisements*
  - Appendix C3: Site Posters*
  - Appendix C4: Background Information Document*
  - Appendix C5: Public Information Session*
    - Meeting Minutes*
    - Attendance Register*
  - Appendix C6: DEDTEA Consultation*
    - Pre-application Meeting Documents*
  - Appendix C7: Comments*
    - BID Comments*
  - Appendix C8: Additional Information Circulated to I&APs*
- Appendix D: Specialist Reports & Declaration Forms
- Appendix D1: Biodiversity Assessment*
  - Appendix D2: Wetland Assessment*
  - Appendix D3: Geotechnical Assessment*
  - Appendix D4: Socio-Economic Assessment*
  - Appendix D5: Heritage Impact Assessment*
  - Appendix D6: Palaeontological Assessment*
  - Appendix D7: Storm Water Management Plan*
  - Appendix D8: Traffic Impact Assessment*
  - Appendix D9: Bulk Services Report*
- Appendix E: Environmental Management Programme (EMPr)
- Appendix F: Environmental Assessment Practitioner Documents
- Appendix F1: Environmental Assessment Practitioner Declaration*
  - Appendix F2: Environmental Assessment Practitioners CV*
  - Appendix F3: EAPASA Registration Certificate*
- Appendix G: Other Information
- Appendix G1: Previous Environmental Authorisation (DC22/0066/08)*
  - Appendix G2: Site EMF Report*
  - Appendix G3: Letter from Ezemvelo KZN Wildlife*
  - Appendix G4: Site Screening Tool Report*
  - Appendix G5: Msunduzi Municipality Services Approval*

# 1. PROJECT & ACTIVITY DESCRIPTION

## 1.1 PROJECT TITLE

The proposed establishment of a 15 ha mixed-use development, located on Erf 234, New England (220 Murray Road), within the Msunduzi Local and uMgungundlovu District Municipality, Pietermaritzburg, KwaZulu-Natal.

## 1.2 LISTED ACTIVITIES

All the listed activities that make up this application are listed below:

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices as well as per the proposed activity:
GNR 327	Part 14	<p><i>“The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.”</i></p> <p><b>This activity is applicable, as 161 m<sup>3</sup> of a dangerous good is proposed.</b></p>
GNR 327	Part 27	<p><i>“The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for...”</i></p> <p><b>Although the site is heavily infested with alien invasive vegetation, there is indigenous vegetation onsite which totals more than 1 ha in extent.</b></p>
GNR 324	Part 4	<p><i>“The development of a road wider than 4 metres with a reserve less than 13,5 metres. d. KwaZulu-Natal... viii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; x. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; xi. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority...”</i></p> <p><b>This activity is applicable as roads greater than 4 m in width are proposed. The site is designated as a ‘Critical Biodiversity Area’ that is ‘totally irreplaceable’ in terms of the Msunduzi Environmental Management Framework (EMF, 2009).</b></p>



GNR 324	Part 12	<p><i>“The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p><i>d. KwaZulu-Natal ...</i></p> <p><i>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p><i>xi. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</i></p> <p><i>xii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ...”</i></p> <p><b>This Activity is Applicable as the proposed mixed-use development will require the clearance of an area greater than 300 m<sup>2</sup> of indigenous vegetation. The property is currently zoned as ‘future residential’ according to the Msunduzi Spatial Development Framework (SDF, 2009). The site is designated as a ‘Critical Biodiversity Area’ that is ‘totally irreplaceable’ in terms of the Msunduzi Environmental Management Framework (EMF, 2009).</b></p>
---------	---------	---

### 1.3 LIST OF LEGISLATION, POLICIES AND/OR GUIDELINES THAT ARE RELEVANT TO THE APPLICATION

Title of legislation, policy or guideline:	Administering authority:	Date:
uMgungundlovu District Municipality Fifth Generation Draft Integrated Development Plan (IDP)	uMgungundlovu District Municipality	2022/2023 – 2026/2027
Environmental Management Framework (EMF) for the uMgungundlovu District Municipality	Umgungundlovu District Municipality	2017
Umgungundlovu District Municipality Spatial Development Framework (SDF)	Umgungundlovu District Municipality	2014
Msunduzi Municipality Draft Spatial Development Framework (SDF)	Msunduzi Municipality	2021
Msunduzi Local Municipality EMF	Msunduzi Municipality	2021
Msunduzi Local Municipality SDF	Msunduzi Municipality	2021
Msunduzi Municipality Integrated Development Plan (IDP)	Msunduzi Municipality	2021/2022
The National Environmental Management Act (NEMA, Act No. 107 of 1998)	Department of Environmental Affairs (DEA)	1998
The Msunduzi Integrated Environmental Management Policy (IEMP)	Msunduzi Municipality	2017
The draft Msunduzi Ecosystem Services Plan (ESP)	Msunduzi Municipality	2010
The Msunduzi Conservation Plan (C-Plan)	Msunduzi Municipality	2010
The Msunduzi Strategic Environmental Assessment	Msunduzi Municipality	2010

(SEA)		
The Msunduzi Climate Change Policy	Msunduzi Municipality	2014
The Msunduzi Climate Change Adaptation & Mitigation Strategy	Msunduzi Municipality	2017
Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11 (2004)	DEA	2004
Department of Environmental Affairs (2017) Public Participation Guideline in terms of NEMA EIA Regulations.	DEA	2017
EIA Guideline and Information Document Series: Guideline on Alternatives	Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning (DEA&DP)	2011
EIA Guideline and Information Document Series: Guideline on Need and Desirability	Provincial Government of the Western Cape: DEA&DP	2017
EIA Guideline and Information Document Series: Guideline on Public Participation	Provincial Government of the Western Cape: DEA&DP	2011
EMF Regulations of 2010 promulgated under NEMA	DEA	2010
Environmental Impact Assessment (EIA) Regulations promulgated under the NEMA	DEA	2017
Foodstuffs, Cosmetics and Disinfectants Act (Act No. 54 of 1972)	DoA	1972
Guideline on Need and Desirability, Integrated Environmental Management Guideline Series 9, Department of Environmental Affairs (DEA), Pretoria, South Africa	DEA	2014
Integrated Environmental Guideline: Guideline on Need and Desirability	DEA	2017
Integrated Environmental Management (IEM) Information Series	DEA	2010
KwaZulu-Natal Heritage Resources Act (Act No. 10 of 1997)	SAHRA	1997
KZN Provincial Roads Act, Act 4 of 2001	DOT	2001
KZN Terrestrial Systematic Conservation Plan	SANBI	2010
National Heritage Resources Act (NHRA, Act 25 of 1999)	South African Heritage Resources Authority (SAHRA)	1999
National Road Traffic Act (Act No. 93 of 1996)	Department of Transport (DoT)	1996
Public Participation Guideline in terms of the NEMA (1998) and the EIA Regulations (2017)	DEA	2017
South African National Standard (SANS) 10 108 The classification of hazardous locations and the selection of apparatus for use in such locations.	SABS	2005
South African National Standard (SANS) 10 131 Section 5.	SABS	2004
South African National Standard (SANS) 10 089 The Petroleum Industry	SABS	2008

Part 1: Storage and distribution of petroleum products. Part 2: Electrical Code Part 3: The Installation of Underground Storage Tanks, etc		
South African National Standard (SANS, 10103:2008): The measurement and rating of environmental noise with respect to annoyance and speech communication	SANS	2008
The Biodiversity Policy	South African National Biodiversity Institute (SANBI)	2021
The Constitution of South Africa (Act No. 108 of 1996)	Department of Justice and Constitutional Development (DOJCD)	1996
The Hazardous Substances Act (Act No. 15 of 1973)	South African Government	1973
The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	South African Government	2002
The Municipal Systems Act (Act No. 32 of 2000)	South African Government	2000
The National Environmental Management: Air Quality Act (NEM:AQ, Act No. 39 of 2004)	DEA	2004
The National Environmental Management: Biodiversity Act (NEM:BA, Act No. 10 of 2004)	DEA	2004
The National Environmental Management: Protected Areas Act (NEM: PAA, Act No. 53 of 2003)	DEA	2003
The National Environmental Management: Waste Act (NEM: WA, Act No. 59 of 2008)	DEA	2008
The National Environmental Management: Waste Amendment Act (NEM: WAA, Act No. 26 of 2014)	DEA	2014
The National Health Act, 2004	DoH	2003
The National Water Act (NWA, Act No. 36 of 1998)	Department of Water and Sanitation (DWS)	1998
The National Water Act Regulations, 1999	Department of Water and Sanitation (DWS)	1999
The Occupational Health and Safety Act (OHSA, Act No. 85 of 1993)	South African Government	1993

#### 1.4 SG 21 DIGIT CODE(S) OF THE PROPERTIES

N	0	F	T	0	4	0	0	0	0	0	0	0	2	3	4	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

#### 1.5 PHYSICAL ADDRESS & FARM NAME

<b>Address</b>	220 Murray Road
<b>Property Description</b>	Erf 234, New England
<b>Town</b>	Pietermaritzburg
<b>Postal Code</b>	3201

#### 1.6 COORDINATES OF THE BOUNDARY OF THE PROPERTY

Corner	Latitude (S)	Longitude (E)
1	29° 37' 29.13" S	30° 25' 40.50" E

2	29° 37' 25.50" S	30° 25' 57.03" E
3	29° 37' 34.94" S	30° 25' 57.88" E
4	29° 37' 41.70" S	30° 25' 42.48" E

## 1.7 DETAILED PROJECT DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

The Applicant, Shanbar Property Development CC, wishes to apply for Environmental Authorisation for the proposed establishment of a 15-ha mixed-use development, located on Erf 234, New England (220 Murray Road), Pietermaritzburg, KwaZulu-Natal. A Locality Map is provided in Figure 1 and 2 below. Refer to Figure 3 for an Overview Map, Figure 4 for a Layout Plan and Figure 5 and 6 for the Layout of the Filling Station, Fast-food outlet and convenience store. All the maps are attached at **Appendix A** (high resolution).

The proposed mixed-use development features the following components:

- A residential estate of approximately 5 ha in extent;
- A school with associated facilities of approximately 5 ha in extent;
- A shopping centre of approximately 3.5 ha in extent;
- A filling station with a convenience store of approximately 0.5 ha in extent;
- A fast-food outlet of approximately 0.04 ha; and
- Road servitudes (a portion of the property is proposed to cater for the new Hesketh Drive extension).

The proposed residential estate will occupy an area of approximately 5 ha in extent and will comprise of 1- and 2-bedroom apartments targeting a medium income group. It is anticipated that there will be 350 apartments.

The proposed school will be a private school from Grade RR to Grade 12 and will occupy an area of approximately 5 ha in extent. It is anticipated that the school will have 500 scholars. The school will also comprise of the associated educational facilities such as a swimming pool, sports fields and other related sports facilities.

The proposed shopping centre will occupy an area of approximately 3.5 ha in extent. This will include a parking area, toilet facilities and an area allowing for multiple shops. The parking area will allow for 524 parking bays, and the commercial retail space will be 1 ha in extent.

The filling station will include a convenience store covering an area of approximately 0.5 ha. It is also proposed that there will be a fast-food outlet of approximately 0.04 ha in extent. The filling station will have a combined fuel storage capacity of 161 m<sup>3</sup>. The following underground fuel storage tanks are proposed:

- 7 x 23 000L tanks

The property is currently zoned as '*Future Residential*' according to the Msunduzi Spatial Development Framework (SDF, 2021); however, the Applicant will apply to have the property rezoned to allow for the establishment of the mixed-use development if and when the proposed development is approved. A special zoning will also be required for the proposed filling station.

On 09 March 2011, Environmental Authorisation (Reference number: DC22/0066/08) (refer to **Appendix G1**) was granted for the establishment of the Hlatshana Retirement Village on the said property. The current owner of the site chose not to proceed with this development when he purchased the property. Following review of the information pertaining to the previous Environmental Authorisation, heritage features were identified on site. The currently proposed layout respects these features.

---

The site is designated as a 'Critical Biodiversity Area' that is 'totally irreplaceable' in terms of the Msunduzi Environmental Management Framework (EMF, 2009) (**Appendix G2**). Thus, a Biodiversity Assessment (refer to **Appendix D1**) has been commissioned to accurately report on the current ecological status of the site. Mr. Dominic Wieners of Ezemvelo KZN Wildlife has confirmed that a detailed millipede and mollusc assessment is not required to be undertaken for the proposed development (refer to **Appendix G3**).

No wetland systems were delineated within Erf 234 New England. A channelled valley bottom system was identified to the east of the study site. The Murray Road Mixed-Use development respects the 32m calculated wetland buffer (refer to **Appendix D2** for the Wetland Assessment).

#### **Provision of Services:**

Loretz and Associates CC was appointed by the Applicant to investigate and prepared a report on the bulk and internal service requirements and engineering design for the proposed development (refer to **Appendix D9**). The internal services have been designed according to accepted engineering specification and principles, as well as the acceptable environmental requirements and specifications, as outlined below (refer to Appendix G5 for the Msunduzi Municipality Services Approval).

#### **Bulk Sewer**

There is a municipal bulk sewerage line located adjacent to the site that the developer can link into, which is located along Murray Road. The proposed development's sewerage disposal will need to be connected to the existing municipal system by an additional 160 mm diameter pipe with 110 mm connection points.

#### **Internal Reticulation**

The internal sewer reticulation serving the development will comprise of the municipal waterborne gravity sewerage disposal system which leads to the nearby Municipal Wastewater Treatment Works. This connection will need to be extended to adequately accommodate the additional flows that would arise from the proposed development. The total estimated sewerage disposal for the entire development is reflected in Table 1.

**Table 1: Sewerage disposal for the development (Loretz and Associates)**

Portion	Description	Peak flow (l/day)	Flow (l/s)	Pipe size (mm)	Velocity (m/s)
1	Education - leaners	95 640	1.1069	110	Pipe gradients satisfy minimum velocity
2	Residential	546 480	6.3250	110	
3	Retail stores	25 685	0.2973	110	
	Restaurants	2 451	0.0284		
	Filling station	2 219	0.0257	110	
4	Roads	-	0.0	-	-
5	Roads	-	0.0	-	-
		<b>672475</b>	<b>7.7833</b>	<b>160</b>	<b>0.9</b>

**Bulk Water Supply**

The expected water demand for the proposed Murray Road mixed-use development is 507 967 litres per day. The daily water demand for the proposed development was calculated and is presented in Table 2. The existing municipal water distribution system is located within the road reserve adjacent to the current property. There will need to be two connections of the existing line, which shall be extended and connected to a water meter on each portion.

**Table 2: Daily Water Demand (Loretz Associates CC)**

Portion	Description	Peak flow (l/day)	Flow (l/s)	Flow (m <sup>3</sup> /h)	Pipe size (uPVC, Class 6)	Velocity (m/s)	Main take off pipe (mm)	Meter size (mm)
1	Education - leaners	47 820	0,5535	1,993	32	1,0	supplied off PTN 2 110	25
	Sports facilities	32 381	0,3748	1,349	25	1,1		
2	Residential	386 100	4,4688	16,088	90	0,8	110	50
	Sports ground	15 000	0,1736	0,625	20	0,8		
3	Retail stores	12 842	0,1486	0,535	25	0,6	90	20
	Restaurants	5 514	0,0638	0,230				
	Filling station	1 110	0,0128	0,046	16	0,9		
	Car wash	7 200	0,0833	0,300	20	0,9		
4	Roads	-	0,0	0,0	-	-	-	-
5	Roads	-	0,0	0,0	-	-	-	-
	<b>Total water demand</b>	<b>507967</b>	<b>5,8792</b>					
	Fire demand		25		110	25,0		-

**Bulk Road Network**

The proposed site access will be located on Murray Road, which is an 8 m wide surfaced road with a speed limit of 60 km/h. The nearby Hesketh Drive varies between 8 m to 20 m in width and is a surfaced road with a speed limit of 60 km/h. Gladys Manzi Road is approximately an 8 m wide surfaced road with a speed limit of 60 km/h (refer to **Appendix D8**).

---

Currently there is no access to the site from the adjacent roads. A new access road will be constructed to the site from Murray Road. The new access road will be located directly opposite Pat Warmback Drive. The new access will allow for two-way travel into and out of the site.

A new residential development known as the Hesketh Estate will be constructed to the north of the Applicant's site on Murray Road. As part of the residential development, the surrounding road network will undergo several upgrades as follows:

Murray Road and Grimthorpe Intersection:

- Converted from a priority-controlled intersection to a signalised intersection.
- New 60 m left-slip lane on the Murray Road south approach.
- Existing right-turn lane on the Murray Road south approach extended to 60m.
- New 30 m left-slip lane on the Grimthorpe approach.
- New left-slip created on the Murray Road north approach.
- New 60 m right-turn lane created on the Murray Road north approach.
- The new Hesketh Estate access will have two entry and two exit lanes.

Murray Road and Hesketh Drive Intersection

- Converted from a priority-controlled intersection to a signalised intersection.
- Existing short right-turn lane will be converted to a shared through and right-turn lane and extended to 50 m on the Hesketh Drive approach.
- Existing left-turn lane converted to a 30 m short left-turn slip lane on the Gladys Manzi Road approach.
- Existing short right-turn lane converted to a full right-turn lane on the Gladys Manzi Road approach.
- New 60 m left-slip lane added to the Murray Road approach.
- Existing shared through and left-turn lane converted to a through only on the Murray Road approach.
- New 150 m exit lane added to the Murray Road approach.

Murray Road and Pat Warmback Intersection

- Converted from priority controlled to a roundabout.

A Traffic Impact Assessment (TIA) (**Appendix D8**) was undertaken and concluded that the proposed mixed-use development is considered to be a low growth area. The TIA assessed both the proposed Murray Road Development and the Hesketh Country Estate, with which construction has already commenced. Since the upgrades are triggered by the development generated traffic from both the Hesketh Country Estate the proposed Murray Road Mixed-Use development, a cost contribution model would need to be discussed with the Hesketh Country Estate owners.

The construction of the Murray Road Mixed-Use Development will result in the following upgrades being required to the surrounding road networks:

Blackburrow and Hesketh Drive Intersection

- Convert the left-slip lane on the Blackburrow Road approach to a shared left-slip and right-turn lane and extend it to 40 m in length.

It is recommended that the following additional upgrades are implemented at the Hesketh Drive and Murray Road Intersection, to handle the new trips from the two proposed developments:

Hesketh Drive and Murray Road Intersection (Upgraded)

- A new 125 m through lane must be added to the Hesketh Drive approach.
- A new 125 m exit lane must be added to the Hesketh Drive approach.

- 
- Convert the proposed 60 m left-slip lane to a full shared through and left-slip lane.
  - Convert the proposed 150 m exit lane to a full exit lane.

#### Murray Road, Pat Warmback Drive and Site Access Intersection

- A new full lane which allows through and left-turn movements on the Murray Road south approach will be required.
- A new 60 m right-turn lane on the Murray Road south approach will be required.
- A full exit lane on the Murray Road south approach will be required.
- A new full lane which allows through and left-turn movements on the Murray Road north approach will be required.
- A new 60 m right-turn lane on the Murray Road north approach will be required.
- A full exit lane on the Murray Road north approach will be required.

#### Storm Water Management

A storm water management plan (**Appendix D7**) was compiled for the site. The preliminary estimate of attenuation required for the site is 2 235 m<sup>3</sup> which could be attenuated in parking zones for surfaced areas and in tanks for roofed areas.

#### Design of the storm water infrastructure

It is recommended that all storm water flow from hardened surfaces run-off be conducted to catchpits and manholes and from there conduiting can be done via underground concrete piping except where internal road channel flow is applicable for access roads. Run off from soft areas, grassed areas etc. can be conducted via surface sheet flow to catchpits and piping which would be connected to the storm water network.

The entire site's storm water flow would be directed to a terminal manhole to be situated in the north-eastern zone (proposed services retention servitude in favour of Portion's 1, 3 and 4) from where it would be a single point of discharge into sheet flow, via energy dissipator structures, onto the neighbouring property being Portion 1 of Erf 233. A 1:50 year storm condition will be considered for the development. All pipe flows, hydraulic structure design and attenuation facilities design would incorporate these values. Structural elements such as gabion baskets, reno mattresses, stone pitching, geofabric membranes and the like must be incorporated to eliminate any erosion on the Site.

Due to the site sloping in an easterly direction with a natural watershed running in a north easterly direction, it is recommended that all stormwater flow from hardened surfaces run-off be channelled to catchpits and manholes and conduiting can be done via underground concrete piping.

The standards for the storm water infrastructure to be installed with the proposed development can be summarised as follows:

#### Stormwater design parameters:

Storm Type: 1: 50 years

Storm Duration: 30 minutes, peaking at 15 minutes

Storm Intensity: 165 mm / hour

On-site Attenuation Period: 30 minutes

Pre-development Conditions Coefficient: 0.35

Post-development Conditions Coefficient for open areas (non-hardened surfaces): 0.45

Post-development Conditions Coefficient for hardened surfaces: 0.85

#### Peak Flows

- 2.27 m<sup>3</sup>/s pre-development conditions
- 4.75 m<sup>3</sup>/s post-development conditions

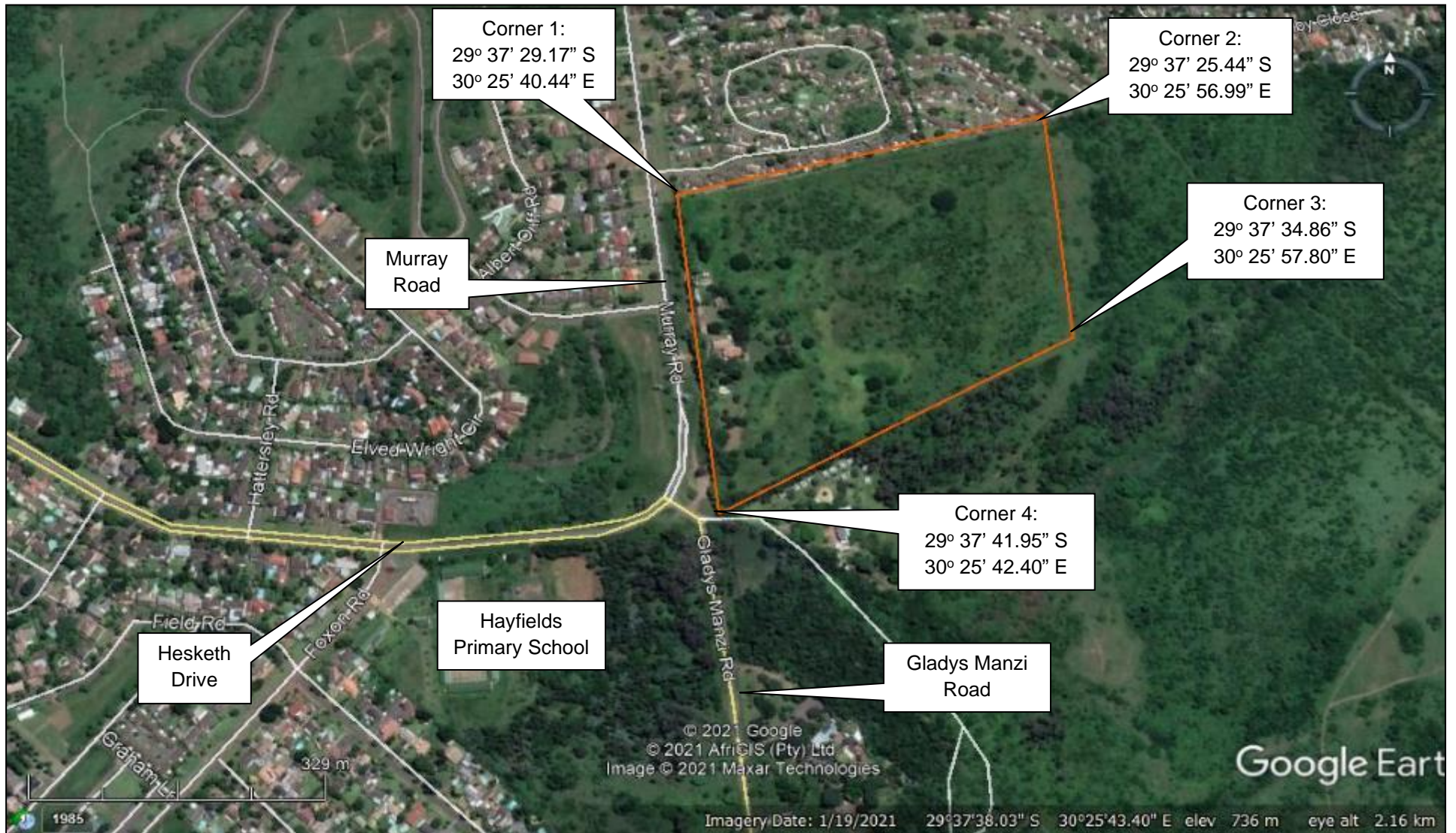


---

Attenuation:

The total increase in peak discharge runoff, which is the difference between the pre-and post-development conditions, is 2 235 m<sup>3</sup>, which is the volume of water required to be attenuated on site for a period of 30 minutes.

Refer to **Figure 1 – 2** for locality maps, **Figure 3** for an overview map, **Figure 4** for the layout plan, **Figure 5 and 6** for the layout plan of the filling station, convenience store and fast-food outlet and **Figure 7** for photographs of the site.



**Figure 1:** Locality Map showing the property for the proposed mixed-use development, 220 Murray Road, Pietermaritzburg, KwaZulu-Natal (Source: Google Earth).

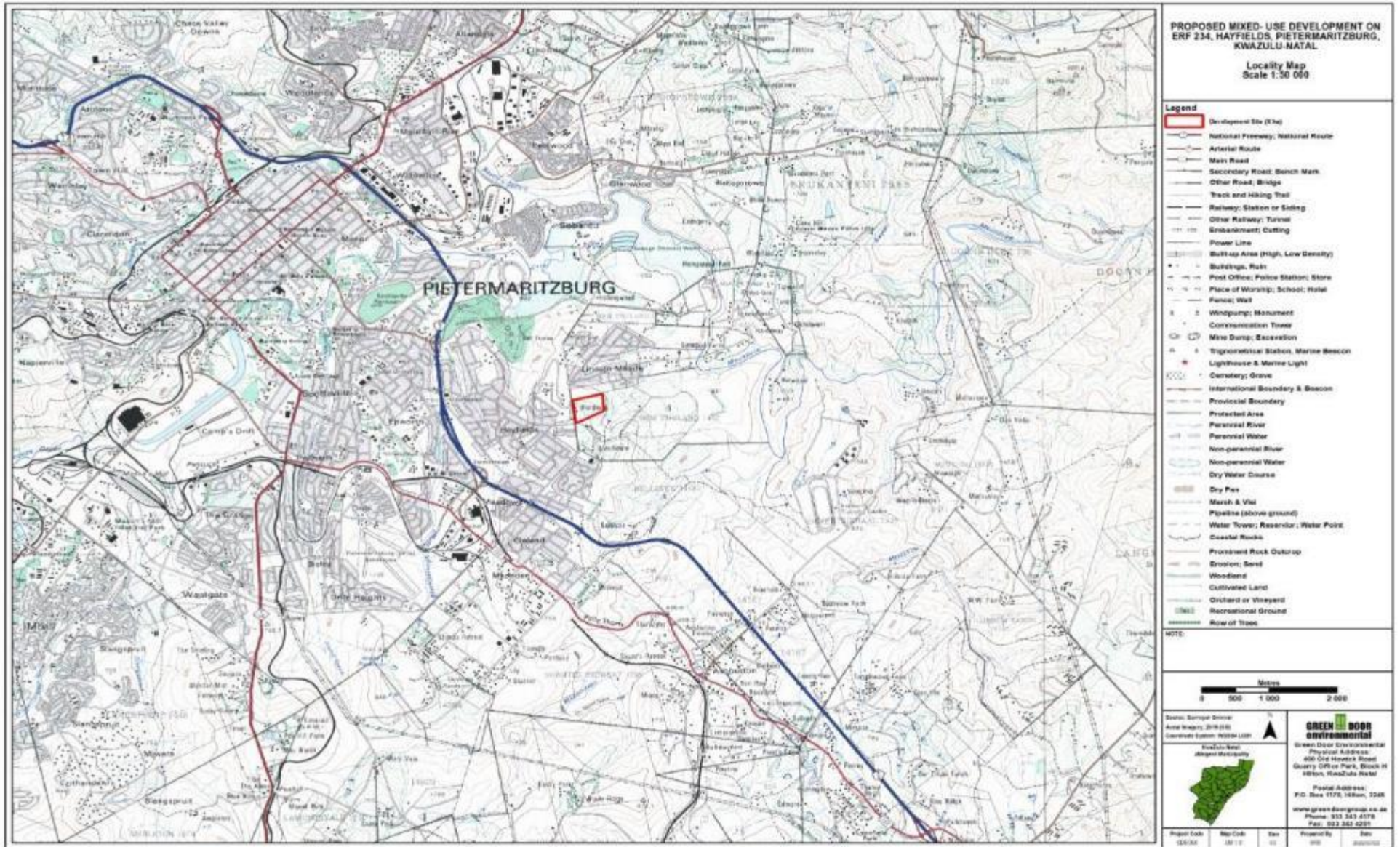


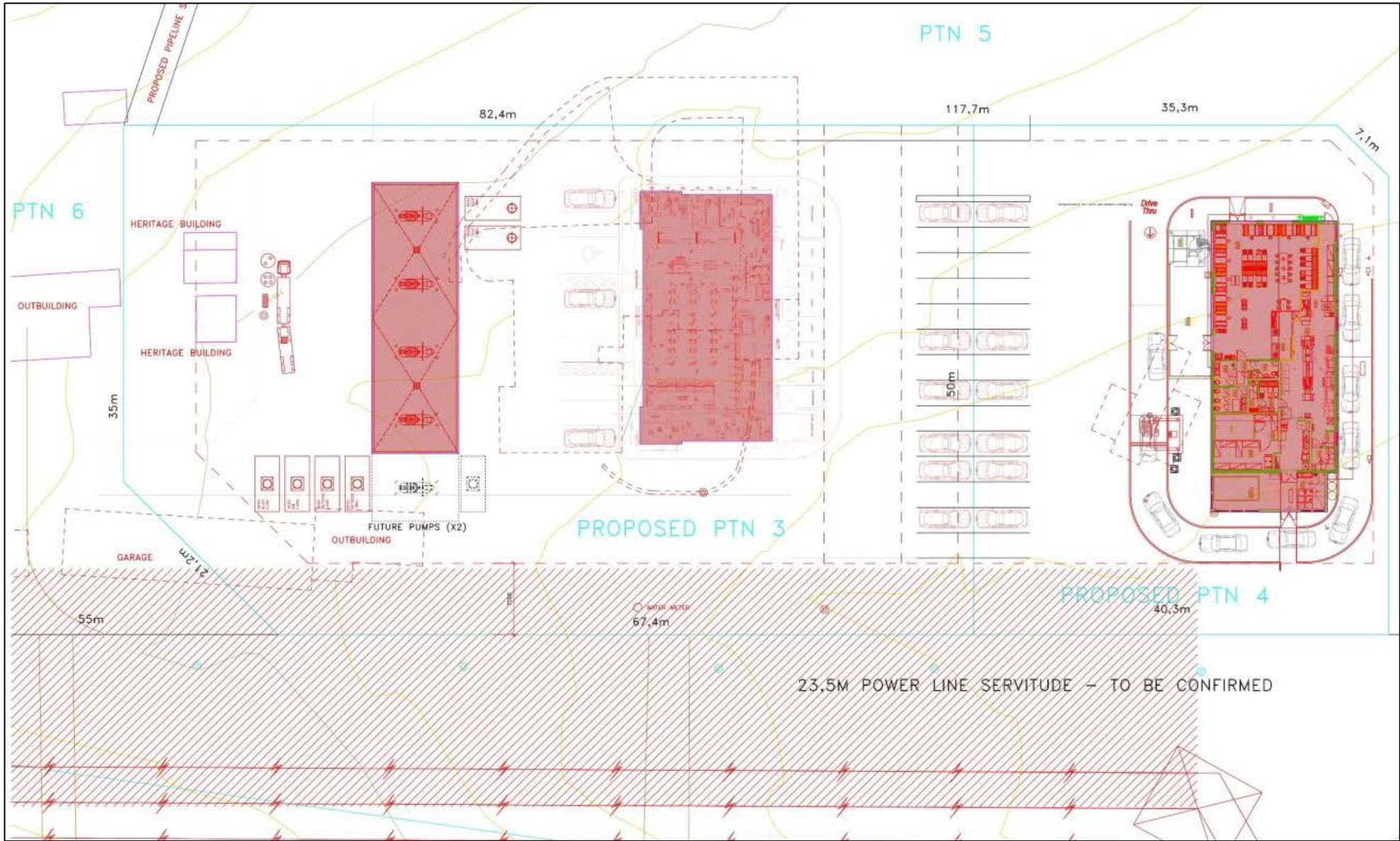
Figure 2: Locality Map showing the property for the proposed mixed-use development, 220 Murray Road, Pietermaritzburg, KwaZulu-Natal.



**Figure 3:** Overview Map showing the property for the proposed mixed-use development, 220 Murray Road, Pietermaritzburg, KwaZulu-Natal.



Figure 4: Layout plan for the 15 ha mixed-use development.



**Figure 5:** Layout plan of the filling station, convenience store and fast-food outlet (Source: Randhir Gobind & Associates).

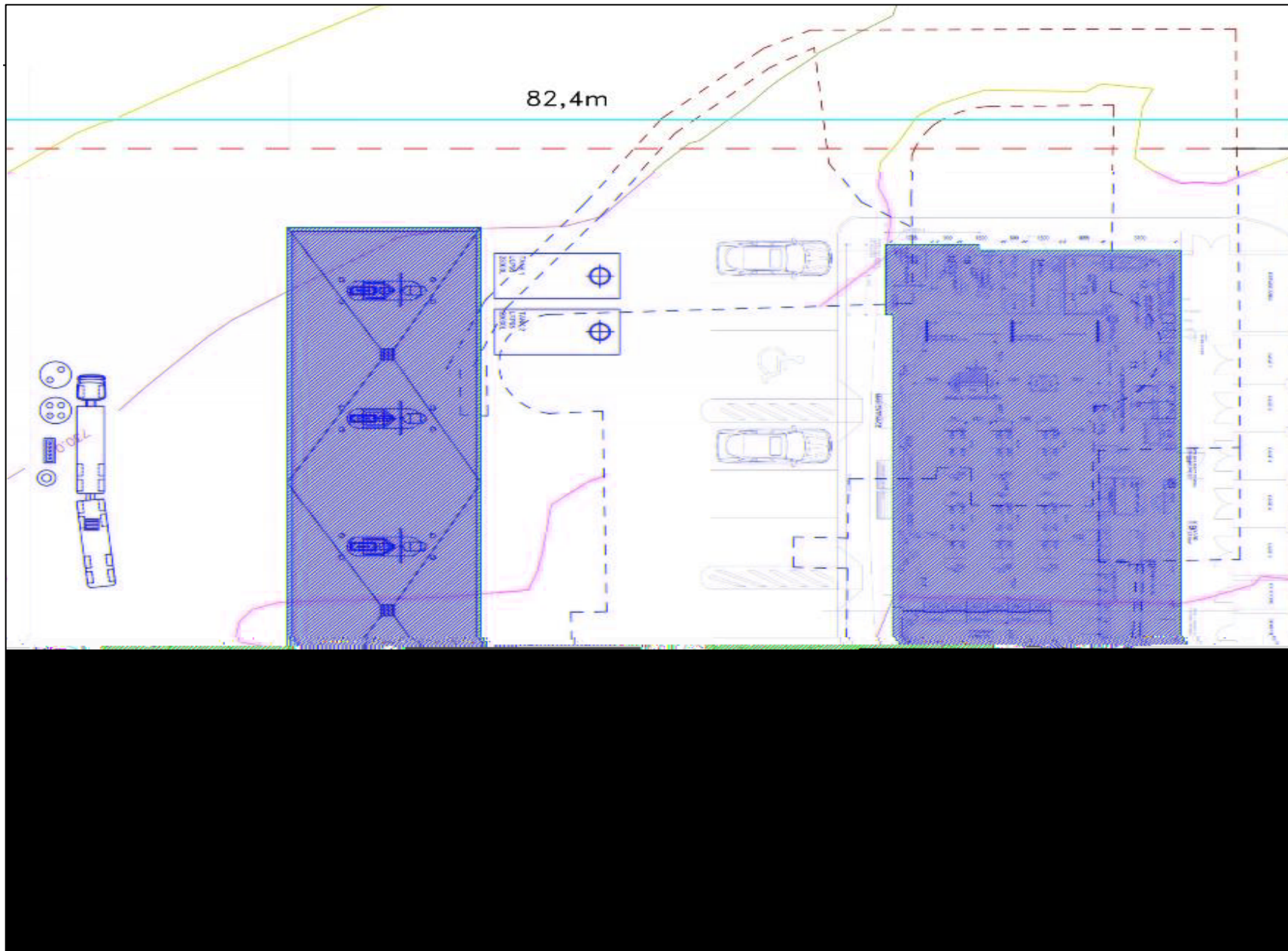


Figure 6: Layout plan of the filling station, convenience store and fast-food outlet (Source: Randhir Gobind & Associates).

---

## Site Photographs







**Figure 7:** Photographs of the proposed mixed-use development site.

---

## 2. NEED AND DESIRABILITY

### **Motivate and explain the need and desirability of the activity**

The following section makes use of the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) Guideline on Need and Desirability (2011) and the Department of Environmental Affairs (DEA) Pretoria, Integrated Environmental Management Guideline Series 9: Guideline on Need and Desirability (2014).

#### **1. Is the activity permitted in terms of the property's existing land use rights?**

The site is currently zoned as Future Residential according to the Msunduzi Spatial Development Framework, and for development approval, would require re-zoning. A town planner has been appointed. A Special Consent Application will be required for the filling station in terms of the Msunduzi Spatial Planning and Land Use Management By-Laws.

#### **2. Will the activity be in line with the Provincial Spatial Development Framework (PSDF)?**

Yes, the proposed development is in line with the Msunduzi SDF. The National Spatial Development Framework (NSDF) promotes rapid economic growth that is sustained and inclusive and is a pre-requisite for the achievement of other policy objectives, among which poverty alleviation is key. The Provincial SDF takes as its starting point this goal of sustainable development. Development is only acceptable and in the public interest if it is ecologically justifiable, socially equitable and economically viable, i.e. environmentally sustainable.

Figure 8 presents the draft Msunduzi Spatial Development Framework (SDF) (2021) and shows that the proposed development site is located on an area earmarked as a longer-term development area. Figure 9 presents the Msunduzi SEDIS Local Area Plan (2019) and shows that the property has long term settlement growth potential. Figure 10 presents an extract from the SDF and shows that the site has been identified to have new housing opportunities.

Taking the above into consideration, the proposed development site is located in an area reserved for '*Future Residential*', future growth and development potential. This is therefore an ideal location for a school, shopping centre, filling station, fast food outlet and residential estate. Whilst the proposed development is not going to be purely a residential development, the other components of the development such as the shopping centre, filling station, fast food outlet and school will service the proposed '*Future Residential*' in the area. Therefore, the proposed development is in line with the PSDF.

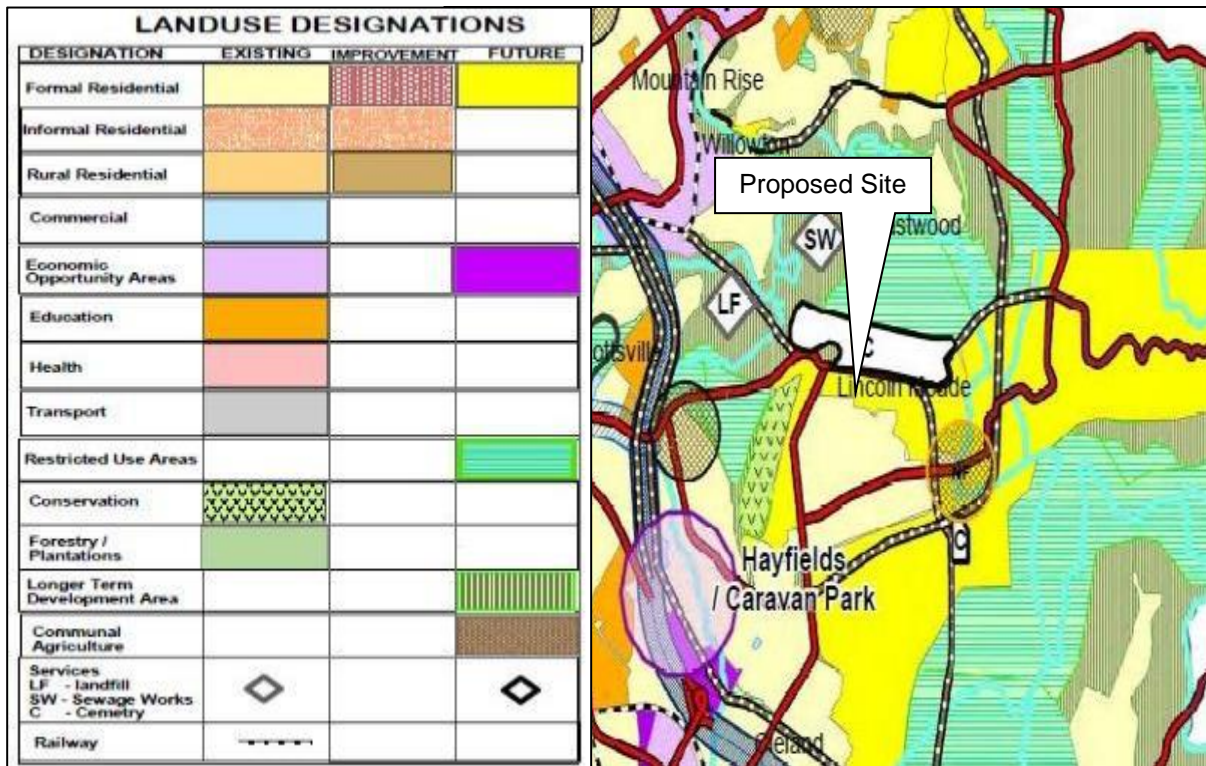


Figure 8: The Msunduzi Spatial Development Framework (Msunduzi SDF, 2019).

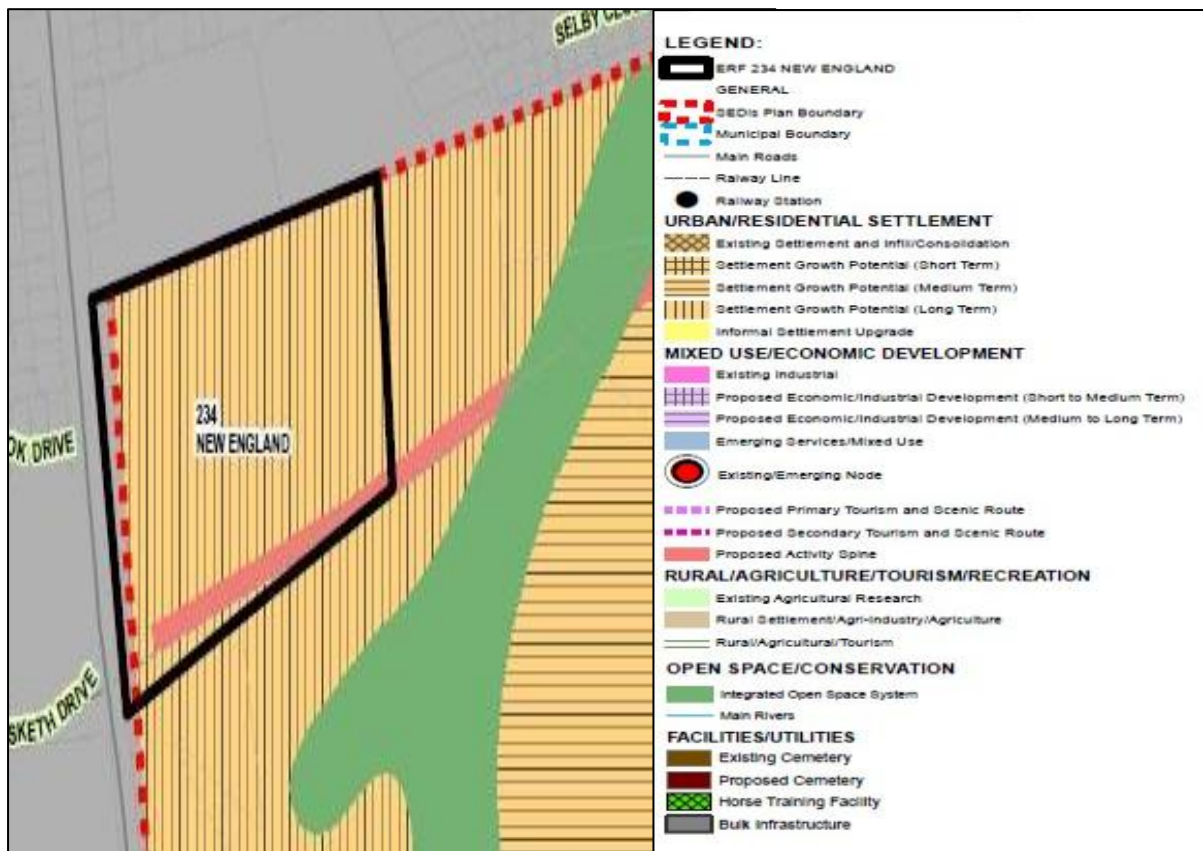
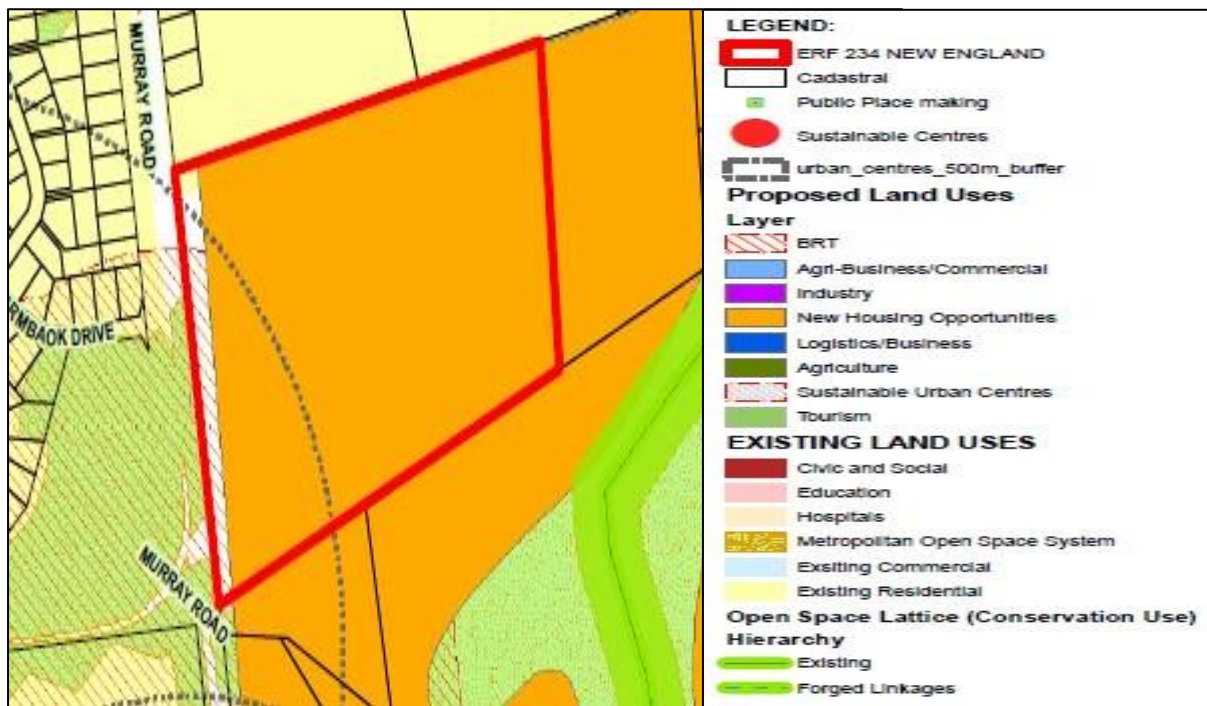


Figure 9: The Msunduzi SEDIS Local Area Plan (Msunduzi, 2019).



**Figure 10:** An extract of the SDF of the proposed site (Msunduzi, 2019).

**3. Will the activity be in line with the Urban Edge / Edge of Built Environment for the area?**

Not applicable.

**4. Will the activity be in line with the Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality; would the approval of this application compromise the integrity of the existing approved and credible Municipal IDP and SDF?**

Yes. In terms of the Municipal Systems Act (Act 32 of 2000), every Municipality in South Africa is obliged to develop an Integrated Development Plan (IDP) to realise the constitutional mandate of local government. The IDP is a strategic management tool, which aims to guide and align all planning, budgeting and operational decisions of the municipality and other spheres of governments. It is a legally binding document and replaces all other plans that guide development at local government level.

The Msunduzi Municipal development strategy has been designed to complement and give effect to the intention of both the national and provincial development strategies. Planning and development in Msunduzi occur within the context of national and provincial policy framework. As such, the IDP and SDF recognize and incorporate development principles and priorities in line with the principle of cooperative governance.

The Msunduzi Municipality has six IDP Goals:

- A well serviced city;
- An accessible, connected city;
- A clean, green city;
- A friendly, safe city;
- An economically prosperous city; and
- A financially viable and well governed city.

The establishment of the proposed development will help towards the majority of the Municipality's goals. The IDP and SDF aim to create an enabling environment and sustainable development which promotes quality of life.

---

**5. Will the activity be in line with an approved Structure Plan of the Municipality?**

Yes, the proposed development is in line with the Structure Plan of both the Msunduzi Local and uMgungundlovu District Municipality.

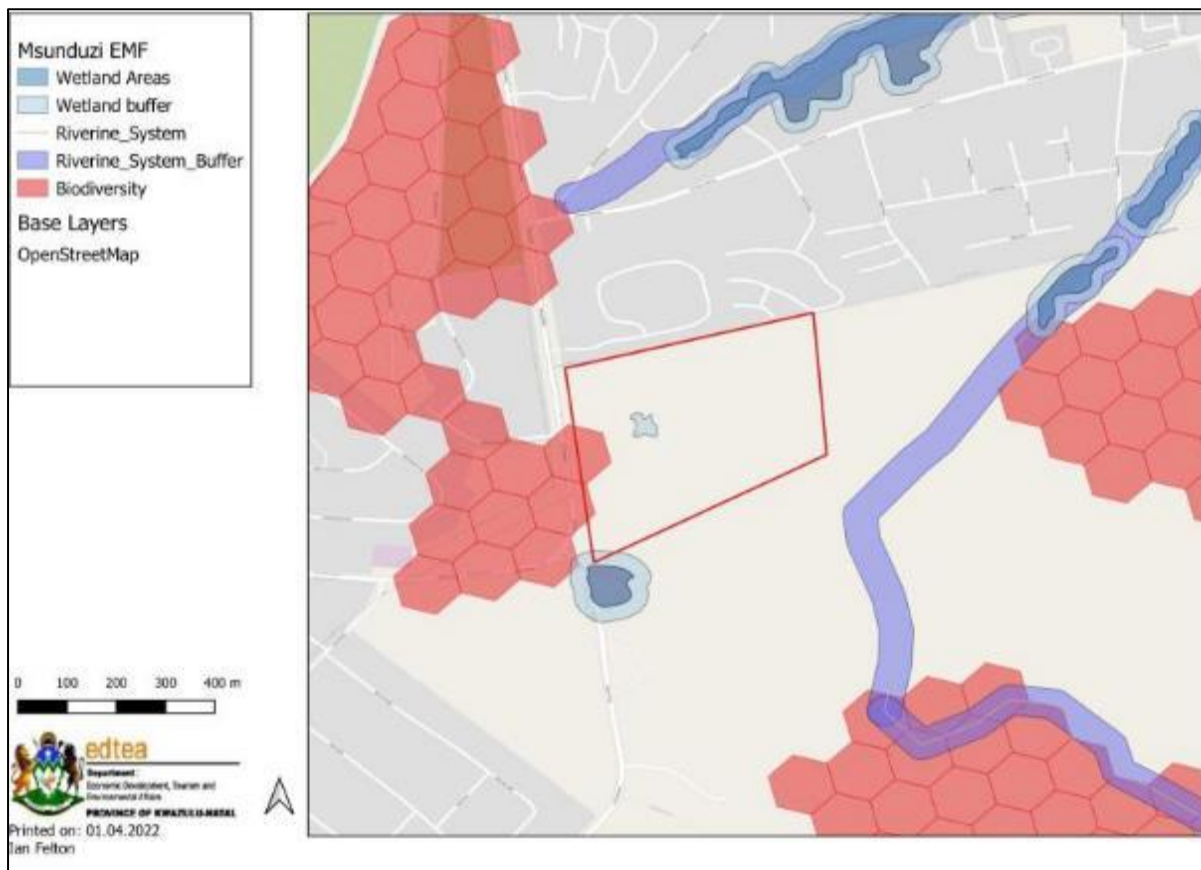
**6. Will the activity be in line with an Environmental Management Framework (EMF) adopted by the Department; would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?**

Refer to Appendix G2 for the Site EMF Report. The EMF concluded the following in terms of conservation significance:

- High wetland development constraint.
- High biodiversity constraint.
- Low flood potential.
- Low agricultural potential.
- Moderate slope (10 – 18 degrees).
- High water quality constraints.
- High air quality constraints.
- Low cultural heritage significance.
- Very high service provision.

The Wetland Assessment confirmed however, that the site does not intercept any wetland areas. The area identified on the EMF map (Figure 11) as a wetland area is an old pond site. The vegetation on this feature did not indicate a wetland was present, therefore this map is outdated.

The Biodiversity Assessment (Appendix D1) confirmed that the site was found to be of moderate biodiversity value. Despite the ranking of the site as a CBA Irreplaceable site in the Msunduzi EMF, this site does not serve as a functional ecological corridor and is not representative of the local vegetation, and its status as CBA Irreplaceable should be reviewed. However, the eastern portion of the site does meet the NEMA definition of “*indigenous vegetation*” due to the vegetation remaining undisturbed for more than 10 years.



**Figure 11:** Msunduzi EMF for the proposed site (DEDTEA, 2022).

**7. Will the activity be in line with any other plans (e.g. Guide Plan)?**

Yes, the development is in line with the following:

- uMgungundlovu District Municipality IDP and SDF
- Msunduzi Local Municipality IDP and SDF
- uMgungundlovu Environmental Management Framework (EMF)
- Msunduzi Environmental Management Framework (EMF)

**8. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?**

Yes. The proposed project is in line with the IDP and SDF for the Msunduzi Local Municipal Area in terms of providing a much-needed service (school, shopping centre, fuel and sustenance) to the surrounding areas and road users.

**9. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate?).**

The establishment of the school, residential estate, filling station, fast food outlet and shopping centre will contribute towards local job creation, poverty alleviation and skills development. It will also attract investment, which will have direct and indirect benefits to the local area. The proposed development site will benefit the local community by providing employment opportunities during the both the construction and operational phases, and services during operation.

**10. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?**

---

A Bulk Services and Engineering Report (Appendix D9) was conducted. The report has been prepared to assess the availability and access to bulk infrastructure services for the proposed Murray Road mixed-use development. It has been confirmed that electricity and water will be provided by the Msunduzi Local Municipality.

**11. Is this development provided for in the infrastructure planning of the Municipality, and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?**

A Bulk Services and Engineering Report (Appendix D9) was conducted. The report has been prepared to assess the availability and access to bulk infrastructure services for the proposed Murray Road mixed-use development. It has been confirmed that electricity and water will be provided by the Msunduzi Local Municipality.

**12. Is this project part of a national programme to address an issue of national concern or importance?**

The proposed development will help address issues of unemployment, education and infrastructure development, which are issues of national concern. The proposed development will provide job opportunities and skills development, and therefore help towards addressing unemployment. It will also result in income generation and enhanced local economic development. The proposed development will result in new and improved residential and commercial infrastructure that will improve the wellbeing of people who reside within the area.

**13. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)**

Yes, the proposed development site is located along Murray Road and Hesketh Drive in Hayfields, Pietermaritzburg and is situated a few minutes away from the N3 highway. The property is zoned Future Residential. The proposed development will need to be rezoned, should Environmental Authorisation be approved. The site is adequately sized for the proposed infrastructure as well as the provision of adequate parking. The biodiversity potential of the site is low.

The following location factors favour the establishment of the development at the proposed development site because the site:

- Is in close proximity to a provincial corridor (N3 corridor).
- Is adequately sized for the establishment of all proposed infrastructure as well as the provision of adequate parking.
- Contains no sensitive habitats which would be adversely affected by the proposed development.
- The site is in an area that provides accessibility to various areas; surrounding Hayfields, Lincoln Meade, Scottsville, the N3, Mkondeni and Pietermaritzburg.
- The area is earmarked for future development (i.e. the Hesketh Country Estate to the north of the site).

**14. Is the development the best practicable environmental option for this land/site?**

Based on Section 13 above, the proposed development site is suitable for the establishment of the development. Provided the development is undertaken adhering to the contents of the Environmental Management Programme (EMPr), mitigation measures and recommendations of the specialist studies, the impacts associated with the proposed development will be minimal. Refer to Appendix E for the EMPr.

**15. Will the benefits of the proposed land use/development outweigh the negative impacts of it?**

Yes, the proposed development will provide socio-economic benefits to the local community through job creation and skills development. It will also attract investment to the area. Provided the design,

---

construction and operation of the proposed facility adheres to the controls and mitigations identified during the Basic Assessment Process and contained in the EMPr, and all required monitoring is carried out on a regular basis during the construction and operational phases, the negative socio-economic impacts associated with not establishing the development outweigh the impacts of establishing it.

**16. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?**

Yes, the proposed mixed-use development is located on Murray Road between Hayfields and Lincoln Meade. The site is located in an area earmarked for "Future Residential", future growth and development potential. According to the Socio-Economic Assessment (SEA) (Appendix D4), the site *"appears well aligned to the local precinct and to the greater Pietermaritzburg district spatial development plans. The residential component fits well within the Lincoln Meade and Hayfields ambit which is substantially similar. Augmenting this, the conveniences offered by retail and fuel outlets should encourage further development and add velocity to the thrust to grow the district south and east of greater Pietermaritzburg and to encourage further development of this corridor."*

**17. Will any person's rights be negatively affected by the proposed activity/ies?**

No. No person's rights will be negatively affected by the proposed activities. The Public Participation Process has been fulfilled as required under NEMA, informing the public of the proposed development. Local residents, authorities, as well as other I&APs were notified of the proposed development and given the opportunity to lodge any concerns / objections regarding the proposed development. The EMPr (Appendix E) provides mitigation measures to prevent unnecessary negative impacts to the surrounding properties.

**18. Will the proposed activity/ies contribute to any of the 18 Strategic Integrated Projects (SIPS)?**

No. As the proposed development is a private sector development, the project does not contribute towards any of the 18 Strategic Integrated Projects (SIPS). However, the proposed development will contribute towards poverty alleviation, income generation and provision of infrastructure.

**19. What will the benefits be to society in general and to the local communities?**

It is anticipated that the proposed development will provide direct benefits to the area at a local and district Municipal level through job creation, skills development, attracting investment and provision of infrastructure. The establishment of the development is in line with the Local and District Municipality's IDP in terms of job creation, attracting investment and skills development.

According to the Socio-Economic Assessment (Appendix D4), the proposed development is anticipated to create 273 direct jobs and 397 economy wide jobs per year for a 5-year period during the construction phase. The proposed development is anticipated to create 465 jobs in the operational phase of the development, which are divided between the filling station, restaurant, shopping centre, school and job creation within the residential sector. In KwaZulu-Natal, on average, one job supports seven people, thus with the proposed mixed-use development, a total of 7 945 people are likely to benefit from employment opportunities provided by the proposed development during both the construction and operational phases.

**20. Any other need and desirability considerations related to the proposed activity?**

Not applicable.

**21. How does the project fit into the National Development Plan for 2030?**

The proposed development addresses Point 1 of the National Development Plan for 2030, through the creation of employment.

**1. Unemployment X**



---

2. The quality of school education for black people is poor.
3. Infrastructure is poorly located, inadequate and under-maintained.
4. Spatial divides hobble inclusive development.
5. The economy is unsustainably resource intensive.
6. The public health system cannot meet demand or sustain quality.
7. Public services are uneven and often of poor quality.
8. Corruption levels are high.
9. South Africa remains a divided society.

**22. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**

This Basic Assessment Report covers the objectives set out in Section 23 of NEMA. Refer to Section 8 of this Report. Numerous Specialists have been consulted as part of the feasibility work undertaken for this development. Mitigation measures have been developed to address the potential environmental impacts identified by the specialists and mitigation measures are included in the EMPr. Participation of key Interested and Affected Parties has been facilitated.

**23. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

Section 2 of NEMA states that “*environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably*”. The disturbance of ecosystems has been minimised and rehabilitation guidance is included in the EMPr.

---

### 3. ALTERNATIVES

#### 3.1 “Alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to —

**(a) The “do nothing” option of not implementing the activity:**

The “do nothing” option would mean that the proposed development will not be constructed at the proposed development site, and the site will be left in its current undeveloped state, and the vegetation on site would likely to continue to not be maintained.

The establishment of the proposed development will contribute towards local job creation and skills development and will attract investment which is in line with the goals of the Provincial SDF and Local Municipal IDP. The development will benefit the local community by providing employment opportunities during both the construction and operational phases. In addition, healthy competition among the existing and any proposed new shopping centres and new filling stations will ultimately benefit the consumers without adversely impacting the long-term sustainability of the existing stations. The proposed development is located along Murray Road, an ideal location for the proposed filling station, shopping centre, school, restaurant and residential sector.

If the proposed development is not authorised then none of the above-mentioned positive socio-economic impacts would be realised, and the area will remain in its current undeveloped state, with little to no economic opportunities for the area.

**(b) The property on which or location where it is proposed to undertake the activity:**

No alternative properties or locations for the establishment of the development have been identified, or investigated, as part of the project. The reason for this is that the Applicant owns the proposed development site which is well positioned for a development of this nature. As such, the establishment of the proposed development on an alternative property is not desirable or feasible for the Applicant.

The current site is suitable for the development in that:

- The site enjoys high visibility from Hesketh Drive and Murray Road.
- The site is adequately sized for the establishment of all proposed infrastructure as well as the provision of adequate parking.
- The site is located within a few minutes from the N3 highway (N3 corridor).
- The site contains no sensitive habitats which would be adversely affected by the proposed development.
- The site is in an area that provides accessibility to various areas; surrounding Hayfields, Lincoln Meade, Scottsville, the N3, Mkondeni and Pietermaritzburg.
- The area is earmarked for future development (i.e. the Hesketh Country Estate to the north of the site).

For these reasons, no alternate properties have been investigated in the Basic Assessment Report.

**(c) The operational aspects / type of activity to be undertaken:**

The following operational aspects / activity types were assessed:

**School**

The establishment of a school has been considered and is part of the preferred layout plan. There is sufficient land for the establishment of sporting facilities.

POSITIVE	NEGATIVE
There is sufficient land available for the establishment of sporting facilities.	None
The Socio-Economic Assessment (Appendix	

D4) indicated the need for a school in the area, as Pietermaritzburg has not had the development of supplementary schooling and the current schools are oversubscribed.	
---	--

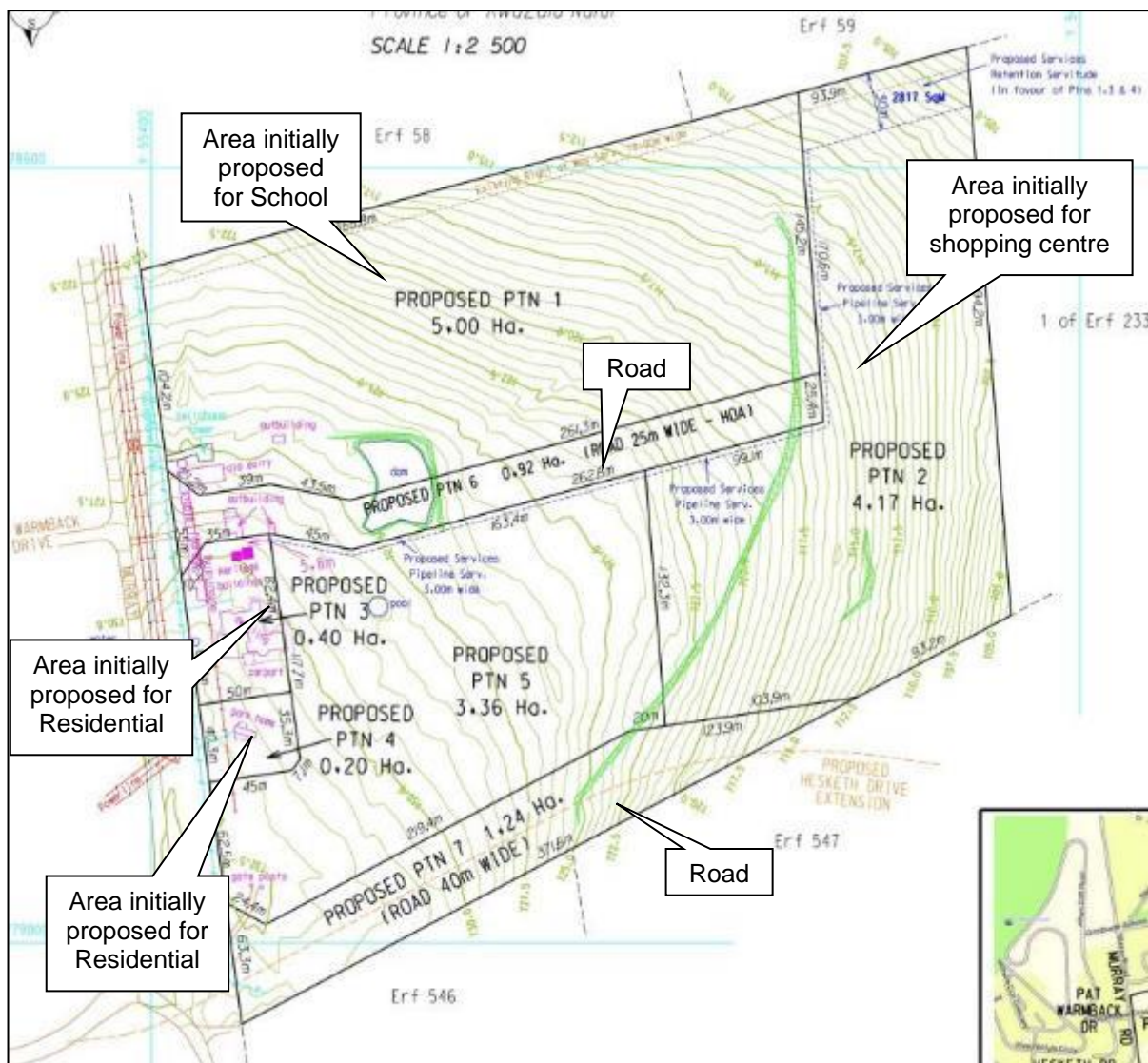
**Residential, Education and Shopping Centre**

<b>POSITIVE</b>	<b>NEGATIVE</b>
The residential estate will serve a middle-income group by providing affordable housing in approximately 350 apartment units.	Initially, the proposed development was to include a school (5 ha), a shopping centre (4.17 ha), and a residential area (3.96 ha). This layout did not consider the Filling Station and fast-food outlet.
The shopping centre, and school will serve and contribute to the growing population in the area (residential area).	The residential area was originally in the location of the shopping centre and indicated to be 3,36 ha, however this area proved to be too small for what was proposed for the 350 residential apartments.

**d). The layout or design of the activity:  
LAYOUTS**

**Original Layout – Layout 1**

The original layout (Figure 12 below) was compiled prior to any specialist work being commissioned. The original layout included an education area, shopping centre, residential area and road. The shopping centre was positioned to the east, the school was positioned to the north, and the residential area was positioned in the south west. The location of the shopping centre would have created traffic issues being the furthest away from the road. As already stated, this was compiled prior to any specialist work conducted on the site, and the fact that access to the shopping centre would mean traffic traveling through the development makes this layout fatally flawed. This layout plan was designed prior to any engineering and architectural plans being made, and just reflects the areas of where everything was proposed to be situated, therefore not providing much information.



**Figure 12:** The original layout (Layout 1), prior to any specialist engagement.

## Amended Layout – Layout 2

Layout 2 (Figure 13) was amended. This layout was amended following consultation with the architects, traffic engineer and Applicant. There was a greater need for a larger residential area and all configurations to be placed in such a way that the traffic flows easily within the property. This layout was not chosen, as the traffic layout was not suitable. This layout plan was designed prior to any engineering and architectural plans being made, and just reflects the areas of where everything was proposed to be situated, therefore not providing much information.

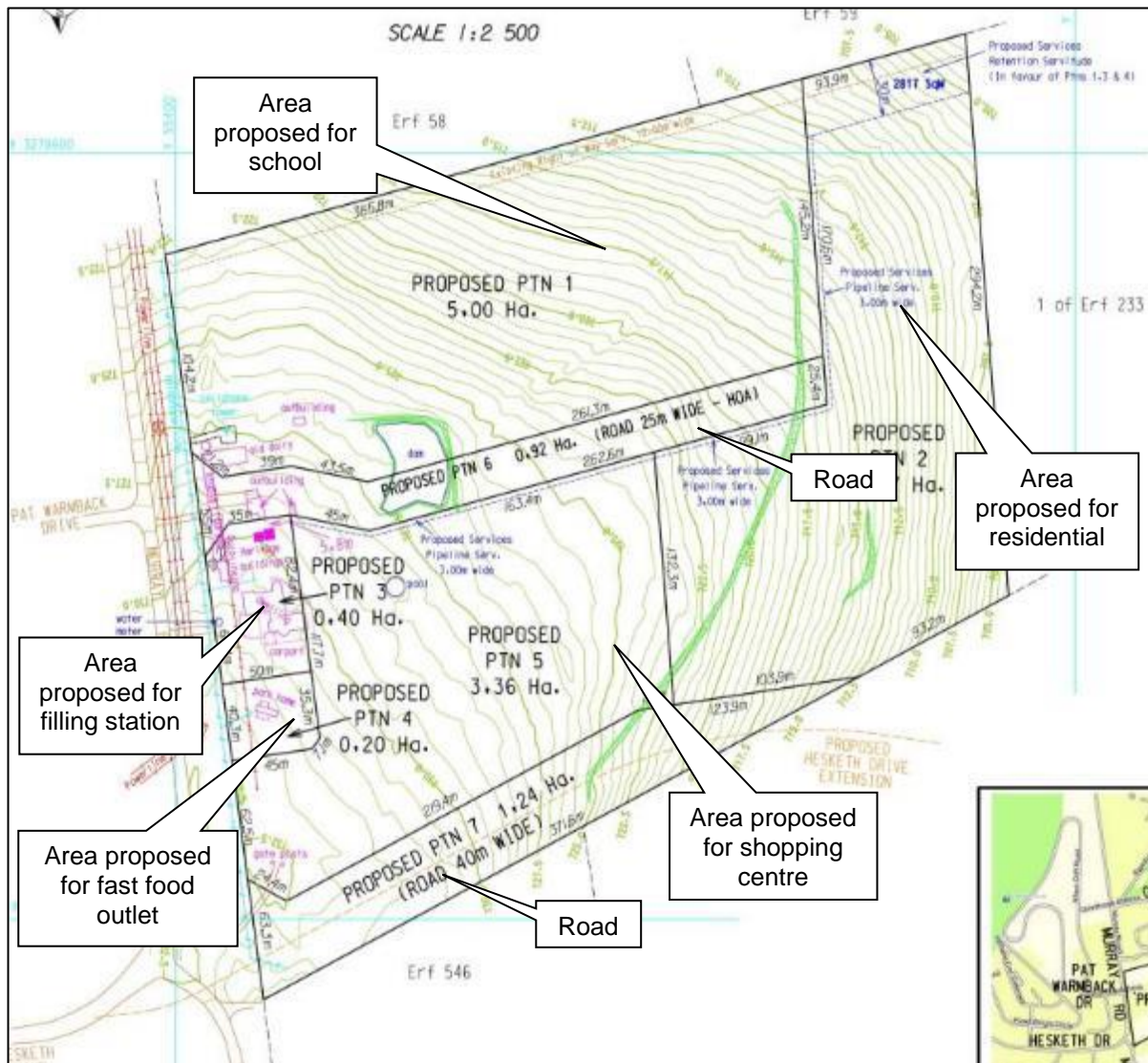
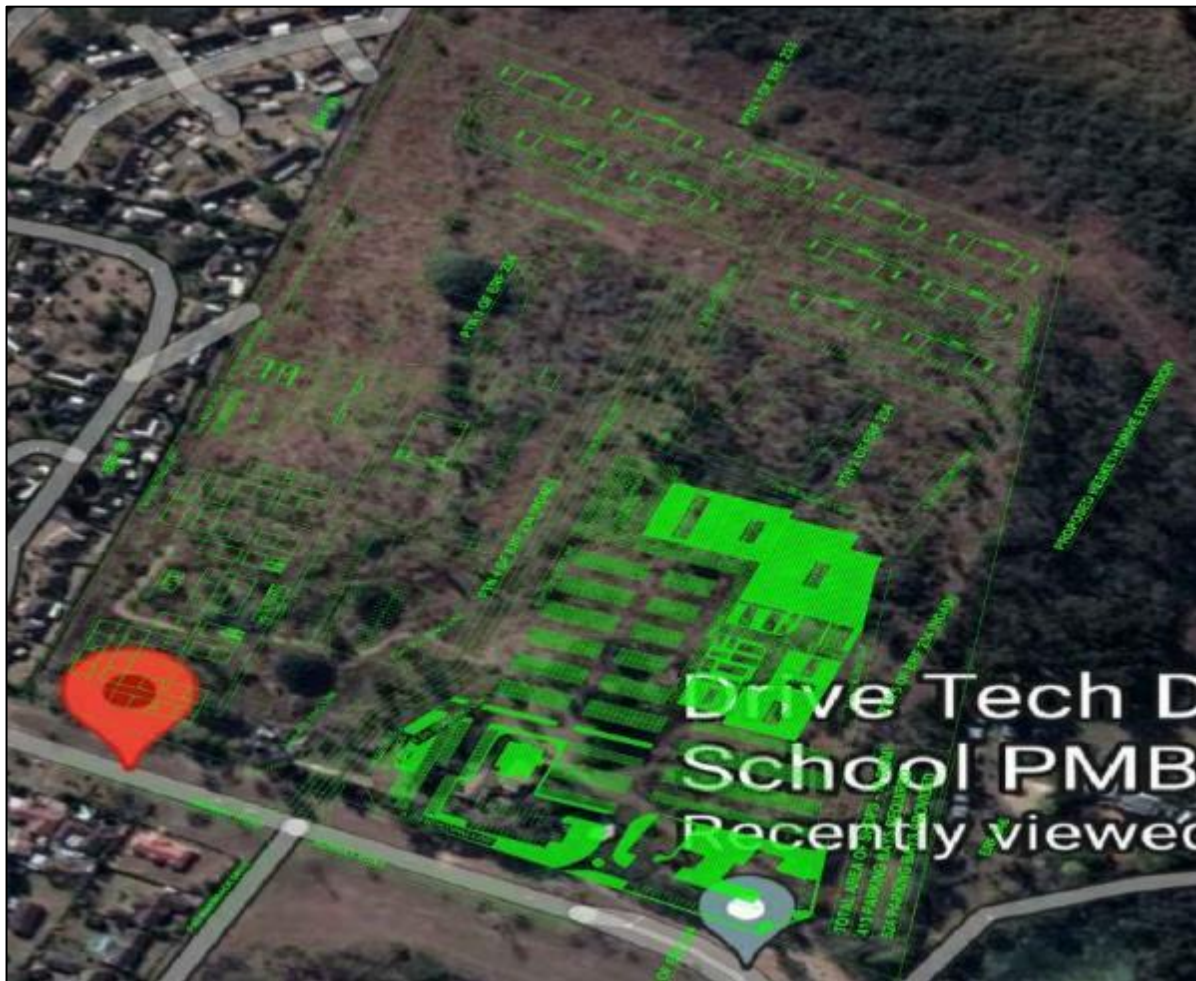


Figure 13: The amended layout (Layout 2).

### Preferred Layout – Layout 3

The Preferred Layout – Layout 3 (Figure 14) was compiled. This layout plan is preferred as it has been designed to meet the requirements from a design perspective and meets the requirements of all of the specialists such as Engineering, Traffic and Storm Water Management.



**Figure 14:** Preferred Layout – Layout 3.

**(d) The technology to be used in the activity:**

Alternatives in terms of the technology to be used for the treatment and disposal of effluent at the proposed development were investigated as follows:

**1. Septic Tank and Soak Away System**

Percolation tests were not undertaken on the site to confirm whether soils are suitable for the disposal of waste water and effluent via a septic tank and soak away system. Due to the size of the development and uses proposed (school, shopping centre etc), a septic tank and soakaway system is not considered a feasible option.

**2. Sewage package plants**

Sewage package plants are acceptable but not preferred. Package plants require regular maintenance and monitoring, which must be performed by a specialist supplier. Package plants also require periodic honey suckers. Due to the costs associated with these systems, this is not the preferred wastewater treatment. Thus, a sewage package plant is not desirable for a commercial development of this size, nature and location.

---

### **3. Conservancy Tanks**

Conservancy tanks involve waste water being collected in underground tanks on the site and this effluent being regularly sucked-out by honey sucker and transported by tanker to the nearest registered Waste Water Treatment Works (WWTW) for disposal. Although the nearest registered WWTW is a few kilometres away at Darvill, the installation of conservancy tanks is not considered economically feasible for this type and size of development due to the costs involved with the regular removal and disposal of waste.

### **4. Link into the Msunduzi Pietermaritzburg network – Preferred Option**

There is a bulk municipal sewerage infrastructure line adjacent to the site that the developer can link into, which is located along Murray Road. This is the preferred Waste Water disposal option. This option carries with it little environmental risks, in comparison to the other disposal methods, and is more economically feasible.

---

## 4. PUBLIC PARTICIPATION PROCESS

A Public Participation Process was undertaken according to Regulations 39 to 44 of the EIA Regulations as promulgated under the National Environmental Management Act (NEMA, Act 107 of 1998).

### 4.1 PROTECTION OF PERSONAL INFORMATION ACT (POPIA, ACT NO. 14 OF 2013)

The Protection of Personal Information Act (POPIA, Act No. 14 of 2013) came into effect on 01 July 2021 and aims to promote the protection of personal information. In terms of the POPIA, personal information refers to *'the name of the person if it appears with other personal information relating to the person or if the disclosure of the name itself would reveal information about the person'*. The EIA Regulations require, inter alia, transparent disclosure of registered Interested and Affected Parties (I&APs) and their comments. I&APs who submit comment, attend a Public Information Session (PIS) or request registration in writing for the Basic Assessment Process are deemed registered I&APs who must be added to the list of I&APs. By registering, I&APs are deemed to give their consent for relevant information to be processed and disclosed, in fulfilment of the requirements of the EIA Regulations.

For the purposes of this Basic Assessment Process and in terms of the requirements of the POPIA, only the names, affiliation and comments of I&APs have been included in this Report. Should additional personal information be required by the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA), consent to share this personal information will be obtained from the I&AP first.

### 4.2 NOTIFICATION OF THE PROPOSED PROJECT

Notification of the proposed project was conducted through the publication of newspaper adverts in English in the Witness on 23 September 2020, and Zulu in the Echo on 1 October 2020, in order to notify I&APs of the proposed project. Refer to Appendix C2 for copies of the adverts.

Site posters in English and Zulu were placed on site to notify the public of the proposed development. These were placed onsite on the 22 September 2020. Refer to Appendix C3 for site posters.

### 4.3 INTERESTED AND AFFECTED PARTIES

A register of I&APs was compiled at the outset of the project. This includes names and contact details of Authorities, Government / Municipal Departments, NGOs, community representatives, local interest groups and neighbouring landowners (refer to Appendix C1). The list of I&APs has been continually updated to include persons responding to the adverts and site notice boards.

### 4.4 BACKGROUND INFORMATION DOCUMENT

Written notification in the form of Background Information Documents (BIDs) were circulated from 04 June 2019 and again from 17 September 2020 (Refer to Appendix C4). These BIDs were circulated by e-mail to relevant authorities.

Due to the project being placed on hold and the combination of the COVID-19 Pandemic and lockdown occurring during 2020, the BID's, Site Posters and Newspaper Advertisements were re-circulated to all I&APs. Comments received (Appendix C7) and responses provided following circulation of the newspaper adverts, site posters and BID are contained within Table 3 and 4 below. Additional information has also been provided where it has become available. Refer to Appendix C8 for additional information that was circulated to I&APs.



**Table 3:** Comments received and responses provided following circulation of the newspaper advertisements, site posters and BID (2019).

I&AP	COMMENT	RESPONSE
<p>Department of Agriculture, Forestry and Fisheries 04 June 2019</p>	<ul style="list-style-type: none"> <li>This letter serves as a notice of receipt for the above document received on the 4 June 2019. Kindly note that the document will be processed within 30 days from the date of receipt, provided that all requested information is submitted to the department timeously. Should any further information be required, please do not hesitate to contact this office.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>
<p>The Department of Agriculture, Forestry and Fisheries 10 June 2019</p>	<ul style="list-style-type: none"> <li>The Department of Agriculture, Forestry and Fisheries appreciates the opportunity to register as an interested and affected party for the above-mentioned project. DAFF 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.</li> <li>With reference to the background information document received on 04/06/2019, the department would like to register as an interested and affected party for the project in view of the fact that the proposed development will affect the indigenous vegetation. However further comments will be provided upon receipt of the DBAR.</li> <li>This letter does not exempt you from considering other legislations.</li> <li>Should any further information be required, please do not hesitate to contact this office.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> <li>The I&amp;AP is a registered I&amp;AP. Refer to Appendix C1 for the I&amp;AP List.</li> <li>Noted.</li> <li>Noted.</li> </ul>
<p>Msunduzi Municipality: Sustainable Development &amp; City Enterprises Department – Environmental Management Unit 20 June 2019</p>	<ul style="list-style-type: none"> <li>Morning Rebecca, I am Gideon Thulisa Duma, at Msunduzi Municipality Environmental Management Unit. Thanks for the BID, I wish to state that I will be the one handling the project on behalf of the Environmental Unit at Msunduzi, may I please be featured in all future correspondence regarding the project.</li> <li>I can see that in the BID the Msunduzi EMF has been considered, the EMF is for 2010 not 2009. Whatever comments I may have regarding the BID will be forwarded to Greendoor.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. The I&amp;AP has been registered as an I&amp;AP and will receive all future correspondence on the project.</li> <li>Noted.</li> </ul>
<p>Duikers Rest Body Corporate 15 October 2020</p>	<ul style="list-style-type: none"> <li>Thank you for sending me the Background Information Document.</li> <li>I live on Grimthorpe Avenue and would like to be added as an I&amp;AP.</li> <li>I have a few concerns which I hope can be addressed through Environmental Impact Assessment, just to mention a few:</li> <li>How does the developer aim to address the issue of sewerage – I</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> <li>The I&amp;AP has been added to the I&amp;AP list (Appendix C1).</li> <li>Noted.</li> <li>Refer to Appendix D9 for the Bulk Internal Services and</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>know the Darvill plant is undergoing an upgrade but will that upgrade be sufficient? There are other developments that have been approved and not sure if the upgraded capacity can handle too many new developments.</p> <ul style="list-style-type: none"> <li>• Solid Waste – The dump is just around the corner but that dump is over prescribed, any new ideas to dispose of waste or to use alternative sites?</li>   <li>• Water and Electricity supply – infrastructure in the area is ageing and residents at the bottom of Grimthorpe experience water pressure issues. Electricity outages are common in the area. Will there be any pressure from the developers onto the municipality to upgrade infrastructure so that the community can benefit.</li> <li>• Upgrading our roads – we minimal exit points from Hayfields and traffic congestion is an issue in the area – by building residential units and assuming that there will be an increase in traffic – how will this be dealt with? At the proposed road which is across Pat Warm Back Drive – will this intersection be controlled by traffic signals or will people just yield?</li> </ul>	<p>Engineering Report.</p> <ul style="list-style-type: none"> <li>• Refer to Appendix E for the Environmental Management Programme. An enclosed collection point will be provided, to collect and store refuse until the Municipality can remove it and dispose of it at a registered landfill site. It would not be practical to use an alternative landfill site, as the nearest would be the Curry’s Post Landfill Site in Howick (refer to Appendix G5 for the Msunduzi Municipality Services Agreement).</li> <li>• Noted. Refer to Appendix G5 for the Msunduzi Municipality Service Level Agreements.</li>   <li>• Refer to Appendix D8 for the Traffic Impact Assessment. The proposed road upgrades are required for the Hesketh Country Estate:  <u>Murray Road and Grimthorpe Intersection:</u> <ul style="list-style-type: none"> <li>- Converted from a priority-controlled intersection to a signalised intersection.</li> <li>- New 60 m left-slip lane on the Murray Road south approach.</li> <li>- Existing right-turn lane on the Murray Road south approach extended to 60m.</li> <li>- New 30 m left-slip lane on the Grimthorpe approach.</li> <li>- New left-slip created on the Murray Road north approach.</li> <li>- New 60 m right-turn lane created on the Murray Road north approach.</li> <li>- The new Hesketh Country Estate access will have 2 entry and 2 exit lanes.</li> </ul> <u>Murray Road and Hesketh Drive Intersection</u> <ul style="list-style-type: none"> <li>- Converted from a priority-controlled intersection to a signalised intersection.</li> </ul> </li> </ul>

I&AP	COMMENT	RESPONSE
		<ul style="list-style-type: none"> <li>- Existing short right-turn lane will be converted to a shared through and right-turn lane and extended to 50 m on the Hesketh Drive approach.</li> <li>- Existing left-turn lane converted to a 30 m short left-turn slip lane on the Gladys Manzi Road approach.</li> <li>- Existing short right-turn lane converted to a full right-turn lane on the Gladys Manzi Road approach.</li> <li>- New 60 m left-slip lane added to the Murray Road approach.</li> <li>- Existing shared through and left-turn lane converted to a through only on the Murray Road approach.</li> <li>- New 150 m exit lane added to the Murray Road approach.</li> </ul> <p><u>Murray Road and Pat Warmback Intersection</u></p> <ul style="list-style-type: none"> <li>- Converted from priority controlled to a roundabout.</li> </ul> <p>The construction of the proposed Murray Road Mixed-Use Development will result in the following upgrades being required to the surrounding road networks:</p> <p><u>Blackburrow and Hesketh Drive Intersection</u></p> <ul style="list-style-type: none"> <li>- Convert the left-slip lane on the Blackburrow Road approach to a shared left-slip and right-turn lane and extend it to 40 m in length.</li> </ul> <p>It is recommended that the following additional upgrades are implemented at the Hesketh Drive and Murray Road Intersection, to handle the new trips from the two proposed developments:</p> <p><u>Hesketh Drive and Murray Road Intersection (Upgraded)</u></p> <ul style="list-style-type: none"> <li>- A new 125 m through lane must be added to the Hesketh Drive approach.</li> <li>- A new 125 m exit lane must be added to the Hesketh Drive approach.</li> <li>- Convert the proposed 60 m left-slip lane to a full shared through and left-slip lane.</li> <li>- Convert the proposed 150 m exit lane to a full exit lane.</li> </ul>

I&AP	COMMENT	RESPONSE
	<ul style="list-style-type: none"> <li>• A Road is proposed across a Dam – is it not possible to move the road around the Dam if the water body is serving an important function and seeing that is a critical biodiversity area – storm water drainage, design of units and use of landscape should be closely looked at to minimise biodiversity impacts (I'm sure this will be explored in detail during the process).</li> </ul>	<p><u>Murray Road, Pat Warmback Drive and Site Access Intersection</u></p> <ul style="list-style-type: none"> <li>- A new full lane which allows through and left-turn movements on the Murray Road south approach will be required.</li> <li>- A new 60 m right-turn lane on the Murray Road south approach will be required.</li> <li>- A full exit lane on the Murray Road south approach will be required.</li> <li>- A new full lane which allows through and left-turn movements on the Murray Road north approach will be required.</li> <li>- A new 60 m right-turn lane on the Murray Road north approach will be required.</li> <li>- A full exit lane on the Murray Road north approach will be required.</li> </ul> <ul style="list-style-type: none"> <li>• This is not true; the I&amp;AP has been misinformed. There is no wetland or dam on site (Erf 234) and no road is proposed across a dam. Refer to Appendix D2 for the Wetland Assessment.</li> </ul>
<p>KZN Department of Transport 20 June 2019</p>	<ul style="list-style-type: none"> <li>• With reference to your application dated June 2019. In terms of Kwazulu-Natal Provincial Roads Act No. 4 of 2001, this Department has no objection to the proposed DEVELOPMENT situate on the abovementioned property, as this Departments Provincial Road Network is NOT AFFECTED.</li> <li>• This correspondence does not grant authorization or exemption from compliance with any other relevant and applicable legislation.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> </ul>
<p>Lincoln Cottages 20 June 2019</p>	<ul style="list-style-type: none"> <li>• It is noted that despite the development being in the planning phase, that the future residents of the development have already marked off some plots of ground alongside the road leading into the Darvill sewage treatment plant.</li> <li>• It is also noticed that power cables have in the past, and are still</li> </ul>	<ul style="list-style-type: none"> <li>• The EAP is unaware of any construction related activities having been undertaken for the proposed development on Erf 234.</li> <li>• Any power cables that are being laid for electricity purposes are</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>currently continuing to be being laid by the Msunduzi Municipality to bring power to the development.</p> <ul style="list-style-type: none"> <li>• This makes a mockery of Basic Assessment Process, as it seems that the developers are bent on moving ahead with the development despite the outcome of the EIA process.</li> </ul> <p><b><u>Health issues</u></b></p> <ul style="list-style-type: none"> <li>• It is assumed that the basic assessment process will take into account the serious situation that exists regarding the extremely poor management of the New England Road land fill site which is in a deplorable state. The complete disregard of the very basics concerning the management of a landfill site is evident, resulting in the dump catching alight frequently. This will seriously impact on the health of the residents of the development, as it does those residing in areas removed from the dump site.</li> <li>• While being a proponent to the upliftment of the poor and disadvantaged, and sympathetic to the acute housing shortage in Pietermaritzburg, it is evident that crime will increase in the Lincoln Meade area. The nearest police station to the development is situated 6 km away (Alexandra Road Police station), can the establishment of policing policy in the area not be addressed? This could include the establishment of a satellite police station within the development.</li> <li>• As a B&amp;B owner I am concerned that the escalation in the crime rate that the development will surely bring to the Lincoln Meade area will have an adverse effect in the running of our B&amp;B, so for all of the above reasons I have no option but to formally lodge an objection to the development going ahead. However, should an effective policing policy be put in place to adequately ensure the safety of houses and businesses in the Lincoln Meade area, the entire matter can then be reviewed.</li> </ul>	<p>dealt with by the Msunduzi and Eskom Electricity Departments and have nothing to do with the proposed development. The installation of electricity cables is for the benefit for all, including the residents in the Lincoln Meade and Hayfields areas.</p> <ul style="list-style-type: none"> <li>• This is the opinion of the I&amp;AP.</li> </ul> <ul style="list-style-type: none"> <li>• Noted. The proposed development addresses potential impacts on the biophysical environment. Refer to Section 6 of this Report for potential impacts and mitigation measures. The New England Road Landfill Site is run and owned by the Msunduzi Municipality. The EAP is aware of the dump fires that occur on the New England Road landfill site; this issue is being dealt with by Msunduzi Municipality.</li> <li>• Refer to Section 5.8 for proposed security related impacts and the potential mitigation measures. The proposed development will mitigate security related issues by having a guard on the site at all times throughout the construction and operational phases of the development.</li> <li>• Noted. Refer to Section 5.8 of this Report for Security related impacts. A guard will be on the site at all times throughout the construction and operational phases of the development. The area will be fenced and all construction labourers will remain within the boundaries of the construction site at all times. Access onto and off the site during construction must be controlled by a register system. During the operational phase, the owner must be responsible for employing a security firm to provide security at the facility if deemed necessary.</li> </ul>
Msunduzi Municipality:	<ul style="list-style-type: none"> <li>• Your Background Information Document (BID) dated June 2019 and</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>

I&AP	COMMENT	RESPONSE
<p>Sustainable Development &amp; City Enterprises Department – Environmental Management Unit 27 June 2019</p>	<p>received by the Msunduzi Municipality Environmental Management Unit on the 14th of June 2019 refers. This Unit has reviewed the above information and responds below:</p> <ul style="list-style-type: none"> <li>• The site has been assessed in terms of the Municipal Environmental Management Framework (EMF), Draft Msunduzi Ecosystem Services Plan (ESP), Draft Msunduzi Conservation Plan (C Plan).</li> <li>• The EMF has identified the following constraints on the application site: <ul style="list-style-type: none"> <li>– High Wetland Development Constraints: A Wetland Delineation and Functionality Assessment would be required.</li> <li>– High Biodiversity Development Constraints: Biodiversity Assessment Will be required.</li> <li>– High Water Quality Constraints: A Stormwater Management Plan will be required due to the increase of hardened surfaces.</li> <li>– High Air Quality Constraints: Dust Suppression measures to be put in place during construction.</li> </ul> </li> <li>• The site has additionally been reviewed against any proposed activities which may require compliance with the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) and the associated Environmental Impact Assessment (EIA) Regulations of 07 April 2017.</li> <li>• The following but not limited to activities may have applicability to the proposed activity: GNR No. 327 Activity Number 19: <i>“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 a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving –</i> <i>(a) will occur behind a development setback;</i> <i>(b) is for maintenance purposes undertaken in accordance with a</i></li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• A 32 m wetland buffer has been applied. A Wetland Assessment has been conducted. Refer to Appendix D2 for the Wetland Assessment and Section 7.2 of this Report.</li> <li>• A Biodiversity Assessment has been conducted. Refer to Appendix D1 for the Biodiversity Assessment and Section 7.1 of this Report.</li> <li>• Noted. A Stormwater Management Plan has been conducted. Refer to Appendix D7 for the Stormwater Management Plan and Section 7.7 of this Report.</li> <li>• Refer to Section 5.6 for dust mitigation measures which are to be put in place during construction.</li> <li>• Noted.</li> <li>• Your comment is acknowledged.</li> <li>• GNR 327 Part 19 is not applicable to the proposed development. The development will not be infilling or depositing material into or from a watercourse. Refer to Section 1.2 of this report for the Listed Activities that are applicable to this proposed development.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p><i>maintenance management plan; or</i></p> <p><i>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies the seashore;</i></p> <p><i>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</i></p> <p><i>(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.”</i></p> <ul style="list-style-type: none"> <li>• GNR No. 327 Activity Number 27: <i>“The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-</i> <ul style="list-style-type: none"> <li><i>(i) the undertaking of a linear activity; or</i></li> <li><i>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.”</i></li> </ul> </li>   <li>• GNR No. 324 Activity Number 12: <i>“The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (b) In KwaZulu-Natal:</i> <ul style="list-style-type: none"> <li><i>i. Trans-frontier protected areas managed under international conventions;</i></li> <li><i>ii. Community Conservation Areas;</i></li> <li><i>iii. Biodiversity Stewardship Programme Biodiversity Agreement areas;</i></li> <li><i>iv. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</i></li> <li><i>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></li> <li><i>vi. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• GNR 327 Part 27 is applicable to the proposed development. The Biodiversity Assessment (Appendix D1) confirmed that the site was found to be of moderate biodiversity value. Despite the site being ranked as a CBA Irreplaceable site in the Msunduzi EMF, it does not serve as a functional ecological corridor and is not representative of the local vegetation, and its status as CBA Irreplaceable should be reviewed. However, the eastern portion of the site does meet the NEMA definition of Indigenous Vegetation due to the vegetation remaining undisturbed for more than 10 years.</li> <li>• GNR 324 Part 12 is applicable to the proposed development, as the proposed mixed-use development will require the clearance of an area greater than 300 m<sup>2</sup> of indigenous vegetation.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p><i>the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;</i></p> <p><i>vii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning;</i></p> <p><i>viii. A protected area identified in terms of NEMPAA, excluding conservancies;</i></p> <p><i>ix. World Heritage Sites;</i></p> <p><i>x. Sites or areas identified in terms of an international convention;</i></p> <p><i>xi. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</i></p> <p><i>xii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or an estuarine functional zone.”</i></p> <ul style="list-style-type: none"> <li>• This Unit has reviewed the relevant spatial datasets and has established that the site for proposed clearing, and construction within areas that have been identified as being sensitive (viz. High Wetland, High Water Quality, High Air Quality and High Biodiversity constraints) in terms of the Msunduzi Environmental Management Framework which was adopted by the MEC for Economic Development, Tourism and Environmental Affairs on the 3rd of September 2015 (Provincial Notice 125 of 3 September 2015).</li> <li>• Based on the information provided and the threshold of the property, this Unit is of the view that <b>the proposed activity would potentially trigger activities that are listed in terms of Government Notice No. R324, and No. R327 of 7 April 2017</b> viz; <ul style="list-style-type: none"> <li>- <i>Item No. 12 of GNR 324 of 4 April 2017;</i></li> <li>- <i>Item No. 19 of GNR 327 of 4 April 2017; and</i></li> <li>- <i>Item No. 27 of GNR 327 of 4 April 2017.</i></li> </ul> </li> <li>• Please note that the activities applied for may not commence prior to</li> </ul>	<ul style="list-style-type: none"> <li>• Noted. According to the Biodiversity Assessment (Appendix D1), no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site. It is the opinion of the Biodiversity Specialist that: <i>“although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.”</i> According to the Wetland Assessment (Appendix D2), a channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>• The proposed development triggers the following listed activities: GNR 327 Part 14 and Part 27, GNR 324 Part 4 and GNR 324 Part 12.</li> <li>• Noted.</li> </ul>



I&AP	COMMENT	RESPONSE
	<p>an Environmental Authorisation being issued by the Competent Authority, that being the Department of Economic Development, Tourism and Environmental Affairs (EDTEA).</p> <ul style="list-style-type: none"> <li>• The Department of Water and Sanitation is to be consulted with regards to a Water Use License (WUL) as this development occurs within 500m of a watercourse and wetland / riparian area which may trigger section 21 (c) and (i) of the National Water Act, (Act 26 of 1998). The Department of Water and Sanitation (DWS) will determine if a Water Use License or General Authorisation is required and a letter from the Department stating the outcome of their decision must be provided to this Unit.</li> <li>• Landscaping and urban greening of the site must be implemented using indigenous species prior to the issuing of an Occupation Certificate. An Indigenous Landscape Plan must be submitted to this Unit for comment and approval during the pre-construction or construction phase. Once complete, the landscaping must be regularly irrigated and maintained to ensure the vegetation reaches an established state.</li> <li>• No developments to occur within 40 m of watercourses in alignment with the SDF.</li> <li>• Msunduzi Municipalities Green Building Guideline Toolkit must be taken into consideration to ensure the sustainability and improved efficiency of the proposed building.</li> <li>• As the Msunduzi EMF identifies High Water Quality and High Air Quality Constraints on the application site, it is recommended that, where possible, hard surfacing be minimised and landscaping be incorporated within the development footprint, as this will contribute to reducing the carbon footprint of the site.</li> <li>• Further; In terms of the Spatial Planning and Land Use Management Act (Act no.16 of 2013), the following sections are raised:</li> <li>• Sections 22(1) read with 22(2) says: a Municipal Planning Tribunal or any other authority required or mandated to make land</li> </ul>	<ul style="list-style-type: none"> <li>• The Department of Water and Sanitation (DWS) is a registered I&amp;AP. A Water Use License (WUL) process is being undertaken concurrently with the Environmental Authorisation process.</li> <li>• Should Environmental Authorisation be obtained for the proposed development, the Applicant will submit an Indigenous Landscape Plan to the Msunduzi Municipality: Sustainable Development &amp; City Enterprises Department – Environmental Management Unit.</li> <li>• Noted. According to the Wetland Assessment (Appendix D2), a channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>• Noted.</li> <li>• Noted. Where possible, hard surfacing will be minimised, and landscaping be incorporated within the development footprint.</li> <li>• Noted.</li> <li>• Noted.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>development decisions in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal Spatial Development Framework, except where site specific circumstances justify a departure from its provisions.</p> <ul style="list-style-type: none"> <li>• It should be noted that the application site has been reserved for 'Future Residential' in the 2015 adopted SDF.</li> <li>• Please contact this unit should you have further queries.</li> </ul>	<ul style="list-style-type: none"> <li>• This is correct. The site is currently zoned as 'Future Residential'. The Applicant will apply for mixed-use zoning if the proposed development is approved.</li> <li>• Noted.</li> </ul>
Conservancies KZN	<ul style="list-style-type: none"> <li>• Dear Rob According to Nora: "<i>This is an application for environmental authorisation on Hlatsana which is next door to Broadleaze. Andrew Barnes is the developer. There are no environmental sensitivities on the site. There may be issues with stormwater management and waste water management</i>"...so there seems no major reason to attend.</li> <li>• Thanks Kerryn, unless there are compelling objections to this development, I will not attend the meeting.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted. Please refer to Section 7.7 of this Report for Storm Water Management and Appendix D7 for the Stormwater Management Plan. Refer to Appendix D1 for the Biodiversity Assessment.</li> <li>• Noted.</li> </ul>
Hesketh Country Estate June 2019	<ul style="list-style-type: none"> <li>• Please advise the number of units proposed, the type of units proposed, the amount of gross lettable area or bulk infrastructure in M<sup>2</sup> for the school and commercial component.</li> <li>• Please advise the applicable zoning applied for.</li> <li>• In keeping with the management plan for the area, please advise if the 30m buffer zone to conservation areas have been applied and that there are required greenbelts for the Dwarf Chameleon and other species.</li> </ul>	<ul style="list-style-type: none"> <li>• A total of 350 residential apartment units that are 1 and 2 bedroomed are proposed and will be approximately 5 ha in extent. The school is to be 5 ha in extent and will be a private school with approximately 500 learners from Grade RR to 12. The shopping centre will be 10 000 m<sup>2</sup> in extent.</li> <li>• The site is currently zoned as future residential. Should environmental Authorization be granted, the site will be rezoned to mixed-use.</li> <li>• A 32 m wetland buffer has been applied (refer to Appendix D2 for the Wetland Assessment). According to the Biodiversity Assessment (Appendix D1), no conservation buffer is required.</li> </ul>
Msunduzi Municipality – Transportation Planning	<ul style="list-style-type: none"> <li>• This department will require a Traffic Impact Study. This study must be undertaken by a registered Traffic Engineer. It must be in line the COTO Manual.</li> </ul>	<ul style="list-style-type: none"> <li>• This has been done. Refer to Appendix D8 for the Traffic Impact Assessment.</li> </ul>
KZN Department of Transport	<ul style="list-style-type: none"> <li>• With reference to your application dated June 2019. In terms of Kwazulu-Natal Provincial Roads Act No. 4 of 2001, this Department has no objection to the proposed DEVELOPMENT situate on the</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>abovementioned property, as this Departments Provincial Road Network is NOT AFFECTED.</p> <ul style="list-style-type: none"> <li>• This correspondence does not grant authorization or exemption from compliance with any other relevant and applicable legislation.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>
<p>Environmental Health Unit – Msunduzi Municipality 19 October 2019</p>	<ul style="list-style-type: none"> <li>• The above proposal has reference and this unit's comments are as follows:</li> <li>• Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, biological, social and psychosocial factors in the environment. It is also related to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect the health of present and future generations. The environmental Health Unit of Msunduzi Municipality acknowledges the need for the above development and therefore supports the development. However, the following must be considered:</li> </ul> <p><b>Planning Phase</b></p> <p><u>A Residential Estate</u></p> <ol style="list-style-type: none"> <li>1. Each residential unit must be provided with the following: <ol style="list-style-type: none"> <li>a. A piped supply of potable water</li> <li>b. A waterborne flush toilet</li> <li>c. A bath/ shower and wash hand basin</li> <li>d. A separate kitchen with a sink</li> <li>e. Compliance with Msunduzi Municipality's Public Health Bylaws: Schedule 1: any building, room or structure to be used wholly or partly by a greater number of persons than will allow less than 12 m<sup>3</sup> of free air space and 4 m<sup>2</sup> of floor space for each person aged 10 years or more and 6 m<sup>3</sup> of free air space and 2 m<sup>2</sup> of floor space for each person less than 10 years of age.</li> </ol> </li> <li>2. Suitable waste disposal mechanisms must be identified in the planning phase so as to be affected during the project implementation. A waste management plan must therefore be considered.</li> <li>3. Suitable refuse bin areas must be provided for each block which must be roofed over, kerbed, graded and drained to a gully, with a water standpipe and sufficient in size to accommodate the total number</li> </ol>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• This will be done.</li> <li>• Noted.</li> <li>• Refer to Appendix E for the Environmental Management Programme (EMPr).</li> <li>• This will be done. Refer to Appendix A for Site Mapping and Layout Plans.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>of refuse bins required for each block. In addition, suitable access must be provided for refuse trucks and other emergency vehicles. Refuse bin areas must be indicated on the building plan.</p> <p>B. <u>School (Grade RR to 12)</u>. The school must be comply with the following:</p> <p>a) SANS 10400  b) Tobacco Products Control Act  c) Public Health Bylaws  d) National Food Regulations R638 (if the school is selling or preparing food) and relevant Bylaws</p> <p>2. Suitable waste disposal mechanisms must be identified in the planning phase so as to be affected during the project implementation. A waste management plan must therefore be considered.</p> <p>3. Suitable refuse bin areas must be provided for the school which must be roofed over, kerbed, graded and drained to a gulley, with a water standpipe and sufficient in size to accommodate the total number of refuse bins required for the school. In addition, suitable access must be provided for refuse trucks and other emergency vehicles. Refuse bin areas must be indicated on the building plan.</p> <p>4. Compliance of SANS 10400</p> <p>C. <u>Shopping Centre</u>  The shopping centre must comply with the following:</p> <p>e) SANS 10400  f) Tobacco Products Control Act  g) Public Health Bylaws  h) National Food Regulations R638 (if the garage is selling or preparing food) and relevant Bylaws</p> <p>2. Suitable waste disposal mechanisms must be identified in the planning phase so as to be effected during the project implementation. A waste management plan must therefore be considered.</p> <p>3. Suitable refuse bin areas must be provided for the shopping centre which must be roofed over, kerbed, graded and drained to a gulley, with a water standpipe and sufficient in size to accommodate the total</p>	<ul style="list-style-type: none"> <li>• Noted.</li>   <li>• Refer to Appendix E for the Environmental Management Programme which has a Waste Management Plan as an Appendix.</li> <li>• This will be done. Refer to Appendix A for the Layout Plan.</li>   <li>• Noted.</li>   <li>• Noted.</li>   <li>• Noted. The Environmental Management Programme (Appendix E) has a Waste Management Plan.</li>   <li>• Refer to Appendix E for the Environmental Management Programme.</li>   <li>• This will be done.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>number of refuse bins required for the school. In addition, suitable access must be provided for refuse trucks and other emergency vehicles. Refuse bin areas must be indicated on the building plan.</p> <p>D. Filing Station The Filing Station must comply with the following:</p> <ul style="list-style-type: none"> <li>i) SANS 10400</li> <li>j) Tobacco Products Control Act</li> <li>k) Public Health Bylaws</li> <li>l) National Food Regulations R638 (if the filing station is selling or preparing food) and relevant Bylaws</li> </ul> <p>2. Suitable waste disposal mechanisms must be identified in the planning phase so as to be effected during the project implementation. A waste management plan must therefore be considered.</p> <p>3. Suitable refuse bin areas must be provided for the filing centre which must be roofed over, kerbed, graded and drained to a gulley, with a water standpipe and sufficient in size to accommodate the total number of refuse bins required for the school. In addition, suitable access must be provided for refuse trucks and other emergency vehicles. Refuse bin areas must be indicated on the building plan.</p> <p>Construction Phase:</p> <ul style="list-style-type: none"> <li>1. Compliance with of the National Environmental Management: Air Quality Act and National Dust Control Regulations, in that all reasonable steps must be taken to avoid odour/dust nuisances during the construction phase.</li> <li>2. Compliance with the Noise Regulations R2544, in that no noise nuisance or disturbing noise to be created during construction phase.</li> <li>3. Sanitary Fixtures must be provided for all workmen on site in terms of National Building Regulations and Building Standards Amendment Act no 45 of 1995.</li> <li>4. Measures to ensure the safe storage of oil, fuel or other chemicals if stored on site during construction.</li> <li>5. Prevention of any surface or ground water pollution. In addition, contractors to be equipped to effectively deal with any spillages.</li> <li>6. Effective vector control measures to be implemented.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• This has been done. Refer to Appendix E for the EMPr.</li> <li>• Noted.</li> <li>• This will be done. Refer to Section 5.7: Noise and Dust Nuisances. All potential dust nuisances have been identified and mitigation measures have been proposed. Refer to Appendix E for the Environmental Management Programme.</li> <li>• Noted.</li> <li>• This will be done.</li> <li>• Refer to Appendix E for the Environmental Management Programme.</li> <li>• Noted.</li> <li>• Noted.</li> </ul>

I&AP	COMMENT	RESPONSE
	<p>7. Compliance with Msunduzi Municipality's Public Health Bylaws: Prohibition on causing public health hazards and nuisances Implementation Phase:</p> <p>10. Submission of building plans</p> <p>11. A structural maintenance plan must be considered as well as vector control, clearing of overgrowth, and hygiene maintenance of all common areas.</p> <p>Applicable Legislation</p> <ul style="list-style-type: none"> <li>• National Health Act No. 61 of 2003</li> <li>• National Environmental Management: Air Quality Act and National Dust Control Regulations, National Building Regulations and Building Standards Amendment Act no 45 of 1995.</li> <li>• Noise Regulations R2544</li> <li>• Public Health bylaws No. 1394 of 25 June 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> </ul>
<p>SANRAL 27 November 2020</p>	<ul style="list-style-type: none"> <li>• The South African National Roads Agency SOC Ltd (SANRAL) has reviewed the said application dated 17 September 2020. SANRAL has considered your application in terms of Section 49 of The South African National Roads Agency Limited and National Roads Act, Act 7 of 1998 (SANRAL Act). Please be advised that SANRAL is not affected hence the said development is outside SANRAL's building restriction area.</li> <li>• Please note that these comments do not exempt the applicant from the provisions of any other law. You may contact the undersigned should you have any queries, comments in this regard.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> </ul>

**Table 4:** Comments received and responses provided following circulation of the newspaper advertisements, site posters and BID (2020).

<p>PADCA 20 September 2020</p>	<ul style="list-style-type: none"> <li>• Thank you for keeping PADCA updated on this project.</li> <li>• I am curious to know what happened to the EIA process which was started last year. I attended a presentation at the Pietermaritzburg Golf Club. The present document gives the impression that the process is starting from scratch.</li> <li>• That this site should be described as a “<i>Critical Biodiversity site</i>” is ludicrous. It was so designated in 2009. I can confirm that this site was a wasteland overrun with blue gum and jacarandas, when we took it over in 2008. At the time we spent nearly R500 000.00 removing all the alien trees. The site has been ploughed, the topsoil had been washed away and the only vegetated areas was under kikuyu. I know that the vegetation has made a remarkable recovery but the reality is it could take another 50 years to get back to climax vegetation. For the record, the above comments are not from an amateur in this field as by training I was a grassland scientist and researched with an M.Sc (Agric) degree.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Due to insufficient information being available at the start of the project in 2019, the process was halted. The additional information on the proposed development has become available and Green Door Environmental has recommenced with the environmental process.</li> <li>• Noted. According to the Biodiversity Assessment (Appendix D1), no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site. It is the opinion of the Biodiversity Specialist that: “<i>although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.</i>”</li> </ul>
<p>Department of Environment, Forestry &amp; Fisheries 22 September 2020</p>	<ul style="list-style-type: none"> <li>• The Department of Forestry, Fisheries, and Environment (DFFE) appreciates the opportunity to register as an interested and affected party for the above-mentioned project. DFFE, through the sub-directorate Forestry Regulations and Support, is the authority mandated to implement the National Forest Act, (Act No. 84 of 1998) by regulating the use of natural forests and protected tree species in terms of the said Act.</li> <li>• With reference to the above-mentioned document received on the 17/09/2020 for the proposed establishment of a 15 ha mixed use development. The Department will provide informed comments on the Draft Basic Assessment report and attached specialist studies i.e. Terrestrial Biodiversity Impact Assessment as matters pertaining to vegetation will be provided in these documents.</li> <li>• In addition, the Department requests that the vegetation specialist study that will be undertaken, should determine if any natural forests and/or protected trees that occur within the development footprint be affected as per sections 7 and 15 of the National</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted. Refer to Appendix D1 for the Biodiversity Assessment.</li> <li>• Noted. According to the Biodiversity Assessment (Appendix D1), no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site. It is the opinion of the</li> </ul>

	<p>Forests Act No. 84 of 1998.</p> <ul style="list-style-type: none"> <li>• Should any further information be required, please do not hesitate to contact this office. This letter does not exempt you from considering other legislations.</li> </ul>	<p>Biodiversity Specialist that: <i>“although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.”</i></p> <ul style="list-style-type: none"> <li>• Noted.</li> </ul>
<p>Msunduzi Municipality – Sustainable Development &amp; City Enterprises Environmental Management Unit 13 October 2020</p>	<ul style="list-style-type: none"> <li>• With reference to the Background Information Document dated September 2020, the following comments are submitted for your information and attention:</li> <li>• The application site has been assessed in terms of the Msunduzi Environmental Management Framework (EMF), the Msunduzi Ecosystem Services Plan (ESP) and the Msunduzi Conservation Plan (C-Plan).</li> <li>• The EMF has identified the following constraints on the site: <ul style="list-style-type: none"> <li>○ a) High Wetland Development Constraint</li> <li>○ b) High Biodiversity Constraint</li> </ul> </li> <li>• Guidelines and policy to be considered in developing the Basic Assessment Report, in terms of section 2(a) of Appendix 3 of the Environmental Impact Assessment Regulations of 2014, must include: <ul style="list-style-type: none"> <li>○ a) the Msunduzi Environmental Management Framework (EMF);</li> <li>○ b) the Msunduzi Integrated Environmental Management Policy (IEMP);</li> <li>○ c) the draft Msunduzi Ecosystem Services Plan (ESP);</li> <li>○ d) the Msunduzi Conservation Plan (C-Plan);</li> <li>○ e) the Msunduzi Strategic Environmental Assessment (SEA) (2010);</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted. Please refer to the Wetland Assessment (Appendix M). However, no wetlands were delineated within the development site.</li> <li>• Noted. Please refer to the Biodiversity Assessment (Appendix D1). Although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> </ul>



	<ul style="list-style-type: none"> <li>○ f) the Msunduzi Spatial Development Framework (SDF);</li> <li>○ g) the Msunduzi Integrated Development Plan (IDP) for 2014 – 2017;</li> <li>○ h) Relevant Local Area Plans and Town Planning Schemes;</li> <li>○ i) the Msunduzi Climate Change Policy (2014); and</li> <li>○ j) the Msunduzi Climate Change Adaptation &amp; Mitigation Strategy (2017).</li> <li>• The preparation of Specialist Studies by independent specialist will be necessary during the authorisation process, and budgetary provision must therefore be included for, but not limited to the following additional studies: <ul style="list-style-type: none"> <li>○ a) Wetland Delineation and Functionality Assessment including the Department of Water and</li> <li>○ Sanitation 500m requirement as well as measurable offset options if required;</li> <li>○ b) Wetland Management and Rehabilitation Plan (if necessary);</li> <li>○ c) Aquatic Ecological Study (if necessary);</li> <li>○ d) Fully Indigenous Landscape Plan.</li> </ul> </li> <li>• All relevant parties, including the applicant, all project managers, contractors and sub-contractors must be made aware of their responsibility for compliance with the provisions for the <i>Duty of care and remediation of environmental damage</i> contained in Section 28 of the National Environmental Management Act 107 of 1998.</li> <li>• A copy of the Environmental Management Program (EMPR) and</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• According to the Wetland Assessment (Appendix D2), a channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>• Noted.</li> <li>• According to the Wetland Assessment (Appendix D2), a channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>• An Aquatic Ecological Study is not necessary for the proposed development.</li> <li>• Refer to Appendix D1 for the Biodiversity Assessment.</li> <li>• This will be done.</li> <li>• Noted, this will be done. Refer to Appendix E for the</li> </ul>
--	---	--

	<p>rehabilitation plan must be submitted to this unit for comment and approval. Plans must address the following concerns (not limited to):</p> <ul style="list-style-type: none"> <li>○ a) Rehabilitation of all areas including watercourses impacted by construction activities</li> <li>○ b) Re-vegetation of areas impacted on by construction activities using indigenous vegetation</li> <li>○ c) Removal of alien invasive plant species.</li> </ul> <ul style="list-style-type: none"> <li>● A Water Use License may be required for this development, and it is the responsibility of the applicant to ensure that the Department of Water and Sanitation (DW&amp;S) are contacted regarding this matter. Written confirmation regarding the requirements of the DWS must be submitted to this unit.</li> <li>● Please ensure that written confirmation of the requirements of all relevant authorities are submitted to this unit.</li> <li>● Further comments and recommendations will be provided when the Draft Basic Assessment Report is made available.</li> </ul>	<p>Environmental Management Programme.</p> <ul style="list-style-type: none"> <li>● Refer to Appendix E for the Environmental Management Programme. Refer to Section 5 and 6 of this Report, which is concerned with potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed.</li> <li>● Refer to Appendix E for the Environmental Management Programme.</li> <li>● Refer to Appendix E for the Environmental Management Programme.</li> <li>● Noted. The Water Use License Application is being undergone concurrently. The Department of Water and Sanitation has been included as an I&amp;AP (Appendix C1).</li> <li>● Noted.</li> <li>● Noted.</li> </ul>
<p>Duikers Rest Body Corporate 14 October 2020</p>	<ul style="list-style-type: none"> <li>● How will this development affect the number of vehicles utilizing the main routes in Hayfields, especially exiting and entering the area during peak times?</li> <li>● How will traffic and congestion be controlled entering the site?</li> </ul>	<ul style="list-style-type: none"> <li>● Refer to Appendix D8 for the Traffic Impact Assessment. A new residential development known as the Hesketh Country Estate will be constructed just north of the Applicant's site on Murray Road. As part of the residential development, the surrounding road network will undergo several upgrades. As a result of the Murray Road Mixed-Use development, certain intersections will need to be upgraded in order to handle the new trips from the two proposed developments: The upgrades will be able to accommodate the additional volumes of traffic that will travel through this intersection in the 2027 design horizon.</li> <li>● The Murray Road, Pat Warmback Drive and Site Access Intersection are proposed to be signalised to</li> </ul>

	<ul style="list-style-type: none"> <li>• Will the current infrastructure e.g. water, electricity and waste water – be upgraded or can the infrastructure handle the added load?</li> <li>• How will the surrounding communities benefit from this development? economic growth in the area?</li> </ul>	<p>accommodate the additional traffic created by the Murray Road development and the Hesketh Country Estate. The following additional upgrades will be required at this intersection:</p> <ul style="list-style-type: none"> <li>- A new full lane which allows through and left-turn movements on the Murray Road south approach will be required.</li> <li>- A new 60 m right-turn lane on the Murray Road south approach will be required.</li> <li>- A full exit lane on the Murray Road south approach will be required.</li> <li>- A new full lane which allows through and left-turn movements on the Murray Road north approach will be required.</li> <li>- A new 60 m right-turn lane on the Murray Road north approach will be required.</li> <li>- A full exit lane on the Murray Road north approach will be required.</li> </ul> <ul style="list-style-type: none"> <li>• According to the Bulk Engineering Services Report (Appendix D9), it is proposed that the development will link into the municipal bulk sewerage line located adjacent to the site (located along Murray Road). It is proposed that the Applicant will also link into the Municipal water line (refer to Appendix G5 for the Msunduzi Municipality Services Approval).</li> <li>• During the construction phase of the proposed development, it is anticipated that a total investment of R400 million spread over a 5-year period (i.e. R80 million investment value per year) in the KwaZulu-Natal economy in the construction industry. The modelled assessment of job creation indicates that the investment in this project of R80 million per annum would result in a direct job creation / support of 273 jobs per year and a total economy-wide impact of 397 jobs. As the area continues to grow and develop with a greater population</li> </ul>
--	--	---

		density (firstly with the residential influx to the proposed residential site development itself) it is anticipated that the local demand for retail and fuel services will increase proportionally. The growth of the area and areas surrounding the proposed development is anticipated with high probability.
Hesketh Country Estate 14 October 2020	<ul style="list-style-type: none"> <li>• Please refer to submission from PKX attorneys to which this is attached.</li> <li>• Please note: Direct correspondence to Ina Cronje, PKX Attorneys, Email: [REDACTED]</li> </ul>	<ul style="list-style-type: none"> <li>• Noted. The comments from PKX attorneys have been addressed below.</li> <li>• Noted.</li> </ul>
PKX Attorneys 14 October 2020	<ul style="list-style-type: none"> <li>• We are acting for Mr Tadeusz Tomaszewski, of Hesketh Country Estate (Pty) Ltd, Erf 9672, Pietermaritzburg, which is a neighbouring property to the proposed mixed-use development on Erf 234, New England, 220 Murray Road, Pietermaritzburg (“Proposed development”).</li> </ul> <p>Our client has instructed us to:</p> <ul style="list-style-type: none"> <li>• Register him as interested and affected party (I&amp;AP) in respect of the proposed development, which we hereby do (see Annexure “A”).</li> <li>• Obtain further particulars of the proposed development, as set out in Part B below. In this regard our client reserves the right to supplement his request for further particulars during the course of the process of consultation; and</li> <li>• Lodge an objection to the proposed development on the basis set out in Part C below. In this regard our client reserves the right to supplement or amend his objections and reasons therefore once we are: (a) in receipt of further particulars in respect of the proposed development; and (b) there is credible scientific information available on its socio-economic and environmental impact.</li> </ul> <p>Part B: Request for further particulars</p> <ul style="list-style-type: none"> <li>• In terms of the National Environmental Management Act No. 107 of 1998, as amended (NEMA) and the Environmental Impact Assessment Regulations, as amended (EIA Regulations), the</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted. He is a registered I&amp;AP. Refer to Appendix C1 for the I&amp;AP List.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• This is correct.</li> </ul>

	<p>proposed development triggers a number of ‘Listed Activities’ that will need to be carried out should the proposed development go ahead (refer to the BID).</p> <ul style="list-style-type: none"> <li>• In addition, because the full potential and cumulative impact of the proposed development is not known at this stage it may become apparent during the process that the proposed development triggers additional ‘Listed Activities’.</li> <li>• In the premises we request the following further particulars in respect of the proposed development – <ul style="list-style-type: none"> <li>○ <b>GNR 327 (Part 27):</b> Please provide: (a) a detailed list of the indigenous vegetation on site and their conservation status; and (b) the actual extent of the indigenous vegetation on site that is proposed to be cleared;</li> <li>○ <b>GNR 325 (Part 4):</b> Please provide details of: (a) the proposed width of the roads and the road reserves; and (b) the total extent of the proposed roads and road reserves within the development.</li> <li>○ <b>GNR 325 (Part 4):</b> The property is currently zoned as ‘future residential’. What new zoning does the Applicant intend applying for? Please provide details.</li> <li>○ <b>GNR 325 (Part 4):</b> The site is designated as a ‘<b>Critical Biodiversity Area</b>’ which is ‘<b>totally irreplaceable</b>’. Please provide details of measures being considered to mitigate and manage: (a) the short, medium and long term, as well as the cumulative impact of the proposed development on the critical biodiversity of the area; and (b) the impact on an area that is designated ‘<b>totally irreplaceable</b>’?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• This has been fully assessed in this DBAR. All applicable listed activities are included in Section 1.2 of this Report. GNR 324, Part 4 and 12 are applicable, and GNR 327, Part 27.</li> <li>• Refer to Appendix D1 for the Biodiversity Assessment. Refer to Appendix 1 and 1A of this report for a list of vegetation observed on site.</li> <li>• The internal roads will be 14 m wide wherever it is 2 lanes in each direction and will be 7 m wide wherever there is a single lane in each direction. There should also be 2 m sidewalks provided where necessary. Refer to Appendix D8 for the Traffic Impact Assessment for additional information regarding traffic, access roads and proposed road upgrades.</li> <li>• This is correct. The Applicant intends to apply for mixed-use zoning. Rezoning will be applied for, should Environmental Authorisation be granted.</li> <li>• Noted. Please refer to Appendix D1 for the Biodiversity Assessment. The site is divided into three key areas. Area A is made up of infrastructure and gardens. Area B consists predominantly of kikuyu pasture, whilst Area C consists of old croplands that were cultivated more than 10 years ago. Please refer to Page 8 of the Biodiversity Assessment: “<i>Although most of area A was mapped as a CBA irreplaceable site in the Municipal EMF, it has negligible biodiversity importance and should be removed as a CBA feature (this supports the recommendation by Zunckel 2017).</i>” “<i>Although the BGIS map indicated most of area C as a ‘CBA Irreplaceable’ vegetation type, its</i></li> </ul>
--	---	---

	<ul style="list-style-type: none"> <li>○ Please advise: (a) what species of indigenous flora and fauna has been identified on the site;</li>   <li>○ (b) what is their conservation status?</li>   <li>○ (c) will all or any part of the habitat of the dwarf chameleon present on the site be destroyed if the development proceeds?</li>   <li>○ And (d) will the applicant apply the precautionary principle regarding the dwarf chameleon and its habitat? If yes, provide details.</li> </ul>	<p><i>biodiversity importance was considered moderate; being truncated by a transformed area it does not serve as a functional ecological corridor; accordingly, its status as CBA Irreplaceable should be reviewed.”</i></p> <ul style="list-style-type: none"> <li>● A Biodiversity Assessment has been conducted (Appendix D1). Indigenous species of flora that have been identified on site include <i>Chloris gayana</i>, <i>Clerodendrum glabrum</i>, <i>Cymbopogon excavatus</i>, <i>Cymbopogon Validus</i>, <i>Dalbergia obovate</i>, <i>Digitaria eriantha</i>, <i>Ehretia rigida</i>, <i>Eragrostis curvula</i>, <i>Heteropogon contortus</i>, <i>Hypoestes aristate</i>, <i>Leonotis leonorus</i>, <i>Lippia javanica</i>, <i>Paspalum urvillei</i>, <i>Senecio sp.</i>, <i>Sporobolus africanus</i>, <i>Sporobolus pyramidalis</i>, <i>Vachellia nilotica</i>, <i>Vachellia sieberiana</i>, <i>Vangueria infausta subsp. infausta</i>, <i>Veronia tigna</i>. No mammals of conservation concern are likely to occur on the site. A low development constraint was for fauna.</li> <li>● No faunal species of conservation significance or red data list species were identified on site. The proposed development site falls in vegetation with low biodiversity value and as a result, have low development constraints.</li> <li>● Please refer to the Biodiversity Assessment (Appendix D1), page 10: <i>“The only reptile listed as significant is the Bourquin’s Dwarf Chameleon Bradypodion borquini; however the habitat is not suitable and it has not been recorded in the vicinity of the study site.”</i> Refer to Appendix G3 for a letter from Ezemvelo KZN Wildlife that states that additional millipede and mollusc assessments would not be required to be undertaken on this property.</li> <li>● Yes, the precautionary principle will be applied. The Environmental Management Programme (EMPr) (Appendix E) is a legally binding document and is required to be implemented for the entire lifetime of the development. This includes the Pre-Construction, Construction, Post Construction and Rehabilitation,</li> </ul>
--	--	--

	<ul style="list-style-type: none"> <li>○ <b>GNR 325 (Part 12):</b> Please refer to para 5.1.</li>   <li>○ <b>GNR 327 (Part 14):</b> Please provide details of: (a) the proposed combined capacity in cubic metres of the underground storage tanks of the proposed filling station;</li> <li>○ (b) the level of the water table in the area of the proposed filling station;</li>   <li>○ (c) any wetlands identified on the site of the proposed development; and</li>   <li>○ (d) the soil classification on the site and the adjacent area.</li>   <li>○ Other 'Listed Activities' that may potentially be triggered by the proposed development.</li> </ul>	<p>Operation and Decommissioning Phases.</p> <ul style="list-style-type: none"> <li>● This activity is not applicable to the proposed application. GNR 325, Part 12 states: “<i>The development of railway lines, stations or shunting yards excluding — (i) railway lines, shunting yards and railway stations in industrial complexes or zones; (ii) underground railway lines in a mining area; or (iii) additional railway lines within the railway line reserve.</i>” No railway lines or stations are being developed, nor are any working railway lines are present on the site.</li> <li>● The proposed storage capacity of the underground fuel storage tanks will be 161 m<sup>3</sup>.</li> <li>● Refer to Appendix D2 for the Wetland Assessment. Due to the fluctuation in seasons and the rainfall patterns, it is impossible to provide the exact water table level. However, as per the Geotechnical Assessment (Appendix D3), no groundwater seepage was noted in the trial pits which suggests that the water tables are not close to the surface.</li> <li>● Refer to Appendix D2 for the Wetland Assessment. No wetlands were identified within Erf 234. A channelled valley bottom system was identified to the east of the study site. The channelled valley bottom system is classified as moderately modified.</li> <li>● Refer to Appendix D3 for the Geotechnical Assessment. The site is underlain by dark grey shale, siltstone and subordinate sandstone (Pp) of the Pietermaritzburg Formation of the Ecca Group, Karoo Supergroup. This is intruded by post-karoo dolerite (Jd). Shale Bedrock was also intercepted and dolerite was intercepted on the eastern portion of the site.</li> <li>● Please refer to Section 1.2 of this report for Listed Activities that are applicable to the proposed development. GNR 324, Part 4 and 12 are applicable,</li> </ul>
--	---	--

	<ul style="list-style-type: none"> <li>○ Please provide details of the proposed: (a) number, type and square metres of the various residential units in the proposed residential estate;</li> <li>○ (b) gross rentable area of the commercial component of the development, including the residential units and shopping centre, where applicable; and</li> <li>○ (c) the bulk services that will be required in respect of the entire development.</li> <li>○ Please provide particulars of the proposed school (Grade RR – 12) in respect of: (a) capacity; (b) catchment area; (c) sporting and outdoor facilities; (d) traffic and transport flow; (e) parking; and (f) whether the need and desirability of another school in that area has been discussed with the Department of Education. If yes, what was their response?</li> <li>○ Please provide details of any proposed buffer zones or green belt areas envisaged as part of the development.</li> <li>○ Will the proposed development require the demolition of any existing structures, including heritage structures? If yes, please provide details.</li> </ul>	<p>and GNR 327, Part 14 and Part 27.</p> <ul style="list-style-type: none"> <li>● The residential estate is proposed to be approximately 5 ha in extent. Residential units on the estate will be in the form of three story, walk-up apartment blocks comprised of 1- and 2-bedroom units of approximately (40 m<sup>2</sup> and 55 m<sup>2</sup>).</li> <li>● Refer to Appendix A for the layout plan. The total area of the shopping centre / retail space is 1 ha. The residential estate is to be 350 apartments comprising of 1- and 2-bedroom units.</li> <li>● Please refer to Section 7.9 of this report for details on the bulk services for the proposed development. Refer to Appendix D9 for the Bulk Engineering Services Report. Refer to Appendix G5 for the Msunduzi Municipality Services Approval.</li> <li>● The school will be a private school, consisting of approximately 500 scholars. The school will have Grade RR to Matric. It will have sports fields, tennis courts and basketball courts. Refer to Appendix D4 for the Socio-Economic Assessment.</li> <li>● Due to no wetland being found on Erf 234, and no flora and faunal species of conservation concern were found on site. Thus, no buffer zones have been proposed. However, due to the wetland found to the east of the site, a 32 m wetland buffer is proposed. Refer to the Environmental Management Programme (Appendix E).</li> <li>● Some identified heritage features on the property are respected by the current proposed layout plan for the development. Please refer to Appendix A for the layout plan, where Heritage Buildings are included in the layout. <i>“A permit application will be necessary for the demolition or alteration of structures, this must include full site development plans showing the proposed demolitions and location of new development in relation to existing</i></li> </ul>
--	---	---



	<ul style="list-style-type: none"> <li>○ What heritage features were identified in the previous Environmental authorisation for the Hlatshana Retirement Village on the same property?</li> </ul> <p>Part C: Initial Objections to Proposed Development</p> <ul style="list-style-type: none"> <li>● Our client objects to the proposed establishment of a mixed-use development on a property currently zoned as <b>'future residential'</b> and designated in terms of the Msunduzi Environmental Management Framework as a <b>'critical biodiversity area'</b> that is <b>'totally irreplaceable'</b>, on the following grounds – <ul style="list-style-type: none"> <li>○ The scale and nature of the proposed development will irreversibly change the nature, ambience and sense of place of the area as the development comprises: <ul style="list-style-type: none"> <li>○ (a) a large residential estate of some 5ha in extent necessitating the destruction of critical and irreplaceable ecosystems and habitat leading to a loss of biodiversity;</li> <li>○ (b) a school for all grades, i.e. from Grades RR to Grade 12 with associated facilities, which will cause further loss to biodiversity, destruction of ecosystems and habitat, as well as a significant increase in pedestrian and vehicular traffic and air and noise pollution;</li> <li>○ (c) a shopping centre of some 3.5ha in extent, which will add to the negative environmental impact through loss of biodiversity, destruction of ecosystems and habitat, increased pedestrian and vehicular traffic, as well as air, noise and light pollution;</li> <li>○ (d) a filling station with a convenience shop and a drive-</li> </ul> </li> </ul> </li> </ul>	<p><i>structures."</i></p> <ul style="list-style-type: none"> <li>● Refer to Appendix D5 for the Heritage Impact Assessment (Page 4): <i>"Apart from the buildings and ancillary structures to be reported on separately by Lindsay Napier Architects, no other heritage resources of significance were observed. Consequently, with regards to the latter, no further heritage mitigation is recommended."</i></li> <li>● Noted.</li> <li>● Noted.</li> <li>● Noted. Evidence from the Wetland (Appendix D2) and Biodiversity Assessment (Appendix D1) show that the site area has a low biodiversity value. As mentioned in the Biodiversity Assessment, no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed.</li> <li>● Refer to Section 6 of this report for potential impacts on the biophysical environment, and the proposed mitigation measures should any impacts occur. The Environmental Management Programme (Appendix E), which will be implemented throughout all phases of the development (preconstruction, construction, post-construction and rehabilitation, operation and decommissioning).</li> <li>● Refer to Section 5 and Section 6 of this Report, which is assesses potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed.</li> <li>● Refer to Section 5 and Section 6 of this Report, which</li> </ul>
--	---	---

	<p>through restaurant of some 0.5ha in extent, which will bring about all night traffic and air, noise and light pollution; and</p> <ul style="list-style-type: none"> <li>○ (e) various road servitudes including the extension of Hesketh Drive, a major arterial road with its attendant risks to the health and safety of the people in the area.</li> </ul> <ul style="list-style-type: none"> <li>• Cumulatively the proposed development will bring about <u>unacceptably high levels of air, noise and light pollution and poses a real threat of water contamination</u> (see also comments in para 6.4).</li> <li>• The proposed development will require <u>re-zoning of the area as well as a special zoning for the proposed filling station</u>.</li> <li>• This is the proverbial ‘thin edge of the wedge’ with the potential to destroy a critical and irreplaceable biodiversity area for future generations.</li> <li>• It also deviates drastically from the Environmental Authorisation (Ref. DC22/0066/08) granted on 9 March 2011 for the establishment of the Hlatshana Retirement Village on the same property.</li> </ul> <ul style="list-style-type: none"> <li>• The proposed development, in particular the filling station, has the</li> </ul>	<p>assesses potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed.</p> <ul style="list-style-type: none"> <li>• The extension of Hesketh Drive has undergone and acquired Environmental Authorisation. Impacts and applicable mitigation measures have been defined in this process.</li> <li>• Refer to Section 5 and Section 6 of this Report, which is concerned with potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed.</li> <li>• This is correct. Should Environmental Authorisation be approved for the proposed development, a Rezoning Application will be undertaken.</li> <li>• The Biodiversity Assessment (Appendix D1) concluded that no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site.</li> <li>• On 09 March 2011, Environmental Authorisation (Reference No: DC22/0066/08) (Appendix G1) was granted for the establishment of the Hlatshana Retirement Village on Erf 234, New England (220 Murray Road). The Applicant at the time was the Pietermaritzburg and District Council for the Care of the Aged (PADCA). The retirement village was to comprise ablution, kitchen, dining, office, workshop and administration facilities, a hall, swimming pool, heritage garden, maintenance yard, a chapel, and servicing infrastructure which included attenuation ponds, a sewer pump station, roads and other associated infrastructure. When the current property owner and Applicant, (Shanbar Property Development CC) purchased the property, he chose not to proceed with the retirement village.</li> <li>• Refer to Section 5 and Section 6 of this Report, which is</li> </ul>
--	---	--

	<p>potential to <u>impact on the water quality in the area</u> through the contamination of ground and surface water with a dangerous and toxic substance, thus negatively affecting the <u>health and well-being of people</u> in the area. An added risk is the close proximity of the Msunduzi River to the site.</p> <ul style="list-style-type: none"> <li>• The proposed development will inevitably impact on the <u>critical biodiversity of the area which is termed 'totally irreplaceable'</u>. By definition, if an area is designated 'totally irreplaceable', no mitigation measures are capable of remedying the negative impact on the environment if that area is destroyed. Thus, if the development were to proceed it will cause irreparable harm to biodiversity in the area which will be forever <u>lost for the enjoyment of present and future generations</u>.</li> <li>• There is no information on the need and desirability of a major development of the nature, size and scale of the proposed development, nor has such need and desirability been shown.</li> </ul> <ul style="list-style-type: none"> <li>• Our client respectfully submits that there is no need for such a development in the area.</li> <li>• In summary, when tested against the environmental right in the Constitution, the proposed development –</li> </ul>	<p>concerned with potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed. Refer to the Environmental Management Programme (Appendix E).</p> <ul style="list-style-type: none"> <li>• As mentioned in the Biodiversity Assessment (Appendix D1), no faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site. Refer to Section 5 and Section 6 of this Report, which is concerned with potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed. Refer to the Environmental Management Programme (Appendix E).</li> <li>• The information in the Background Information Document (BID) is done at the very early stages of the Environmental Process; no specialist studies had been conducted at this stage. Refer to the Socio-Economic Assessment (Appendix D4). The establishment of the proposed development will provide socio-economic benefits through job creation, service provision and skills development. It will also attract investment to the area. This is in line with the uMgungundlovu Municipality's IDP and SDF which aims to create an enabling environment and sustainable development. As the area continues to grow and develop with a greater population density (firstly with the residential influx to the proposed residential site development itself) it is anticipated that the local demand for retail and fuel services will increase proportionally. The growth of the area and areas surrounding the proposed development is anticipated with high probability.</li> <li>• Noted. This is the opinion of the I&amp;AP.</li> <li>• Noted.</li> </ul>
--	--	--

	<ul style="list-style-type: none"> <li>○ Has the potential to infringe the right to an environment that is not harmful to the health or well-being of the people;</li> <li>○ Instead of protecting the environment for the benefit of present and future generations, has the potential to destroy a critical biodiversity area which is designated as totally irreplaceable;</li> <li>○ Will cause pollution and ecological degradation instead of preventing it;</li> <li>○ Will cause loss of critical and irreplaceable biodiversity instead of promoting conservation; and</li> <li>○ Is not an ecologically sustainable development which promotes justifiable economic and social development.</li> </ul>	<ul style="list-style-type: none"> <li>● Noted.</li> <li>● Noted. No faunal and fauna species of ecological concern were identified on site. A high density of alien plants was observed on site. It is the opinion of the Biodiversity Specialist that: <i>“although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.”</i></li> <li>● Noted. Refer to Section 5 and Section 6 of this Report, which is concerned with potential impacts on the social and biophysical environment. Mitigation measures have been proposed and are included in the Environmental Management Programme (Appendix E).</li> <li>● Noted. According to the Biodiversity Assessment (Appendix D1), no faunal and flora species of ecological concern were identified on site.</li> <li>● This is the opinion of the I&amp;AP. Please refer to the Socio-Economic Assessment (Appendix D4).</li> </ul>
<p>Msunduzi Municipality – Sustainable Development &amp; City Enterprises Environmental Management Unit 13 October 2020</p>	<ul style="list-style-type: none"> <li>● With reference to the Background Information Document dated September 2020, the following comments are submitted for your information and attention:</li> <li>● The application site has been assessed in terms of the Msunduzi Environmental Management Framework (EMF), the Msunduzi Ecosystem Services Plan (ESP) and the Msunduzi Conservation Plan (C-Plan).</li> <li>● The EMF has identified the following constraints on the site: <ul style="list-style-type: none"> <li>○ a) High Wetland Development Constraint</li> <li>○ b) High Biodiversity Constraint</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Noted.</li> <li>● Noted.</li> <li>● Noted. According to the Wetland Assessment (Appendix M), no wetlands were delineated within the development site. A channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>● Noted. Refer to the Biodiversity Assessment (Appendix D1). <i>“Although the area around the homestead was</i></li> </ul>

	<ul style="list-style-type: none"> <li>• Guidelines and policy to be considered in developing the Basic Assessment Report, in terms of section 2(a) of Appendix 3 of the Environmental Impact Assessment Regulations of 2014, must include: <ul style="list-style-type: none"> <li>○ a) the Msunduzi Environmental Management Framework (EMF);</li> <li>○ b) the Msunduzi Integrated Environmental Management Policy (IEMP);</li> <li>○ c) the draft Msunduzi Ecosystem Services Plan (ESP);</li> <li>○ d) the Msunduzi Conservation Plan (C-Plan);</li> <li>○ e) the Msunduzi Strategic Environmental Assessment (SEA) (2010);</li> <li>○ f) the Msunduzi Spatial Development Framework (SDF);</li> <li>○ g) the Msunduzi Integrated Development Plan (IDP) for 2014 – 2017;</li> <li>○ h) Relevant Local Area Plans and Town Planning Schemes;</li> <li>○ i) the Msunduzi Climate Change Policy (2014); and</li> <li>○ j) the Msunduzi Climate Change Adaptation &amp; Mitigation Strategy (2017).</li> </ul> </li> <li>• The preparation of Specialist Studies by independent specialist will be necessary during the authorisation process, and budgetary provision must therefore be included for, but not limited to the following additional studies: <ul style="list-style-type: none"> <li>○ a) Wetland Delineation and Functionality Assessment including the Department of Water and Sanitation 500m requirement as well as measurable offset options if required;</li> <li>○ b) Wetland Management and Rehabilitation Plan (if necessary);</li> <li>○ c) Aquatic Ecological Study (if necessary);</li> </ul> </li> </ul>	<p><i>mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature.”</i></p> <ul style="list-style-type: none"> <li>• Noted, this has been done.</li> <li>• Noted.</li> <li>• Noted. According to the Wetland Assessment (Appendix D2), no wetlands were delineated on site. A channelled valley bottom system was identified to the east of the study site and is located approximately 30m from the most eastern boundary of Erf 234.</li> <li>• This is not applicable. There is no wetland on site. Refer to Appendix D2 for the Wetland Assessment.</li> <li>• This is not applicable, as there are no wetlands or streams on site.</li> </ul>
--	--	--

	<ul style="list-style-type: none"> <li>○ d) Fully Indigenous Landscape Plan.</li> <li>• All relevant parties, including the applicant, all project managers, contractors and sub-contractors must be made aware of their responsibility for compliance with the provisions for the <i>Duty of care and remediation of environmental damage</i> contained in Section 28 of the National Environmental Management Act 107 of 1998.</li> <li>• A copy of the Environmental Management Program (EMPR) and rehabilitation plan must be submitted to this unit for comment and approval. Plans must address the following concerns (not limited to): <ul style="list-style-type: none"> <li>○ a) Rehabilitation of all areas including watercourses impacted by construction activities</li> <li>○ b) Re-vegetation of areas impacted on by construction activities using indigenous vegetation</li> <li>○ c) Removal of alien invasive plant species.</li> </ul> </li> <li>• A Water Use License may be required for this development, and it is the responsibility of the applicant to ensure that the Department of Water and Sanitation (DW&amp;S) are contacted regarding this matter. Written confirmation regarding the requirements of the DW&amp;S must be submitted to this unit.</li> <li>• Please ensure that written confirmation of the requirements of all relevant authorities are submitted to this unit.</li> <li>• Further comments and recommendations will be provided when the Draft Basic Assessment Report is made available.</li> </ul>	<ul style="list-style-type: none"> <li>• This will be a requirement of the Environmental Authorisation should it be granted. Refer to Appendix D1 for the Biodiversity Assessment.</li> <li>• Noted, this is included in the EMPr (Appendix E).</li> <li>• Noted, this will be done. Refer to Appendix E for the Environmental Management Programme.</li> <li>• Refer to Appendix E for the Environmental Management Programme. Refer to Section 5 and 6 of this Report, which is concerned with potential impacts on the social and biophysical environment. Adequate mitigation measures have been proposed.</li> <li>• Refer to Appendix E for the Environmental Management Programme.</li> <li>• Refer to Appendix E for the Environmental Management Programme.</li> <li>• Noted. The Water Use License Application is being undertaken concurrently to the Environmental Authorisation Process. The Department of Water and Sanitation has been included as an I&amp;AP (Appendix C1).</li> <li>• Noted.</li> <li>• Noted.</li> </ul>
--	--	---

#### **4.5 PRE-APPLICATION MEETING**

A Pre-Application Meeting was held on Thursday, 15 August 2019 at 10h00, at the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) offices, Cascades, Pietermaritzburg. The agenda, attendance register and the meeting minutes from the Pre-Application Meeting are included in Appendix C6.

#### **4.6 PUBLIC INFORMATION SESSION**

A Public Information Session was held on Thursday, 19 July 2019 from 17h00 – 18h30, at the Maritzburg Golf Club, New England Road, Pietermaritzburg, KwaZulu-Natal. The purpose of the Public Information Session was to provide information to I&APs of the proposed project, present the major concerns raised to date regarding the proposed project and give I&APs the opportunity to raise any additional issues which they feel should be addressed during the Environmental Process. All registered I&APs were personally invited by e-mail and phone from the 04 July 2019.

The meeting took place in the form of a Public Information Session whereby all available information on the proposed project and environmental process to be followed was presented in a handout format. The meeting attendees were given the opportunity to ask questions and provide comments to the EAP once the presentation of the handout was complete.

The EAP documented the issues and concerns raised by I&APs regarding the proposed project during the meeting, and the meeting minutes were circulated to all I&APs from the 23 July 2019.

The following Project Team members were present:

- Dr Rebecca Bowd – Green Door Environmental (EAP)
- Kerryn Arbuthnot – Green Door Environmental (EAP)

The meeting invitation, attendance register, a copy of the handout and meeting minutes from the Public Information Session are included in Appendix C5.

Comments received and responses provided at the Public Information Session are contained within Table 5 below. Additional information has also been provided where it has become available.

**Table 5:** Comments received and responses provided at the Public Information Session.

I&AP	COMMENT	RESPONSE
I&AP	<ul style="list-style-type: none"> <li>• What market research has been done for the proposed project?</li>   <li>• In terms of the education side of things, why is a school being proposed with the current economic climate?</li> <li>• In terms of the timeframes, I can give you numerous examples of education projects that have been approved but have taken about thirty years to be established.</li> <li>• I can see this proposed school taking long to be established.</li> <li>• The Department of Education’s strategy needs to be determined.</li> <li>• This doesn’t only include infrastructure, but also teachers and the budget for these teachers.</li> <li>• We need to know the timeframes as the nearby school took about thirty years to be established.</li> <li>• Teachers have been curtailed in educational facilities.</li> <li>• Many teachers have been funded but cannot get positions or if they do, it is in the middle of nowhere.</li> <li>• Traffic will be horrific as a result of the proposed project.</li>   <li>• There is a huge difference in the traffic during and after school holidays.</li> <li>• Circles or robots may be required.</li> <li>• People are coming from the Grange development to the Hayfields School which has resulted in the road being very congested.</li> <li>• The Hollingwood development near to the sewage works has been put on the back burn.</li> <li>• How many residential units will there be?</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to Appendix D4 for the Socio-Economic Assessment that states that there is a need for a school in the area due to the over saturation of schools in the Pietermaritzburg area.</li> <li>• See above response.</li>   <li>• As long as the proposed project is approved, it can take as many years as the Applicant wishes to establish the school, as long as one element of the project is commenced with.</li> <li>• Noted.</li> <li>• Noted. The Applicant has been informed.</li> <li>• Noted.</li>   <li>• The timeframes cannot be determined at this stage.</li>   <li>• Noted.</li> <li>• Noted.</li>   <li>• A Traffic Impact Assessment (TIA) (Appendix D8) has been conducted for the proposed project. Traffic related impacts have been assessed and mitigation measures provided (Section 5.5 and Section 7.8 of this Report). Various intersection and road upgrades have been proposed in the TIA.</li> <li>• Noted. A Traffic Impact Assessment has been conducted (Appendix D8).</li> <li>• Noted.</li> <li>• Noted. A Traffic Impact Assessment has been conducted (Appendix D8).</li> <li>• Noted.</li>   <li>• According to the Layout Plan (Appendix A), there will be</li> </ul>



		350 residential apartments consisting of 1- and 2-bedroom apartments targeting a medium-income group. These apartments will not be more than three storeys high.
I&AP	<ul style="list-style-type: none"> <li>When will this proposed project be established?</li> <li>The proposed project will help my development. I am for this project.</li> <li>Is it still PADCA or has someone else bought the site?</li> </ul>	<ul style="list-style-type: none"> <li>This cannot be confirmed; there are a number of processes that have to be undertaken before the development can be established (e.g. Water Use License Application, Planning Process, etc).</li> <li>Noted.</li> <li>No. The property has been sold to the Applicant, Shanbar Property Development.</li> </ul>
I&AP	<ul style="list-style-type: none"> <li>Is the existing house on the property double storey?</li> <li>It will be a problem pumping sewage with the Msunduzi River being right there. There was a package plant designed for a development in Hillcrest because of the problem of pumping sewage.</li> <li>This could be an option for the proposed project.</li> <li>What is proposed to be established on the steep area?</li> </ul>	<ul style="list-style-type: none"> <li>Yes, there is a double storey house on the property.</li> <li>Noted. A Stormwater Management Plan (Appendix D7) and a Bulk and Internal Services Engineering Report (Appendix D9) has been conducted for the proposed project and have determined that the most suitable sewage disposal method is to link into the Msunduzi Municipality Bulk Sewerage Infrastructure line (refer to Appendix G5 for the Msunduzi Municipality Services Approval).</li> <li>Noted. The engineer (Michael Loretz and Associates), confirmed in their Bulk and Internal Services Engineering Report (Appendix D9), that connecting into the Msunduzi Municipality Bulk Sewerage Infrastructure line is the most suitable sewerage disposal method (refer to Appendix G5 for the Msunduzi Municipality Services Approval).</li> <li>The Applicant is proposing residential development on the steep area at the back of the property. Refer to Appendix A for the Layout Plan.</li> </ul>
I&AP	<ul style="list-style-type: none"> <li>The potential for the crime rates to escalate must be addressed.</li> <li>Mitigation measures must be put in place to reduce the anticipated crime rate increase.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. Refer to Section 5.7 of this Report for Security mitigation measures.</li> <li>Noted. Refer to Section 5.7 of this Report for Security mitigation measures.</li> </ul>
I&AP	<ul style="list-style-type: none"> <li>I am the previously property owner of the site.</li> <li>I have walked every inch the property and there are no graves.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> <li>Noted. A Heritage Impact Assessment (Appendix D5) has been conducted for the proposed development and concluded that the proposed development may proceed in</li> </ul>

	<ul style="list-style-type: none"> <li>• If there are any graves they are in the proposed Hesketh Drive road.</li> <li>• Although the Spatial Development Framework (SDF) says that the property is designated as a 'Critical Biodiversity Area' and is irreplaceable, it is not.</li> <li>• It is full of alien invasive vegetation and kikuyu.</li> <li>• A few years ago it was heavily degraded due to grazing, and the property was completely bare.</li> <li>• It was also ploughed and lost all its topsoil.</li> </ul>	<p>terms of heritage values. There are historical buildings that are present on sight, which are more than 60 years old and have been assigned a grading rating. There are no graves present.</p> <ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted. Refer to the Biodiversity Assessment (Appendix D1). <i>"Although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature."</i></li> <li>• Noted. A Biodiversity Assessment (Appendix D1) has been conducted for the proposed development.</li> <li>• Noted.</li> <li>• Noted. A Biodiversity Assessment (Appendix D1) has been conducted for the proposed development.</li> </ul>
Msunduzi Municipality	<ul style="list-style-type: none"> <li>• I will send you contact details of someone from the Planning Section.</li> <li>• They will be able to give you any information about the SDF and the Environmental Management Framework (EMF).</li> <li>• The EMF is based on desktop assessment thus no one goes to the sites.</li> <li>• It is currently outdated as it is updated every five years and will get updated soon.</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted. Refer to Appendix G2 for the Environmental Management Framework (EMF) maps and information.</li> <li>• Yes, this is correct.</li> <li>• This has been noted.</li> </ul>

#### **4.7 CIRCULATION OF THE DRAFT BASIC ASSESSMENT REPORT (DBAR)**

Copies of the Draft Basic Assessment Report (DBAR) have been circulated to the following I&APs for review and comment:

- Nerissa Pillay – Ezemvelo KZN Wildlife
- Bernadet Pawandiwa – Amafa Heritage KZN
- Siyabonga Buthelezi – Department of Water and Sanitation
- Ayanda Myungula – Department of Environment, Forestry and Fisheries
- Thandekile Nxumalo – KZN Department of Agriculture and Rural Development (KZN DARD)
- Kraigen Govindasamy – Department of Economic Development, Tourism and Environmental Affairs
- Judy Reddy – Department of Transport
- Reggie Sibiyi – Fuel Retailers Association
- Brian Akkiah – Eskom
- Mandisa Khomo – uMgungundlovu District Municipality
- Kerina Singh – Msunduzi Local Municipality

Electronic copies of the Report are available on request via email or Dropbox. All I&APs have been given 30 days to provide comments on the Draft Basic Assessment Report.

#### **4.8 SUMMARY OF ISSUES RAISED**

The main issues raised to date during the public participation process for the proposed project is:

- High biodiversity, water quality, air quality and wetland development constraints.
- Landscaping and urban greening of the site must be implemented using indigenous species.
- Power cables have in the past been laid by Msunduzi.
- Management of New England landfill site will impact on the health of the residents of the development.
- The nearest police station to the development is situated 6 km away; can the establishment of policing policy in the area not be addressed?
- Concern about the escalation of crime rate in the development.
- How does the developer aim to address the issue of sewage?
- Water and electricity supply infrastructure in the area is aging and residents at the bottom of Grimthorpe experience water pressure issues. Electricity outages are common in the area.
- Concerns over timeframes and delays with the project and so much time passing.
- Will all or any part of the habitat of the dwarf chameleon present on the site be destroyed if the development proceeds?
- Will the applicant apply the precautionary principle regarding the dwarf chameleon and its habitat?
- Will the proposed development require the demolition of any existing structures, including heritage structures?
- The scale and nature of the proposed development will irreversibly change the nature, ambience and sense of place of the area.
- A school, residential estate, shopping centre, filling station and various road servitudes will cause loss to biodiversity, destruction of ecosystems and habitat, as well as significant increase in pedestrian and vehicular traffic, and, air and noise pollution.
- How will this development affect the number of vehicles utilizing the main routes in Hayfields, especially exiting and entering the area during peak times?
- How will traffic and congestion be controlled entering the site?
- Will the current infrastructure e.g. water, electricity and waste water – be upgraded or can the infrastructure handle the added load?

## 5. POTENTIAL IMPACTS ON THE SOCIAL AND ECONOMIC ENVIRONMENTS

### 5.1 LOCAL ECONOMY AND EMPLOYMENT OPPORTUNITIES / NEED AND DESIRABILITY

#### Description:

Economica (Pty) Ltd was contracted to undertake a specialist Socio-Economic Assessment (SEA) for the proposed development (Appendix D4).

The establishment of the proposed development will provide socio-economic benefits through job creation, service provision and skills development. It will also attract investment to the area. This is in line with the uMgungundlovu Municipality's IDP and SDF which aims to create an enabling environment and sustainable development.

#### Implication / Risk / Impact:

The main findings of the Socio-Economic Assessment are as follows:

- During the construction phase, an investment of R400 million spread over a 5-year period (R80 million per year) is anticipated.
- R80 million investment per annum will result in approximately 273 jobs / year.
- A total economy-wide impact of 397 jobs is anticipated (Table 6).
- To unlock positive impacts in the area, local labour will need to be hired where possible.
- Job creation is a potentially high positive impact due to the nature of the area and the vital need for job creation.

**Table 6:** Job Creation by Job Level (Source: Economica)

	Annual Jobs
Highly skilled jobs	24
Skilled jobs	81
Unskilled jobs	142
Informal jobs	150
<b>Total jobs</b>	<b>397</b>

The initial investment of R400 million is expected to result in an economy wide impact of R861 million output / sales and a contribution of R305 million to GDP over the project period. The assumption made is that all monies are spent within the South African economy.

A wide range of jobs are expected to be supported by this project due to its nature as a mixed-use development with multiple components. The anticipated level of permanent jobs is reflected in Table 7.

**Table 7:** Anticipated Job Creation during the Operational Phase (Source: Economica)

	Estimated No. Permanent Jobs
Phase 1: Filling station, shopping centre, restaurant	300
Phase 2: School	50 – 60
Phase 3: Residential sector	115
<b>Total jobs</b>	<b>465</b>

The job estimates for Phase 1 of the development (filling station, shopping centre and restaurant) are based on a development of a similar nature in Pietermaritzburg. An estimate of 50 – 60 jobs during Phase 2 of the development is anticipated (school). The school will be a private school with approximately 500 scholars. The jobs required will include academic staff, support staff and operational staff (including skilled and unskilled labour). An estimate of 115 jobs will be created for Phase 3 of the development (residential sector). These jobs will include domestic staff supporting

households in their homes and gardens. This estimate is based on one employee per every three households of the 350 apartments. Additional jobs supported include artisans and service sectors which will support households, the school and the commerce precinct.

#### Economic impact on existing business:

The proposed development of a shopping centre, a fast-food outlet and a filling station in the Lincoln Meade / Hayfields area may have the potential to impact some local businesses in terms of attracting customers away from existing retail outlets and fuel providers particularly in the Hayfields area. Of relevance are:

- The filling station and Spar (located at the lower end of Hesketh Drive adjacent to the traffic circle, approximately 2.8 km from the site)
- Mills SuperSpar (in Blackburrow Road, approximately 2 km from the site)
- The Hayfields Shopping Mall (Blackburrow Road, approximately 2 km)
- The Autobahn Filling Station (Blackburrow Road, approximately 2 km).

It is considered possible that the proximity of the proposed shopping and fuel outlets might present an attractive alternative to customers resident in the high-density residential areas closer to the proposed development site, especially residents of Lincoln Meade. This could potentially negatively impact other business operations in the Hayfields area as customers move away and towards potentially more conveniently located shopping and fuel outlets.

However, as the area continues to grow and develop with a greater population density (firstly with the residential influx to the proposed residential site development itself) it is anticipated that the local demand for retail and fuel services will increase proportionally. The growth of the area and areas surrounding the proposed development is anticipated with high probability.

#### Summary of Impacts

- There will be an opportunity to create employment opportunities, with skills development.
- There may be traffic related impacts during the construction phase.
- The site is situated at a sufficient distance from potentially affected local residents, for noise and dust impacts to be sufficiently mitigated against.
- The construction phase may present security risks on site, however the site will be patrolled with controlled access.
- Some competitor business operations will experience a degree of loss of customers given the convenience of offerings from the development. However, this is likely to be short term and will dissipate as the area and population grows.
- Increased traffic volumes will put pressure on the road network; however the Traffic Impact Assessment (Appendix D8) recommends road upgrades.
- The site is currently a security risk due to the vacant land. The management of the site during the operational phase will improve the safety and security of the site.

#### **Mitigation / Recommendations:**

- Local business operations which might be impacted by elements of the proposed development will need to continue to find proactive ways in which to build their brands and attract customers.
- Business owners should be reassured that any potential loss of customers is likely to be of a short-term nature as the area continues to grow and the residential population of Hayfields and Lincoln Meade increases.
- It is essential that local businesses and unemployed people in the immediate area must be considered first, before employing labour and services from further afield.
- The use of local contractors, suppliers and service providers must be undertaken.

## 5.2 PLANNING INITIATIVES

### National Spatial Development Perspective (NSDP)

The Policy Co-ordination and Advisory Services introduced a National Spatial Development Perspective (NSDP), which was then endorsed by the Cabinet in March 2003. The NSDP works in conjunction with different Departmental and Provincial spatial and development strategies. The four principles of the NSDP are as follows:

- Economic growth is a prerequisite for achievement of policy objectives;
- Government spending should concentrate on fixed investment, focusing on localities of economic growth and/or economic potential;
- Efforts to address the past and current inequalities should focus on people not on places; and
- To overcome spatial distortions of apartheid, future settlement and economic development opportunities should be channelled into nodes adjacent to the main growth centres.

In order to distinguish between localities, the NSDP uses two concepts as methodological tools, which are 'Potential' and 'Poverty Gap'. These two concepts will assist the NSDP in providing a coarse-grained analysis from a national perspective, which will be supplemented by a more finely, grained analysis at Provincial and Local Government level.

In defining potential, the NSDP has drawn on recent tradition of 'institutional economics' a field that has come to dominate both developmental economics and regional planning. The institutional approach suggests that beyond the usual sources of comparative advantage, the institutional adequacy of a locality will help determine whether development is sustainable or not. The NSDP therefore uses concepts of potential that rely strongly on the presence of institutional capacity to realize the developmental impact of other resources.

In summary, the NSDP will have a role to play as an instrument that informs the respective development plans of the three spheres of government i.e. IDP, PGDS and the Medium Term Strategic Framework (MTSF).

### KZN Growth and Development Strategy (PGDS)

Inequalities exist in our economy and there is a legacy of inequitable spatial development. This has had a negative impact on public sector investment as highlighted by the National Spatial Development Perspective (NSDP). This is evident in the lopsided economic and social costs for poor communities in locations far from employment and other opportunities. The PGDS is a vehicle to address the legacies of the apartheid space economy, to promote sustainable development and to ensure poverty eradication and employment creation.

Government has a mandate to restructure the process of development and service delivery in the province. This is to be achieved through the three spheres of government, the different government sectors and the various strategic frameworks. The key challenges it faces is to effectively align and harmonise these structures towards this end; and to harness and align fiscal, financial and human resources at its disposal towards eradicating poverty, creating employment and laying the foundations for accelerated economic growth.

The PGDS offers a tool through which provincial government can direct and articulate its strategy and similarly for local government to reflect the necessary human, financial and fiscal support it needs to achieve these outcomes. It facilitates proper coordination between different spheres of government and aims to prevent provincial departments from acting out of concert with local Municipalities. It enables intergovernmental alignment and guides activities of various role players and agencies (provincial sector departments, parastatals, district and local Municipalities). The PGDS will enhance service delivery.

It is a framework for public and private sector investment, indicating areas of opportunities and development priorities. It addresses key issues of implementation blockages whilst providing strategic

direction. The PGDS implies a developmental approach to government. This implies a pro-active and facilitative approach to development and not one based of formulating and applying regulations and restrictions. The PGDS on the one hand involves preparing policies, strategies and guidelines and on the other hand it involves preparing mechanisms to align and facilitate the implementation, monitoring and evaluation of key growth and development priorities.

### **Millennium Development Goals**

Looking to the future, the Municipality believes that they can achieve the overarching goal: '*to put an end to poverty*'.

The MDGs represent a global partnership that has grown from the commitments and targets established at the world summits of the 1990s. Responding to the world's main development challenges and to the calls of civil society, the MDGs promote poverty reduction, education, maternal health, gender equality, and aim at combating child mortality, AIDS and other diseases.

Set for this year, the MDGs are an agreed set of goals that can be achieved if all actors work together and do their part. Poor countries have pledged to govern better and invest in their people through health care and education. Rich countries have pledged to support them, through aid, debt relief, and fairer trade.

uMgungundlovu District Municipality, as part of the globalized community, is playing its part in ensuring that it provides the necessary infrastructure to help reduce poverty and hunger.

### **Alignment with Municipal Goals and Objectives**

Msunduzi Local Municipality has thus ensured that all its long-term strategic goals and objectives (particularly infrastructure development, job creation and economic development) are aligned to National and Provincial Strategic Perspectives which has direct link with MDGs.

### **Implication / Risk / Impact:**

- The proposed development complies with all of the above Planning Initiatives, most notably job creation, infrastructure development and economic growth.

### **Mitigation / Recommendations:**

- None.

## **5.3 CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES**

### **Description**

A specialist Heritage Impact Assessment (HIA) (Appendix D5) of the proposed development site was undertaken by Lindsay Napier Architect. The findings of the Heritage Impact Assessment revealed that no heritage sites were identified on the proposed development property, however historical buildings are present on site.

A desktop Paleontological Assessment (PIA) (Appendix D6) was conducted by Gary Trower as the proposed development is situated within an area where the underlying geology is given a moderate paleo-sensitivity rating on the South African Heritage Resources Agency map, and these deposits may contain some palaeontological material. A desktop Palaeontological Assessment was necessary to evaluate the likelihood of fossil material being present within the boundaries of the proposed development, and to evaluate whether any further palaeontological assessment is required.

### **Implication / Risk / Impact:**

HIA:

- Historical buildings are present on sight which are more than 60 years old.

- Each of the buildings have been assigned a recommended grading based on the grading system of the National Heritage Resources Act (NHRA) Chapter 1:3(3). Refer to Table 8 for the recommended heritage grading of all the buildings.
- Construction work may expose material and it is pointed out that the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008) requires that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.
- The geology of the study area grades from Dwyka Group tillites to Pietermaritzburg Formation shales of the Ecca Group, both of the Karoo Supergroup. Neither are considered to be paleontologically sensitive. Consequently, no further paleontological studies are recommended.
- There are no graves on the footprint. Some of the associated structures on the site are older than 60 years and have heritage value.

**Table 8: Recommended Heritage Grading (Source: Lindsay Napier Architect)**

Building number	Building name/ current use	Estimated date of construction and age	Proposed grading	Mitigation
1.	House	1897-1970 52-122yrs	3C	Integrate into the development – change of use
2.	Stone storeroom “the armoury”	100-120yrs	3C	Retain with buffer
3.	Stone storeroom “the dog house”	100-120yrs	3C	Retain with buffer
4.	The dairy	60-70yrs	NCW	
5.	The stables and cattle sheds	60-70yrs	NCW	
6.	Carports	60-70yrs	NCW	
7.	Outbuilding 1	60-70yrs	NCW	
8.	Outbuilding 2	60-70yrs	NCW	
9.	Outbuilding 3	60-70yrs	NCW	
10.	Dip tank	60-70yrs	NCW	
11.	Gate and gate posts	100-120yrs	3C	Retain or relocate within the development
12.	Water reservoir	70-120yrs	NCW	

**PIA:**

- The proposed development is situated within an area where the underlying geology is given a moderate paleo-sensitivity rating on the South African Heritage Resources Agency Map.
- Several potentially fossiliferous outcrops may have been weathered and eroded over millennia, buried under younger deposits such as alluvial and colluvial sediments, or capped by topsoil.
- Paleontologically sensitive bedrock may have been metamorphosed through its contact with intrusive lavas, damaging or destroying fossil specimens along the contact zone.
- Only if well-preserved, more complete plant material emerges from bedrock, does the significance of the site increase and mitigation measures may be necessary to reduce the impact such a development could have on the fossil location.
- Construction work may expose material and it is pointed out that the south African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008) require that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

**Mitigation / Recommendations:**

**HIA:**

- Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone,



asphalt, etc.) must be obtained in a sustainable manner and in compliance with heritage legislation.

- The contractor and his / her labourers will need to be educated in order to identify valuable cultural / historical resources.
- If any objects are identified during construction activities, Amafa must be contacted immediately and all development must be halted until further notice. Amafa can be contacted on 033 394 6543.
- Materials should be salvaged and re-used in a new development. It is recommended that the materials be used in the urban design, landscaping and entrances to connect the visitor or new resident/ user to the land and its previous use.
- It is recommended that the names of the farm and the settlers who have tended the land be recognized in the planning of the development.
- Buildings 2 (Stone storeroom “*the armoury*”) and 3 (Stone storeroom “*the dog house*”) should be retained only if they can be retained with a buffer zone (for protection during construction) that can be incorporated as a park-like setting.
- Existing planting and vegetation (including exotics) are to be considered in the development, given the history of the introduction of exotic garden species to the area by Victorians.

PIA:

- If any paleontological or heritage-related material were to be unearthed during construction activities, landowners and / or the developers they appoint are reminded that, according to the National Heritage Resources Act 1999 (Act No. 25) and KwaZulu-Natal Heritage Act 2008 (Act No. 4), work should immediately cease and the “chance Find Protocol” outlined in the PIA (Appendix D6), should be followed.
- This is to ensure that developments comply with the law, and to ensure that a rare object / fossil stands a good chance of being recorded and / or relocated, before being damaged or destroyed by site activities.

## 5.4 SURROUNDING LANDUSE AND AESTHETICS

### Description:

The site is located on Murray Road in Pietermaritzburg. This area is situated between Hayfields and Lincoln Meade. The site is surrounded by open land, residential developments and houses, and the Hesketh Conservancy, which is designated as a municipal open space area. Economic activity of the area is founded primarily on retail from the nearby shopping centres (Hayfields and the Mills Circle Spar), the remainder of the area is residential.

The site is currently zoned as Future Residential and, for development approval, would require rezoning to Mixed-Use. The proposed development site is an area of approximately 15 ha, is currently characterised by Savanna Biome (SV) which comprises KwaZulu-Natal Hinterland Thornveld (SVs3).

### Implication / Risk / Impact:

- The proposed development will alter the land where the infrastructure is established, transforming it to a built environment.
- The proposed development will have visual impacts particularly to road users on Hesketh Drive and Murray Road.
- The proposed development will alter the sense of place of the immediate area.

### Mitigation / Recommendations:

- Wherever possible, the proposed development must make use of natural building materials and architectural styles that blend into the surrounding landscape.
- The use of highly reflective building materials such as corrugated iron and glass must be minimised where possible.

- Only locally indigenous plant species are to be used for landscaping around the proposed development.
- An Alien Vegetation Control Programme must be implemented.
- The Environmental Management Programme (EMPr) must be implemented (Appendix E).
- Noise and dust impacts must be controlled.
- All lighting must face downwards.

## 5.5 TRAFFIC, ROADS AND ACCESS

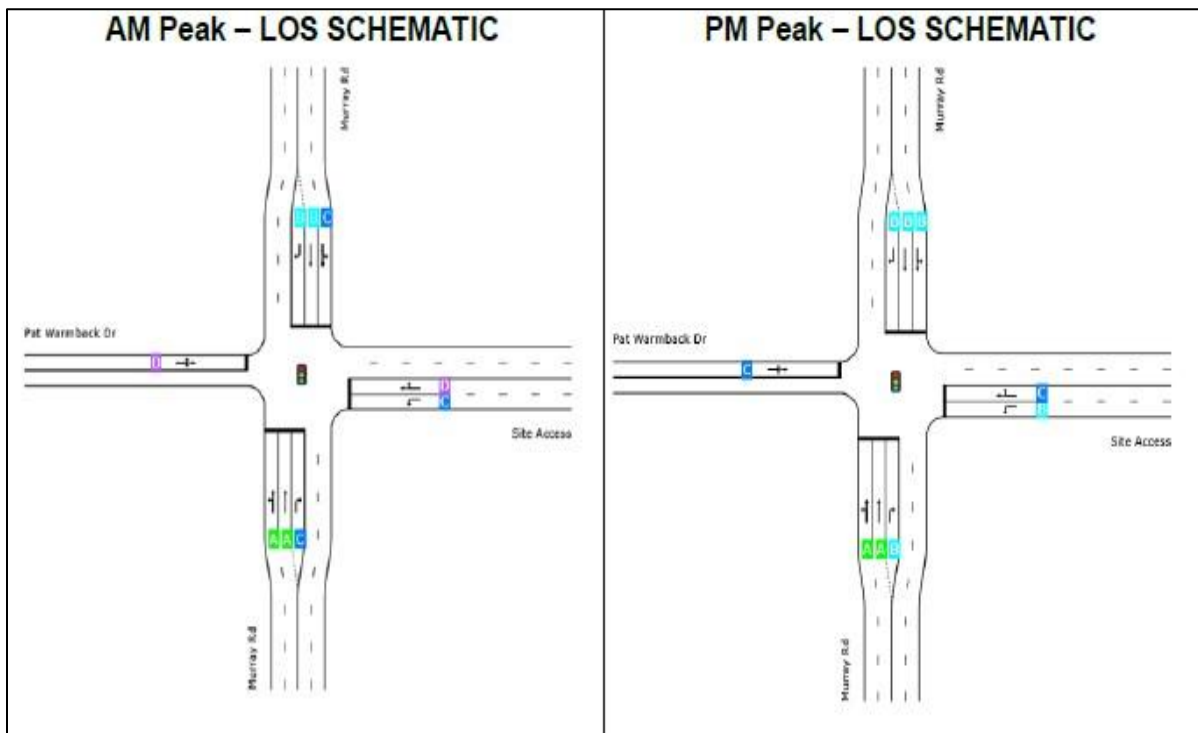
A Traffic Impact Assessment (TIA) (Appendix D8) was undertaken and concluded:

### Description:

- The area in the vicinity of the proposed development is considered to be a low growth area from a traffic perspective. As such, a 3% per annum growth rate compounded annually is considered.
- The TIA assessed both the proposed Murray Road Development and the Hesketh Country Estate, with which construction has already commenced.
- The upgrades are triggered by the development generated traffic from both the Hesketh Country Estate and the proposed Murray Road Mixed-Use development, a cost contribution model would need to be discussed with the Hesketh Estate owners.
- Currently there is no access to the site from the adjacent roads. A new access road will be constructed onto the site from Murray Road. A new access road will be located directly opposite Pat Warmback Drive. The new access will allow for two-way travel into and out of the site.
- All movements at this intersection will operate at a Level of Service (LOS) A to D during both AM and PM peak hours (refer to Figure 15). The level of service is defined as a qualitative measure of the operational conditions within a traffic stream as perceived by road users.

### Implication / Risk / Impact:

- In terms of the TMH 16 COTO Manual for Traffic Impact Assessments and Site Traffic Assessments, the proposed development must be assessed for a design horizon of 5 years (2027).
- The area near the proposed development is considered a low growth area from a traffic perspective. As such, a 3 % per annum growth rate compounded annually is considered reasonable for this traffic impact assessment.



**Figure 15:** Site access intersection operating at a LOS A to D and configuration (Jinyela).

#### Mitigation / Recommendations:

- Over and above the upgrades recommended in the TIA for the Hesketh Country Estate, the road network will require further upgrades to handle the additional trips from the proposed Murray Road Developments.
- The proposed development will generate additional pedestrian traffic; therefore, it is recommended that sidewalks are provided in the immediate vicinity of the site.
- No road safety concerns were observed during the site visit and traffic count period. Traffic speeds appear to be acceptable on all roads and there was no evidence of pedestrian / vehicle conflict.
- It is expected that the proposed development will not cause the road safety conditions on the surrounding road network to deteriorate in any way.

As part of the proposed development, a new access road will be constructed on Murray Road directly opposite the intersection with Pat Warmback Drive. The Hesketh Country Estate TIA recommended this intersection be upgraded to a single lane roundabout; however, given the large volumes of traffic expected as a result of the two proposed developments, it is recommended that this intersection is upgraded to traffic signals instead.

#### Hesketh Country Estate Upgrades:

A new residential development known as the Hesketh Country Estate will be constructed to the north of the Applicant's site on Murray Road. As part of the residential development, the surrounding road network will undergo several upgrades as follows:

#### Murray Road and Grimthorpe Intersection

- Converted from a priority-controlled intersection to a signalised intersection.
- New 60 m left-slip lane on the Murray Road south approach.
- Existing right-turn lane on the Murray Road south approach extended to 60 m.
- New 30 m left-slip lane on the Grimthorpe approach.
- New left-slip created on the Murray Road north approach.

- New 60 m right-turn lane created on the Murray Road north approach.
- The Hesketh Country Estate access will have 2 entry and 2 exit lanes.

#### Murray Road and Hesketh Drive Intersection

- Converted from a priority-controlled intersection to a signalised intersection.
- Existing short right-turn lane will be converted to a shared through and right-turn lane and extended to 50 m on the Hesketh Drive approach.
- Existing left-turn lane converted to a 30 m short left-turn slip lane on the Gladys Manzi Road approach.
- Existing short right-turn lane converted to a full right-turn lane on the Gladys Manzi Road approach.
- New 60 m left-slip lane added to the Murray Road approach.
- Existing shared through and left-turn lane converted to a through only on the Murray Road approach.
- New 150 m exit lane added to the Murray Road approach.

#### Murray Road and Pat Warmback Intersection

- Converted from priority controlled to a roundabout.

The construction of the proposed Murray Road Mixed-Use Development will result in the following upgrades being required to the surrounding road networks:

#### Blackburrow and Hesketh Drive Intersection

- Convert the left-slip lane on the Blackburrow Road approach to a shared left-slip and right-turn lane and extend it to 40 m in length.

**It is recommended that the following additional upgrades are implemented at the Hesketh Drive and Murray Road Intersection, to handle the new trips from the two proposed developments:**

#### Hesketh Drive and Murray Road Intersection (Upgraded)

- A new 125 m through lane must be added to the Hesketh Drive approach.
- A new 125 m exit lane must be added to the Hesketh Drive approach.
- Convert the proposed 60 m left-slip lane to a full shared through and left-slip lane.
- Convert the proposed 150 m exit lane to a full exit lane.

#### Murray Road, Pat Warmback Drive and Site Access Intersection

- A new full lane which allows through and left-turn movements on the Murray Road south approach will be required.
- A new 60 m right-turn lane on the Murray Road south approach will be required.
- A full exit lane on the Murray Road south approach will be required.
- A new full lane which allows through and left-turn movements on the Murray Road north approach will be required.
- A new 60 m right-turn lane on the Murray Road north approach will be required.
- A full exit lane on the Murray Road north approach will be required.

## **5.6 CONSTRUCTION ACTIVITIES, NOISE AND DUST**

### **Description:**

Construction activities on site will require the use of heavy machinery for earthworks. The construction phase will generate noise from the use of construction machinery and a slight increase in traffic (construction vehicles) and dust. There will also be an increase in the number of people in the area due to the presence of construction labourers on the site, as well as other potential job seekers.

**Implication / Risk / Impact:**

- The construction phase will generate noise from the use of construction machinery and increased traffic (construction vehicles) and dust.
- This impact however, is only a temporary impact, ending with the completion of the construction phase.
- During the operational phase the development may generate noise resulting from vehicles using the filling station, shopping centre (and other facilities).
- Despite the anticipated generation of noise, it is unlikely that the production of noise and dust from construction activities as well as noise during the operational phase will have a significantly negative impact on neighbouring landowners.

**Mitigation / Recommendations:**

- The developer must undertake to provide 1.8 m high shade cloth around the entire construction site, prior to commencing with construction.
- It is recommended that activities of construction vehicles, building contractors and labourers should be limited to working hours between 7.30 am and 5 pm during weekdays. Furthermore, construction on weekends and public holidays should not be permitted.
- Machinery and equipment must be maintained and regularly serviced to ensure that unnecessary noise is prevented. Workers on site must not create unnecessary noise such as hooting or shouting.
- Dust from the construction site must be managed in an efficient and environmentally sensitive manner (e.g. dampening, stockpile covered if not used for more than 3 weeks).
- To minimise noise during the operational phase, the development is to be operated in a manner that does not result in any negative impacts to the adjacent residents, i.e. excess noise, hooting, loud music at the facility is to be prohibited.
- Labour must not create unnecessary noise such as hooting or shouting.

## 5.7 SECURITY

**Description:**

The construction and operational phases will result in an increase in the number of people in the area due to the presence of construction labourers on the site, as well as other potential job seekers.

**Implication / Risk / Impact:**

- Management of construction labourers is often problematic. Potential exists for labourers to trespass onto adjoining properties.
- Crime in the area could increase during the construction phase, as a result of criminals posing as construction workers, or people seeking employment on the site.
- Crime in the area may also potentially increase during the operational phase, as a result of an influx of people making use of the facilities offered by the development.
- Criminals may target the facility's retail outlets.

**Mitigation / Recommendations:**

- 24-hour CCTV must be installed through the development.
- Construction labourers must be sourced from surrounding communities.
- All construction labourers must remain within the boundaries of the construction site at all times.
- Access onto and off the site during construction must be controlled by a register system. This includes visitors.
- All restricted areas of the property must be designated with appropriate warning signs.
- During the operational phase the facility operators must be responsible for employing a security firm to provide security at the facility if deemed necessary.

## 5.8 CORONA VIRUS (COVID-19) PANDEMIC

### Description

The Corona Virus (Covid-19) pandemic is far more than a health crisis. It is not only affecting societies but also economies at their core. Although the impact of the pandemic will vary from country to country, the extent of its impacts is not yet known. However, it will most likely increase poverty and inequalities on a global scale.

### Implication / Risk / Impact:

- Both temporary and permanent jobs will be created during the planning, construction and operational phase of the proposed project.
- Increased employment opportunities will result in positive knock-on effects of the surrounding population and the local economy.
- As such, although the pandemic was widespread, the proposed project will play a beneficial role in alleviating its impacts within the surrounding area.

### Mitigation / Recommendations

- Local businesses and unemployed people in the immediate area must be considered first, before employing labour and services from further afield.
- Where possible, any additional employment opportunities on the farm must include labour from surrounding local communities.

## 6. POTENTIAL IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

### 6.1 TOPOGRAPHY

#### Description:

Indicate the general gradient of the site:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Indicate the landform(s) that best describes the site:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

Ground Cover:

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

### Implication / Risk / Impact:

- The site exhibits a flat to gently sloping gradient. In general, the site is considered stable and suitable for the intended development, provided the presence of shale bedrock is allowed for.

### Mitigation / Recommendations:

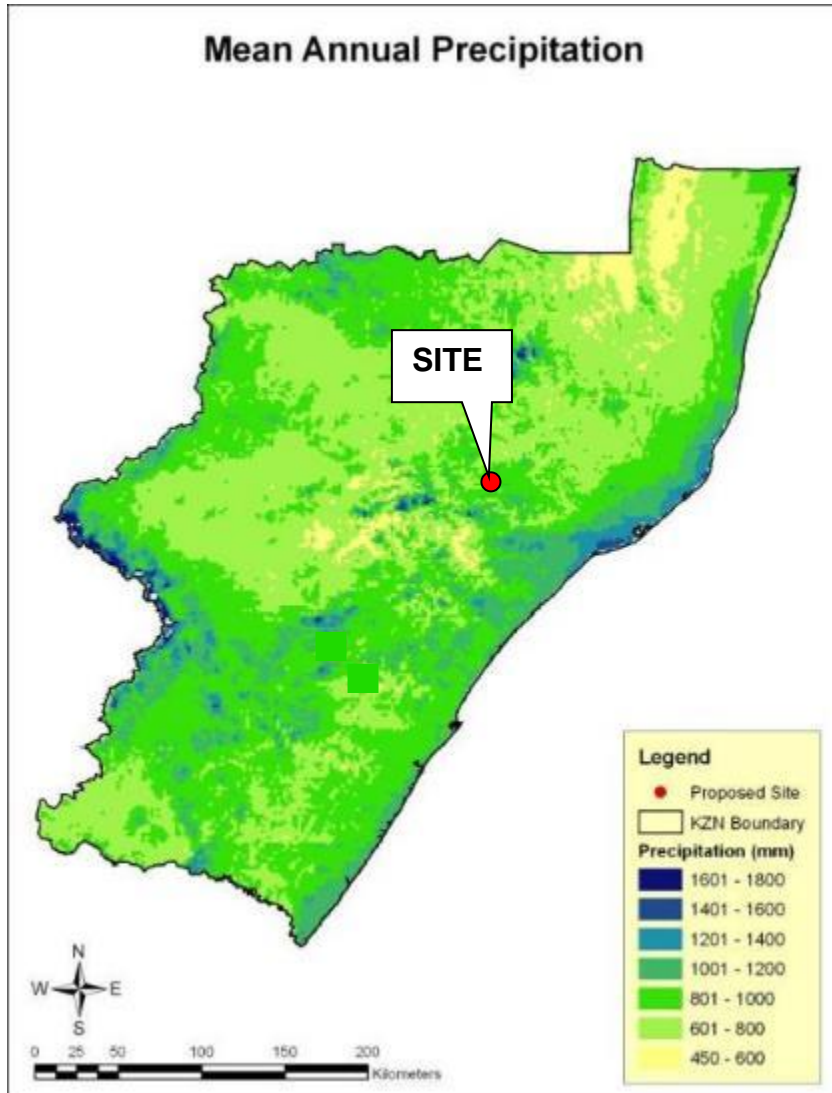
- The storm water management plan (Appendix D7) must incorporate a storm water management system, as well as a surface cut-off drain on the upslope side of structures to prevent surface ponding.
- Subsequent ingress into fills and foundations has the potential to cause destabilisation over time, such as differential settlements due to a lowered subsoil strength.

- The shallow expansive soil can be removed, and non-expansive material imported and compacted to create a stable layer of soil at the building footprint.

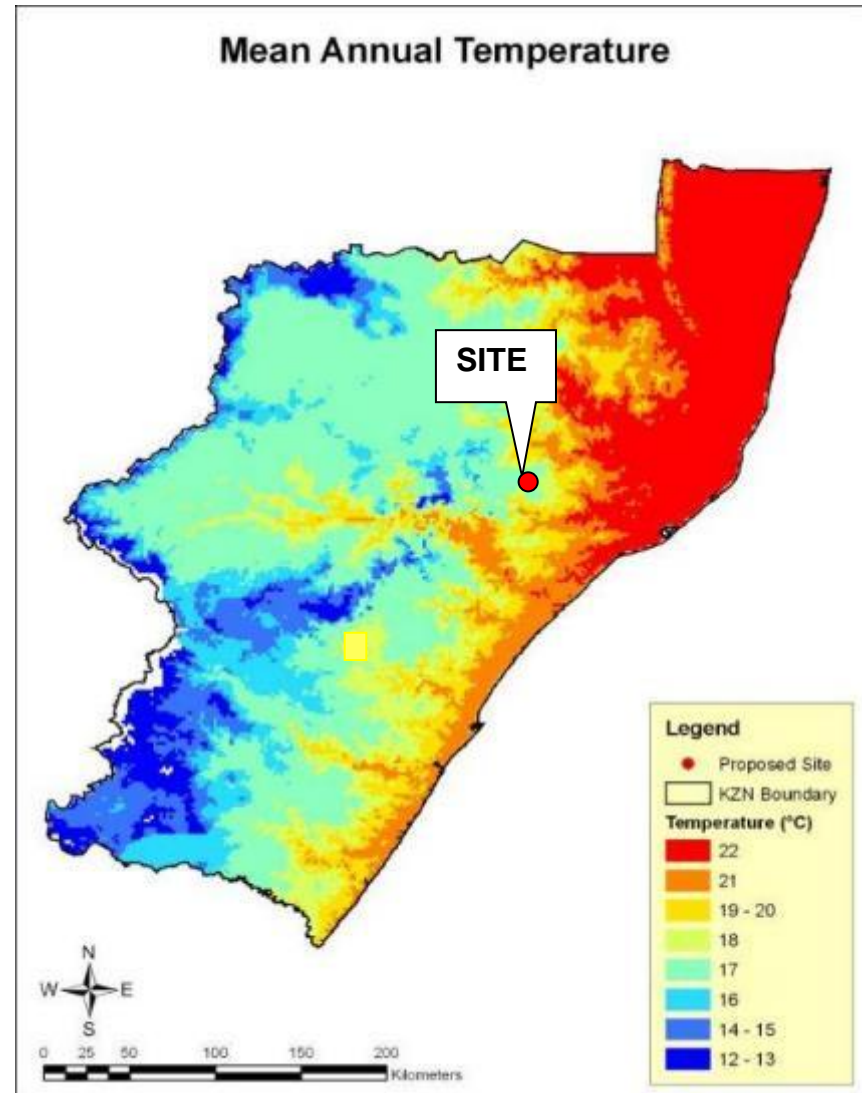
## 6.2 CLIMATE

### Description:

The study area is characterised by a sub-tropical climate with hot summers and cool winters. Pietermaritzburg receives a mean annual precipitation of 586 mm. The average lowest rainfall is received in June (11 mm) and the highest in October (87 mm). The average maximum midday temperature for Pietermaritzburg ranges from 26°C in February to 21°C in June. The region is coldest during June and July when the temperature drops to 7°C on average at night. (Refer to Figure 16 and 17).



**Figure 16:** Mean Annual Precipitation for KwaZulu-Natal.



**Figure 17:** Mean Annual Temperature for KwaZulu-Natal.



**Implication / Risk / Impact:**

The purpose of the Stormwater Management Plan (Appendix D7) is to:

- Achieve compliance with the relevant standards, regulations and policies such as SANS 10400 Part R and local municipal requirements.
- Protection of the public and property of flood hazards.
- Responsibility towards natural environmental preservation and the preservation of natural resources.

**Potential impacts associated with the proposed development include:**

- The proposed development will transform the site to buildings, roofed areas, parking, canopy, access roads, and other hardened surfaces. This will increase the surface runoff of the entire property during rainstorm events.
- Potential exists for high intensity rainstorm events to cause erosion.

**Mitigation / Recommendations:**

- The site must be developed in congruence with the contours as far as possible.
- The design of the attenuation facilities must incorporate impermeable surface linings to reduce water ingress into the substrate.
- Tank attenuation can include rainwater harvesting system which would be beneficial to the development.
- Structural elements such as gabion baskets, etc. can be incorporated in the design in order to eliminate erosion on the site.
- The preliminary estimate of attenuation required for the site is 2 235 m<sup>2</sup> which could be attenuated in parking zones for surfaced areas and in tanks for roofed areas.

## 6.3 CLIMATE CHANGE

**Description**

Climate change is a global challenge, which is both impacted by development and activities and which has effects on development and activities. In South Africa, the effects of climate change are increasing, with more frequent heat waves, droughts, flood events and severe weather conditions. These conditions are especially challenging considering the water scarcity in the country, the high fire danger in many areas and the high dependence on our wide-spread agricultural areas. At the same time, South Africa is challenged with the great need to promote development as a developing country, with the high-impact mining sector and linked electricity generation sector being predominant contributors to economic growth, whilst also being a predominant contributor to climate change.

In order to ensure sustainable development is achieved and that contributions to climate change are minimised, it is imperative that all development, transformative and resource-utilising activities take cognisance of climate change. At the same time, it is important to note that part of the response to climate change includes adapting to its effects and promoting development and activities which allows the population to become more resilient to the impacts of climate change. This may include ensuring delivery of basic services (water, sanitation and electricity), improving food security and enhancing economic security.

In order to appropriately respond to climate change, all developments and activities should consider the following:

- How does the development / activity affect climate change?
- What effect does climate change have on the development / activity?
- What climate change adaptation responses are required for the development / activity?
- What pro-active climate change mitigation measures can be implemented for the development / activity?

### **Implication / Risk / Impact**

- The proposed development may contribute to climate change to a minor extent through energy usage, water usage and waste generation during the construction and operational phases.
- The proposed development is not likely to be largely directly impacted by climate change as it is removed from coastal areas, watercourses and floodline areas and is not impacted by temperature changes.
- The proposed development plays an important role in building resilience to climate change by providing economic stimulus, creating employment opportunities and providing a positive economic benefit to the area.

### **Mitigation / Recommendations**

- All development infrastructure must promote the efficient use of energy, water and limit wastage of resources.
- Waste generation must be minimised and waste must be managed in an environmentally responsible manner and in accordance with the waste management hierarchy. The EMPr (Appendix E) outlines specific waste management mitigation measures which comply with the waste management hierarchy.
- The proposed development / activity / infrastructure must be implemented in accordance with approved layout plans which have been planned and assessed to ensure that locations and layouts of least environmental impact and risk are utilised.
- The proposed development must ensure the protection of on-site environmental features which thereby protects ecological infrastructure important for building climate change resilience.

## **6.4 GEOLOGY AND SOILS**

### **Description:**

A Geotechnical Assessment (Appendix D3) was conducted. The fieldwork for the investigation comprised the following:

- Trial Pits;
- Dynamic Cone Penetrometer (DPL) tests, and
- Foundation Indicator Laboratory Resting.

### **Implication / Risk / Impact:**

- The site is underlain by dark grey shale, siltstone and subordinate sandstone (Pp) of the Pietermaritzburg Formation of the Ecca Group, Karoo Supergroup. This is intruded by post-karoo dolerite (Jd).
- Shale bedrock was intersected. These bedrock units are overlain by Quaternary-aged colluvial and residual horizons. Dolerite was intersected in the eastern portion of the site.
- The topography of the site is gently sloping. In general, the site is considered stable and suitable for the intended development provided the presence of very shallow shale bedrock is allowed for.
- General good practice for cuts and fills of less than 2 m height should be followed.
- No groundwater seepage was encountered in any of the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site. It can be expected, however, that groundwater seepage will occur at the interface between the transported soils and the underlying bedrock, particularly during or after periods of heavy rainfall.
- Shallow bedrock was encountered over majority of the site. The presence of shallow colluvial and residual horizons should be considered during foundation design.
- Shale of the Pietermaritzburg Formation is subject to rapid weathering and should not be exposed to natural elements for prolonged periods of time, as it degrades on subaerial exposure by the process of slaking and disintegration.

**Mitigation / Recommendations:**

- The design of the proposed development must incorporate a storm-water management system, as well as surface cut-off drains on the upslope side of structures to prevent surface ponding.
- Shallow expansive soil can be removed, and non-expansive material imported and compacted to create a stable layer of soil at the building footprint.
- All cut and fill slopes must be suitably vegetated as soon as possible after construction to reduce the risk of erosion and instability due to infiltration. Fill must be compacted in layers not exceeding 200 mm or the appropriate layer thickness for the compaction plant, whichever is the lesser.
- Compaction should be to at least 93% of the Mod AASHTO maximum dry density at optimum moisture content.
- It is recommended that a senior engineering geologist be present to inspect foundation depths.

**6.5 GROUND WATER****Description:**

No groundwater was encountered in any of the test pits excavated on the site although some slight groundwater seepage may occur at the interface of the various soil horizons during the wet summer months or after periods of heavy rain.

**Implication / Risk / Impact:**

- The site slopes in an easterly direction with a natural watershed running in a north easterly direction. There is currently no drainage intervention visible on the site.
- Runoff flows in sheet flow across the site onto the adjoining properties situated on the northern and eastern sides of the site.
- The pre-development runoff is mostly intercepted by natural vegetation.
- Uncontrolled stormwater runoff from the development may cause erosion at the site, particularly within open areas during the construction phase.
- No groundwater seepage was noted in the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site.

**Mitigation / Recommendations:**

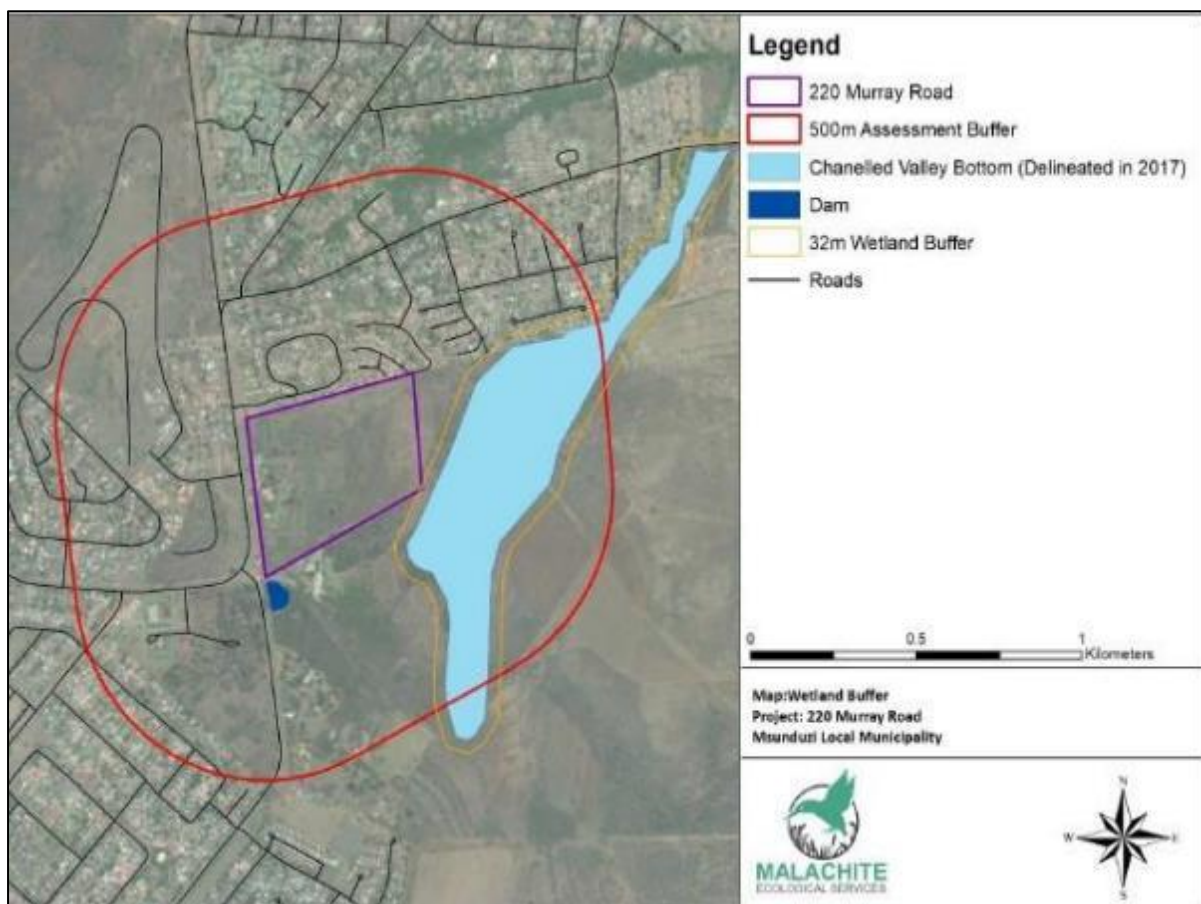
- The design of the stormwater management system must incorporate temporary on-site attenuation facilities that would allow for the slow release of surface run-off in the event of 1:50 year storm conditions.
- The design of the attenuation facilities must incorporate an impermeable surface lining to prevent stormwater infiltration into the subsoil, especially where such facilities are in the vicinity of buildings. This can be achieved by creating attenuation ponds within parking zones for surface runoff and tank attenuation systems for roofed areas.
- The use of tanks for roofed areas can also be incorporated into a rainwater harvesting system.

**6.6 SURFACE WATER**

A Wetland Assessment (Refer to Appendix D2) was conducted for the proposed development by Malachite Ecological Services.

**Implication / Risk / Impact:**

- No wetland systems were delineated within Erf 234 New England. A historic artificial impoundment was identified in the central portion of the site. This impoundment was infilled by 2010.
- A channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England (Figure 18).
- Soil erosion from the development site and subsequent sedimentation of the channelled valley bottom system.
- Pollution of the channelled valley bottom system as a result of construction and operational activities.
- Disturbance of the area allowing for the further encroachment of alien invasive species.
- Stormwater runoff from hardened surfaces will be contaminated with pollutants and can enter the soil profile and affect water quality if not treated.
- Any removal of vegetation will lead to a disturbance within the area having a negative impact on the functionality of the vegetation community.



**Figure 18:** Delineated Wetland to the east of the site and 32m buffer (Malachite Ecological

#### Mitigation / Recommendations:

- The calculated buffer for the protection of the downstream channelled valley bottom system is 32 m.
- The proposed development is recommended to occur outside of this 32 m buffer.
- The filling station must be located as far west as possible to allow for the maximum distance from the edge of the channelled valley bottom system.
- Indigenous landscaping in open areas needs to be incorporated into the Environmental Management Programme (EMPr).
- No stockpiling of any materials may take place directly adjacent to the 32 m buffer.

- Vegetation clearing must be undertaken only in the areas to be developed and must not extend outside of the development footprint and particularly into the channelled valley bottom.
- There shall be no mining of soil/sand required for construction purposes from the banks of the channelled valley bottom wetland.
- The use of water storage tanks is recommended to capture rainfall and decrease the runoff of stormwater from the site.
- An Invasive management programme must be incorporated into the EMP.

## 6.7 FLORA

### Description:

A Biodiversity Assessment (Refer to Appendix D1) was conducted for the proposed development by Peter Le Roux. The site and surrounding area were classified in Mucina and Rutherford (2006) as KwaZulu-Natal Hinterland Thornveld, with Ecosystem Status '*Least Threatened*' and Level of Protection '*Nominally Protected*'.

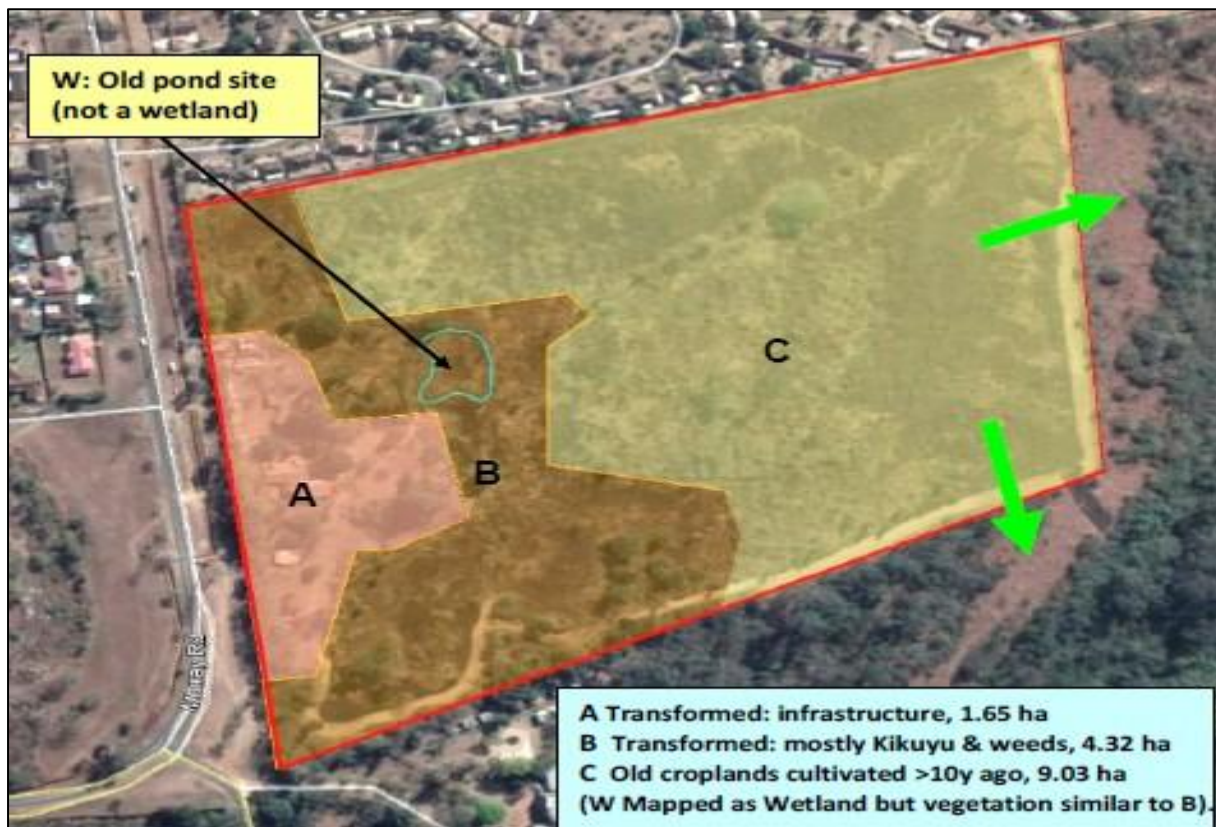
The site is not representative of KwaZulu-Natal Hinterland Thornveld, with many key grasses and forb species absent. The site has not been cultivated within the past 10 years and meets the definition of 'Indigenous Vegetation' in terms of NEMA. The habitat around the homestead was transformed and characterised by lawns, infrastructure, unmanaged weedy areas, and many planted alien trees and shrubs. Although the area around the homestead was mapped as a Critical Biodiversity Area (CBA) irreplaceable site, it has negligible biodiversity importance and should be removed as a CBA feature (Figure 19).



**Figure 19:** Critical Biodiversity Area of the site (Source: Peter Le Roux).

### Implication / Risk / Impact:

- Part of the site is dominated by kikuyu pasture (*Pennisetum clandestinum*) and was mostly a pasture with negligible biodiversity importance (Figure 20).
- The site does not have the attributes of a critical ecological corridor and its function as a corridor connection undeveloped land to the east and west should be reviewed.



**Figure 20:** Classification of vegetation types of the site (Source: Peter Le Roux).

**Mitigation / Recommendations:**

- As many as possible of the planted indigenous trees must be incorporated into the landscape design of the final layout. It is not advisable to move these trees, as the failure rate is high.
- No species of conservation concern were found on the remainder of the site and none are likely to occur.
- Locally indigenous plant species must be used for landscaping around the proposed development.
- Alien Vegetation Removal Plan must be implemented (refer to the EMP in Appendix E).

**6.8 FAUNA**

**Description:**

A Biodiversity Assessment (Refer to Appendix D1) was conducted for the proposed development. No mammals of conservation concern are likely to occur on the site. Very few signs of faunal activity were observed on site. There were no signs of common species or those species that are listed as significant such as the Bourquin’s Dwarf Chameleon (*Bradypodion borquini*) or Oribi (*Ourebia oribi*). It is highly unlikely that any Red Data List species will occur.

Any fauna that might be affected by the development would be well represented in similar sites immediately surrounding the proposed development area. The site has low biodiversity constraints, with no plant or animal species of conservation concern. Absence of faunal species were related to dry, shallow, rocky soils and alien invasive species observed on site.

**Implication / Risk / Impact:**

- The fauna study indicated low development constraints, with none of the species listed being red data list or species of conservation significance.
- Most of the species on the site are likely to use a larger area outside of the site for foraging,

breeding or other activities, so would be capable of moving in response to development related disturbance.

**Mitigation / Recommendations:**

- Should any mammals or other faunal species be observed on site, they must be moved safely to areas near the site.
- Vehicles and machinery must be kept within the site boundary at all times.
- An Environmental Management Programme must be implemented (EMPr).

## 7. SPECIALIST STUDIES: KEY FINDINGS AND RECOMMENDATIONS

The following specialist studies were undertaken for the proposed project as part of the Basic Assessment Process:

- Biodiversity Assessment;
- Wetland Assessment;
- Geotechnical Assessment;
- Socio-Economic Assessment;
- Heritage Impact Assessment;
- Paleontological Impact Assessment;
- Storm Water Management Plan;
- Traffic Impact Assessment; and
- Bulk and Internal Services Engineering Report.

### 7.1 BIODIVERSITY ASSESSMENT

Refer to Appendix D1 for the Biodiversity Assessment.

#### Key Findings:

The following habitats were mapped on the 15 ha site, as depicted in Figure 21 below:

- Infrastructure and Gardens (1,65 ha);
- Kikuyu dominated pastures (4,32 ha); and
- Old lands last cultivated > 10 years ago (9,03 ha).

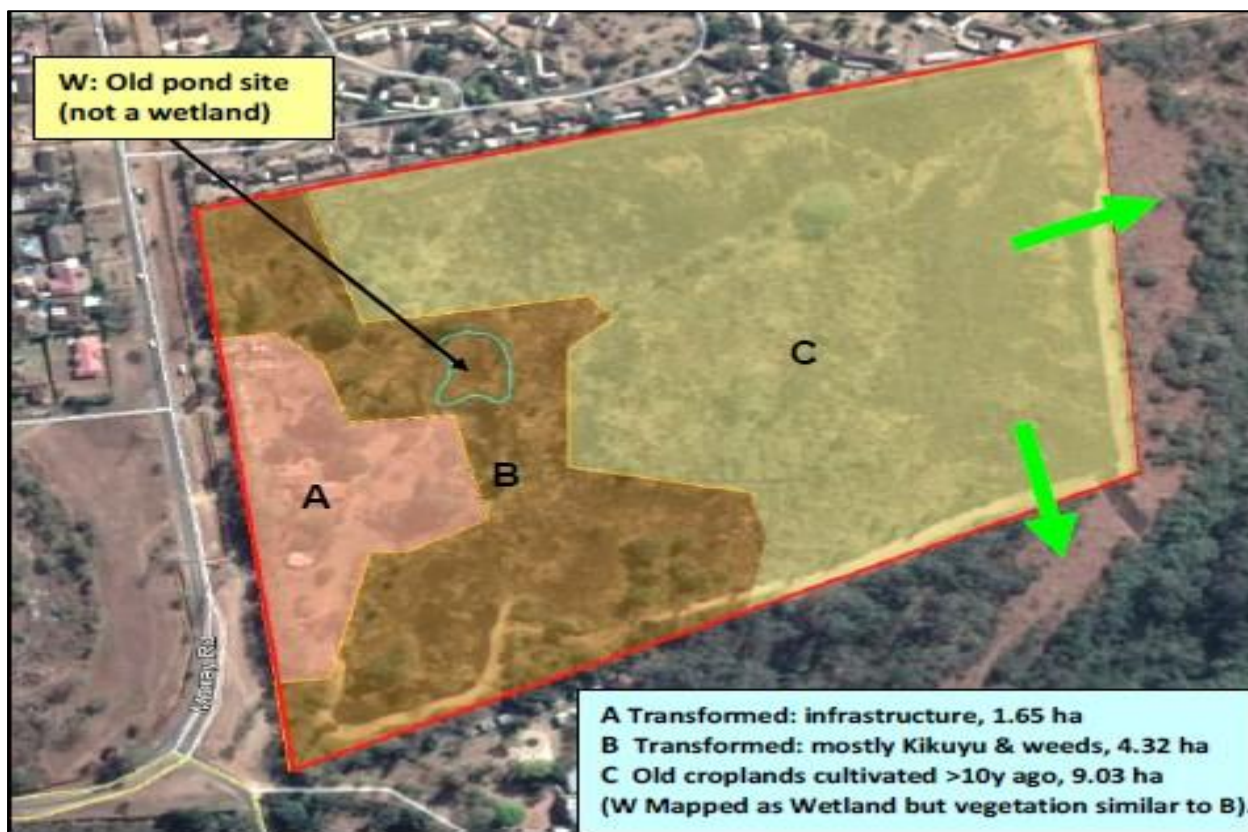
Very few signs of faunal activity were observed on site. There were no signs of common species or those species that are listed as significant, such as the Bourquin's Dwarf Chameleon (*Bradypodion borquini*) or Oribi (*Ourebia oribi*). It is highly unlikely that any Red Data List species will occur.

Any fauna that might be affected by the development would be well represented in similar sites immediately surrounding the proposed development area. The site has low biodiversity constraints, with no plant or animal species of conservation concern.

#### Fauna:

- The fauna study indicated low development constraints, with none of the species listed being red data list or species of conservation significance.
- Most of the species on the site are likely to use a larger area outside of the site for foraging, breeding or other activities, so would be capable of moving in response to development related disturbance.





**Figure 21:** Classification of vegetation on the site (Source: Peter Le Roux).

#### Recommendations:

- Should any mammals or other faunal species be observed on site, they must be moved safely to areas near the site.
- Vehicles and machinery must be kept within the site boundary at all times.
- An Environmental Management Programme must be implemented (EMPr).
- Any fauna that might be affected by the development would be well represented in similar sites immediately surrounding the proposed development area.
- The site has low biodiversity constraints, with no plant or animal species of conservation concern, and could be developed.

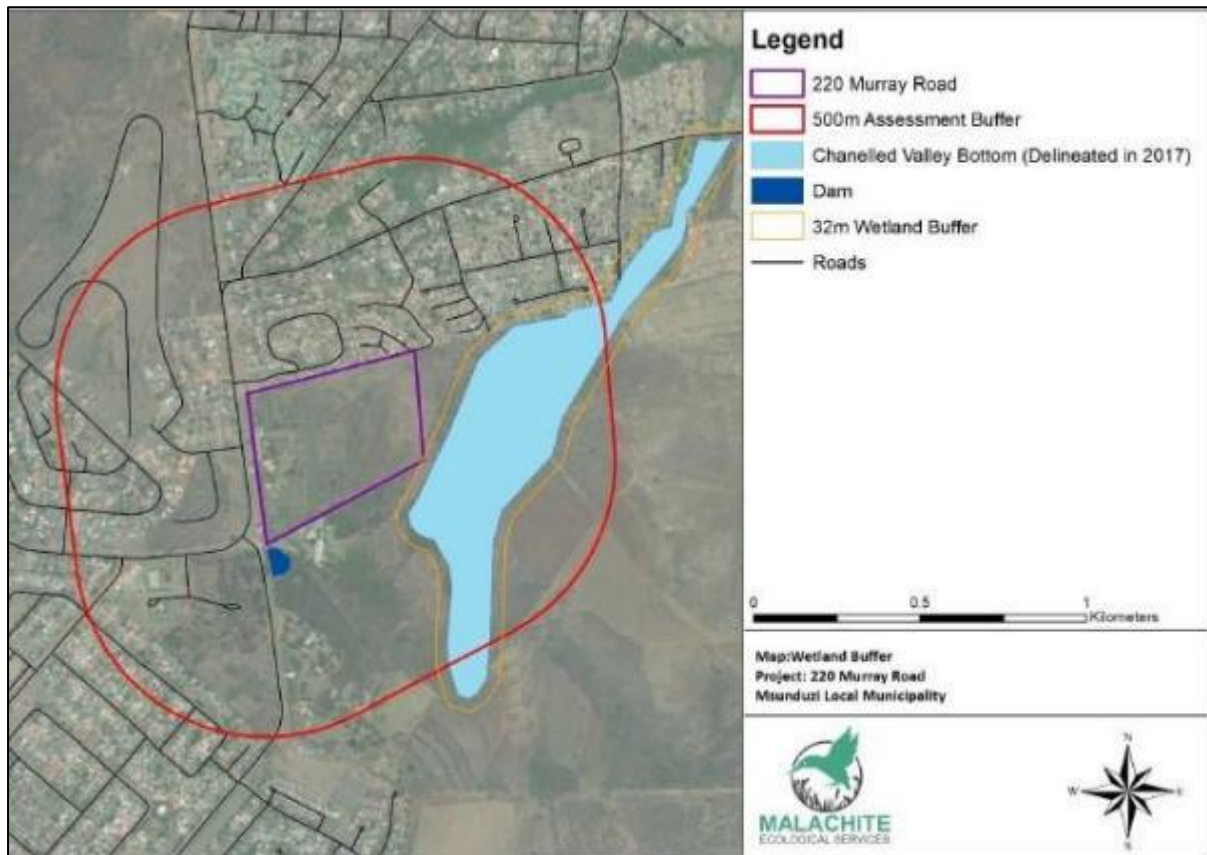
## 7.2 WETLAND ASSESSMENT

Refer to Appendix D2 for the Wetland Assessment.

#### Key Findings:

- No wetland systems were delineated within Erf 234 New England. A historic artificial impoundment was identified in the central portion of the site. This impoundment was infilled by 2010.
- Soil forms identified within the site were dominated by the terrestrial Glenrosa and Mispah soil forms. These forms are shallow, rocky and do not show signs of saturation. They are not associated with any wetlands or watercourse systems.
- A channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England (Figure 22).
- The calculated buffer for the protection of the downstream channelled valley bottom system is 32 m.

- No hydrophytic species were noted on site.
- Soil compaction from the construction site increases the runoff of water over the topsoil and the reduction in stormwater infiltration into the soil profile, therefore increasing the likelihood of erosion gully formation and wetland desiccation.



**Figure 22:** Delineated Wetland to the east of the site and 32m buffer (Malachite Ecological Services).

### Mitigations / Recommendations:

- The proposed development is recommended to occur outside of this 32 m buffer.
- The filling station must be located as far west as possible to allow for the maximum distance from the edge of the channelled valley bottom system.
- Indigenous landscaping in open areas needs to be incorporated into the Environmental Management Programme (EMPr).
- No stockpiling of any materials may take place directly adjacent to the 32 m buffer.
- Vegetation clearing must be undertaken only in the areas to be developed and must not extend outside of the development footprint and particularly into the channelled valley bottom.
- There shall be no mining of soil/sand required for construction purposes from the banks of the channelled valley bottom wetland.
- The use of water storage tanks is recommended to capture rainfall and decrease the runoff of stormwater from the site.
- An Invasive management programme must be incorporated into the Environmental Management Programme (EMPr).

### 7.3 GEOTECHNICAL ASSESSMENT

Refer to Appendix D3 for the Geotechnical Assessment.

### Description:

The topography of the site is gently sloping. The site is underlain by dark grey shale, siltstone and subordinate sandstone (Pp) of the Pietermaritzburg Formation of the Ecca Group, Karoo Supergroup. This is intruded by Post-Karoo Dolerite (Jd). Figure 23 below shows test pits across the site.



**Figure 23:** Map showing the location of the investigation test pits and rock depth.

### Fill Horizon

A fill horizon was intersected in TP1A, the horizon was described as slightly moist, dark olive grey-brown, dense, intact, SILTY fine-grained Sand with abundant shale cobbles and pebbles. The fill horizon extended from a depth of 0.20 m to 0.80 m below Natural Ground Level (NGL).

### Colluvial horizon

A fine textured colluvial horizon was intersected in all trial pits during both investigations. The profiles were described as a dry to slightly moist, grey to greyish-brown, loose, intact, Silty fine-grained sand. The colluvial horizon, generally extended from a depth of 0.00 m to 0.70 m below NGL. The thicker colluvial horizons were generally observed in the southern portion of the site.

### Residual Shale Horizon

A residual shale horizon was intersected in TP1A, TP5A and TP6A. The residual horizon was generally described as slightly moist, orangey-grey brown, loose, intact, silty fine sand with ferricrete nodules. Excavation refusal was encountered in this horizon in TP8. The residual shale horizon generally extended over a depth range of 0.20 m to 1.85 m below NGL.

### Shale Bedrock

Shale bedrock was intersected in all trial pits excavated during both investigations, with the exception of TP8. The shale was described as dark grey to khaki brown, completely to highly weathered, fine grained, highly fractured, very soft to medium hard rock strength bedrock. Excavation refusal was generally encountered in the shale bedrock over a depth range of 0.30 m to 3.00 m below NGL.

### Residual Dolerite Horizon

A residual dolerite horizon was intersected. The horizon was generally described as dry to slightly moist, orangey brown, loose to medium dense, intact, ferruginous silty fine sand. The residual dolerite horizon generally extended over a depth range of 0.40 m to 1.20 m below NGL.

#### Dolerite Bedrock

Dolerite bedrock was only intersected at TP5 in the previous investigation. The dolerite was described as light purplish-grey speckled white stained black and orange, highly weathered, soft rock strength bedrock. The horizon was intersected between 1.20 m and 1.30 m below NGL.

#### Groundwater and Drainage

No groundwater seepage was noted in the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site. The design of the proposed development must incorporate a storm-water management system, as well as a surface cut-off drains on the upslope side of structures to prevent surface ponding. Subsequent ingress into fills and foundations has the potential to cause destabilisation over time, such as differential settlements due to a lowered subsoil strength.

#### School

The school development is located near TP1-TP2 and TP1A-TP2A on the site plan. The majority of this area had shallow bedrock ranging in depth from 0.20 m to 0.70 m. Laboratory testing of the weathered shale bedrock presented a clayey low to medium potential expansiveness. Moderate expansiveness soils may cause problems due to swelling and shrinking consequent upon moisture content changes. Foundations in certain areas of the site may therefore need to be designed to take account of possible moderate seasonal heave and shrinkage movements.

#### Petrol Filling Station

The filling station is located near TP5A on the site plan. The trial pit intersected colluvial, residual shale and highly weathered soft shale bedrock to depths of 0.40 m, 1.00 m and 1.50 m below NGL respectively. Laboratory testing of the residual shale presented low expansiveness.

The stability of the shale bedrock, exposed in cuttings, may potentially pose an issue due to the highly fractured nature of the rock mass observed in some trial pits. If clay infilling is present on joint surfaces as well as the ingress of water along preferential drainage paths, it may potentially result in planar sliding along clay infilled slip surfaces. During the bulk earthworks stage, periodic geotechnical input and assessment of exposed cut faces in shale bedrock is recommended to determine any stability issues.

It is recommended that petrol tanks be placed subsurface in the hard rock strength (unweathered shale bedrock) at 5.00 m NGL. The material at 5.00 m below NGL is hard shale bedrock with recorded wave velocity of 1500 m/s, which is rippable by a D9R Ripper.

#### Shopping centre

The shopping centre is located near TP3, TP4, TP5 and TP3A. Shallow bedrock characterised this portion of the site with rock observed from 0.10 m below NGL. The trial pit intersected colluvial, residual shale and weathered shale. The recommended foundation option is reinforced strip footings, extended through the soil horizons and placed in, or on, the shallow shale at a minimum depth of 1.30 m below NGL. The Estimated Allowable Safe Bearing Pressures (EASBP) of the soft rock shale is in the order of 400kPa.

#### Residential area

The residential area is planned to be near area TP6, TP7, TP8 and TP4A. Laboratory testing of the residual shale presented medium expansiveness. Moderate expansiveness soils may cause problems due to swelling and shrinking consequent upon moisture content changes. Foundations in certain areas of the site may therefore need to be designed to take account of possible moderate seasonal heave and shrinkage movements.

Where the weathered rock occurs at shallow depths (less than approximately 1.5 m) the structures may be founded on reinforced strip footings excavated into the weathered rock. It is assumed the residential structured will be single or double storey.

It is recommended that areas underlain by expansive soils, reinforced strip foundations should be placed at a minimum depth of 1.20 m. Articulation joints should be included at appropriate locations throughout the structures, together with reinforcing around door and window apertures. Mesh reinforcement should be included in the floor slabs. Bearing pressures should be limited to about 400kPa. Floor slabs should be separated from the walls by a 10 mm wide softboard joint to allow for soil movement.

#### Roads and parking

Over most of the site, conventional roadbed preparation (sub-grade, selected layer, base course, surfacing) will suffice, combined with adequate drainage to limit moisture ingress into the subgrades and the layerworks. Soft spots in the roadbed created by de-stumping activities must be compacted to 93% of modified AASHTO density at 1% below OMC. Where roads cross the medium potential expansiveness soil material, the material must be removed (undercut) and replaced with rock or coarse granular fill.

#### **Recommendations:**

- The design of the proposed development must incorporate a storm-water management system, as well as surface cut-off drains on the upslope side of structures to prevent surface ponding.
- Shallow expansive soil can be removed, and non-expansive material imported and compacted to create a stable layer of soil at the building footprint.
- The site is considered suitable for the proposed development, provided that certain design recommendations are considered to address potential geotechnical constraints; potential expansiveness of residual and weathered shale through most of the site.
- All cut and fill slopes must be suitably vegetated with indigenous vegetation as soon as possible after construction to reduce the risk of erosion and instability due to infiltration. Fill must be compacted in layers not exceeding 200 mm or the appropriate layer thickness for the compaction plant, whichever is the lesser.
- Compaction should be to at least 93 % of the Mod AASHTO maximum dry density at optimum moisture content.
- It is recommended that a senior engineering geologist be present to inspect foundation depths.
- General good practice for cuts and fills of less than 2 m height should be followed. Cuts and fills that exceed 2 m should be designed with special considerations applied to them. The fill must be compacted in layers not exceeding 200 mm or the appropriate layer thickness for the compaction plant, whichever is the lesser. Compaction should be to at least 93 % of the Mod AASHTO maximum dry density at optimum moisture content. Provided that the construction is done properly, it is expected that a slope of 1: 1.2 to 1.5 should be adequate for the stability of a constructed slope.
- Foundation recommendations:
  - The presence of shallow colluvial and residual horizons should be taken into account during foundation design.
  - Foundations in certain areas of the site need to be designed to take into account the possible moderate seasonal heave and shrinkage movements.
  - Shale of the Pietermaritzburg Formation is subject to rapid weathering and should not be exposed to natural elements for prolonged periods of time, as it degrades on subaerial exposure by the process of slaking and disintegration.

## 7.4 SOCIO-ECONOMIC ASSESSMENT

### Key findings:

The proposed development is located in Pietermaritzburg, Msunduzi Local Municipality, uMgungundlovu District Municipality, KwaZulu-Natal. The proposed development is fully located within the Msunduzi Local Municipality, the provincial capital. The N3 is one of the busiest motorways in South Africa, and the N3 development corridor is a focal point for development planning in the province. The location of the proposed development is expected to provide a relatively stable business growth environment for the project. The proposed site is located in a well-established, urban suburb. The area is highly developed and relatively affluent, especially in relation to national, provincial and district municipality counterparts.

The Socio-Economic Assessment (Appendix D4) predicted the following socio-economic impacts for the Construction Phase:

- Employment and job creation
- Local economic impact
- Skills development
- Physical intrusion: dust and noise
- Environmental impact
- Traffic impact
- Impact on services: electricity and water
- Population influx: intended and unintended
- Safety and security

The Socio-Economic Assessment predicted the following socio-economic impacts for the Operational Phase:

- Employment and job creation
- Local economic impact
- Impact on local competitor business
- Impact on traffic
- Environmental impacts
- Safety and security impacts

During the construction phase of the proposed development, it is anticipated that a total investment of R400 million spread evenly across a 5-year period will be made to complete the development. The project is likely to support 273 jobs per year and a total economy-wide impact of 397 jobs. The economic multiplier effect indicates that this initial economic stimulus has a roll-on effect where direct expenditure is reinvested in the economy multiple times – having a multiplied impact of a far greater magnitude. The multiplier effect is inclusive of the direct impacts (purchases, salaries and remuneration), indirect impacts (relating to downstream suppliers of products and services) and induced impacts (increased expenditure by households as a result of increased disposable income). A combination of these impacts constitutes the total economic impact.

A total of 465 permanent jobs are expected to be created and sustained during the operational phase. This is divided up into 300 jobs for Phase 1 which includes the filling station, shopping centre and restaurant. Approximately 50 – 60 jobs are expected to be created for the operation of the school in Phase 2. Phase 3 is expected to create approximately 115 jobs for the residential sector. The job creation indicated for the residential sector is for unskilled domestic staff supporting households in their homes and gardens. The estimate is conservatively based on one employee per three households, 350 residential lots within the middle-income earning bracket.

Additional jobs supported include artisans and service sectors which will support households, the school and the commerce precinct. The employment opportunities expected to be created by this project are significant. Their significance is augmented by the fact that they are long-term and mixed

in skill level, providing a wide range of opportunities for people in the area. The impact of long-term job creation is a significantly positive one. The level to which this will be realised by the 220 Murray Road development, is entirely reliant on the appropriateness of the entities for the area, local and expanding local economy. A high probability of the employment and job creation as a result of the development is realised.

The initial investment is expected to result in an economy wide impact of R861 million output / sales and a contribution of R305 million to GDP over the project period. The assumption made is that all monies are spent within the South African economy. Therefore, it is clear that the significant economic stimulus of the Murray Road development construction will have a significant stimulus on the local area.

There is some risk to social disruption in the area with loitering, increased littering and possible anti-social behaviour associated with an influx of an itinerant labour force. Beyond the building structures on the site is open grassland much of which has been previously cultivated but has been neglected and become generally overgrown with little indigenous flora and fauna and including substantial stands of weed and alien invasive vegetation, and the boundary fences have been equally neglected.

Traffic impacts may be experienced by local commuters as construction related traffic adds to existing volumes on limited access points. Dust and noise intrusions are a consequent feature of any infrastructure development, the proposed site is situated at sufficient distance from potentially affected local residents so as to mitigate these impacts significantly. The nature of the proposed development will undoubtedly impact the immediate environment and sense of place, it is anticipated that this will ultimately lead to rehabilitation and a positive outcome. Increased human presence on the property during the construction phase may present some security risk but an effective perimeter barrier together with vigilant access management should mitigate this substantially.

The operational phase of this development is expected to be long term. The economic contributions through job creation and local economic development are especially significant given the need for economic growth and employment opportunities in the area. There will be opportunities to continuously train and develop employees through the normal processes of customer service and company on-boarding. The positive impact of local economic stimulus is expected to be significant for the area and complementary to existing economic activity in the nearby surrounds. Negative impacts are believed to be manageable given the appropriate application of mitigation measures and the proposed development appears to offer opportunities for job creation and economic benefit to the area.

#### **Recommendations:**

The proposed development of a mixed-use property at 220 Murray Road appears well aligned to the local precinct and to the greater Pietermaritzburg district spatial development plans. The residential component fits well within the Lincoln Meade and Hayfields ambit which is substantially similar. Augmenting this, the conveniences offered by retail and fuel outlets should encourage further development and add velocity to the thrust to grow the district south and east of greater Pietermaritzburg and to encourage further development of this corridor.

Inconveniences will accrue from the construction phase of this development but indications are that these will be substantially mitigated. Developers are encouraged to consider all mitigation and augmentation strategies to avert negative social and economic impacts and to capitalize on opportunities. The opportunity to rehabilitate a degraded property and to contribute to improved security and the environmental appeal of the property are anticipated. Opportunities for job creation and local economic stimulus are compelling arguments in favour of the proposed development. Long-term positive social impacts are anticipated from the proposed development.

Although rising property price is identified as a negative impact, improved property value is largely considered to be socially desirable, especially for those who own property in an area and its surrounds. The impact of improved property value reveals a moderately high rating, as the increased value is anticipated to be moderate and limited in extent. Augmentation will certainly result in greater positive social outcomes.

## 7.5 HERITAGE IMPACT ASSESSMENT

Refer to Appendix D5 for the Heritage Impact Assessment (HIA).

### Key Findings:

- Historical buildings are present on sight which are more than 60 years old.
- Each of the buildings have been assigned a recommended grading based on the grading system of the National Heritage Resources Act (NHRA) Chapter 1:3(3). Refer to Table 9 for the recommended heritage grading of all the buildings.
- Construction work may expose material and it is pointed out that the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008) requires that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.
- The geology of the study area grades from Dwyka Group tillites to Pietermaritzburg Formation shales of the Ecca Group, both of the Karoo Supergroup. Neither are considered to be paleontologically sensitive. Consequently, no further paleontological studies are recommended.
- There are no graves on the footprint. Some of the associated structures on the site are older than 60 years and have heritage value.

**Table 9:** Recommended Heritage Grading (Source: Lindsay Napier Architect)

Building number	Building name/ current use	Estimated date of construction and age	Proposed grading	Mitigation
1.	House	1897-1970 52-122yrs	3C	Integrate into the development – change of use
2.	Stone storeroom "the armoury"	100-120yrs	3C	Retain with buffer
3.	Stone storeroom "the dog house"	100-120yrs	3C	Retain with buffer
4.	The dairy	60-70yrs	NCW	
5.	The stables and cattle sheds	60-70yrs	NCW	
6.	Carports	60-70yrs	NCW	
7.	Outbuilding 1	60-70yrs	NCW	
8.	Outbuilding 2	60-70yrs	NCW	
9.	Outbuilding 3	60-70yrs	NCW	
10.	Dip tank	60-70yrs	NCW	
11.	Gate and gate posts	100-120yrs	3C	Retain or relocate within the development
12.	Water reservoir	70-120yrs	NCW	

### Recommendations:

- Materials should be salvaged and re-used in a new development. It is recommended that the materials be used in the urban design, landscaping and entrances to connect the visitor or new resident/ user to the land and its previous use.
- It is recommended that the names of the farm and the settlers who have tended the land be recognized in the planning of the development.



- Buildings 2 (Stone storeroom “*the armoury*”) and 3 (Stone storeroom “*the dog house*”) should be retained only if they can be retained with a buffer zone (for protection during construction) that can be incorporated as a park-like setting.
- Existing planting and vegetation (including exotics) are to be considered in the development, given the history of the introduction of exotic garden species to the area by Victorians.
- Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable manner and in compliance with heritage legislation.
- If any objects are identified during construction activities, Amafa must be contacted immediately and all development must be halted until further notice. Amafa can be contacted on 033 394 6543.

It should be noted that a permit application to The Amafa and Research Institute will be necessary for the demolition or alteration of structures. Full site development plans showing the proposed demolitions and location of new development in relation to existing structures will be required.

## 7.6 PALAEOLOGICAL IMPACT ASSESSMENT

Refer to Appendix D6 for the Palaeontological Impact Assessment.

### Key Findings:

- The proposed site for the development is no longer in a natural state but has undergone decades of transformation through various human activities.
- Pipelines and canals will need to be laid for this development, and the bedrock where these trenches will be dug has the potential to yield some plant fossils.
- Drainage systems for such a development need to be robust, efficient and watertight in order to reduce the possibility of ground and surface water contamination via seepage or leakage into the bedrock and/or adjacent watercourse where heritage-related material may be present.
- The proposed development is likely to have little to no impact on paleontological resources and no further paleontological investigation is required.
- From a paleontological perspective there is no reason why the project cannot proceed.

### Recommendations:

- If any paleontological or heritage-related material were to be unearthed during construction activities developers are reminded that according to the National Heritage Resources Act 1999 (Act No.25) and KwaZulu-Natal Heritage Act 2008 (Act No. 4), work must immediately cease and the “*Chance Find Protocol*” outlined in the PIA, should be followed.
- This is to ensure that developments comply with the law, and to ensure that a rare object / fossil stands a good chance of being recorded and/or relocated, before being damaged or destroyed by site activities.

## 7.7 STORM WATER MANAGEMENT PLAN

Refer to Appendix D7 for the Storm Water Management Plan.

### Key Findings:

- The proposed development will transform the site to buildings, roofed areas, parking, canopy, access roads, and other hardened surfaces. This will increase the surface runoff of the entire property during rainstorm events.
- Potential exists for high intensity rainstorm events to cause erosion.

- The site generally slopes in an easterly direction with a natural watershed running in a north easterly direction. There is currently no drainage intervention visible on the site.
- Runoff flows in sheet flow across the site onto the adjoining properties situated on the northern and eastern sides of the site.
- The pre-development runoff is mostly intercepted by natural vegetation.
- Uncontrolled stormwater runoff from the development may cause erosion at the site, particularly within open areas during the construction phase.
- No groundwater seepage was noted in the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site.

The standards for the storm water infrastructure to be installed:

- Storm Type: 1:50 years
- Storm Duration: 30 minutes, peaking at 15 minutes
- Storm Intensity: 165 mm / hour
- On-site Attenuation Period: 30 minutes
- Pre-development conditions coefficient: 0.35
- Post-development conditions coefficient for open areas (non-hardened surfaces): 0.45
- Post-development conditions coefficient for hardened surfaces: 0.85

### **Recommendations:**

The following recommendations are made for the proposed development:

- Clean and contaminated stormwater should be kept separate at all times, where contaminated stormwater is considered any runoff from the forecourt, fuel loading area and outlets from the oil separator.
- It is recommended that all storm water flow from hardened surfaces run-off be conducted to catchpits and manholes and from there conduiting can be done via underground concrete piping except where internal road channel flow is applicable for access roads.
- Run-off from soft areas, grassed areas etc can be conducted via surface sheet flow to catchpits and piping which would be connected to the storm water network.
- The entire sites stormwater flow would be directed to a terminal manhole to be situated in the north-eastern zone, from where it would be a single point of discharge into sheet flow, via a energy dissipator structures, onto the neighbouring property being Portion 1 of Erf 233.
- The final engineering design would take into consideration the area's precipitation values for a 1:50 year storm condition as the major governing factor. All pipe flows, hydraulic structure design and attenuation facilities design would incorporate these values. Structural elements such as gabion baskets, reno mattresses, stone pitching, geofabric membranes etc must be incorporated to eliminate any erosion on the site.

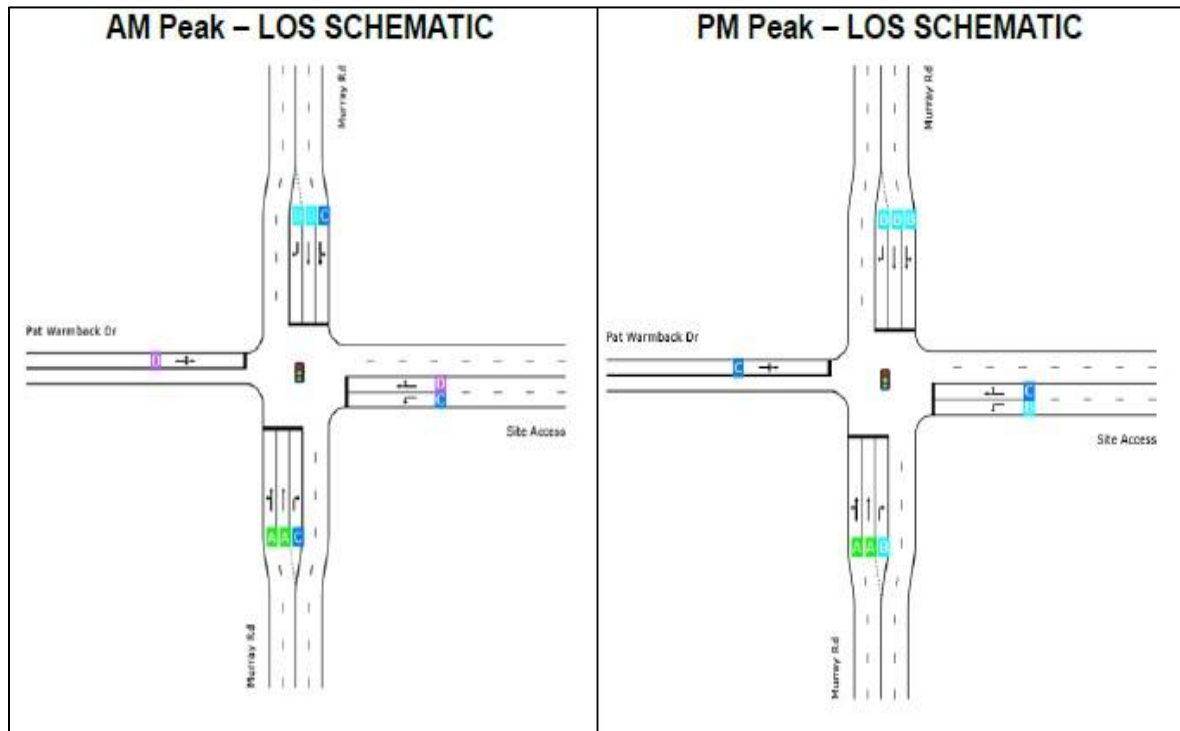
## **7.8 TRAFFIC IMPACT ASSESSMENT**

Refer to Appendix D8 for the Traffic Impact Assessment.

### **Key Findings:**

- The proposed mixed-use development is considered to be a low growth area.
- The TIA assessed both the proposed Murray Road Development and the Hesketh Country Estate, with which construction has already commenced.
- The upgrades are triggered by the development generated traffic from both the Hesketh Country Estate and the proposed Murray Road Mixed-Use development, a cost contribution model would need to be discussed with the Hesketh Country Estate owners.
- Currently there is no access to the site from the adjacent roads. A new access road will be constructed onto the site from Murray Road and will be located directly opposite Pat Warmback Drive. The new access will allow for two-way travel into and out of the site.

- All movements at this intersection will operate at a Level of Service (LOS) A to D during both AM and PM peak hours (refer to Figure 24). The level of service is defined as a qualitative measure of the operational conditions within a traffic stream as perceived by road users
- In terms of the TMH 16 COTO Manual for Traffic Impact Assessments and Site Traffic Assessments, the proposed development must be assessed for a design horizon of 5 years (2027).
- The area near the proposed development is considered a low growth area from a traffic perspective. As such, a 3 % per annum growth rate compounded annually is considered reasonable for this traffic impact assessment.



**Figure 24:** Site access intersection operating at a LOS A to D and configuration (Jinyela).

#### Recommendations:

- Over and above the upgrades recommended in the TIA for the Hesketh Country Estate, the road network will require further upgrades to handle the additional trips from the proposed Murray Road Developments.
- The proposed development will generate additional pedestrian traffic; therefore, it is recommended that sidewalks are provided in the immediate vicinity of the site.
- No road safety concerns were observed during the site visit and traffic count period. Traffic speeds appear to be acceptable on all roads and there was no evidence of pedestrian / vehicle conflict.
- It is expected that the proposed development will not cause the road safety conditions on the surrounding road network to deteriorate in any way.

As part of the proposed development, a new access road will be constructed on Murray Road directly opposite the intersection with Pat Warmback Drive. The Hesketh Country Estate TIA recommended this intersection be upgraded to a single lane roundabout, however given the large volumes of traffic expected as a result of the two proposed developments, it is recommended that this intersection is upgraded to traffic signals instead.

#### Hesketh Country Estate Upgrades:

A new residential development known as the Hesketh Country Estate will be constructed to the north of the Applicant's site on Murray Road. As part of the residential development, the surrounding road network will undergo several upgrades as follows:

#### Murray Road and Grimthorpe Intersection

- Converted from a priority-controlled intersection to a signalised intersection.
- New 60 m left-slip lane on the Murray Road south approach.
- Existing right-turn lane on the Murray Road south approach extended to 60 m.
- New 30 m left-slip lane on the Grimthorpe approach.
- New left-slip created on the Murray Road north approach.
- New 60 m right-turn lane created on the Murray Road north approach.
- The new Hesketh Country Estate access will have two entry and two exit lanes.

#### Murray Road and Hesketh Drive Intersection

- Converted from a priority-controlled intersection to a signalised intersection.
- Existing short right-turn lane will be converted to a shared through and right-turn lane and extended to 50 m on the Hesketh Drive approach.
- Existing left-turn lane converted to a 30 m short left-turn slip lane on the Gladys Manzi Road approach.
- Existing short right-turn lane converted to a full right-turn lane on the Gladys Manzi Road approach.
- New 60 m left-slip lane added to the Murray Road approach.
- Existing shared through and left-turn lane converted to a through only on the Murray Road approach.
- New 150 m exit lane added to the Murray Road approach.

#### Murray Road and Pat Warmback Intersection

- Converted from priority controlled to a roundabout.

The construction of the proposed Murray Road Mixed-Use Development will result in the following upgrades being required to the surrounding road networks:

#### Blackburrow and Hesketh Drive Intersection

- Convert the left-slip lane on the Blackburrow Road approach to a shared left-slip and right-turn lane and extend it to 40 m in length.

It is recommended that the following additional upgrades are implemented at the Hesketh Drive and Murray Road Intersection, to handle the new trips from the two proposed developments:

#### Hesketh Drive and Murray Road Intersection (Upgraded)

- A new 125 m through lane must be added to the Hesketh Drive approach.
- A new 125 m exit lane must be added to the Hesketh Drive approach.
- Convert the proposed 60 m left-slip lane to a full shared through and left-slip lane.
- Convert the proposed 150 m exit lane to a full exit lane.

#### Murray Road, Pat Warmback Drive and Site Access Intersection

- A new full lane which allows through and left-turn movements on the Murray Road south approach will be required.
- A new 60 m right-turn lane on the Murray Road south approach will be required.
- A full exit lane on the Murray Road south approach will be required.
- A new full lane which allows through and left-turn movements on the Murray Road north approach will be required.
- A new 60 m right-turn lane on the Murray Road north approach will be required.

- A full exit lane on the Murray Road north approach will be required.

## 7.9 BULK INTERNAL SERVICES AND ENGINEERING REPORT

Refer to Appendix D9 for the Bulk and Internal Services Engineering Report:

### Key Findings and Recommendations:

#### Refuse

- The storage area should be bunded to prevent animals from accessing it and resulting in litter. The refuse collection area must be provided with a drain to wash it out, linked to the sewer system. It is advised that recycling be practiced where possible, to practice and encourage green habits, such as recycling glass, paper, tins and plastic bottles.
- Refuse will be removed as part of the local Msunduzi Municipalities responsibility as a rated property.

#### Bulk Sewer

- There is bulk sewerage infrastructure adjacent to the site that the developer can link into, which is located along Murray Road.
- The proposed development sewerage disposal will need to be connected to the existing municipal system by an additional 160 mm diameter pipe with 110 mm connection points. Refer to Figure 25 for the existing municipal sewer line.
- The development is expected to produce a total effluent volume of 672 475 litres / day.

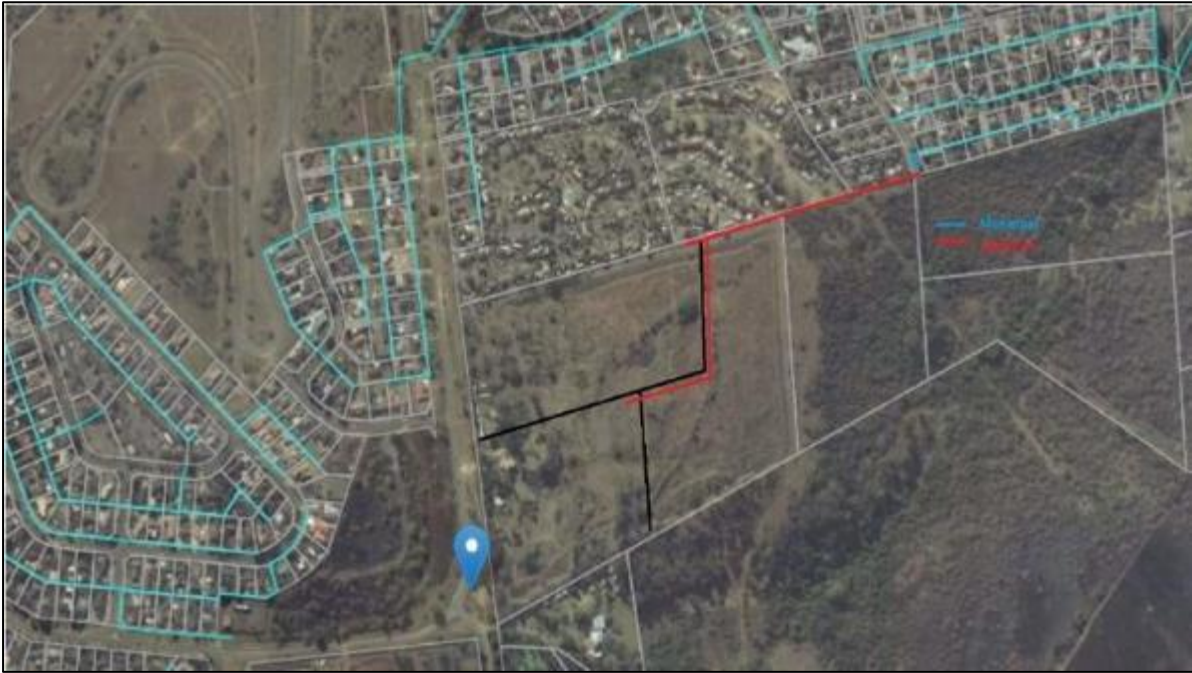
#### Internal Reticulation

- The internal sewer reticulation serving the development will comprise of a municipal waterborne gravity sewer system which leads to the nearby Municipal Waste Water Treatment Works. This connection will need to be extended to adequately accommodate the additional flows that would arise from the proposed development.
- It is recommended that the kitchen outlets from the restaurant are fitted with fat and grease traps in terms of the building regulations.

The standards for the internal sewer reticulation to be installed for the development can be summarised as follows:

- Pipe material: uPVC
- Pipe Diameters: 110 or 160 mm
- Minimum Grade: 1:60
- Maximum Grade: 1:10

The total estimated sewerage disposal for the entire development is reflected in Table 10.



**Figure 25:** Existing municipal sewer line

**Table 10:** Total estimated sewerage disposal for the development (Loretz and Associates CC)

Portion	Description	Peak flow (l/day)	Flow (l/s)	Pipe size (mm)	Velocity (m/s)
1	Education - learners	95 640	1.1069	110	Pipe gradients satisfy minimum velocity
2	Residential	546 480	6.3250	110	
3	Retail stores	25 685	0.2973	110	
	Restaurants	2 451	0.0284	110	
	Filling station	2 219	0.0257		
4	Roads	-	0.0	-	-
5	Roads	-	0.0	-	-
		<b>672475</b>	<b>7.7833</b>	<b>160</b>	<b>0.9</b>

**Bulk Water Supply**

The expected water demand for the proposed development is 507 967 litres per day and is represented in Table 11. The existing municipal water distribution system is located within the road reserve adjacent to the current property. There will need to be two connections of the existing line, which shall be extended and connected to a water meter on each portion.

**Table 11:** Total estimated daily water demand for the development (Loretz and Associates CC)

Portion	Description	Peak flow (l/day)	Flow (l/s)	Flow (m <sup>3</sup> /h)	Pipe size (uPVC, Class 6)	Velocity (m/s)	Main take off pipe (mm)	Meter size (mm)
1	Education - learners	47 820	0,5535	1,993	32	1,0	supplied off PTN 2 110	25
	Sports facilities	32 381	0,3748	1,349	25	1,1		
2	Residential	386 100	4,4688	16,088	90	0,8	110	50
	Sports ground	15 000	0,1736	0,625	20	0,8		
3	Retail stores	12 842	0,1486	0,535	25	0,6	90	20
	Restaurants	5 514	0,0638	0,230				
	Filling station	1 110	0,0128	0,046	16	0,9		
	Car wash	7 200	0,0833	0,300	20	0,9		
4	Roads	-	0,0	0,0	-	-	-	-
5	Roads	-	0,0	0,0	-	-	-	-
	<b>Total water demand</b>	<b>507967</b>	<b>5,8792</b>					
	Fire demand		25		110	25,0		-

### Internal supply

- The internal water reticulation will be limited to a supply to the school, sports facilities, residential area, shopping centre, filling station, restaurants, and car wash.
- According to the CSIR Guidelines, a moderate risk area category was selected for the fire design, resulting in a demand of 1 500 litres / minute (25 m/s).
- The firefighting pipes shall be 110 mm uPVC Class 6 which will be able to cater for this demand.
- It is suggested that the firefighting requirements of the development be kept separate from the internal water network, including pipe work, therefore the 110 mm pipe is to be run on a separate reticulation with fire hydrants connecting into it, spaced at 180 m intervals for the moderate risk category.

### Storm Water

#### **Internal Storm Water System**

- The proposed storm water management system must be designed to have minimal impact on the surrounding properties. The design of the attenuation facilities must incorporate an impermeable surface lining to prevent storm water infiltration into the subsoil, especially where such facilities are in the vicinity of buildings.
- This can be achieved by creating attenuation ponds within parking zones for surface run off and tank attenuation systems for roofed areas.
- The use of tanks for roofed areas can be incorporated into a rainwater harvesting system which has added value benefits to the development. Rainwater can be used for car wash facilities, watering gardens etc.

The standards for the stormwater infrastructure to be installed with the proposed development can be summarised as follows:

- Storm Type: 1:50 years
- Storm Duration: 30 minutes, peaking at 15 minutes
- Storm Intensity: 165 mm / hour

- On-site Attenuation Period: 30 minutes
- Pre-development conditions coefficient: 0.35
- Post-development conditions coefficient for open areas (non-hardened surfaces): 0.45
- Post-development conditions coefficient for hardened surfaces: 0.85
- Clean and contaminated stormwater should be kept separate at all times, where contaminated stormwater is considered any runoff from the forecourt, fuel loading area and outlets from the oil separator.
- It is recommended that all storm water flow from hardened surfaces run-off be conducted to catchpits and manholes and from there conduiting can be done via underground concrete piping except where internal road channel flow is applicable for access roads.
- Run-off from soft areas, grassed areas etc can be conducted via surface sheet flow to catchpits and piping which would be connected to the storm water network.
- The entire sites stormwater flow would be directed to a terminal manhole to be situated in the north-eastern zone, from where it would be a single point of discharge into sheet flow, via a energy dissipator structures, onto the neighbouring property being Ptn 1 of Erf 233.
- The final engineering design would take into consideration the area's precipitation values for a 1:50 year storm condition as the major governing factor. All pipe flows, hydraulic structure design and attenuation facilities design would incorporate these values. Structural elements such as gabion baskets, reno mattresses, stone pitching, geofabric membranes etc must be incorporated to eliminate any erosion on the site.



## 8. ASSESSMENT OF ENVIRONMENTAL IMPACTS

In order to assess potential environmental issues associated with the proposed development, each aspect addressed in Section 5 and 6 have been given a qualitative rating in relation to its environmental impact (Table 12). Each aspect has been divided into a number of different classes, each of which has been assigned various criteria.

Where relevant, the following methods have been used to predict the characteristics of identified impacts:

- Professional judgement;
- Quantitative mathematical models;
- Experiments and physical models;
- Physical or visual simulations or maps (including GIS tools);
- Case studies; and
- Past experience.

**Table 12:** Summary of aspects used for assessing environmental impacts

ASPECT	CLASS	CRITERIA
<b>NATURE OF IMPACT</b>	Positive	The impact on the environment will be positive.
	Negative	The impact on the environment will be negative.
	Direct	The impact is caused directly by the activity and generally occurs at the same time and at the place of the activity.
	Indirect	The impact induces changes that may occur as a result of the activity.
	Cumulative	The impact is a result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities.
<b>OCCURRENCE OF IMPACT</b>	Construction	The impact will happen during construction.
	Operation	The impact will happen during operation.
	Decommissioning	The impact will happen during decommissioning.
	Immediate	The impact will happen immediately
	Delayed	There will be a delay in the impact occurring.
<b>PROBABILITY OF IMPACT OCCURRING (With mitigation)</b>	Definitely	The impact will definitely occur even with mitigation (100%).
	Likely	It is likely that the impact will occur (60%-99%).
	Fair	There is a fair chance that the impact will occur (30% -59%).
	Unlikely	It is unlikely that the impact will occur (0% - 29%)
<b>REVERSIBILITY (with mitigation)</b>	Possible	It is possible to reverse the impact.
	Partly	It is partly possible to reverse the impact.
	Not possible	It is not possible to reverse the impact.
<b>EXTENT OF IMPACT (With mitigation)</b>	Site	The impact will be limited to the site.
	Local	The impact will affect the local area (within a radius of 40km).
	Provincial	The impact will affect areas beyond the site but within the boundaries of KwaZulu-Natal.
	National	The impact will affect areas beyond the province but within the boundaries of South Africa.
<b>DURATION (With mitigation)</b>	Short-term	0-5 years (construction phase).
	Medium-term	5-40 years (construction and operation).

	Long-term Permanent	(>40 years). Permanent damage to the environment.
<b>SIGNIFICANCE OF IMPACT WITHOUT MITIGATION</b>	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.
<b>SIGNIFICANCE OF IMPACT POST- MITIGATION</b>	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.

Table 13 lists potential impacts associated with the proposed development, and details what mitigation measures should be taken to minimize these impacts.

**Table 13:** Assessment of potential impacts associated with the development:

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<p><b>LOCAL ECONOMY AND EMPLOYMENT OPPORTUNITIES / NEED AND DESIRABILITY</b></p> <ul style="list-style-type: none"> <li>• Job creation.</li> <li>• Skills transfer.</li> <li>• Increase in services.</li> <li>• Increased rates base.</li> <li>• Prime location for a shopping centre, filling station, school, residential area and associated facilities.</li> <li>• During the construction phase, an investment of R400 million spread over a 5-year period (R80 million per year) is anticipated.</li> <li>• R80 million investment per annum will result in approximately 273 jobs / year.</li> <li>• A total economy-wide impact of 397 jobs is anticipated (Table 6).</li> <li>• To unlock positive impacts in the area, local labour will need to be hired where possible.</li> <li>• Job creation is a potentially high positive impact due to the nature of the area and the vital need for job creation.</li> </ul>	<ul style="list-style-type: none"> <li>• Local business operations which might be impacted by elements of the proposed development will need to continue to find proactive ways in which to build their brands and attract customers.</li> <li>• Business owners should be reassured that any potential loss of customers is likely to be of a short-term nature as the area continues to grow and the residential population of Hayfields and Lincoln Meade increases.</li> <li>• It is essential that local businesses and unemployed people in the immediate area must be considered first, before employing labour and services from further afield.</li> <li>• The use of local contractors, suppliers and service providers must be undertaken.</li> </ul>	Positive Direct	.	Definite	Definite	.	.	Local and potentially provincially	.	Short-term during Construction. Medium-term during Operation.	Short-term during Construction. Medium-term during Operation.	High Positive	High Positive
<p><b>PLANNING INITIATIVES</b></p> <ul style="list-style-type: none"> <li>• The proposed development complies with all of the above Planning Initiatives, most notably job creation, infrastructure development and economic growth.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>	Positive Indirect	.	Definite	Definite	.	.	Local, provincial	.	Medium-term & long-term	Medium-term & long-term	High Positive	High Positive

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES</b> HIA: <ul style="list-style-type: none"> <li>Historical buildings are present on sight which are more than 60 years old.</li> <li>Each of the buildings have been assigned a recommended grading based on the grading system of the National Heritage Resources Act (NHRA) Chapter 1:3(3). Refer to Table 8 for the recommended heritage grading of all the buildings.</li> <li>Construction work may expose material and it is pointed out that the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008) requires that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.</li> <li>The geology of the study area grades from Dwyka Group tillites to Pietermaritzburg Formation shales of the Ecca Group, both of the Karoo Supergroup. Neither are considered to be paleontologically sensitive. Consequently, no further paleontological studies are recommended.</li> <li>There are no graves on the footprint. Some of the associated structures on the site are older than 60 years and have heritage value.</li> </ul>	HIA: <ul style="list-style-type: none"> <li>Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable manner and in compliance with heritage legislation.</li> <li>The contractor and his / her labourers will need to be educated in order to identify valuable cultural / historical resources.</li> <li>If any objects are identified during construction activities, Amafa must be contacted immediately and all development must be halted until further notice. Amafa can be contacted on 033 394 6543.</li> <li>Materials should be salvaged and re-used in a new development. It is recommended that the materials be used in the urban design, landscaping and entrances to connect the visitor or new resident/ user to the land and its previous use.</li> <li>It is recommended that the names of the farm and the settlers who have tended the land be recognized in the planning of the development.</li> <li>Buildings 2 (Stone storeroom "the armoury") and 3 (Stone storeroom "the dog house") should be retained only if they can be retained with a buffer zone (for protection during construction) that can be incorporated as a park-like setting.</li> <li>Existing planting and vegetation (including exotics) are to be considered in the development, given the history of the introduction of exotic garden species to the area by Victorians.</li> </ul>	Negative Indirect	Highly likely	Unlikely	Unlikely	Possible	Possible	Site & local	Site & local	Medium-term	Medium-term	Med	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<p>PIA:</p> <ul style="list-style-type: none"> <li>The proposed development is situated within an area where the underlying geology is given a moderate paleo-sensitivity rating on the South African Heritage Resources Agency Map.</li> <li>Several potentially fossiliferous outcrops may have been weathered and eroded over millennia, buried under younger deposits such as alluvial and colluvial sediments, or capped by topsoil.</li> <li>Paleontologically sensitive bedrock may have been metamorphosed through its contact with intrusive lavas, damaging or destroying fossil specimens along the contact zone.</li> <li>Only if well-preserved, more complete plant material emerges from bedrock, does the significance of the site increase and mitigation measures may be necessary to reduce the impact such a development could have on the fossil location.</li> <li>Construction work may expose material and it is pointed out that the south African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008) require that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.</li> </ul>	<p>PIA:</p> <ul style="list-style-type: none"> <li>If any paleontological or heritage-related material were to be unearthed during construction activities, landowners and / or the developers they appoint are reminded that, according to the National Heritage Resources Act 1999 (Act No. 25) and KwaZulu-Natal Heritage Act 2008 (Act No. 4), work should immediately cease and the "chance Find Protocol" outlined in the PIA (Appendix D6), should be followed.</li> <li>This is to ensure that developments comply with the law, and to ensure that a rare object / fossil stands a good chance of being recorded and / or relocated, before being damaged or destroyed by site activities.</li> </ul>												

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>SURROUNDING LANDUSE AND AESTHETICS</b> <ul style="list-style-type: none"> <li>The proposed development will alter the land where the infrastructure is established, transforming it to a built environment.</li> <li>The proposed development will have visual impacts particularly to road users on Hesketh Drive and Murray Road.</li> <li>The proposed development will alter the sense of place of the immediate area.</li> </ul>	<ul style="list-style-type: none"> <li>Wherever possible, the proposed development must make use of natural building materials and architectural styles that blend into the surrounding landscape.</li> <li>The use of highly reflective building materials such as corrugated iron and glass must be minimised where possible.</li> <li>Only locally indigenous plant species are to be used for landscaping around the proposed development.</li> <li>An Alien Vegetation Control Programme must be implemented.</li> <li>The Environmental Management Programme (EMPr) must be implemented (Appendix E).</li> <li>Noise and dust impacts must be controlled.</li> <li>All lighting must face downwards.</li> </ul>	Negative, Direct and Indirect	Partly	Definitely	Fair	Not Possible	Possible	Site & local	Site & local	Long-term	Medium-term	High	Low
<b>TRAFFIC, ROADS AND ACCESS</b> <ul style="list-style-type: none"> <li>In terms of the TMH 16 COTO Manual for Traffic Impact Assessments and Site Traffic Assessments, the proposed development must be assessed for a design horizon of 5 years (2027).</li> <li>The area near the proposed development is considered a low growth area from a traffic perspective. As such, a 3 % per annum growth rate compounded annually is considered reasonable for this traffic impact assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Over and above the upgrades recommended in the TIA for the Hesketh Country Estate, the road network will require further upgrades to handle the additional trips from the proposed Murray Road Developments.</li> <li>The proposed development will generate additional pedestrian traffic; therefore, it is recommended that sidewalks are provided in the immediate vicinity of the site.</li> <li>No road safety concerns were observed during the site visit and traffic count period. Traffic speeds appear to be acceptable on all roads and there was no evidence of pedestrian / vehicle conflict.</li> <li>It is expected that the proposed development will not cause the road safety conditions on the surrounding road network to deteriorate in any way.</li> </ul>	Negative Direct	Highly Likely	Definitely	Fair	Not Possible	Possible	Site and Local	Site and Local	Medium-Term to Long-Term	Medium Term	High	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<p><b>CONSTRUCTION ACTIVITIES, NOISE AND DUST</b></p> <ul style="list-style-type: none"> <li>The construction phase will generate noise from the use of construction machinery and increased traffic (construction vehicles) and dust.</li> <li>This impact however, is only a temporary impact, ending with the completion of the construction phase.</li> <li>During the operational phase the development may generate noise resulting from vehicles using the filling station, shopping centre (and other facilities).</li> <li>Despite the anticipated generation of noise, it is unlikely that the production of noise and dust from construction activities as well as noise during the operational phase will have a significantly negative impact on neighbouring landowners.</li> </ul>	<ul style="list-style-type: none"> <li>The developer must undertake to provide 1.8 m high shade cloth around the entire construction site, prior to commencing with construction.</li> <li>It is recommended that activities of construction vehicles, building contractors and labourers should be limited to working hours between 7.30 am and 5 pm during weekdays. Furthermore, construction on weekends and public holidays should not be permitted.</li> <li>Machinery and equipment must be maintained and regularly serviced to ensure that unnecessary noise is prevented. Workers on site must not create unnecessary noise such as hooting or shouting.</li> <li>Dust from the construction site must be managed in an efficient and environmentally sensitive manner (e.g. dampening, stockpile covered if not used for more than 3 weeks).</li> <li>To minimise noise during the operational phase, the development is to be operated in a manner that does not result in any negative impacts to the adjacent residents, i.e. excess noise, hooting, loud music at the facility is to be prohibited.</li> <li>Labour must not create unnecessary noise such as hooting or shouting.</li> </ul>	Negative Direct	Partly	Definitely	Fair	Partly	Partly	Site & local	Site & local	Short-term during Construction. Medium-term during Operation.	Short-term during Construction. Medium-term during Operation.	Medium	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>SECURITY</b> <ul style="list-style-type: none"> <li>Management of construction labourers is often problematic. Potential exists for labourers to trespass onto adjoining properties.</li> <li>Crime in the area could increase during the construction phase, as a result of criminals posing as construction workers, or people seeking employment on the site.</li> <li>Crime in the area may also potentially increase during the operational phase, as a result of an influx of people making use of the facilities offered by the development.</li> <li>Criminals may target the facility's retail outlets.</li> </ul>	<ul style="list-style-type: none"> <li>24-hour CCTV must be installed through the development.</li> <li>Construction labourers must be sourced from surrounding communities.</li> <li>All construction labourers must remain within the boundaries of the construction site at all times.</li> <li>Access onto and off the site during construction must be controlled by a register system. This includes visitors.</li> <li>All restricted areas of the property must be designated with appropriate warning signs.</li> <li>During the operational phase the facility operators must be responsible for employing a security firm to provide security at the facility if deemed necessary.</li> </ul>	Negative Direct	Highly likely	Fair	Unlikely	Partly	Possible	Local	Local	Short-term	Short-term	High	Low
<b>CORONA VIRUS (COVID-19) PANDEMIC</b> <ul style="list-style-type: none"> <li>Both temporary and permanent jobs will be created during the planning, construction and operational phase of the proposed project.</li> <li>Increased employment opportunities will result in positive knock-on effects of the surrounding population and the local economy.</li> <li>As such, although the pandemic was, the proposed project will play a beneficial role in alleviating its impacts within the surrounding area.</li> </ul>	<ul style="list-style-type: none"> <li>Local businesses and unemployed people in the immediate area must be considered first, before employing labour and services from further afield; and</li> <li>Where possible, any additional employment opportunities on the farm must include labour from surrounding local communities.</li> </ul>	Negative Direct and Indirect	Likely	Definitely	Unlikely	Not possible	Partly	Site & Local	Site & Local	Medium-term	Short-term	Low	Low



DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>TOPOGRAPHY</b> <ul style="list-style-type: none"> <li>The site exhibits a flat to gently sloping gradient. In general, the site is considered stable and suitable for the intended development, provided the presence of shale bedrock is allowed for.</li> </ul>	<ul style="list-style-type: none"> <li>The storm water management plan (Appendix D7) must incorporate a storm water management system, as well as a surface cut-off drain on the upslope side of structures to prevent surface ponding.</li> <li>Subsequent ingress into fills and foundations has the potential to cause destabilisation over time, such as differential settlements due to a lowered subsoil strength.</li> <li>The shallow expansive soil can be removed, and non-expansive material imported and compacted to create a stable layer of soil at the building footprint.</li> </ul>	Negative Direct	Likely	Definitely	Unlikely	Partly	Possible	Site & local	Site & local	Medium-term	Short-term	High	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<p><b>CLIMATE</b></p> <p>The purpose of the Stormwater Management Plan (Appendix D7) is to:</p> <ul style="list-style-type: none"> <li>Achieve compliance with the relevant standards, regulations and policies such as SANS 10400 Part R and local municipal requirements.</li> <li>Protection of the public and property of flood hazards.</li> <li>Responsibility towards natural environmental preservation and the preservation of natural resources.</li> </ul> <p>Potential impacts associated with the proposed development include:</p> <ul style="list-style-type: none"> <li>The proposed development will transform the site to buildings, roofed areas, parking, canopy, access roads, and other hardened surfaces. This will increase the surface runoff of the entire property during rainstorm events.</li> <li>Potential exists for high intensity rainstorm events to cause erosion.</li> </ul>	<ul style="list-style-type: none"> <li>The site must be developed in congruence with the contours as far as possible.</li> <li>The design of the attenuation facilities must incorporate impermeable surface linings to reduce water ingress into the substrate.</li> <li>Tank attenuation can include rainwater harvesting system which would be beneficial to the development.</li> <li>Structural elements such as gabion baskets, etc. can be incorporated in the design in order to eliminate erosion on the site.</li> <li>The preliminary estimate of attenuation required for the site is 2 235 m2 which could be attenuated in parking zones for surfaced areas and in tanks for roofed areas.</li> </ul>	Negative Direct and Indirect	Partly	Likely	Fair	Partly	Possible	Site & Local	Site & Local	Medium-term	Short-term	High	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>CLIMATE CHANGE</b> <ul style="list-style-type: none"> <li>The proposed development may contribute to climate change to a minor extent through energy usage, water usage and waste generation during the construction and operational phases.</li> <li>The proposed development is not likely to be largely directly impacted by climate change as it is removed from coastal areas, watercourses and floodline areas and is not impacted by temperature changes.</li> <li>The proposed development plays an important role in building resilience to climate change by providing economic stimulus, creating employment opportunities and providing a positive economic benefit to the area.</li> </ul>	<ul style="list-style-type: none"> <li>All development infrastructure must promote the efficient use of energy, water and limit wastage of resources.</li> <li>Waste generation must be minimised and waste must be managed in an environmentally responsible manner and in accordance with the waste management hierarchy. The EMPr (Appendix E) outlines specific waste management mitigation measures which comply with the waste management hierarchy.</li> <li>The proposed development / activity / infrastructure must be implemented in accordance with approved layout plans which have been planned and assessed to ensure that locations and layouts of least environmental impact and risk are utilised.</li> <li>The proposed development must ensure the protection of on-site environmental features which thereby protects ecological infrastructure important for building climate change resilience.</li> </ul>	Negative Direct and Indirect	Partly	Likely	Fair	Partly	Possible	Site & Local	Site & Local	Medium-term	Short-term	High	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>GEOLOGY AND SOILS</b> <ul style="list-style-type: none"> <li>The site is underlain by dark grey shale, siltstone and subordinate sandstone (Pp) of the Pietermaritzburg Formation of the Ecca Group, Karoo Supergroup. This is intruded by post-karoo dolerite (Jd).</li> <li>Shale bedrock was intersected. These bedrock units are overlain by Quaternary-aged colluvial and residual horizons. Dolerite was intersected in the eastern portion of the site.</li> <li>The topography of the site is gently sloping. In general, the site is considered stable and suitable for the intended development provided the presence of very shallow shale bedrock is allowed for.</li> <li>General good practice for cuts and fills of less than 2 m height should be followed.</li> <li>No groundwater seepage was encountered in any of the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site. It can be expected, however, that groundwater seepage will occur at the interface between the transported soils and the underlying bedrock, particularly during or after periods of heavy rainfall.</li> </ul>	<ul style="list-style-type: none"> <li>The design of the proposed development must incorporate a storm-water management system, as well as surface cut-off drains on the upslope side of structures to prevent surface ponding.</li> <li>Shallow expansive soil can be removed, and non-expansive material imported and compacted to create a stable layer of soil at the building footprint.</li> <li>All cut and fill slopes must be suitably vegetated as soon as possible after construction to reduce the risk of erosion and instability due to infiltration. Fill must be compacted in layers not exceeding 200 mm or the appropriate layer thickness for the compaction plant, whichever is the lesser.</li> <li>Compaction should be to at least 93% of the Mod AASHTO maximum dry density at optimum moisture content.</li> <li>It is recommended that a senior engineering geologist be present to inspect foundation depths.</li> </ul>	Negative Direct	Partly	Definitely	Unlikely	Not possible	Possible	Site	Site	Medium-term	Short-term	High	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<ul style="list-style-type: none"> <li>• Shallow bedrock was encountered over majority of the site. The presence of shallow colluvial and residual horizons should be considered during foundation design.</li> <li>• Shale of the Pietermaritzburg Formation is subject to rapid weathering and should not be exposed to natural elements for prolonged periods of time, as it degrades on subaerial exposure by the process of slaking and disintegration.</li> </ul>													

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>GROUND WATER</b> <ul style="list-style-type: none"> <li>The site slopes in an easterly direction with a natural watershed running in a north easterly direction. There is currently no drainage intervention visible on the site.</li> <li>Runoff flows in sheet flow across the site onto the adjoining properties situated on the northern and eastern sides of the site.</li> <li>The pre-development runoff is mostly intercepted by natural vegetation.</li> <li>Uncontrolled stormwater runoff from the development may cause erosion at the site, particularly within open areas during the construction phase.</li> <li>No groundwater seepage was noted in the trial pits and groundwater seepage is not expected to be problematic at shallow depths on this site.</li> </ul>	<ul style="list-style-type: none"> <li>The design of the stormwater management system must incorporate temporary on-site attenuation facilities that would allow for the slow release of surface run-off in the event of 1:50 year storm conditions.</li> <li>The design of the attenuation facilities must incorporate an impermeable surface lining to prevent stormwater infiltration into the subsoil, especially where such facilities are in the vicinity of buildings. This can be achieved by creating attenuation ponds within parking zones for surface runoff and tank attenuation systems for roofed areas.</li> <li>The use of tanks for roofed areas can also be incorporated into a rainwater harvesting system.</li> </ul>	Negative Direct	Highly likely	Definitely	Unlikely	Not Possible	Possible	Site & Local	Site & local	Long-term	Medium-term	High Negative	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>SURFACE WATER</b> <ul style="list-style-type: none"> <li>No wetland systems were delineated within Erf 234 New England. A historic artificial impoundment was identified in the central portion of the site. This impoundment was infilled by 2010.</li> <li>A channelled valley bottom system was identified to the east of the study site. This system is located approximately 30 m from the most eastern boundary of Erf 234 New England.</li> <li>Soil erosion from the development site and subsequent sedimentation of the channelled valley bottom system.</li> <li>Pollution of the channelled valley bottom system as a result of construction and operational activities.</li> <li>Disturbance of the area allowing for the further encroachment of alien invasive species.</li> <li>Stormwater runoff from hardened surfaces will be contaminated with pollutants and can enter the soil profile and affect water quality if not treated.</li> <li>Any removal of vegetation will lead to a disturbance within the area having a negative impact on the functionality of the vegetation community.</li> </ul>	<ul style="list-style-type: none"> <li>The calculated buffer for the protection of the downstream channelled valley bottom system is 32 m.</li> <li>The proposed development is recommended to occur outside of this 32 m buffer.</li> <li>The filling station must be located as far west as possible to allow for the maximum distance from the edge of the channelled valley bottom system.</li> <li>Indigenous landscaping in open areas needs to be incorporated into the Environmental Management Programme (EMPr).</li> <li>No stockpiling of any materials may take place directly adjacent to the 32 m buffer.</li> <li>Vegetation clearing must be undertaken only in the areas to be developed and must not extend outside of the development footprint and particularly into the channelled valley bottom.</li> <li>There shall be no mining of soil/sand required for construction purposes from the banks of the channelled valley bottom wetland.</li> <li>The use of water storage tanks is recommended to capture rainfall and decrease the runoff of stormwater from the site.</li> <li>An Invasive management programme must be incorporated into the EMPr.</li> </ul>	Negative Direct and Indirect	Highly likely	Definitely	Unlikely	Not Possible	Possible	Site & Local	Site & local	Long-term	Medium-term	High Negative	Low

DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT	MITIGATION	NATURE OF IMPACT	DEGREE TO WHICH IMPACT CAN BE MITIGATED	PROBABILITY OF IMPACT OCCURRING		REVERSIBILITY OF IMPACT		EXTENT OF IMPACT		DURATION OF IMPACT		SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	SIGNIFICANCE OF IMPACT WITH MITIGATION
				WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION	WITHOUT MITIGATION	WITH MITIGATION		
<b>FLORA</b> <ul style="list-style-type: none"> <li>Part of the site is dominated by kikuyu pasture (Pennisetum clandestinum) and was mostly a pasture with negligible biodiversity importance.</li> <li>The site does not have the attributes of a critical ecological corridor and its function as a corridor connection undeveloped land to the east and west should be reviewed.</li> </ul>	<ul style="list-style-type: none"> <li>As many as possible of the planted indigenous trees must be incorporated into the landscape design of the final layout. It is not advisable to move these trees, as the failure rate is high.</li> <li>No species of conservation concern were found on the remainder of the site and none are likely to occur.</li> <li>Locally indigenous plant species must be used for landscaping around the proposed development.</li> <li>Alien Vegetation Removal Plan must be implemented (refer to the EMPr in Appendix E).</li> </ul>	Negative Direct and Indirect	Likely	Definitely	Unlikely	Not possible	Partly	Site & Local	Site & Local	Medium-term	Short-term	Low	Low
<b>FAUNA</b> <ul style="list-style-type: none"> <li>The fauna study indicated low development constraints, with none of the species listed being red data list or species of conservation significance.</li> <li>Most of the species on the site are likely to use a larger area outside of the site for foraging, breeding or other activities, so would be capable of moving in response to development related disturbance.</li> </ul>	<ul style="list-style-type: none"> <li>Should any mammals or other faunal species be observed on site, they must be moved safely to areas near the site.</li> <li>Vehicles and machinery must be kept within the site boundary at all times.</li> <li>An Environmental Management Programme must be implemented (EMPr).</li> </ul>	Negative Direct and Indirect	Likely	Definitely	Unlikely	Not possible	Partly	Site & Local	Site & Local	Medium-term	Short-term	Low	Low



## 9. ENVIRONMENTAL MANAGEMENT PROGRAMME

In terms of the regulations stated in Appendix 4 of Chapter 8 of NEMA GNR 326 (2014, as amended – 2017) an Environmental Management Programme (EMPr) has been compiled (Refer to Appendix E) which contains guidelines for ensuring that all activities associated with the proposed development are carried out in an environmentally responsible and acceptable manner. Specific management objectives and mitigation measures have been specified for the entire duration of the development.

The EMPr is based on the principles of the NEMA as well as the recommendations made in this Report. It identifies roles and responsibilities of management personnel on site and will be used as a framework for environmental compliance monitoring and reporting, should the proposed activity(s) be authorised.

An EMPr is a legally-binding document that contains guidelines with which land owners and contractors must comply, and which must be strictly implemented and regularly monitored. If this is done, it is likely that the majority of the potentially adverse impacts associated with proposed activities can be minimised or prevented. An Environmental Control Officer (ECO) should be appointed by the Applicant to ensure compliance with the EMPr during the construction and operational phases. Should non-compliance occur, this must be brought to the attention of the DEDTEA, who will conduct the required prosecution procedure.

Specific management objectives and mitigation measures are specified in the EMPr for the entire duration of the operation, including the following stages:

- Construction activities;
- Operation of the activity;
- Rehabilitation of the environment; and
- Closure (decommissioning), where relevant.

## 10. POSITIVE AND NEGATIVE IMPLICATIONS OF THE PROPOSED PROJECT

### POSITIVE SUMMARY:

- It is anticipated that a total investment of R400 million will be made to complete the development;
- The project is likely to support 397 jobs during the construction phase and a total of 465 direct and permanent jobs during the operational phase of the filling station, fast-food outlet, shopping centre, school and residential sector;
- The initial investment is expected to result in an economy-wide economic stimulus of R861 million output/sales and a contribution of R305 million to GDP over the project period;
- The project will contribute positively to the local economy and the social environment through spending of capital at local businesses;
- The operational phase is expected to be long term. There will be opportunities to continuously train and develop employees through the normal processes of customers service and company on-boarding. The positive impact of local economic stimulus is expected to be significant for the area and complementary to existing economic activity in the nearby surrounds;
- The development will result in job creation, skills development and income generation during both the construction and operational phase. This in turn will result in skills development, income generation and improved quality of life, and will benefit employed people in the long-term when they seek employment elsewhere;
- A wide range of jobs are expected to be supported by this project due to its nature as a mixed-use development with multiple components;
- The proposed project is anticipated to have a positive impact on the local economy, the direct surrounding areas and as a support to the expansion of development in the vicinity of the site; and
- As the area continues to grow and develop with a greater population density, it is anticipated that the local demand for retail and fuel services will increase proportionally.
- The proposed development will provide opportunity to rehabilitate a degraded property and to contribute to improved security are anticipated.

### NEGATIVE SUMMARY:

- The proposed development of a shopping centre, a fast-food outlet and a filling station in the Lincoln Meade / Hayfields area may have the potential to impact some local businesses in terms of attracting customers away from the existing retail outlets and fuel providers, particularly in the Hayfields area;
- The proposed development may have visual impacts particularly for road users on the Hesketh and Murray Roads;
- Some population influx is expected during the construction phase which is unlikely to produce security issues as professional security service will be employed. Crime in the area could increase as a result of criminals posing as construction workers, or people seeking employment on the site if security is not managed well;
- There will be noise, and potentially dust, during both the construction and operational phases, however it is expected to be minimal, provided the site is policed;
- Potential exists for high intensity rainstorm events to cause erosion at the site, particularly within open areas during the construction phase;
- Failure to control the spread of alien invasive plant species on the development site may result in the spread of invasive vegetation to the adjacent properties;
- The proposed development will alter the land where the infrastructure is established, transforming it to a built environment; and
- The proposed development will alter the sense of place of the immediate area.

## **10.1 POSITIVE AND NEGATIVE IMPLICATIONS OF THE IDENTIFIED ALTERNATIVES**

### **DO-NOTHING**

The “do nothing” option would mean that the proposed development will not be constructed at the proposed development site, and the site will be left in its current undeveloped state, and the vegetation on site would continue to not be maintained.

The establishment of the proposed development will contribute towards local job creation and skills development and will attract investment which is in line with the goals of the Provincial SDF and Local Municipal IDP. The development will benefit the local community by providing employment opportunities during both the construction and operational phases. In addition, healthy competition among the existing and any proposed new shopping centres and new filling stations will ultimately benefit the consumers without adversely impacting the long-term sustainability of the existing stations. The proposed development is located along Murray Road, an ideal location for the proposed filling station, shopping centre, school, restaurant and residential sector.

If the proposed development is not authorised then none of the above-mentioned positive socio-economic impacts would be realised, and the area will remain in its current undeveloped state, with little to no economic opportunities for the area.

### **POSITIVE**

- The potential negative impacts that may result from the proposed development associated with increased traffic, increased stormwater flows, noise and visual impacts and increased crime etc. will not apply.

### **NEGATIVE**

- The “do nothing” option will result in negative economic and social impacts at a local and district municipal level associated with job creation and the provision of economic opportunities for the local area, as well as additional services for the local community.

### **ALTERNATIVE LOCATION OR SITE**

No alternative properties or locations for the establishment of the development have been identified, or investigated, as part of the project. The reason for this is that the Applicant owns the proposed development site which is well positioned for a development of this nature. As such, the establishment of the proposed development on an alternative property is not desirable or feasible for the Applicant.

The current site is suitable for the development in that:

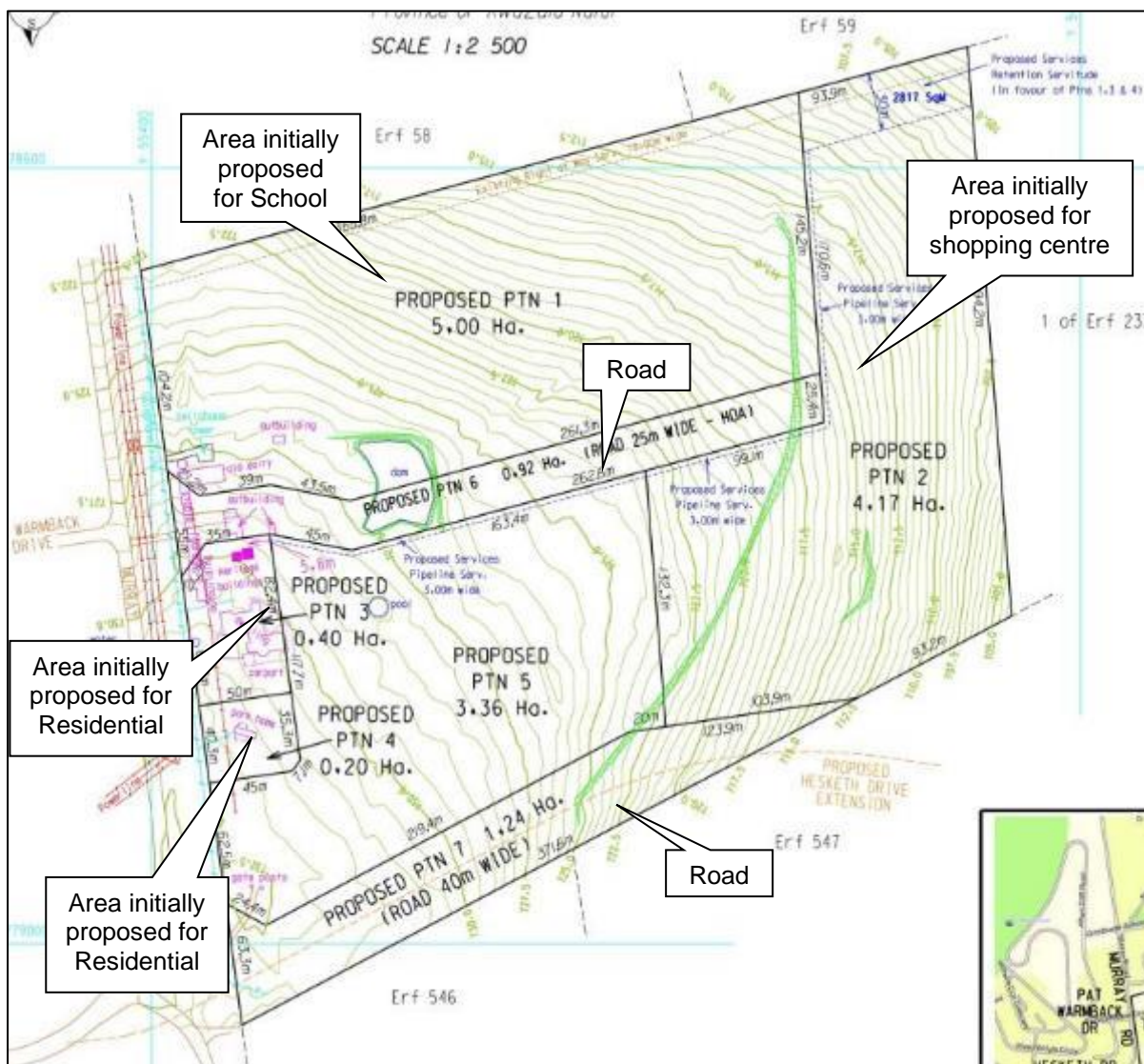
- The site enjoys high visibility from Hesketh Drive and Murray Road.
- The site is adequately sized for the establishment of all proposed infrastructure as well as the provision of adequate parking.
- The site is located within a few minutes from the N3 highway (N3 corridor).
- The site contains no sensitive habitats which would be adversely affected by the proposed development.
- The site is in an area that provides accessibility to various areas; surrounding Hayfields, Lincoln Meade, Scottsville, the N3, Mkondeni and Pietermaritzburg.
- The area is earmarked for future development (i.e. the Hesketh Country Estate to the north of the site).

For these reasons, no alternate properties have been investigated in the Basic Assessment Report.

## ALTERNATIVE LAYOUT OR DESIGN

### Original Layout – Layout 1

The original layout (Figure 26 below) was compiled prior to any specialist work being commissioned. The original layout included an education area, shopping centre, residential area and road. The shopping centre was positioned to the east, the school was positioned to the north, and the residential area was positioned in the south west. The location of the shopping centre would have created traffic issues being the furthest away from the road. As already stated, this was compiled prior to any specialist work conducted on the site, and the fact that access to the shopping centre would mean traffic traveling through the development makes this layout fatally flawed. This layout plan was designed prior to any engineering and architectural plans being made, and just reflects the areas of where everything was proposed to be situated.



**Figure 26:** The original layout (Layout 1), prior to any specialist engagement.

## Amended Layout – Layout 2

Layout 2 (Figure 27) was amended. This layout was amended following consultation with the architects, traffic engineer and Applicant. There was a greater need for a larger residential area and all configurations to be placed in such a way that the traffic flows easily within the property. This layout was not chosen, as the traffic layout was not suitable.

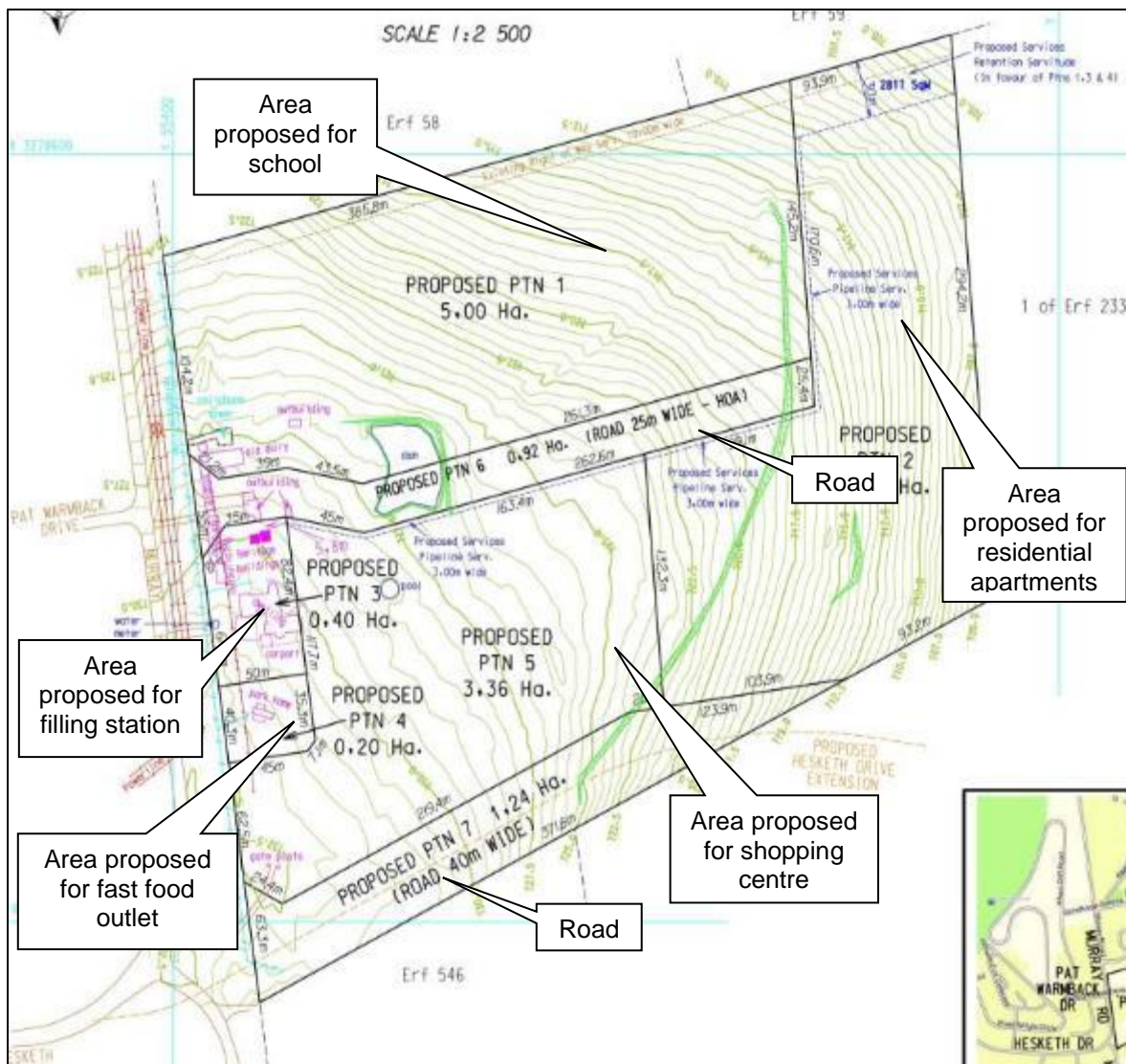


Figure 27: The amended layout (Layout 2).

### Preferred Layout – Layout 3

The Preferred Layout – Layout 3 (Figure 28) was compiled. This layout plan is preferred as it has been designed to meet the requirements from a design perspective and meets the requirements of all of the specialists such as Engineering, Traffic and Storm Water Management.

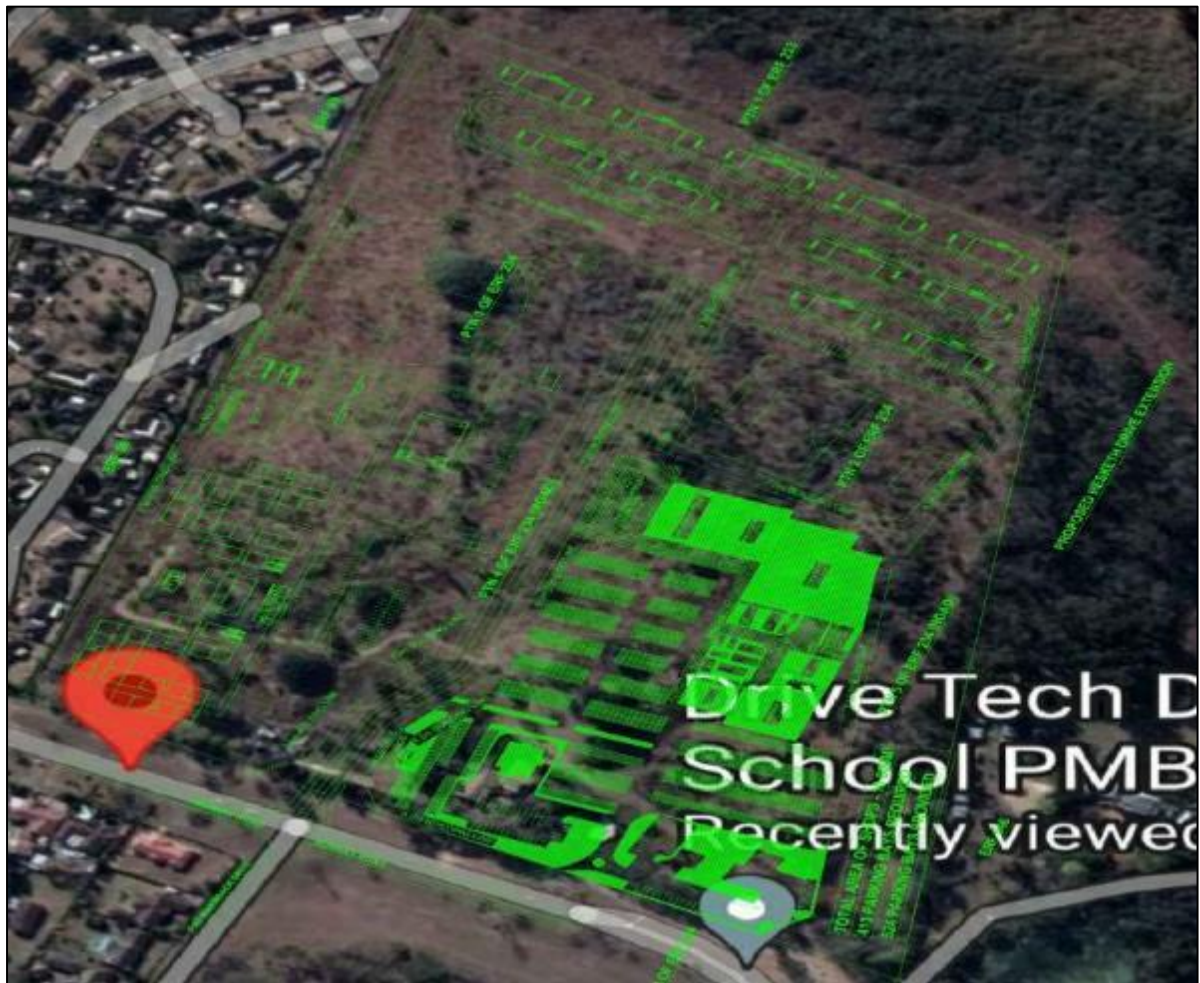


Figure 28: Preferred Layout – Layout 3.

### ALTERNATIVE TECHNOLOGY:

#### 5. Septic Tank and Soak Away System

Percolation tests were not undertaken on the site to confirm whether soils are suitable for the disposal of waste water and effluent via a septic tank and soak away system. Due to the size of the development and uses proposed (school, shopping centre etc), a septic tank and soakaway system is not considered a feasible option.

#### 6. Sewage package plants

Sewage package plants are acceptable but not preferred. Package plants require regular maintenance and monitoring, which must be performed by a specialist supplier. Package plants also require periodic honey suckers. Due to the costs associated with these systems, this is not the preferred wastewater treatment. Thus, a sewage package plant is not desirable for a commercial development of this size, nature and location.

#### 7. Conservancy Tanks

Conservancy tanks involve waste water being collected in underground tanks on the site and this effluent being regularly sucked-out by honey sucker and transported by tanker to the nearest registered Waste Water Treatment Works (WWTW) for disposal. Although the nearest registered WWTW is a few kilometres away at Darvill, the installation of conservancy tanks is not considered economically feasible for this type and size of development due to the costs involved with the regular removal and disposal of waste.

#### **8. Link into the Msunduzi Pietermaritzburg network – Preferred Option**

There is a bulk municipal sewerage infrastructure line adjacent to the site that the developer can link into, which is located along Murray Road. This is the preferred Waste Water disposal option. This option carries with it little environmental risks, in comparison to the other disposal methods, and is more economically feasible.

## 11. EAP RECOMMENDATIONS & CONCLUSION

The EAP wishes to reiterate that the information provided in this report is true and based on factual information provided by the specialist and I&APs.

Signed:  Date: 31 August 2022

Signed:  Date: 15 September 2022

The EAP is of the opinion that the proposed activity should be authorised, provided the following activities are made conditions of the Environmental Authorisation:

### **TRAFFIC / ACCESS**

- The recommendations as outlined in the Traffic Impact Assessment must be adhered to.
- Access, any other applicable applications, must be applied for, and approved, by the KZN Department of Transport.

### **STORM WATER**

- The Storm Water Management Plan must be adhered to.

### **GEOTECHNICAL**

- All recommendations contained in the Geotechnical Assessment must be adhered to.

### **CONSTRUCTION OF THE FACILITIES**

- The approved EMPr must be strictly enforced. During the construction phase, the activities must be monitored monthly by an independent Environmental Control Officer (ECO).
- The construction of the development must be in accordance to the approved design and layout specifications.
- The Developer must undertake to provide 1,8 m high shade cloth around the entire construction site, prior to commencing with construction.

### **BIOPHYSICAL**

- Only locally indigenous plant species are to be used for landscaping.
- An Alien Vegetation Control Programme must be implemented.
- The recommendations as outlined in the Biodiversity Assessment must be adhered to.
- A fully Indigenous Landscape Plan must be submitted to the Msunduzi Municipality: Sustainable Development & City Enterprises Department – Environmental Management Unit.

### **HERITAGE AND PALAEOLOGICAL**

- If any palaeontological or heritage related material were to be unearthed during construction activities, landowners and/or the developers they appoint are reminded that, according to the National Heritage Resources Act 1999 (Act No. 25) and KwaZulu-Natal Heritage Act 2008 (Act No. 4), work should immediately cease and the “*Chance Find Protocol*” outlined in the PIA, should be followed.
- Materials should be salvaged and re-used in a new development. It is recommended that the materials be used in the urban design, landscaping and entrances to connect the visitor or new resident/ user to the land and its previous use.
- It is recommended that the names of the farm and the settlers who have tended the land be recognized in the planning of the development.
- Buildings 2 (Stone storeroom “*the armoury*”) and 3 (Stone storeroom “*the dog house*”) should be retained only if they can be retained with a buffer zone (for protection during construction) that can be incorporated as a park-like setting.



- Existing planting and vegetation (including exotics) are to be considered in the development, given the history of the introduction of exotic garden species to the area by Victorians.
- Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable manner and in compliance with heritage legislation.
- If any objects are identified during construction activities, Amafa must be contacted immediately and all development must be halted until further notice. Amafa can be contacted on 033 394 6543.

### **WETLAND**

- A channelled valley bottom system was identified to the east of the study site. The proposed development must adhere to the recommended 32 m wetland buffer.
- The filling station must be located as far west as possible to allow for the maximum distance from the edge of the channelled valley bottom system.
- Indigenous landscaping in open areas needs to be incorporated into the Environmental Management Programme (EMPr).
- No stockpiling of any materials may take place directly adjacent to the 32 m buffer.
- Vegetation clearing must be undertaken only in the areas to be developed and must not extend outside of the development footprint and particularly into the channelled valley bottom wetland.
- All recommendations contained in the Wetland Assessment must be adhered to.

### **OPERATIONAL PHASE**

- All underground fuel storage tanks must have leak detection systems and thus must comply with all SANS.
- Modern fuel storage tanks are proposed, which are fitted with a double walled skin tank (i.e. two layers). The tanks will consist of a steel primary tank enclosed within a steel secondary tank.
- An Automatic Tank Gauge (ATG) will be fitted to each tank. An ATG electronically monitors any leaks in the inner tank and associated fuel line.
- A central collection point to store refuse must be established on site.

### **CONCLUSION**

This Report concludes that whilst the proposed filling station, convenience store, fast-food outlet, shopping centre, school and residential estate will result in positive socio-economic impacts (employment opportunities, local economic stimulation and prime location), it will have an impact on the existing shopping centres and fuel stations that are operating in the surrounding area during the short-term. However, in the long term, it is unlikely that the development will have a negative effect on the competing businesses trading conditions. The growth in the future market demand will lead to a greater need and desirability for additional pumping capacity in the area. Healthy competition amongst the existing and proposed new filling station and shopping centre will ultimately benefit the consumers without adversely impacting the long-term sustainability of the existing vendors.

Overall, there is sufficient demand for the proposed development to be feasible, and adequate mitigation measures have been proposed in this report to ensure that the identified potential negative impacts will be minimal to none.

The Environmental Assessment Practitioner (EAP) concludes that no fatal-flaws have been identified during the Basic Assessment Process, and, provided the Environmental Management Programme (EMPr) and recommendations made in this Report are strictly adhered to, there should be no significant, detrimental impacts on the environment.

## 12.APPENDICES