

DRAFT BASIC ASSESSMENT REPORT:

**The Proposed Upgrade of the Existing Mount
Partridge Road located in Imbali, Edendale,
Msunduzi Local Municipality, Kwazulu-Natal**

PREPARED FOR: THE MSUNDUZI LOCAL MUNICIPALITY

DATE: 21 NOVEMBER 2016



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EXECUTIVE SUMMARY

The Applicant, the Msunduzi Local Municipality has identified the need to upgrade the existing Mount Partridge Road located in Imbali, Msunduzi Local and uMgungundlovu District Municipality. Green Door Environmental has been appointed by Preben Naidoo and Associates on behalf of the Msunduzi Local Municipality to conduct the Environmental Basic Assessment process and Water Use License Application for the proposed road upgrade project.

The project entails the rehabilitation and widening of the existing Mount Partridge Road and the construction of associated bus/taxi shelters and 3,5m wide pedestrian/cycle walkways. Specifically, the project involves the rehabilitation and upgrading of the existing carriageway from a 7m wide to a 17m wide dual carriageway. The relocation of affected services and the realignment and replacing of dysfunctional stormwater infrastructure also forms part of the project. The approximate length of the upgrade is 1km.

The upgrade will assist with the increase in the volume of traffic that has occurred in the area, improve traffic flow and safety, and prevent the delays currently being experienced along this road.

The project site is located on Mount Partridge Road within Machibisa, Unit 3, Imbali, Pietermaritzburg, KwaZulu-Natal. The route commences at the intersection of Mount Partridge Road and Thala Road and ends at the intersection of Edendale Road / Sutherland Road and Mount Partridge Road, adjacent to the Greater Edendale Mall. The general area within the vicinity of the road comprises mainly peri-urban residential properties. The Greater Edendale Shopping Mall borders the road to the north-west.

Several wetlands and riparian systems have been identified within the vicinity of the project site, including the Greater Edendale Mall wetland which is located within the Greater Edendale Mall cadastral, and was rehabilitated as part of the mitigation requirements for the development of the Mall.

In terms of the Environmental Impact Assessment (EIA) Regulations 2014, under Section 24(5), 24M and 44 of the National Environmental Management Act (Act No 107 of 1998), published in Government Notice No. R. 982 of 2014 and Section 21 of the National Water Act (36 of 1998), the proposed development requires a Basic Assessment process and Water Use License Application to be conducted.

The main issues raised during the public participation process for the project are:

- Impacts of the proposed road upgrade on the surrounding wetlands, drainage lines, river systems and catchment during the construction and operational phases;
- Stormwater management including the prevention of erosion and sedimentation;
- Impacts on the informal traders who operate stalls along the road – the traders may be forced to relocate as a result of the widening of the Mount Partridge Road; and
- Traffic impacts during the construction phase.

The following Specialist Studies have been undertaken as part of the Basic Assessment and Water Use License Application process:

- Freshwater Ecosystems Delineation and Assessment Study; and
- Geotechnical Study.

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.

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1. PROJECT & ACTIVITY DESCRIPTION

1.1 PROJECT TITLE

The Proposed Upgrade of the Existing Mount Partridge Road located in Imbali, Edendale, Msunduzi Local Municipality, uMgungundlovu District Municipality, 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 983	Part 19	<p><i>"The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from-</i></p> <p><i>(i) a watercourse;</i></p> <p><i>(ii) the seashore; or</i></p> <p><i>(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving-</i></p> <p><i>(a) will occur behind a development setback;</i></p> <p><i>(b) is for maintenance purposes undertaken in accordance with a 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."</i></p> <p>The proposed upgrade includes the widening of the Mount Partridge Road over an existing causeway located at the Mount Partridge Road and Thala Road intersection. The construction activities required for the road widening triggers the above listed activity.</p>
GNR 985	Part 14	<p><i>"The development of-</i></p> <p><i>(xii) infrastructure or structures with a physical footprint of 10 square metres or more;</i></p> <p><i>where such development occurs-</i></p> <p><i>(a) within a watercourse;</i></p> <p><i>(b) in front of a development setback; or</i></p> <p><i>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p> <p><i>(d) In KwaZulu-Natal: viii. 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>The proposed road upgrade will take place within 32m of a wetland area. The project site also falls within environmentally sensitive areas as identified by the Msunduzi Environmental Management Framework as well as the Msunduzi Conservation Plan and the Draft Ecosystem Services Plan. Thus this trigger is applicable.</p>

GNR 985	Part 18	<p><i>"The widening of a road by more than 4 meters, or the lengthening of a road by more than 1km. (d) In KwaZulu-Natal: 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>The proposed upgrade will entail the widening of the existing 7m carriageway to a 17m wide dual carriageway. The project site falls within environmentally sensitive areas as identified by the Msunduzi Environmental Management Framework as well as the Msunduzi Conservation Plan and the Draft Ecosystem Services Plan. Thus this trigger is applicable.</p>
GNR 985	Part 23	<p><i>"The expansion of – (xii) infrastructure or structures where the physical footprint is expanded by 10 square meters or more; where such development occurs – (a) within a watercourse; (b) in front of a development setback adopted in the prescribed manner; or (c) if no development setback has been adopted, within 32 meters of a watercourse, measured from the edge of a watercourse; (e) In KwaZulu-Natal: viii. 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>The proposed road upgrade will take place within 32m of a wetland area. The project site also falls within environmentally sensitive areas as identified by the Msunduzi Environmental Management Framework as well as the Msunduzi Conservation Plan and the Draft Ecosystem Services Plan. Thus this trigger is applicable.</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's Integrated Development Plan (IDP) Review - Draft	uMgungundlovu District Municipality	2014 / 2015
Msunduzi Municipality Revised Integrated Development Plan 2011 – 2016 and Beyond	Msunduzi Local Municipality	2011 - 2016
Msunduzi Environmental Management Framework (EMF)	Msunduzi Local Municipality	2010
Msunduzi Municipality Environmental Services Plan (ESP)	Msunduzi Local Municipality	2010
Msunduzi Municipality Conservation Plan (C-Plan)	Msunduzi Local Municipality	2010
Msunduzi Municipality Spatial Development Framework (SDF)	Msunduzi Local Municipality	2009
Climate Change Policy for Msunduzi Municipality	Msunduzi Local Municipality	2014
Msunduzi Municipality Draft Spatial Planning of Land Use Management By-Law (Draft SPLUMA By-Laws)	Msunduzi Local Municipality	2016
Msunduzi Municipality Integrated Environmental	Msunduzi Local	2007

Management Policy (IEMP)	Municipality	
Spatial Planning and Land Use Management Act (SPLUMA)	Msunduzi Local Municipality	2013
KwaZulu-Natal Planning and Development Act (PDA)	Msunduzi Local Municipality	2008
KZN Terrestrial Systematic Conservation Plan	SANBI	2010
National Environmental Management Act (NEMA)	DEA	1998
Environmental Impact Assessment Regulations, section 24(5) and 44 of the National Environmental Management Act, 1998	DEA	2014
Integrated Environmental Management Guideline Series: Companion to the EIA Regulations 2010 and Public Participation 2010.	DEA	2010
The National Water Act (NWA), 1998 (36 of 1998)	DWS	1998
National Water Act Regulations, 1999	DWS	1999
The National Heritage Resources Act, 1999	SAHRA	1999
KwaZulu Natal Heritage Resources Act 10 of 1997	SAHRA	1997
The Constitution of South Africa 108 of 1996	DOJCD	1996
National Roads Act 83 of 1996	DOT	1998
Water Services Act 108 of 1997	DWS	1997
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Alternatives,	DEA&DP	2011
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Public Participation.	DEA&DP	2011
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Need and Desirability.	DEA&DP	2011
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Generic Terms of Reference for EAPs and Project Schedules.	DEA&DP	2011
Guideline on Need and Desirability, Integrated Environmental Management Guideline Series 9, Department of Environmental Affairs (DEA), Pretoria, South Africa	DEA	2014

1.4 SG 21 DIGIT CODE(S) OF THE PROPERTIES

N	O	F	T	0	0	0	0	0	0	0	1	6	4	5	4	0	0	0	0	0
N	O	F	T	0	4	9	2	0	0	0	0	2	3	8	8	0	0	0	0	0
N	O	F	T	0	2	6	2	0	0	0	0	0	4	4	4	0	0	0	0	0
N	O	F	T	0	2	6	2	0	0	0	0	0	4	4	1	0	0	0	0	0
N	O	F	T	0	2	6	2	0	0	0	0	0	4	5	8	0	0	0	0	0

1.5 PHYSICAL ADDRESS & FARM NAME

Address	Mount Partridge Road, Machibisa, Unit 3, Imbali, Pietermaritzburg
Farm Name	Remainder of the Farm Willow No. 16454 Remainder of Erf 2388 Edendale CC Erf 441 Plessis-Laer Erf 444 Plessis-Laer Erf 458 Plessis-Laer

Town	Imbali, Edendale, Pietermaritzburg
Postal Code	3201

1.6 COORDINATES OF THE ROAD UPGRADE ROUTE

Corner/Position	Latitude (S)	Longitude (E)
Route Start Point	29° 39' 15.25" S	30° 20' 11.06" E
Route Mid Point	29° 39' 4.01" S	30° 20' 21.95" E
Route End Point	29° 38' 51.39" S	30° 20' 28.80" E

1.7 DETAILED PROJECT DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

The Applicant, the Msunduzi Local Municipality has identified the need to upgrade the existing Mount Partridge Road located in Imbali, Edendale in the Msunduzi Local and uMgungundlovu District Municipality of KwaZulu-Natal. The proposed upgrade entails the rehabilitation and widening of the existing Mount Partridge Road carriageway and the construction of bus/taxi shelters and 3,5m wide pedestrian/cyclist lanes on either side of the road. The upgrade will assist with the increase in the volume of traffic that has occurred in the area, improve traffic flow and safety, and prevent the delays currently being experienced along this road. The upgrade and widening will take place between the Thala Road intersection and Edendale Road/Sutherland Road intersection.

Regional Setting and Project Location

The project site is located on Mount Partridge Road within Machibisa, Unit 3, Imbali, Pietermaritzburg, KwaZulu-Natal. The route commences at the intersection of Mount Partridge Road and Thala Road and ends at the intersection of Edendale Road/Sutherland Road and Mount Partridge Road, adjacent to the Greater Edendale Mall. The road upgrade route is approximately 1km in length.

Mount Partridge Road is located within the Msunduzi Local Municipality and the uMgungundlovu District Municipality of KwaZulu-Natal. The project site is located within the vicinity of the Edendale, Imbali and Plessislaer areas. The Pietermaritzburg Central Business District (CBD) is located approximately 5km to the north-east of the project site. Refer to Figure 1 and 2 for locality maps of the study area and Plates 1 to 4 for site photographs.

Development Property

The existing Mount Partridge Road servitude traverses five properties along the length of its route. These are:

- Erf 444 Plessis-Laer (Msunduzi Municipality);
- Rem of Erf 441 Plessis-Laer (Msunduzi Municipality);
- Erf 458 Plessis-Laer (Transnet LTD);
- Rem of the Farm Willow No. 16454 (Msunduzi Municipality); and
- Rem of Erf 2388 Edendale CC (Msunduzi Municipality).

All of the above properties are registered to the Msunduzi Municipality with the exception of Erf 458 Plessis-Laer, which comprises a railway line servitude and is registered to Transnet LTD (Refer to Figure 3 for a map showing the various properties within the vicinity of Mount Partridge Road).

The general area within the vicinity of the road comprises mainly peri-urban residential properties. The Greater Edendale Shopping Mall borders the road to the north-west. One hillslope seepage wetland (known as the Greater Edendale Mall wetland), two artificial wetland systems and two riparian B channel systems are located within 100m of the road. The hillslope seepage wetland is located within the Greater Edendale Mall cadastral. This wetland was rehabilitated as part of the mitigation requirements for the development of the Greater Edendale Mall.

Two river systems are also located within 500m of the study site, namely the KwaPata and the Msunduzi Rivers. The KwaPata is a tributary of the Msunduzi River.

Scope of Work

The project entails the rehabilitation and widening of the existing Mount Partridge Road from a 7m in width to a 17m wide dual carriageway. The works to be carried out for the project include:

- The widening of the existing asphalt surfaced carriageway from 7m wide to 9m wide with the provision of 0.3m wide edging on either side;
- The provision of 3.5m wide paved walkways comprising a 1.5m wide paved cyclist lane and a 2m wide paved pedestrian walkway along both road edges;
- Provision of five taxi lay byes at strategic positions (3 on the left hand side of the road and 2 on the right);
- Rehabilitation of existing stormwater infrastructure;
- Realignment and replacing of dysfunctional stormwater infrastructure;
- Relocation of existing services including sewer line, water line and Electrical cables;
- Upgrading of street lighting;
- Relocation of affected street lamp posts;
- Intersection upgrades;
- Construction of speed tables along the road;
- New traffic light installations at the Mount Partridge and Thala Road intersection, including the upgrading of existing traffic lights; and
- The installation of dry stack retaining walls at strategic positions.

There is an existing causeway at the Thala Road intersection. The road will be widened over the causeway, but the causeway itself does not need to be widened. The approximate length of the upgrade is 1km in length.

Construction activities will be concentrated along the existing Mount Partridge Road servitude commencing at the intersection of Mount Partridge Road and Thala Road and ending at the Edendale/Sutherland Road and Mount Partridge Road intersection (adjacent to the Greater Edendale Mall).

All existing infrastructure at the site will be re-used where possible. This includes the existing 7m wide road carriageway, existing kerb and channel stormwater infrastructure, street lighting and traffic lights. However, if any services are found to be too old or obstructing construction works, they will be relocated and in cases where needed, new material will be installed.

A construction camp for the project will be established and will include:

- Storage facilities for construction materials and equipment;
- Designated bunded areas for storage tanks and hazardous wastes;
- Storage facilities for general waste; and
- Sanitation in the form of portable chemical toilets.

Stormwater Management

The development of impervious areas such as surfaced roads increases the total storm runoff volume, and increases the flood susceptibility of nearby rivers. The proposed road upgrade will create an increase in stormwater runoff. In order to ensure that the increase in runoff does not have a destructive effect on the environment and receiving water bodies, provision has been made for the management of stormwater runoff for the proposed upgrade, with the following objectives:

- Protection of life (prevent loss of life) and property (reduce damage to infrastructure) from flood hazards;
- Prevention of land and watercourse erosion (especially during storm events);

- Protection of water resources from pollution;
- Ensuring continuous operation and production through different hydrological cycles;
- Maintaining the downstream water quantity and quality requirements;
- Preservation of the natural environment (water courses and their ecosystems); and
- Ensuring that the rate of runoff is reduced to pre-development states and that runoff is not concentrated onto any adjacent or otherwise neighbouring states.

The Mount Partridge Road site stormwater management system has been designed strictly in accordance with the Local Municipality: Design manual: Guidelines and Policy for the Design of Stormwater Drainage systems. The stormwater generated over the road surface will be directed into appropriately positioned catch pits and then released into a nearby stream / river through a network of appropriately sized pipes. No stormwater attenuation will apply. The stormwater will be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem. Refer to Appendix B for the Mount Partridge Road Design Plan.

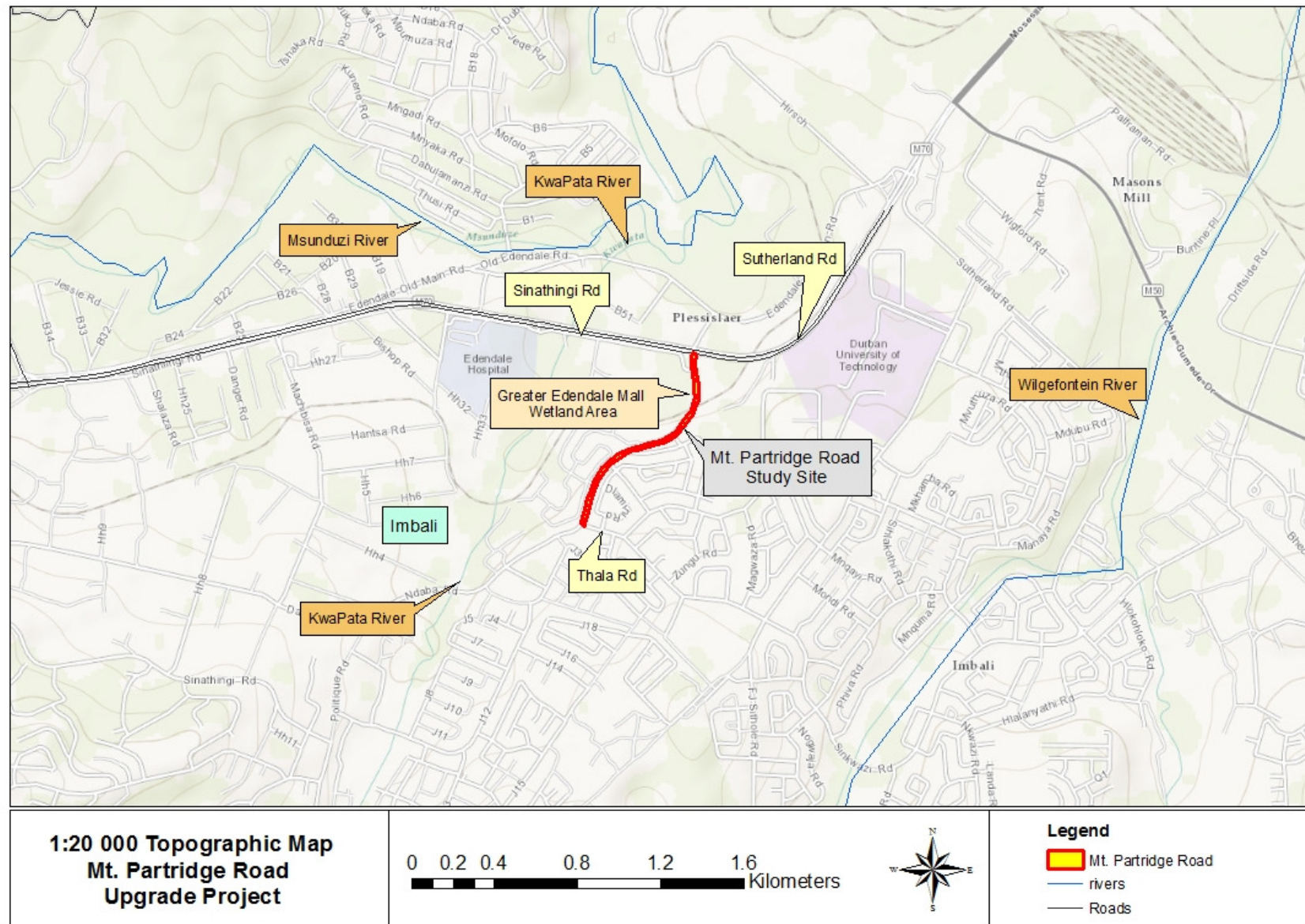


Figure 1: Topographical locality map of the existing Mount Partridge Road project site.



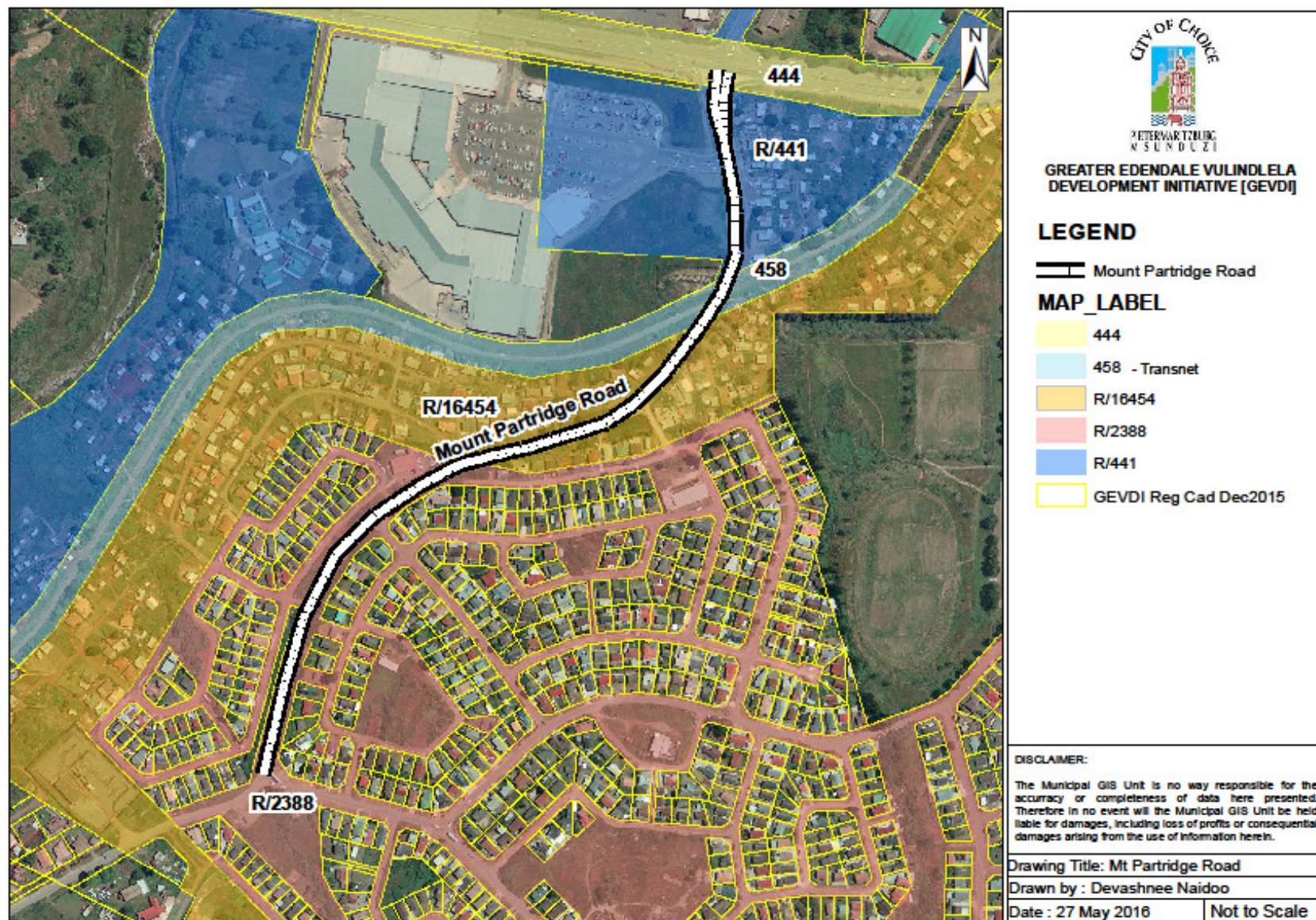


Figure 3: Map showing the relevant properties along the Mount Partridge Road upgrade route (Msunduzi Municipality).

Site Photos



Plate 1: Start of road upgrade at the Mount Partridge Road and Thala Road intersection.



Plate 2: View along the existing Mount Partridge Road.



Plate 3: Transnet railway line servitude over the existing Mount Partridge Road.



Plate 4: End of road upgrade at the Mount Partridge Road and Sutherland Road intersection.

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 activity is the upgrade of the existing Mount Partridge Road located in Imbali. As the upgrade will take place within the existing road servitude it is in line with the land use rights of the area. The Mount Partridge Road traverses four properties which are owned by the Applicant, the Msunduzi Local Municipality as well as one property comprising a railway line servitude registered to Transnet LTD.

2. Will the activity be in line with the Provincial Spatial Development Framework (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. This means that the development needs of present generations should be met without the ability of future generations to meet their own needs, being compromised.

The map below (Figure 4) indicates that the Mount Partridge Road site falls within an Economic Value Adding Area. Areas of Economic Value Adding can be defined as key economic centres and areas where all of the variety of economic sectors (agriculture, tourism, manufacturing, services) are prevalent and perceived to have good potential to be further expanded on. These areas are visibly linked to high accessibility areas with existing bulk infrastructure and relatively high population densities which would both contribute to the economic expansion and benefit from interventions in these areas. Due to these factors, further economic processing and value adding at a provincial level, are mainly proposed within these identified areas.

Richards Bay, Msunduzi, Newcastle and Port Shepstone have been identified as provincial Secondary Nodes and thus urban centres with good existing economic development and the potential for growth and services to the regional economy. At a strategic level, the PSDF strongly reinforces the concept of promoting development around the main activity corridors of the Province. The KZN Provincial Spatial Economic Development Strategy (PSEDS) states that infrastructure investment and development spending should primarily support localities that will become future growth nodes, supported by municipal integrated development plans. The Msunduzi area is one such area where infrastructural development and employment is urgently needed.

The upgrading on the existing Mount Partridge Road falls under the National Development Partnership (NDP) Grant Programme and has been approved and funded by National Treasury. The NDP has identified the Greater Edendale area for township renewal and seeks to advance the transformation and regeneration of the Greater Edendale area. This NDPG initiative is also driven by the notion that public investment and funding can be used creatively to attract private and community investment to unlock the social and economic potential within neglected townships and neighbourhoods, which in turn will improve the quality of life among its citizens. In this regard, the upgrade of the Mount Partridge Road is an important element in the transformation of both the physical and geographical landscape of Greater Edendale from a dormitory township into a dynamic and vibrant urban place of high quality.

In terms of the Linkages and Network Elements of the Urban Network Strategy, the upgrade of Mount Partridge Road is presented as a logical extension of Thala Road. The upgrade of Thala Road was approved by National Treasury as a catalytic project and the now consideration of Mount Partridge Road follows a spatially targeted approach to create a multi-functional hub in Edendale.

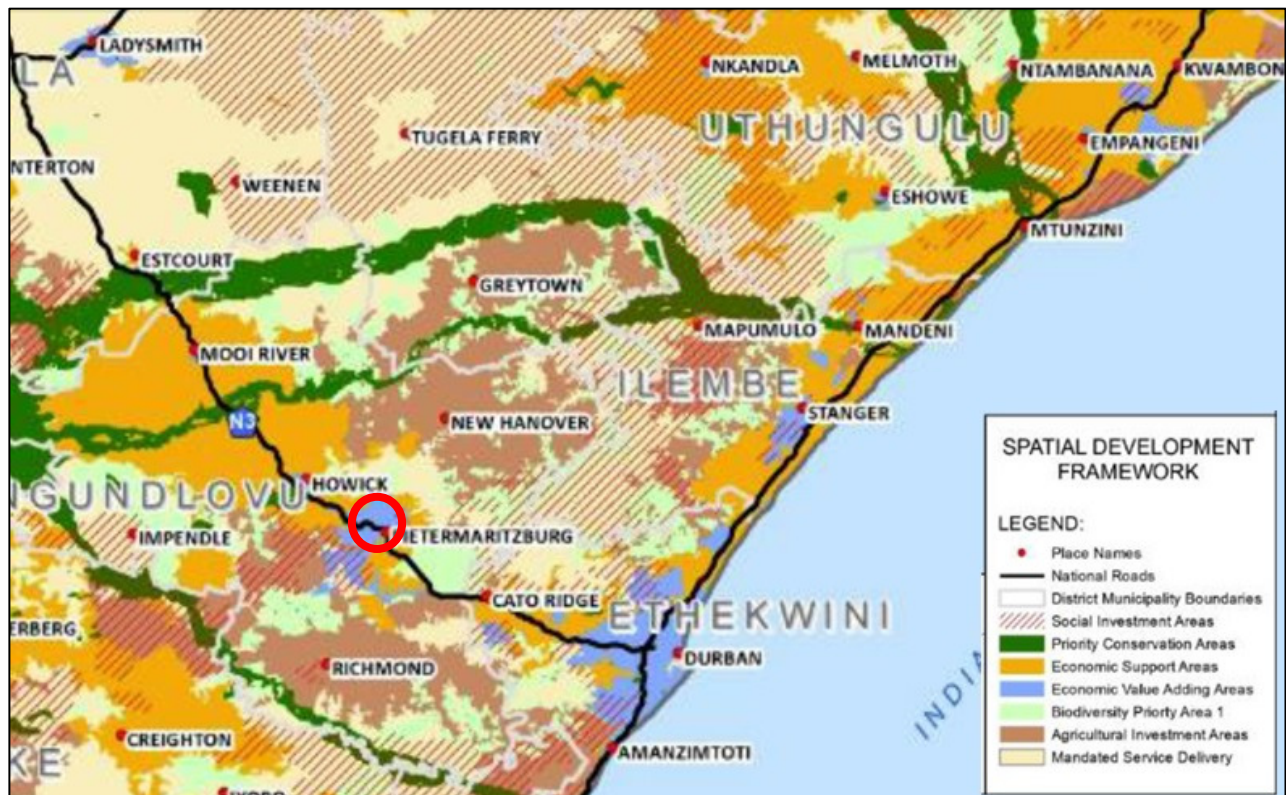


Figure 4: Provincial Spatial Development Framework (PSDF).

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

This is not applicable to this application.

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?

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 IDP lists the following in terms of sustainable economic growth:

- Development of all appropriate sectors of the local economy;
- Development and retention of all businesses formal and informal;
- Developing economic opportunity in communities;
- Creation of jobs;
- Skills development for the local economy;

- Attracting investment; and
- Funding of local economic development.

In addition, the Msunduzi Municipality has the following organisational goals outlined in its IDP and SDF:

- A healthy citizenry with access to affordable, quality health care;
- A safe city with low crime levels and quality living areas;
- An efficiently managed, financially viable and sustainable, city;
- A well governed city underpinned by meaningful public participation;
- A vibrant economic centre, attracting investment, supporting business development and creating jobs;
- A city where all have access to habitable human settlements – decent houses, clean water and proper sanitation;
- An environmentally sustainable and healthy city; and
- A well planned, spatially integrated city.

According to the Msunduzi SDF, a large proportion of the Edendale area is used for residential purposes. The nature of the settlements is a mixture of formal, informal and traditional. The formal areas are concentrated in the middle of the Edendale area, while informal development occurs adjacent to Edendale Road and in the southern periphery. Even though there are industrial activities in the area, the majority of people are unemployed and are poor. This area has been identified as one of the city's areas for priority spending with initiatives already underway to support this namely, the Greater Edendale Development Initiative (GEDI) and the Edendale – Northdale Development Corridor.

The Mount Partridge Road upgrade forms part of the National Development Partnership Grant Programme for the transformation and regeneration of the Greater Edendale area. This programme seeks to address the areas historical and current development challenges and comprises the majority of the municipal area previously designated under apartheid. As a result of past development practices, the area reflects all the elements of apartheid planning, i.e. an area separated and segregated from the central part of the municipality, an area lacking in many infrastructural services, an area deficient in nearby employment opportunities, and an area lacking in many social services, particularly of higher order types.

In an attempt to deal with these challenges, the Msunduzi Municipality has identified the need to upgrade and expand the existing infrastructure network in this area, including the Mount Partridge Road. The upgrading of Mount Partridge Road does not compromise the integrity of the Municipality's IDP and SDF, but rather will be a key strategic element in enabling the achievement of many of the strategies and objectives proposed.

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

Yes, the proposed road upgrade is in line with the approved structure plan for the Municipality – see above responses.

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?

The proposed development site has been assessed in terms of the Msunduzi Environmental Management Framework (EMF), the Msunduzi Ecosystem Services Plan (ESP), the Edendale Strategic Environmental Assessment (SEA) and the Msunduzi Conservation Plan (C-Plan). Refer to

Appendix C for the Msunduzi Environmental Management Information for the project site.

The Msunduzi EMF has identified the site to have high biodiversity constraints. The Msunduzi C-Plan indicates the proposed site to be “totally irreplaceable”. Site visits confirmed the presence of a wetland (Greater Edendale Mall wetland) and biodiversity value. The Draft Ecosystem Services Plan (ESP) indicates the presence of key biodiversity areas and riparian corridor on the proposed site, while the Edendale Strategic Environmental Assessment (SEA) identifies the road upgrade to occur within key biodiversity areas and riparian corridor.

However, as the project entails the upgrade of an existing road located within a fully developed area it will not have any impact on environmentally sensitive areas, in particular the fenced off wetland area situated at the Greater Edendale Mall. Development proposed in this area can therefore be undertaken in alignment with the existing Greater Edendale Environmental Management Implementation Plan.

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

This is not applicable to this application.

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 Mount Partridge Road upgrade is in line with the IDP timeframes / priority programmes for the Msunduzi Local Municipal area. Refer to Point 4 above.

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?).

Mount Partridge Road is an important route serving the Imbali and Edendale area. There are numerous public facilities that are served in this densely populated area such as the Greater Edendale Mall, Edendale Hospital, schools, community halls and sports grounds. These will all benefit from the project through both a socio-economic aspect related to improved infrastructure and an improved road user safety level.

The Msunduzi Municipality has identified the Greater Edendale Area as a priority area for social and economic development. The Mount Partridge Road upgrade forms part of the National Development Partnership Grant Programme for the transformation and regeneration of the Greater Edendale area. This programme seeks to address the areas historical and current development challenges. The upgraded road will facilitate safer road conditions for drivers and pedestrians, as well as improve traffic flow and congestion.

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?

This is not applicable to this application.

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)?

Yes, the project is provided for in the infrastructure planning of the Municipality. It forms part of the Municipality's initiative for the transformation and regeneration of the Greater Edendale area. – refer to

above responses.

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

Yes, the upgrading on the existing Mount Partridge Road falls under the National Development Partnership (NDP) Grant Programme and has been approved and funded by National Treasury. The NDP has identified the Greater Edendale area for township renewal and seeks to advance the transformation and regeneration of the Greater Edendale area.

The proposed road upgrade also forms part of the Strategic Infrastructure Projects (SIPs) (Infrastructure – transport) as described in the National Development Plan, 2011, which seeks to address basic service delivery at local government level.

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 project entails the upgrade of an existing road within an existing road servitude.

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

Refer to Point 13 above. The road upgrade will take place within an existing road servitude. Provided the upgrade is undertaken adhering to the conditions of the EMP, mitigation measures and recommendations of the specialist studies, the impacts associated with the road upgrade will be minimal.

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

Yes, the Mount Partridge Road forms part of an important route serving the Imbali and Edendale area. There are numerous public facilities that are served in this densely populated area. The community will benefit from the proposed upgrade through improved infrastructure and an improved road user safety level.

Provided the design, construction and operation of the proposed upgraded road adheres to the controls and mitigations identified during the Basic Assessment Process and contained in the EMP, 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 upgrading the road outweigh the impacts of upgrading it.

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

Yes. The Msunduzi Municipality has identified the Greater Edendale Area as a priority area for social and economic development. The Mount Partridge Road upgrade forms part of the National Development Partnership Grant Programme for the transformation and regeneration of the Greater Edendale area. This programme seeks to address the areas historical and current development challenges. The upgrade of the Mount Partridge Road is a key element in the overall transformation of both the physical and geographical landscape of the Greater Edendale area.

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

No. The Public Participation Process has been fulfilled as required under NEMA, informing the public

of the intended development. All residents, businesses and community members along the road were notified of the proposed upgrade and given the opportunity to lodge any concerns / objections regarding the proposed road upgrade. The EMPr provides mitigation measures to prevent any unnecessary negative impacts to the surrounding properties. (Refer to Appendix D: EMPr).

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

Yes.

Strategic Integrated Projects	X = Yes
Green economy + "Green" and energy-saving industries	
Infrastructure – electricity (generation, transmission & distribution)	
Biofuels	
Basic services (local government) – electricity and electrification	
Basic services (local government) – area lighting	
Infrastructure – transport (roads, land strips)	X
Basic services (local government access roads)	
Basic services (local government) – public transport	
Infrastructure – water (bulk and reticulation)	
Basic services (local government) – sanitation	
Basic services (local government) – waste management	
Agricultural value chain + agro-processing (linked to food security and food pricing imperatives)	
Infrastructure – information and communication technology	
Tourism + strengthening linkages between cultural industries and tourism	
Basic services (local government) – public open spaces and recreational facilities	

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

It is anticipated that the proposed road upgrade will provide direct benefits to the local community at a local and district Municipal level. As Mount Partridge Road is an important route serving the Imbali and Edendale area, the road upgrade will benefit the community through the provision of improved infrastructure in a historically disadvantaged area.

The current Mount Partridge Road is only 7m wide in extent and is unable to sustain the increased volume of traffic in the area that has occurred over the past few years, particularly with the development of the Greater Edendale Mall. The upgrade will assist with the increase in the volume of traffic and improve traffic flow and prevent the traffic delays that are currently being experienced along the road. In addition, the provision of paved walkways along both road edges will improve safety along the road for pedestrians, cyclists and drivers.

The project will also result in the provision of temporary employment opportunities for local community members during the construction phase.

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 road upgrade project addresses Points 1, 3 and 4 of the National Development Plan for 2030, through the creation of employment and the provision and upgrading of basic infrastructure in a historically disadvantaged area.

1. Unemployment
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 all 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 have been 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 existing Mount Partridge Road will not be rehabilitated, widened and upgraded and will be left at its current layout and 7m carriageway width, with all existing services and infrastructure left in their current state.

Mount Partridge Road forms part of an important route serving the Imbali and Edendale area. There are numerous public facilities that are served in this densely populated area such as the Greater Edendale Mall, Edendal Hospital, schools, community halls and sports grounds. There has been a significant increase in the volume of traffic in the area over the past few years, particularly with the development of the Greater Edendale Mall.

The current 7m wide Mount Partridge Road is inadequate in terms of both vehicular and pedestrian traffic. As a result, traffic congestion and delays are experienced, with road users being subjected to hazardous driving conditions. Traffic congestion on the route causes inconvenience, frustration and delays for the commuters.

The proposed road upgrade will assist with the increase in the volume of traffic and improve traffic flow and prevent the traffic delays that are currently being experienced along the road. In addition, the provision of the paved walkways/cycle lanes along both road edges will improve safety along the road for both pedestrians, cyclists and drivers, as pedestrians and cyclists will no longer be required to walk/ride in the road and drivers will no longer have to swerve to avoid hitting pedestrians and cyclists.

The Msunduzi Municipality has identified the Greater Edendale area as a priority area for social and economic development. The Mount Partridge Road upgrade forms part of the National Development Partnership Grant Programme for the transformation and regeneration of the Greater Edendale area. This programme seeks to address the areas historical and current development challenges. As a result of past development practices, the area reflects all the elements of apartheid planning, i.e. an area separated and segregated from the central part of the municipality, an area lacking in many infrastructural services, an area deficient in nearby employment opportunities, and an area lacking in many social services, particularly of higher order types.

In an attempt to deal with these challenges, the Msunduzi Municipality has identified the need to upgrade and expand the existing infrastructure network in this area, including the Mount Partridge Road. The upgrade of the Mount Partridge Road is essential in paving the way for further social and economic development initiatives in the Greater Edendale area. The road upgrade project will also result in the creation of temporary employment opportunities for local community members during the construction phase.

If the road upgrade is not authorised then there will be none of the above-mentioned positive socio-economic impacts and the area will continue to experience the current problems associated with traffic congestion, delays and dangerous road user conditions. As such, the “do nothing” option will result in negative economic, and social impacts at a local and district level.

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

In terms of the location of the proposed activity and the affected properties, the proposed road upgrade follows the existing Mount Partridge route which traverses five properties within the existing road

servitude. As the Mount Partridge Road is currently established at that location and on the affected properties, it is not considered feasible to assess alternative routes / properties and thus no other properties or locations have been assessed in this Report.

(c) The type of activity to be undertaken:

The proposed Mount Partridge Road upgrade project involves the rehabilitation and widening of the existing 7m wide carriageway to a 17m wide dual carriageway with 3.5m cycle lane and pedestrian walkway on either side. The Application is specifically for the upgrade of the Mount Partridge Road and thus no alternative activity types have been assessed in this Report.

(d) The design or layout of the activity:

Design:

The proposed Mount Partridge Road infrastructure has been designed in accordance with industry norms and standards using bitumen based asphalt to surface the road. The design of the road is intended to accommodate an increased volume of traffic and improve traffic flow and prevent the delays currently being experienced. The provision of 1.5m cycle lanes and 2m pedestrian walkways on either side of the road and taxi lay byes is intended to improve safety along the road for both pedestrian/cyclists and drivers. The design of the road is aimed at ensuring that road is structurally sound as well as safe. Thus no other design alternatives have been investigated.

Layout:

In terms of layout the currently established road is already in place and it is intended to retain the current alignment to reduce the environmental impacts associated with the establishment of new roads on previously undisturbed land. Thus no layout alternatives have been investigated.

(e) The technology to be used in the activity:

As the project entails the upgrade of an existing road, various alternatives relating to the recycling and reuse of the existing road infrastructure have been investigated. The results of the Geotechnical Assessment for the project showed that the existing pavement layers, namely the subbase, selected layer and base courses, are all of at least G5, G6 and G7 quality and as such satisfy requirements for road construction. This good quality material may be recycled into the proposed road upgrade to reduce the requirements for additional granular material from a commercial source. In this regard a number of options present themselves for recycling the existing pavement layers:

- The in situ materials may be recycled for road construction as required. If the grade levels are to be changed then the material may be stripped off and stockpiled for reuse later during the construction of the road upgrade.
- Should the road remain at the existing grade then the asphalt may be stripped off, the upper 200 mm removed and stockpiled, and the existing layerworks ripped to a depth of 300 mm and recompacted to dry density of 93 percent modified AASHTO, following which the layerworks may be replaced as per the required pavement design.
- The asphalt layer may be stripped off, the existing layerworks scarified to a depth of 300 mm and recompacted as per the second point above, which will then form a suitable subgrade for the emplacement of new selected layer, subbase, base course etc. as the design of the road dictates.

(f) The operational aspects of the activity:

There are no alternative operational aspects to be used in the proposed activity.

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 NOTIFICATION OF THE PROPOSED DEVELOPMENT

The public was notified of the proposed activity through the publication of newspaper adverts in English in the Witness on 08 September 2016 and in Zulu in the Echo on 15 September 2016. The adverts informed the public of the proposed road upgrade and invited them to register their interest in the project (Appendix E). Notice boards were placed on site to notify the local public of the development. The notice boards were in English and Zulu and included details of the application, its nature and location, the assessment procedure in terms of the Regulations and details of the EAP. These were placed at strategic locations along the Mount Partridge Road route on 08 September 2016 (Appendix E).

4.2 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, local interest groups and neighbouring landowners (Appendix E). The list of I&APs has been continually updated to include persons responding to the adverts and notice boards.

4.3 BACKGROUND INFORMATION DOCUMENT

Written notification in the form of Background Information Documents (BIDs) were circulated in both English and Zulu from 14 September 2016 (Appendix E). These BID's were circulated by e-mail, post, fax or hand delivered to relevant authorities and to neighbouring landowners, businesses and affected community members along and within the vicinity of the entire Mount Partridge Road route.

Comments received following circulation of the BIDs, adverts in the newspapers and the displaying of site notice boards are summarised and responded to in Table 1, below. Copies of the comments received are included in Appendix F.

4.4 ONE ON ONE AND PUBLIC INTEREST GROUP MEETINGS

The Applicant, the Msunduzi Municipality appointed a social facilitator, Mr. Sipho Mngadi to assist with public participation at the project site. Mr. Mngadi held one-on-one meetings with key I&APs, community representatives and other stakeholders, with the aim of informing them of the proposed road upgrade and giving them the opportunity to raise any comments or concerns they may have. Consultation with the following key I&APs was undertaken by Mr. Mngadi:

- Meeting with the Area Based Management (ABM) Manager for Ward 22, Mr. Themba Lyons on the 29th June 2016. The aim of the meeting was to notify Mr. Lyons of the proposed road upgrade, identify the key individuals/I&APs who may be directly impacted by the road upgrade activities and request comments from the community preceding the commencement of the road construction activities.
- Consultation with the chairperson of the Ward 22 Transport Committee, Mr. Xolani Ngongoma and representatives from the local taxi associations, namely Unit 3 and J Taxi Association, on 30th June 2016 and 07th July 2016. The representatives from the Taxi Associations were notified of the proposed road upgrade.
- Meeting with the newly elected Ward 22 Councillor Mr. Xolani Ngongoma on the 22nd August 2016.
- Meeting with Mr. Hardman, Chief Engineer from Transnet in Pietermaritzburg on the 19th August 2016. At the meeting Mr. Hardman was notified of the proposed road upgrade. Transnet responded that even

though the railway line is currently unused there are future plans to re-instate its use. As such they requested that the Consulting Engineers and Contractor consult with them to discuss specifications of the layout and re-instatement.

Table 1: Comments received following the newspaper adverts, placing of site notice boards and circulation of the BID

I&AP	COMMENT	RESPONSE
<p>Ms. N. Sontangane Department of Agriculture, Forestry and Fisheries (DAFF) 20 October 2016</p>	<ul style="list-style-type: none"> • DAFF appreciates the opportunity given to review and comment on the BID. • DAFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forest Act (NFA) 1998, (Act No. 84 of 1998) by regulating the use of natural forests and protected tree species in terms of the said Act. • With regards to the BID received on the 14th September 2016, the proposed site is transformed by development with scant to no vegetation remaining. • The proposed activities will be restricted to the existing road and road reserve. • Therefore DAFF has no objections towards the proposed development provided that there are no natural forests and / or protected tree species in terms of the NFA. • However, should there be a need to disturb indigenous trees with interlocking crowns and/or protected trees, the Department should be consulted prior to any activities commencing. 	<ul style="list-style-type: none"> • Noted. • Noted. • Noted. The project site falls within a peri-urban area and is completely transformed. • Noted. • Noted. • Noted.
<p>Ms. Esmeralda Ramburran Msunduzi Municipality Sustainable Development and City Enterprises Department Environmental Management Unit 20 September 2016</p>	<ul style="list-style-type: none"> • With reference to the BID dated September 2016 the following comments are submitted for your information and consideration: • Based on the site visit conducted on the 20th July 2016, environmentally sensitive areas (Edendale Mall wetland area) as identified by the Municipal Environmental Management Framework (EMF), Msunduzi Conservation Plan (C Plan) and the Draft Ecosystem Services Plan (ESP) have been confirmed as being contained within the confined boundary of the Edendale Mall property. • Therefore please note that the sensitive areas along the proposed development route are out of reach of the construction footprint and must be avoided as far as possible. Since the Edendale Mall wetland has been fenced off this will be easy to achieve and therefore no damage to the wetland is foreseen. • The Msunduzi Conservation Plan (C Plan) indicates the proposed site to be "totally irreplaceable". The Draft Ecosystem Services Plan (ESP) indicates the presence of Key biodiversity areas and Riparian Corridor on the proposed site and the Municipal Environmental Management Framework (EMF) has identified the proposed site to have High Biodiversity Constraints. The Edendale Mall wetland is to be avoided with no construction occurring within the fenced portion of the wetland. 	<ul style="list-style-type: none"> • Noted. • The Mount Partridge Road upgrade route avoids the Edendale Mall wetland area. • Noted. The road upgrade route is located outside of the boundary of the Edendale Mall wetland area. No construction activities will take place within the wetland area. Mitigation and management measures to prevent impacts to the Edendale Mall wetland

I&AP	COMMENT	RESPONSE
	<p>Management within this area is to be addressed sufficiently within the EMPr.</p> <ul style="list-style-type: none"> • Please note that the EMF did not identify the drainage line on the proposed site, however, the SDF and site visit confirmed the presence of a drainage line which flows adjacent to the proposed road upgrade through the informal housing settlement. • The Edendale Strategic Environmental Assessment (SEA) identifies the road upgrade to occur within a key biodiversity and riparian corridor area. Environmental Features as identified in the SEA denote wetland within contiguous to 1:100 year floodline and riparian corridor. Based on the Msunduzi Strategic Environmental Assessment (SEA) and Environmental Policy, Msunduzi Municipality does in principle not support the cumulative loss of floodplain, wetland and riparian areas. The Draft Basic Assessment Report must therefore fully address how potential loss of sensitive areas and the risk of such are to be addressed in this case and we require that the development and all associated impacts are managed and mitigated through an Environmental Management Programme (EMPr). • There are 3 unchannelled valley bottom wetlands in close proximity of the proposed development. However there is to be an upgrade of an existing road which would not interfere with the existing fenced off wetland area situated at Edendale Mall. Development proposed in this area can be undertaken in alignment with the existing Greater Edendale Environmental Plan Management Implementation Plan. • In addition to the need for Environmental Authorisation a Water Use License will be required and the onus is on the applicant to enquire from the Department of Water and Sanitation 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. • We also request a Storm Water Management Plan which must address the quality of the storm water discharged from the site and incorporate on-site storm water attenuation measures to ensure the proposed development is flood neutral. This must be submitted to this Unit as well as the Msunduzi Storm water and Drainage Management Unit for comment and approval prior to any site works commencing. 	<p>associated with the road upgrade project have been included in the EMPr (Appendix D).</p> <ul style="list-style-type: none"> • Noted. The drainage line was identified and assessed during the specialist Freshwater Ecosystems Delineation and Assessment study (Appendix G). • The Mount Partridge Road upgrade route is located within the existing Mount Partridge Road servitude, within a densely populated, transformed area. The road upgrade will not result in the loss of floodplain, wetland and riparian areas. Measures to manage and mitigate any potential impacts resulting from the road upgrade project have been included in the EMPr (Appendix D). • Noted. • Green Door has been appointed to undertake the Water Use License Application for the proposed road upgrade. • Noted. The EAP requests that this be made a condition of the Environmental Authorisation.

I&AP	COMMENT	RESPONSE
	<ul style="list-style-type: none"> • Should any activity related to this development occur within the floodplain area or riparian corridor we therefore request that the loss of open green space be mitigated through sufficient indigenous landscaping and consideration given to maintenance of the adjacent stream such as alien clearing and litter pick-ups. A Landscape Plan must be submitted to this Unit for comment and approval prior to site works commencing. • Please note that further comment may be provided at a later date on the Basic Assessment Report and we request hard and soft copies of all reports. • Please note that Environmental Authorisation and a Water Use License must be obtained prior to the construction and commencement of any site works. 	<ul style="list-style-type: none"> • Noted. • Noted. • Noted.
Mr. Thami Hadebe Transnet SOC Ltd Servitude Management 27 September 2016	<ul style="list-style-type: none"> • The BID dated 14 September 2016 has reference. • Transnet Pipelines, a division of Transnet SOC Limited, is not affected by the proposal as indicated on your Imbali / Edendale-PMB Locality and Project/Site Layout Plans. 	<ul style="list-style-type: none"> • Noted.
Bhekuyise Khuzwayo Local Resident 06 October 2016	<ul style="list-style-type: none"> • If you say you are going to increase this road what are you going to do with the small business people that are operating along the side of the road? Are you going to find them an alternative place to trade? 	<ul style="list-style-type: none"> • The informal traders will be required to relocate with the proposed expansion of the Mount Partridge Road. The Ward Councillor and Municipality have been informed of the situation and are in the process of liaising with the informal traders in this regard.

4.5 SUMMARY OF ISSUES RAISED

The main issues which were raised following the newspaper adverts, placing of site notice boards and circulation of the BID include:

- Impacts of the proposed road upgrade on the surrounding wetlands, drainage lines, river systems and catchment during the construction and operational phases.
- Stormwater management including the prevention of erosion and sedimentation.
- Impacts on the informal traders who operate stalls along the road – the traders may be forced to relocate as a result of the widening of the Mount Partridge Road.
- Traffic impacts during the construction phase.

4.6 CIRCULATION OF THE DRAFT BASIC ASSESSMENT REPORT (DBAR)

Copies of the Draft Basic Assessment Report will be circulated to the following I&APs for review and comment:

- Dominic Wieners – Ezemvelo KZN Wildlife
- Zama Hadebe – Department of Water and Sanitation
- Mandisa Khomo – Umgungundlovu District Municipality
- Esmeralda Ramburran - Msunduzi Local Municipality
- Reka Kallicharan – Department of Economic Development, Tourism and Environmental Affairs
- Nandipha Sontangane – Department of Agriculture, Forestry and Fisheries
- Nonhlanhla Myeni – Provincial Department of Agriculture
- Sibongiseni Nelson Cebekhulu – Transnet Ltd
- Zandile Gasela – Eskom
- Bernadet Pawandiwa – Amafa
- Penny Rees – Duzi-Umgweni Conservation Trust

A copy will be made available for viewing at the Edendale Mall Management Office.

5. POTENTIAL IMPACTS ON THE SOCIAL AND ECONOMIC ENVIRONMENTS

5.1 LOCAL ECONOMY AND EMPLOYMENT OPPORTUNITIES

Description:

The Msunduzi Municipal IDP lists the following in terms of sustainable economic growth:

- Development of all appropriate sectors of the local economy;
- Development and retention of all businesses formal and informal;
- Developing economic opportunity in communities;
- Creation of jobs;
- Skills development for the local economy;
- Attracting investment; and
- Funding of local economic development.

Unemployment and poverty are serious issues in the Imbali and Edendale area. Most residences are informal and lack basic services. Educational and skills levels in the area are also low.

Implication / Risk / Impact:

The upgrade of Mount Partridge Road will have significant social and socio-economic impacts for the Edendale community. The construction phase of the project will provide much needed employment opportunities for the local community surrounding the length of the road. The project will entail the provision of improved infrastructure in a historically disadvantaged area which will help facilitate further economic development and growth in the area. The road upgrade will also result in improved road user safety and reduce traffic congestion and delays.

Mitigation / Recommendations:

- 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 NEED AND DESIRABILITY

Description:

The existing Mount Partridge Road, which is only 7m wide in extent, is no longer able to cope with the increased volume of traffic in the Imbali / Edendale area that has occurred over the past few years due to increased development and growth in the area, particularly with the development of the adjacent Greater Edendale Mall and projected future development.

Implication / Risk / Impact:

- The upgrade will assist with the increase in the volume of traffic and improve traffic flow and prevent the traffic delays that are currently being experienced along the road;
- The proposed upgrade will allow for job opportunities for the surrounding communities during construction. A significant level of skills transfer will take place for the construction staff. This will further uplift the community.
- The community will benefit from improved infrastructure and improved road user safety level.

Mitigation / Recommendations:

- 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.

5.3 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 on 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 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, 2016, 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. Working together with all the relevant stakeholders uMDM is committed 2016 target as the rest of the developing countries.

Alignment with Municipal Goals and Objectives

Msunduzi 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.

5.4 CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES

Description

Amafa KwaZulu-Natal, the authority responsible for the province's heritage resources, has been notified of the proposed Mount Partridge Road upgrade.

Implication / Risk / Impact:

As the road upgrade will take place within the existing Mount Partridge Road servitude there are no resources of heritage significance located on the proposed road upgrade route which would be affected by the development.

Mitigation / Recommendations:

- Amafa must be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.

- No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from Amafa.
- 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, Amafa must be contacted immediately and all development must be halted until further notice. Amafa can be contacted on 033 394 6543.

5.5 SURROUNDING LANDUSE AND AESTHETICS

Description:

The development site is located within Machibisa, Unit 3 in Imbali. The general area within the vicinity of the road comprises mainly peri-urban residential properties. The Greater Edendale Shopping Mall borders the road to the north-west. There are also a number of informal traders located along the road, particularly within the vicinity of the Edendale Road and Mount Partridge Road intersection near the Edendale Mall Entrance Gate.

One hillslope seepage wetland (Greater Edendale Mall wetland), two artificial wetland systems and two riparian B channel systems are located within 100m of the road. Two river systems, the KwaPata and the Msunduzi River are located within 500m of the study site.

The Mount Partridge Road traverses four properties which are owned by the Applicant, the Msunduzi Municipality and one railway line servitude registered to Transnet.

The proposed development site has been assessed in terms of the Msunduzi Environmental Management Framework (EMF), the Msunduzi Ecosystem Services Plan (ESP), the Edendale Strategic Environmental Assessment (SEA) and the Msunduzi Conservation Plan (C-Plan).

The Msunduzi EMF has identified the site to have high biodiversity constraints. The Msunduzi C-Plan indicates the proposed site to be “totally irreplaceable”. Site visits confirmed the presence of a wetland (Greater Edendale Mall wetland) and biodiversity value. The Draft Ecosystem Services Plan (ESP) indicates the presence of key biodiversity areas and riparian corridor on the proposed site, while the Edendale Strategic Environmental Assessment (SEA) identifies the road upgrade to occur within key biodiversity areas and riparian corridor.

Implication / Risk / Impact:

- The proposed upgrade will alter the land where the road carriageway is expanded.
- The upgrade will impact upon the informal traders along the road and within the vicinity of the Edendale Mall Entrance Gate at the Edendale Mall and Mount Partridge Road intersection.
- The upgrade will impact on the flow of traffic during the construction phase.
- However, as the project entails the upgrade of an existing road located within a fully developed area it will not have any impact on environmentally sensitive areas, in particular the fenced off wetland area situated at the Greater Edendale Mall. Development proposed in this area can therefore be undertaken in alignment with the existing Greater Edendale Environmental Management Implementation Plan.
- No privately owned houses will be affected by the road construction.

Mitigation / Recommendations:

- An Alien Vegetation Control Programme must be implemented.
- Noise and dust impacts must be controlled.
- No activities associated with the road upgrade must encroach into the Greater Edendale Mall wetland boundary.

5.6 TRAFFIC, ROADS AND ACCESS

Description:

The proposed development site can be easily accessed from Sutherland Road / Edendale Road and Thala Road. The existing road currently experiences a high volume of traffic including private vehicles, taxis and pedestrians.

Implication / Risk / Impact:

- Traffic delays and congestion are likely to increase during the construction phase of the project.
- The construction phase will result in additional large, slow-moving construction vehicles accessing the area which may cause further traffic delays.
- The operational phase of the road upgrade will result in improved traffic flows and improved road user and pedestrian safety.

Mitigation / Recommendations:

- Construction vehicles accessing the area must be driven cautiously within the required speed limits.
- Warning signage must be erected to warn motorists and pedestrians of slow-moving vehicles and active construction areas.

5.7 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 increased 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.

This impact however, is only a temporary impact, ending with the completion of the construction phase.

Implication / Risk / Impact:

It is unlikely that the production of noise and dust from construction activities will have a significantly negatively impact upon the surrounding community as the construction activities will be limited to working hours.

Mitigation / Recommendations:

- It is recommended that activities of construction vehicles, building contractors and labourers should be limited to working hours between 7.30am and 5pm 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.
- As many local people in the area are unemployed, labourers for the construction phase must be sourced from nearby settlements to ensure that unemployed people are given priority for employment on the site.
- Dust from the construction site must be managed in an efficient and environmentally sensitive manner.

5.8 SECURITY

Description:

The construction phase 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.

Mitigation / Recommendations:

- Construction labourers should 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 must be controlled by a register system. This includes visitors.
- All restricted areas of the property must be designated with appropriate warning signs.

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
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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
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Ground Cover:

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

Topographically the proposed development site slopes gently to the north east.

Implication / Risk / Impact:

- Vegetation clearance on the site, stockpiling of soil and uncontrolled construction activities have the potential to result in soil erosion and sedimentation of the surrounding freshwater ecosystems.

Mitigation / Recommendations:

- All nearby undisturbed slopes must be protected from erosion by demarcating the construction site. No vehicular or pedestrian access should be allowed beyond the demarcated area.
- Erosion control measures must be implemented on destabilised slopes.
- Steep slopes must be stabilised by soil stabilisation mechanisms, such as cladding, netting or hard structures, preferably with a natural look and that allow plant growth.
- Service trenches must be backfilled as soon as possible.
- Re-vegetation of exposed soil should take place as soon as possible.

6.2 CLIMATE

Description:

Mean Annual Precipitation and Temperature in KZN are illustrated in Figures 5 and 6. The general site area experiences summer rainfall, but with some rainfall in winter. Average annual rainfall is between 801 – 1000mm while mean maximum annual temperatures are 25.1 °C to 27 °C and mean minimum annual temperatures range from approximately 4.1 °C to 6 °C.

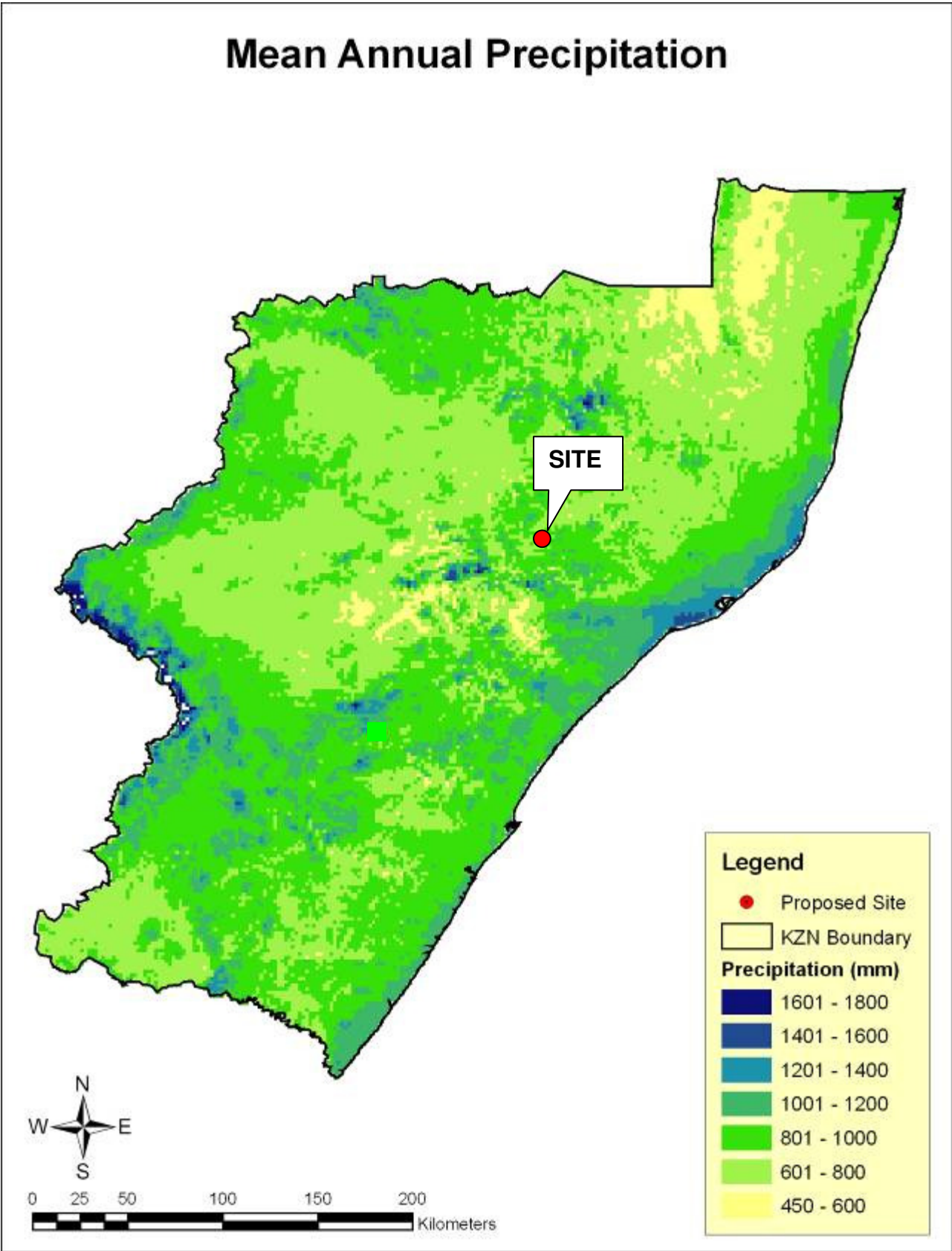


Figure 5: Mean Annual Precipitation for KwaZulu-Natal.

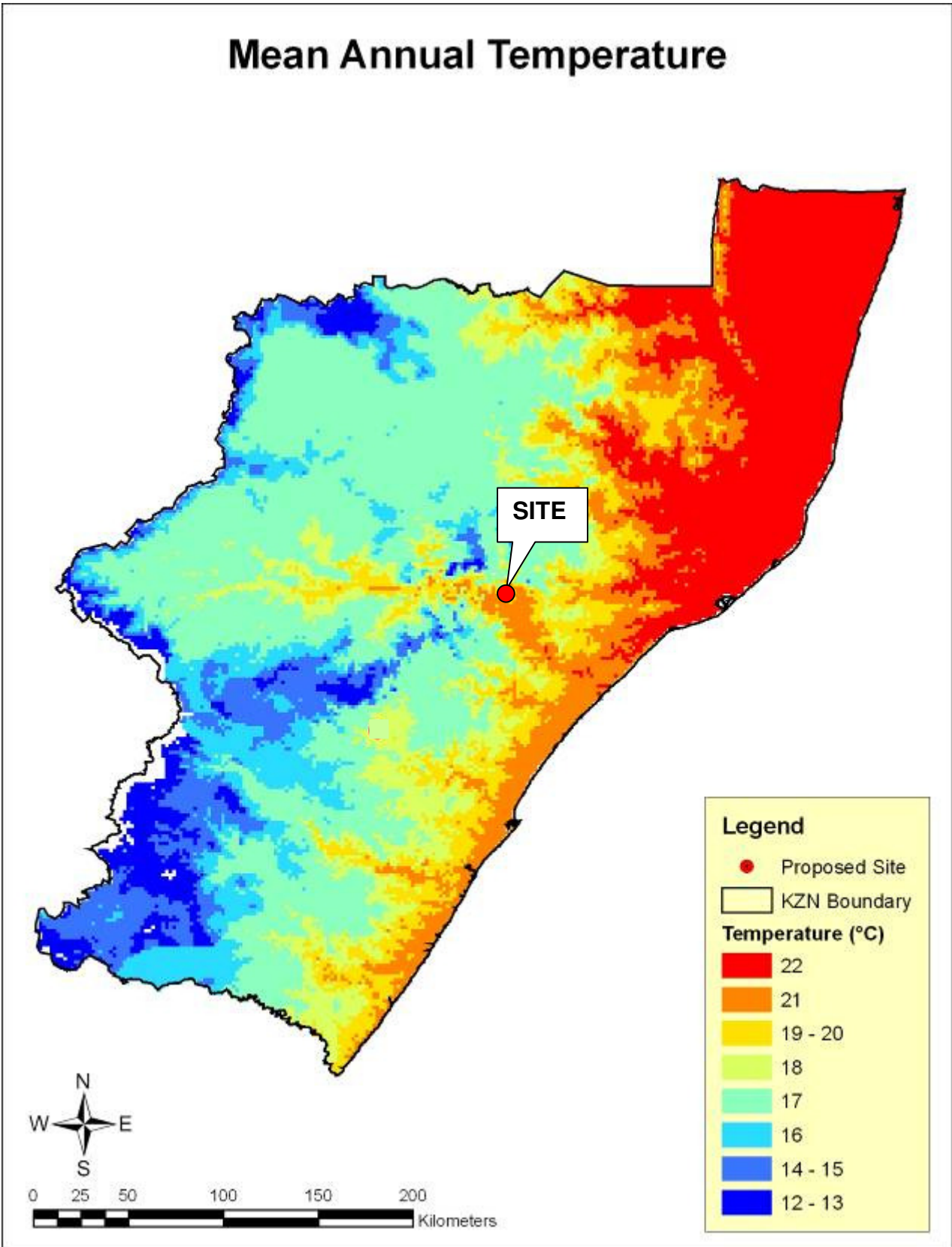


Figure 6: Mean Annual Temperature for KwaZulu-Natal.

Implication / Risk / Impact:

Topsoil, which is stockpiled during the construction phase, has the potential to be wind-blown, causing dust. Sediment rich stormwater runoff may enter the surrounding watercourses impacting negatively upon these systems. Potential exists for high intensity rainstorm events to cause severe erosion at the construction site.

Mitigation / Recommendations:

- Measures should be taken to cover exposed areas during high intensity rainfall events. Stockpiled topsoil should be dampened or covered during times of high wind to prevent dust.
- The subsoil stockpiles must be positioned on the higher side of a disturbed area, and above the 1:20 year flood line, wherever possible.
- Rehabilitation and landscaping should take place in the wetter summer months to increase the newly planted vegetations' chance of becoming established.
- Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem.
- Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem.
- A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral.
- The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing.

6.3 GEOLOGY AND SOILS

Description:

A Geotechnical Investigation was undertaken for the proposed Mount Partridge Road upgrade by GeoZone dated October 2015 (Appendix H). Geologically, the site is underlain by fill colluvial and residual soils that overlie weathered shale of the Pietermaritzburg Formation, which is locally intruded by Jurassic Age dolerite. Rock head, comprising weathered, soft rock Shale of the Pietermaritzburg Formation was encountered at a depth of 0.6m below existing ground level in only one test pit along the route.

No groundwater seepage was encountered in any of the test pits excavated along the route and it is considered that groundwater should not be a problem during construction. However, some slight groundwater seepage may develop at the interface of the fill, colluvial and residual soils both during and after periods of heavy rainfall and during the wet summer months.

Implication / Risk / Impact:

- It is anticipated that soft excavation (in terms of SABS 1200) can be anticipated to a depth of at least 1.0m.
- The existing fill and road layerworks comprises good quality material (G5, G6 and G7 standard) which may be used as selected layer, subgrade and where of high enough specification, as road subbase.
- The underlying subgrade is considered to be of G10 quality and is of acceptable standard for the construction of both road and sidewalks.

Mitigation / Recommendations:

- Depending on the earthworks and road profiles required it is recommended that a contingency amount be allowed for intermediate and hard rock/boulder excavation within the contract documentation.
- If very clayey material of less than G10 quality is encountered along the proposed route these poorer quality horizons should be undercut to a depth of at least 300mm and replaced with material of G8 quality.

- A provision should be made to manage seepage should this be encountered, and this is best done using subsoil drains to draw the phreatic surface below the depth of the proposed layerworks.
- In addition it is important that the surface run off from the roads and paved areas is directed into the stormwater management system to prevent ingress of water into the layerworks.

6.4 GROUND AND SURFACE WATER

Description:

A specialist Freshwater Ecosystem Delineation and Assessment was undertaken for the Mount Partridge Road upgrade by GroundTruth dated November 2015 (Appendix G). The delineation process identified a hillslope seepage wetland (the Greater Edendale Mall Wetland), two artificial wetland systems and two Riparian B channel systems within 100m of the Mount Partridge Road. Two river systems, the KwaPata and the Msunduzi Rivers are also located within 500m of Mount Partridge Road.

Implication / Risk / Impact:

- Roads can have a series of impacts that need to be managed during construction. These relate to the physical disturbance footprint of the construction activities such as vehicle movements, earth moving and storage.
- Roads can act like extensions of the primary drainage network delivering additional run-off and sediment to aquatic ecosystems including wetlands.
- Roads can act as a barrier to the natural movement of water and sediment.
- Insufficient or poorly placed culverts can cause an impounding effect holding back water and sediment, starving the wetland downstream of water and sediment.

Mitigation / Recommendations:

- Where roads are built within or in close proximity to wetlands, culvert design and placement are important elements in reducing the potential negative impacts of roads on wetlands.
- Culverts should be placed in a manner that allows for the free movement of water and sediment.
- Culverts should be placed at the same level as the wetland or riparian surface.
- Culverts need to allow for the natural flows of water across the freshwater ecosystem and not confine flows.
- Culverts should have sufficient grade to be self-scouring or self-cleaning and not prone to sedimentation and be equipped with energy breakers at the outlet to ensure the downstream areas of the freshwater ecosystems do not scour.
- Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem.
- Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem.
- A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral.
- The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing.
- The physical disturbance footprint of the road construction must be limited to the smallest area possible.
- Vehicles should be kept out of freshwater ecosystems.
- Should excavation and construction within the freshwater ecosystems be unavoidable, it should take place during the dry season.
- The freshwater ecosystems areas directly adjacent (within 50m) to crossings should be rehabilitated in accordance with best practice to ensure that no barriers exist to flows within the system and habitat is similar to the current situation and/or improved.

6.5 FLORA

Description:

The proposed road upgrade site is located within the peri-urban Imbali area falling within the built-up or densely populated land use category. Under natural conditions the surrounding landscape would have comprised Ngongoni Veld. Presently any vegetated areas that remain along the road upgrade route comprise alien invasive vegetation. The site therefore has a low vegetation sensitivity.

The Hillslope Seepage Wetland located adjacent to the Mount Partridge Road falls within the sub-escarpment savanna bioregion, which has an ecosystem threat status of endangered. The rehabilitation that was implemented for the wetland has ensured that there is diffuse flow of water through the system, which has allowed for the establishment of a diverse range of plant species through the transition from temporary to permanently wet soils. The riparian B channels systems and artificial wetland systems within the vicinity of the study site comprise largely of Alien Invasive Plants.

Implication / Risk / Impact:

- There is a risk of further spread of alien vegetation where soil is disturbed during the road widening activities.
- As the road upgrade will not encroach into or interfere with the adjacent hillslope seepage wetland area within the Greater Edendale Mall and will have no impact on the vegetation within this wetland.

Mitigation / Recommendations:

- Alien Vegetation Removal Plan must be implemented (refer to the EMP in Appendix D).
- Encroachment of construction activities into the demarcated boundary of the Greater Edendale Mall wetland is prohibited.

6.6 FAUNA

Description:

As the project site falls within a built-up or densely populated land use area and is transformed, it is unlikely that any endangered or red data species will be found.

Implication / Risk / Impact:

None.

Mitigation / Recommendations:

- None.

7. SPECIALIST STUDIES: KEY FINDINGS AND RECOMMENDATIONS

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

- Freshwater Ecosystem Delineation and Assessment; and
- Geotechnical Assessment.

7.1 FRESHWATER ECOSYSTEMS DELINEATION AND ASSESSMENT

Key Findings:

A specialist Freshwater Ecosystem Delineation and Assessment of the Mount Partridge Road project site was undertaken by GroundTruth, dated November 2015. The study identified one hillslope seepage wetland, two artificial wetland systems and two riparian B channel systems within 100m of the project site. The study also identified two river systems, the KwaPata and the Msunduzi Rivers within 500m of the project site. None of these wetland or river systems have been classified as National Freshwater Ecosystem Priority Area (NFEPA) systems.

The hillslope seepage wetland within the Greater Edendale Mall cadastral is approximately 2.4 ha in extent, with an approximate historical extent of 5.7 ha. Currently the wetland drains via drop inlet structure into a sub-surface culvert where it decants into the KwaPata River. This wetland was rehabilitated as part of the development of the Greater Edendale Mall and the rehabilitation that was implemented has ensured that there is diffuse flow of water through the system, which has allowed for the establishment of a diverse range of wetland plant species through the transition from temporary to permanently wet soils. As the wetland forms part of the mitigation requirements for the Mall, encroachment into this wetland is prohibited.

In terms of wetland functioning, the wetland system was seen to be supplying regulatory ecosystem services at an Intermediate to Moderately High level for the current scenario as the rehabilitation of this wetland has increased the effectiveness of the wetland to assimilate pollutants.

In terms of Ecological Importance and Sensitivity (EIS) the wetland system was found to be a C Class (Moderate) for the current scenario. Moderate: *“Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these systems is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major river”*.

The ecological integrity or Present Ecological State (PES) of the wetland was assessed for the hydrology, geomorphology and vegetation components based on the current extent and state of the wetland (post rehabilitation), i.e. the current state should be viewed as a new reference state. Based on this approach, the PES of the wetland system was given a B Category (Largely natural with few modifications) in terms of wetland integrity. Largely natural with few modifications: *“A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.”*

An assessment of the two riparian B-channel systems which drain into the KwaPata and Msunduzi Rivers was also undertaken. The two riparian B channel systems are dominated by alien invasive vegetation. Both channels have been negatively affected by the illegal dumping of solid waste. Portions of the riparian channels have been transformed by water flowing through sub-surface culverts. There are limited buffers surrounding the systems and in places encroachment of houses into the freshwater ecosystems has taken place.

The two artificial wetlands are fed by sub-surface seepage from the adjacent hillside and the discharging of water from the neighbouring households. The railway line acts as a retaining feature, impounding the sub-surface seepage flow on the southern side of the railway line.

The study also identified two river systems, the KwaPata and the uMsunduze Rivers within 500m of Mt. Partridge Road.

All the described systems have been heavily impacted upon by anthropogenic activities and developments associated with a peri-urban environment. These include *inter alia* excavation, infilling, erosion, solid waste, pollutants associated with pit latrines and subsistence agriculture, and grazing pressure in the communal open spaces in the area.

Refer to Appendix G.

Recommendations:

- Considering the loss and degradation of freshwater ecosystems within KwaZulu-Natal, it is recommended that the planning and implementation of the proposed road alignment should adopt a 'no-net-loss' approach. i.e. maintaining the current levels of ecosystem integrity and service delivery of the systems within the study area; and/or
- Mitigating and offsetting impacts of the proposed development on the systems by rehabilitating the habitat within the study area and introducing mitigation measures during the construction process.
- The design and placement of storm water management infrastructure and culverts is very important in reducing potential negative impacts of roads on freshwater ecosystem.
- Culverts should be placed in a manner that allows for the free movement of water and sediment.
- Culverts should be placed at the same level as the wetland or riparian surface.
- Culverts need to allow for the natural flows of water across the freshwater ecosystem and not confine flows.
- Culverts should have sufficient grade to be self-scouring or self-cleaning and not prone to sedimentation and be equipped with energy breakers at the outlet to ensure the downstream areas of the freshwater ecosystems do not scour.
- Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem.
- Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem.
- A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral.
- The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing.
- The following mitigation activities should be incorporated into the Construction Environmental Management Plan (CEMP) to assist in reducing the impacts of the installation of the proposed infrastructure within the freshwater ecosystems.
- The physical disturbance footprint of the road construction must be limited to the smallest area possible.
- Vehicles should be kept out of freshwater ecosystems.
- Should excavation and construction within the freshwater ecosystems be unavoidable, it should take place during the dry season.
- The freshwater ecosystems areas directly adjacent (within 50m) to crossings should be rehabilitated in accordance with best practice to ensure that no barriers exist to flows within the system and habitat is similar to the current situation and/or improved.

7.2 GEOTECHNICAL ASSESSMENT

Key Findings:

A specialist Geotechnical Investigation for the proposed upgrade of Mount Partridge Road was undertaken by GeoZone dated 26 October 2015. The study comprised an investigation into subgrade and pavement structure conditions along the entire length of the road.

The study comprised the excavation and logging of ten test pits from depths ranging from 0.8m to 1.0m below existing ground level. Seven Dynamic Cone Penetrometer (DCP) tests were also carried out to depths ranging from 0.9m to 1.3m below existing ground level.

The key findings of their studies revealed:

- The site is underlain by fill, colluvial and residual soils that overlie weathered shale of the Pietermaritzburg Formation, which is locally intruded by Jurassic Age Dolerite.
- Rockhead was encountered only in one test pit, Test Pit 5 at a depth of 0.6 m below existing ground level and comprised completely to highly weathered, extremely soft rock Shale of the Pietermaritzburg Formation.
- No groundwater was encountered in any of the test pits excavated on the site and it is considered that groundwater should not be a problem during construction. However, some slight groundwater seepage may develop at the interface of the fill, colluvial and residual soils both during and after periods of heavy rainfall or during the wet summer months.
- It is considered that soft excavation in terms of SABS 1200 can be anticipated to a depth of at least 1.0 m.
- The fill and road layerworks comprises good quality material of G5, G6 and G7 standard which may be used as selected layer, subgrade and where of high enough specification as road subbase.
- This good quality material may be recycled into the proposed road upgrade to reduce the requirements for additional granular material from a commercial source.
- The underlying subgrade is considered to be of G10 quality and the DCP test results further indicate that it is of acceptable standard for the construction of both roads and sidewalks.

Refer to Appendix H.

Recommendations:

- It is recommended that a contingency amount be allowed for intermediate and hard rock/boulder excavation within the contract documentation.
- A provision should be made to manage seepage should this be encountered, and this is best done using subsoil drains to draw the phreatic surface below the depth of the proposed layerworks. In addition it is important that the surface run off from the roads and paved areas is directed into the stormwater management system to prevent ingress of water into the layerworks.
- Should weathered shale bedrock be encountered at subgrade level, it may be ripped to a depth of 300 mm and recompacted to 93 percent modified AASHTO dry density to provide a good subgrade.
- It is important that water is kept out of the various layerworks and in this regard all road curves and the outer shoulder should be lined with upright kerbs to deflect run-off back into the road stormwater system.
- The need for subsoil drainage will have to be assessed on site during construction.

8. ASSESSMENT OF ENVIRONMENTAL IMPACTS

In order to assess potential environmental issues associated with the proposed development, each aspect addressed in the two sections above have been given a qualitative rating in relation to its environmental impact (Table 2). 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 2: Summary of aspects used for assessing environmental impacts.

ASPECT	CLASS	CRITERIA
NATURE OF IMPACT	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.
OCCURRENCE OF IMPACT	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.
PROBABILITY OF IMPACT OCCURRING (with mitigation)	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%)
REVERSIBILITY (with mitigation)	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.
EXTENT OF IMPACT (with mitigation)	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.
DURATION (with mitigation)	Short-term	0-5 years (construction phase).
	Medium-term	5-40 years (construction and operation).
	Long-term	(>40 years).
	Permanent	Permanent damage to the environment.

SIGNIFICANCE OF IMPACT WITHOUT MITIGATION	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.
SIGNIFICANCE OF IMPACT POST- MITIGATION	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.

Table 3 lists potential impacts associated with the proposed development, and details what mitigation measures should be taken to minimise these impacts.

Table 3: Assessment of potential impacts associated with the proposed Mount Partridge Road upgrade.

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		
LOCAL ECONOMY AND EMPLOYMENT OPPORTUNITIES	<ul style="list-style-type: none">• The upgrade of Mount Partridge Road will have significant social and socio-economic impacts for the Edendale community.• The construction phase will provide much needed employment opportunities for the local community.• The project will result in improved infrastructure in a historically disadvantaged area.• This will help facilitate further economic development and growth in the area.• The road upgrade will result in improved safety and reduce traffic congestion and delays.	<ul style="list-style-type: none">• 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.	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
NEED AND DESIRABILITY	<ul style="list-style-type: none">• The existing 7m wide Mount Partridge Road is no longer able to cope with the increased volume of traffic in the Imabli / Edendale area.• The upgrade will assist with the increase in the volume of traffic and improve traffic flow and prevent the traffic delays that are currently being experienced along the road;• The proposed upgrade will allow for job opportunities for the surrounding communities during construction.• The community will benefit from improved infrastructure and improved road user safety level.	<ul style="list-style-type: none">• 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.	Positive Direct and Indirect	-	Definite	Definite	-	-	Local and provincially	-	Short-term during Construction. Medium-term during Operation.	Short-term during Construction. Medium-term during Operation.	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		
PLANNING INITIATIVES	<ul style="list-style-type: none"> The proposed development complies with the Planning Initiatives of job creation, infrastructure development and economic growth. 	<ul style="list-style-type: none"> 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. 	Positive Direct and Indirect	-	Definite	Definite	-	-	Local, provincial	-	Short-term during Construction. Medium-term during Operation.	Short-term during Construction. Medium-term during Operation.	High Positive	High Positive
CULTURAL AND HISTORICAL RESOURCES	<ul style="list-style-type: none"> As the road upgrade will take place within the existing Mount Partridge Road servitude no buildings or structures of heritage significance will be affected by the upgrade. 	<ul style="list-style-type: none"> The KwaZulu-Natal Heritage Act requires that all operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities. 	Negative Direct	Highly likely	Unlikely	Unlikely	Possible	Possible	Site & local	Site & local	Medium-term	Medium-term	Med	Low
SURROUNDING LANDUSE AND AESTHETICS	<ul style="list-style-type: none"> The proposed upgrade will alter the land where the road carriageway is expanded. The upgrade will impact upon the informal traders along the road. The upgrade will impact on the flow of traffic during the construction phase. 	<ul style="list-style-type: none"> Noise and dust impacts must be controlled. Land owners must be given sufficient notification if access roads are unusable. An Alien Vegetation Control Programme must be implemented. Noise and dust impacts must be controlled. No activities associated with the road upgrade must encroach into the Greater Edendale Mall wetland boundary. 	Negative Direct & Indirect	Highly likely	Fair	Unlikely	Possible	Possible	Site & local	Site & local	Medium-term	Short-term	Med	Low
TRAFFIC, ROADS AND ACCESS	<ul style="list-style-type: none"> Traffic delays and congestion are likely to increase during the construction phase of the project. The construction phase will result in additional large, slow-moving construction vehicles accessing the site which may cause further traffic delays. The operational phase of the road upgrade will result in improved traffic flows and improved road user and pedestrian safety. 	<ul style="list-style-type: none"> Construction vehicles accessing the area must be driven cautiously within the required speed limits. Warning signage must be erected to warn motorists and pedestrians of slow-moving vehicles and the active construction areas. Vehicles using Mount Partridge Road during the construction phase must be driven cautiously within the required speed limits. 	Negative Direct	Partly	Definitely	Definitely	Partly	Possible	Site and Local	Site and Local	Short-term	Short-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
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CONSTRUCTION ACTIVITIES, NOISE AND DUST	<ul style="list-style-type: none"> 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 increased 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. This impact however, is only a temporary impact, ending with the completion of the construction phase. 	<ul style="list-style-type: none"> It is recommended that activities of construction vehicles, building contractors and labourers should be limited to working hours between 7.30am and 5pm 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. As many local people in the area are unemployed, labourers for the construction phase must be sourced from nearby settlements to ensure that unemployed people are given priority for employment on the site. 	Negative Direct	Partly	Definitely	Fair	Partly	Possible	Site & local	Site & local	Short-term.	Short-term	Med	Low
SECURITY	<ul style="list-style-type: none"> The construction phase 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. 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. 	<ul style="list-style-type: none"> Construction labourers should 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 must be controlled by a register system. This includes visitors. All restricted areas of the property must be designated with appropriate warning signs. 	Negative Direct	Highly likely	Fair	Unlikely	Partly	Possible	Local	Local	Short-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
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TOPOGRAPHY	<ul style="list-style-type: none"> Vegetation clearance on the site, stockpiling of soil and uncontrolled construction activities have the potential to result in soil erosion and sedimentation of the surrounding freshwater ecosystems. 	<ul style="list-style-type: none"> All nearby undisturbed slopes must be protected from erosion by demarcating the construction site. No vehicular or pedestrian access should be allowed beyond the demarcated area. Erosion control measures must be implemented on destabilised slopes. Steep slopes must be stabilised by soil stabilisation mechanisms, such as cladding, netting or hard structures, preferably with a natural look and that allow plant growth. Service trenches must be backfilled as soon as possible. Re-vegetation of exposed soil should take place as soon as possible. 	Negative Direct and Indirect	Likely	Definitely	Unlikely	Partly	Possible	Site & local	Site & local	Medium-term	Short-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
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CLIMATE	<ul style="list-style-type: none"> Topsoil, which is stockpiled during the construction phase, has the potential to be wind-blown, causing dust. Sediment rich stormwater runoff may enter the surrounding watercourses impacting negatively upon these systems. Potential exists for high intensity rainstorm events to cause severe erosion at the construction site. 	<ul style="list-style-type: none"> Measures should be taken to cover exposed areas during high intensity rainfall events. Stockpiled topsoil should be dampened or covered during times of high wind to prevent dust. The subsoil stockpiles must be positioned on the higher side of a disturbed area, and above the 1:20 year flood line, wherever possible. Rehabilitation and landscaping should take place in the wetter summer months to increase the newly planted vegetations' chance of becoming established. Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem. Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem. A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral. The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing. 	Negative Direct & Indirect	Partly	Likely	Fair	Partly	Possible	Site & Local	Site & Local	Medium-term	Short-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		
GEOLOGY AND SOILS	<ul style="list-style-type: none"> The site is underlain by fill colluvial and residual soils that overlie weathered shale of the Pietermaritzburg Formation, which is locally intruded by Jurassic Age dolerite. No groundwater seepage was encountered at the site. Some slight groundwater seepage may develop at the interface of the fill, colluvial and residual soils both during and after periods of heavy rainfall and during the wet summer months. The existing fill and road layerworks comprises good quality material which may be used as selected layer, subgrade and road subbase. The underlying subgrade is considered to be of acceptable standard for the construction of both road and sidewalks. 	<ul style="list-style-type: none"> Depending on the earthworks and road profiles required it is recommended that a contingency amount be allowed for intermediate and hard rock / boulder excavation within the contract documentation. A provision should be made to manage seepage should this be encountered, and this is best done using subsoil drains to draw the phreatic surface below the depth of the proposed layerworks. It is important that the surface run off from the roads and paved areas is directed into the stormwater management system to prevent ingress of water into the layerworks. 	Negative Direct and Indirect	Partly	Definitely	Unlikely	Not possible	Possible	Site	Site	Medium-term	Short-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
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GROUND AND SURFACE WATER	<ul style="list-style-type: none"> Roads can act like extensions of the primary drainage network delivering additional run-off and sediment to aquatic ecosystems including wetlands. Roads can act as a barrier to the natural movement of water and sediment. Insufficient or poorly placed culverts can cause an impounding effect holding back water and sediment, starving the wetland downstream of water and sediment. 	<ul style="list-style-type: none"> Culverts should be placed in a manner that allows for the free movement of water and sediment. Culverts should be placed at the same level as the wetland or riparian surface. Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem. Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem. A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral. The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing. The physical disturbance footprint of the road construction must be limited to the smallest area possible. Vehicles should be kept out of freshwater ecosystems. 	Negative Direct and Indirect	Highly likely	Fair	Unlikely	Not possible	Possible	Site & local	Site & local	Medium-term	Short-term	High	Low
VEGETATION	<ul style="list-style-type: none"> There is a risk of further spread of alien vegetation where soil is disturbed during the road widening activities. As the road upgrade will not encroach into or interfere with the adjacent hillslope seepage wetland area within the Greater Edendale Mall and will have no impact on the vegetation within this wetland. 	<ul style="list-style-type: none"> Alien Vegetation Removal Plan must be implemented (refer to the EMP in Appendix D). Encroachment of construction activities into the demarcated boundary of the Greater Edendale Mall wetland is prohibited. 	Negative Direct and Indirect.	Likely	Fair	Unlikely	Not possible	Possible	Site & Local	Site & Local	Medium-term	Short-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
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FAUNA	<ul style="list-style-type: none"> As the project site falls within a built-up or densely populated land use area and is transformed, it is unlikely that any endangered or red data species will be found. 	<ul style="list-style-type: none"> Poaching must not be permitted on site or on adjacent properties. If poaching occurs during construction, the culprit must be fined. 	Negative Direct	Highly likely	Fair	Unlikely	Partly	Possible	Site	Site	Medium-term	Short-term	Med	Low

9. ENVIRONMENTAL MANAGEMENT PROGRAMME

In terms of the regulations stated in Appendix 4 of Chapter 8 of NEMA (GNR 982), an Environmental Management Programme (EMPr) has been compiled (refer to Appendix D), 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 developer 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 development, including the following stages:

- Planning and design;
- Pre-construction and construction activities;
- Operation or undertaking of the activity;
- Rehabilitation of the environment; and
- Closure, where relevant.

10. POSITIVE AND NEGATIVE IMPLICATIONS OF THE PROPOSED ACTIVITY

POSITIVE SUMMARY:

- The proposed upgrade entails the provision of improved infrastructure in a historically disadvantaged area.
- The project will result in job creation and skills training during the construction phase.
- The upgrade will assist with the increase in the volume of traffic that has occurred in the area.
- The upgrade will improve traffic flow and prevent the delays currently being experienced along this road.
- The upgrade will also improve road safety for both drivers and pedestrians.

NEGATIVE SUMMARY:

- The proposed upgrade will result in the need for the relocation of informal traders who operate along the existing Mount Partridge Road.
- The upgrade will result in traffic congestion and delays during the construction phase.
- The proposed development will result in additional catchment hardening.
- Potential soil erosion if stormwater is not adequately controlled and channelled off the site.
- Potential for the further spread of alien invasive vegetation.

10.1 POSITIVE AND NEGATIVE IMPLICATIONS OF THE IDENTIFIED ALTERNATIVES

For this project, a variety of different alternatives types were investigated.

DO-NOTHING

- The “do nothing” option would mean that the existing Mount Partridge Road will not be rehabilitated, widened and upgraded and will be left at its current layout and 7m carriageway width, with all existing services and infrastructure left in their current state.

POSITIVE

- The negative impacts that may result from the proposed road upgrade which include traffic impacts, congestion and delays, noise impacts, increased stormwater flows, and impacts on informal traders and commuter in the area 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 continued traffic congestion and delays, road user safety, job creation and provision of essential public infrastructure in a historically disadvantaged area.

ALTERNATIVE TECHNOLOGY

- As the project entails the upgrade of an existing road, various alternatives relating to the recycling and reuse of the existing road infrastructure have been investigated.

POSITIVE

- The existing pavement layers may be recycled into the proposed road upgrade to reduce the requirements for additional granular material from a commercial source.

NEGATIVE

- Increased project costs from testing the existing pavement layers and obtaining new material from a commercial source should the existing pavement layers be found unsuitable for re-use in the road upgrade.

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: 21 November 2016

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

CONSTRUCTION OF THE ROAD UPGRADE

- The approved EMPr must be strictly enforced. During the construction phase, the activities should be monitored monthly by an independent Environmental Control Officer (ECO).
- Construction areas should only be cleared of vegetation immediately prior to the commencement of construction, in order to reduce the period which soils are exposed.
- The construction of the Mount Partridge Road upgrade must be in accordance to the approved design and layout specifications.
- All construction and operational activities must adhere to the EMPr.

HERITAGE

- Amafa should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
- Amafa should be contacted if any graves are identified during construction and the following procedure is to be followed: stop construction; report finding to local police station; report to Amafa to investigate.

BIOPHYSICAL

- The activity(s) must be restricted to the approved development footprint and all required buffers must be implemented and maintained.
- Vegetation clearing activities should take place only immediately prior to the commencement of construction activities in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.
- Land clearing activities must not be undertaken during windy conditions in order to minimise dust.
- An Alien Vegetation Control Programme must be implemented for the entire lifetime of the development.
- Encroachment of construction activities into the demarcated boundary of the Greater Edendale Mall wetland is prohibited.
- Stormwater should be passed through a sediment trap/pond/basin before it is discharged into a freshwater ecosystem.
- Stormwater should be discharged into the natural environment at a point where a minimum natural vegetation filter of 20m exists between the discharge point and the freshwater ecosystem.
- A stormwater management plan must be compiled to address the quality of stormwater discharged from the site and incorporate on-site stormwater attenuation measures to ensure the proposed upgrade is flood neutral.
- The stormwater management plan must be submitted to the Msunduzi Environmental Management Unit and the Msunduzi Stormwater and Drainage Management Unit for comment and approval prior to any site works commencing.
- The physical disturbance footprint of the road construction must be limited to the smallest area possible.
- Vehicles should be kept out of freshwater ecosystems.
- Should excavation and construction within the freshwater ecosystems be unavoidable, it should take place during the dry season.

- The freshwater ecosystems areas directly adjacent (within 50m) to crossings should be rehabilitated in accordance with best practice to ensure that no barriers exist to flows within the system and habitat is similar to the current situation and/or improved.

GENERAL

- Local businesses and unemployed people in the immediate area must be considered first, before employing services from further afield.
- Noise and dust impacts must be controlled.
- Construction vehicles must be driven cautiously within the required speed limits.
- Warning signage must be erected to warn motorists of slow-moving vehicles and construction activities.
- It is recommended that activities of construction vehicles, building contractors and labourers should be limited to working hours between 7.30am and 5pm 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.
- All construction labourers must remain within the boundaries of the construction site at all times.
- All nearby, undisturbed slopes must be protected from erosion by demarcating the construction site. No vehicular or pedestrian access should be allowed beyond the demarcated area.
- Erosion control measures must be implemented on destabilised slopes.
- All trenches must be backfilled as soon as possible.
- Re-vegetation of exposed soil should take place as soon as possible.
- Measures should be taken to cover exposed areas during high intensity rainfall events. Stockpiled topsoil should be dampened or covered during times of high wind to prevent dust.
- The subsoil stockpiles must be positioned on the higher side of a disturbed area, and above the 1:20 year flood line, wherever possible.
- Rehabilitation and landscaping should take place in the wetter summer months to increase the newly planted vegetations' chance of becoming established.
- Construction should be done during the winter months if possible.

The EAP concludes that not fatal-flaws have been identified during the EIA process and, provided the EMPs and recommendations made in this report are strictly adhered to, there should be no significant, detrimental impacts on the environment.

12. APPENDICES