# DRAFT BASIC ASSESSMENT REPORT

# The Proposed Redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds, Located on Erf 10065 and Portion 3 of Erf 9147, Msunduzi Local Municipality, KwaZulu-Natal

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| **GD PROJECT NO.:** | GDE010 |
| **DEDTEA REF. NO.:** | TBC |
| **APPLICANT:** | Vu-Tact Trade & Invest (Pty) Ltd. |
| **DATE:** | 29 August 2022 |

*Residential*
*Commercial*
*Industrial*
*Agriculture*
*Linear*
*Service*

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# DOCUMENT CONTROL

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# CONTACT DETAILS

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# EXECUTIVE SUMMARY

The Applicant, Vu-Tact Trade and Invest (Pty) Ltd., wishes to obtain Environmental Authorisation for the Proposed Redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds, Msunduzi Local Municipality, KwaZulu-Natal.

The Proposed Redevelopment will traverse two (2) erven; ERF 10065 and Portion 3 of ERF 9147, which currently contain buildings and infrastructure owned by the Royal Agricultural Society. The site is located at GPS co-ordinates 29°35'29.45"S and 30°22'25.02"E and is approximately 16 hectares in extent.

The site is no longer considered to be suitable for hosting the annual Royal Agricultural Show given the many logistical challenges of transporting large numbers of animals into a site which is now in close proximity to the Pietermaritzburg Central Business District (CBD). Prior to the redevelopment of the site, closure of existing facilities, and deconstruction of buildings, structures and infrastructure which are not to be utilised and cannot be recycled, will be undertaken. The site will then be developed into a Mixed Use Precinct, with a building footprint of 72 100 $m^2$, and is proposed to be completed in five (5) phases. The proposed layout comprises the following land uses:

- A Filling Station;
- A Heritage Building Shopping Centre;
- Retail / Residential Facilities;
- Standalone Shops / Showrooms;
- Offices;
- A 150 Room Hotel and Conference Centre;
- A 120 Bed Hospital;
- Offices / Medical Consultation Rooms;
- Retail Buildings;
- Respective Parking Areas;
- Sidewalks and Walkways;
- Landscaped Areas;
- Feature canal area and watercourse areas, and;
- Internal Roads.

The proposed redevelopment triggers Listed Activities from Government Notice Regulation (GNR) 324, and 327 of 2014 (as amended 2017 & 2021), under the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended 2017 & 2021). As such, a Basic Assessment (BA) Process is being undertaken.

The main issues which have been raised to date are:

- Potential Flood Risks;
- Requirement for adequate Stormwater Management and attenuation;
- Current pollution of the Dorpspruit River and tributary;
- Ecological connectivity of Dorpspruit River to adjacent sites;
- Buildings and structures of heritage significance;
- Confirmation requirements regarding available municipal service capacities;
- Socio-economic feasibility of proposed land uses, and;
- Traffic and road impacts.

The following Specialist Studies have been completed:

- Heritage Impact Assessment (Phase 1) — Appendix E1
- Heritage Impact Assessment (Phase 2 for Built Environment) — Appendix E2
- Palaeontological Assessment — Appendix E3

- Floodline and Flood Risk Analysis Study — Appendix E4
- Stormwater Management Plan — Appendix E5
- Wetland / Riparian Assessment — Appendix E6
- Baseline Aquatic Study — Appendix E7
- Bulk Services Report — Appendix E8
- Traffic Impact Assessment — Appendix E9
- Geotechnical Assessment — Appendix E10
- Biodiversity Assessment — Appendix E11
- Feasibility Study, Socio-Economic Impact Assessment & Need and Desirability Assessment — Appendix E12

The findings from the Specialist Studies and the Impact Assessment support the proposed redevelopment, provided mitigation measures contained in this report and the Environmental Management Programme (EMPr) are implemented.

The Environmental Assessment Practitioner (EAP) concludes that no fatal flaws have been identified during the BA Process, and recommends that the proposed redevelopment be approved, provided mitigation measures contained in this report and the EMPr are implemented, there should be no significant, detrimental impacts on the environment.

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# LIST OF ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| BA | Basic Assessment |
| BAR | Basic Assessment Report |
| BID | Background Information Document |
| CA | Competent Authority |
| CBD | Central Business District |
| CER | Centre for Environmental Rights |
| DAFF | Department of Agriculture, Forestry and Fisheries |
| DARD | Department of Agriculture and Rural Development |
| DBAR | Draft Basic Assessment Report |
| DEA | Department of Environmental Affairs |
| DEA & DP | Department of Environmental Affairs and Development Planning |
| DEDTEA | KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs |
| DEG | Digital Elevation Model |
| DoE | Department of Energy |
| DOJCD | Department of Justice and Constitutional Development |
| DoT | Department of Transport |
| DWS | Department of Water and Sanitation |
| EA | Environmental Authorisation |
| EAP | Environmental Assessment Practitioner |
| EAPASA | Environmental Assessment Practitioners Association of South Africa |
| ECO | Environmental Control Officer |
| EIA | Environmental Impact Assessment |
| EMF | Environmental Management Framework |
| EMPr | Environmental Management Programme |
| FBAR | Final Basic Assessment Report |
| GIS | Geographic Information Systems |
| GNR | Government Notice Regulation |
| HIA | Heritage Impact Assessment |
| I&AP | Interested and Affected Parties |
| IAIA | International Association for Impact Assessment |
| IDP | Integrated Development Plan |
| IEM | Integrated Environmental Management |
| IWMSA | Institute of Waste Management of Southern Africa |
| KZN | KwaZulu-Natal |
| MDGs | Millennium Development Goals |
| MPRDA | Mineral and Petroleum Resources Development Act |
| NDP | National Development Plan |
| NEMA | National Environmental Management Act |
| NEM:BA | National Environmental Management Biodiversity Act |
| NAM:PAA | National Environmental Management Protected Areas Act |
| NEM:WA | National Environmental Management Waste Act |
| NEM:WAA | National Environmental Management: Waste Amendment Act |
| NEM:AQA | National Environmental Management Air Quality Act |
| NFA | National Forests Act |
| NHRA | National Heritage Resources Act |
| NSDF | National Spatial Development Framework |
| NWA | National Water Act |
| OHSA | Occupational Health and Safety Act |
| PGDS | Provincial Growth and Development Strategy |

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|---|---|
| PIS | Public Information Session |
| POPIA | Protection of Personal Information Act |
| PP | Public Participation |
| Pr. Sci. Nat. | Professional Natural Scientist |
| PSDP | Provincial Spatial Development Perspective |
| SAHRA | South African Heritage Resources Agency |
| SAIIEA | The South African Institute of International Affairs |
| SANBI | South African National Biodiversity Institute |
| SANS | South African National Standards |
| SDF | Spatial Development Framework |
| SIP | Strategic Integrated Project |
| SSAG | The Society of South African Geographers |
| UC | Urban Core |
| WISA | The Water Institute of Southern Africa |
| WUL | Water Use Licence |

# TERMINOLOGY

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| Activity (Development) | An action either planned or existing that may result in environmental impacts through pollution or resource use. For the purpose of this report, the terms 'activity' and 'development' are freely interchanged. |
| Alternative | A possible course of action, in place of another, of achieving the same desired goal of the proposed project. Alternatives can refer to any of the following but are not limited to: site alternatives, site layout alternatives, design or technology alternatives, process alternatives or a no-go alternative. |
| Applicant | The project proponent or developer responsible for submitting an environmental application to the relevant environmental authority for environmental authorisation. |
| Biodiversity | The diversity of animals, plants and other organisms found within and between ecosystems, habitats, and the ecological complexes. |
| Construction | means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint. |
| Cumulative Impacts | Impacts that 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 to produce a greater impact or different impacts. |
| Direct impacts | Impacts that are caused directly by the activity and generally occur at the same time and at the same place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally quantifiable. |
| Ecological Reserve | The Ecological Reserve specifies both the quantity and quality of water that must be left in the national water resource. The Ecological Reserve is determined for all major water resources in the different water management areas to ensure sustainable development. The water that is necessary to protect the water ecosystems of the water resource. It must be safeguarded and not used for other purposes. |
| Ecosystem | A dynamic system of plant, animal (including humans) and micro-organism communities and their non-living physical environment interacting as a functional unit. The basic structural unit of the biosphere, ecosystems are characterised by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space in which macro-scale conditions and interactions are relatively homogenous. |
| Environment | In terms of the National Environmental Management Act (NEMA) (Act No 107 of 1998) (as amended), "Environment" means the surroundings within which humans exist and that are made up of:<br>a) the land, water and atmosphere of the earth;<br>b) micro-organisms, plants and animal life;<br>c) any part or combination of (a) or (b) and the interrelationships among and between them; and<br>d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing. |

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| Environmental Assessment | The generic term for all forms of environmental assessment for projects, plans, programmes or policies and includes methodologies or tools such as environmental impact assessments, strategic environmental assessments and risk assessments. |
| Environmental Authorisation | An authorisation issued by the competent authority in respect of a listed activity, or an activity which takes place within a sensitive environment. |
| Environmental Assessment Practitioner | The individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the EIA Regulations. |
| Environmental Impact | A change to the environment (biophysical, social and/ or economic), whether adverse or beneficial, wholly or partially, resulting from an organisation's activities, products or services. |
| Environmental Impact Assessment | The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made. |
| Environmental Issue | A concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity. |
| Environmental Management | The inclusion of environmental concerns in all stages of the development, so that the development is sustainable and does not detrimentally impact the environment. |
| Environmental Management Programme | A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. The EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project. |
| Expansion | Means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased. |
| Fatal Flaw | Issue or conflict (real or perceived) that could result in developments being rejected or stopped. |
| General Waste | Waste that does not pose an immediate hazard or threat to health or to the environment, and includes domestic waste, building and demolition waste, business waste, and inert waste. |
| Hazardous Waste | Waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment. |
| Indirect impacts | Indirect or induced changes that may occur as a result of the activity. These types of impacts include all of the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity. |
| Integrated Environmental Management | A philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity – at local, national and international level – that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application |

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| | of appropriate tools for a particular proposal or activity. These may include environmental assessment tools (such as strategic environmental assessment and risk assessment), environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision support systems or advisory councils). |
| Interested and Affected Party | For the purposes of Chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, means an interested and affected party contemplated in Section 24(4)(a)(v), and which includes – (a) any person, group of persons or organisation interested in or affected by such operation or activity; and (b) any organ of state that may have jurisdiction over any aspect of the operation or activity. |
| Mitigate | The implementation of practical measures designed to avoid, reduce or remedy adverse impacts or enhance beneficial impacts of an action. |
| No-Go Option | In this instance, the proposed activity would not take place, and the resulting environmental effects from taking no action are compared with the effects of permitting the proposed activity to go forward. |
| Rehabilitation | A measure aimed at reinstating an ecosystem to its original function and state (or as close as possible to its original function and state) following activities that have disrupted those functions. |
| Sensitive environment | Any environment identified as being sensitive to the impacts of the development. |
| Significance | Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic). |
| Stakeholder engagement | The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. |
| Sustainable Development | Development which meets the needs of current generations without hindering future generations from meeting their own needs. |
| Watercourse | Means:<br>a) a river or spring;<br>b) a natural channel or depression in which water flows regularly or intermittently;<br>c) a wetland, lake or dam into which, or from which, water flows; and<br>d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) and a reference to a watercourse includes, where relevant, its bed and banks. |
| Wetland | Means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil. |

# THE PROPOSED REDEVELOPMENT OF THE PIETERMARITZBURG ROYAL AGRICULTURAL SHOWGROUNDS, LOCATED ON ERF 10065 AND PORTION 3 OF ERF 9147, MSUNDUZI LOCAL MUNICIPALITY, KWAZULU-NATAL

## 1 PROJECT ACTIVITY AND DESCRIPTION

### 1.1 Project Title

The Proposed Redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds, located on Erf 10065 and Portion 3 of Erf 9147, Msunduzi Local Municipality, KwaZulu-Natal

### 1.2 Listed Activities

In terms of the National Environmental Management Act (NEMA), Act 107 of 1998, and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended 2017 & 2021), published in Government Notice Regulation (GNR) 324, 325 and 327 of 2014 (as amended 2017 & 2021), certain Listed Activities require either a Basic Assessment (BA) Process (GNR 324 and GNR 327) or a Scoping and EIA Process (GNR 325) to be undertaken for Environmental Authorisation (EA). The proposed redevelopment triggers the following Listed Activities which require a BA Process to be undertaken (Table 2).

**Table 2: Applicable Listed Activities in terms of the NEMA: EIA Regulations, 2014 (as amended 2017 & 2021), for the proposed redevelopment activities.**

| ACTIVITY NO. | LEGISLATION EXTRACT | COMMENT |
|---|---|---|
| **GNR 327 of 2014 (as amended 2017 & 2021)** | | |
| **14.** | *The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.* | This activity is **applicable** for the establishment of the **proposed Filling Station,** provided the storage specifications remain within the specifications listed in this activity (i.e. 80 cubic metres or more, but less than 500 cubic metres). |
| **19.** | *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse…* | This activity is **applicable** for activities which may require **construction and changes in and around the watercourses**. |
| **31.** | *The closure of existing facilities, structures or infrastructure for…*<br>*(v) any activity regardless the time the activity was commenced with, where such activity:*<br>*(a) is similarly listed to an activity in (i) or (ii) above; and* | This activity is **applicable** as some existing buildings, structures and infrastructure on site must be **closed and deconstructed** prior to redevelopment of the site. |

| ACTIVITY NO. | LEGISLATION EXTRACT | COMMENT |
|---|---|---|
| | *(b) is still in operation or development is still in progress;…* | |
| **67.** | *Phased activities for all activities-*<br>*(i) listed in this Notice, which commenced on or after the effective date of this Notice or similarly listed in any of the previous NEMA notices, which commenced on or after the effective date of such previous NEMA Notices; excluding the following activities listed in this Notice-…*<br>*where any phase of the activity was below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.* | This activity is **applicable** as the proposed redevelopment plans are to implemented in a **phased approach**. |
| **GNR 324 of 2014 (as amended 2017 & 2021)** | | |
| **4.** | *The development of a road wider than 4 metres with a reserve less than 13.5 metres…*<br>*a. KwaZulu-Natal…*<br>*xiii. Inside urban areas:*<br>*(aa) Areas zoned for use as public open space;…* | This activity is **applicable** as the proposed redevelopment site will include the establishment of internal roads between 3.5 metres and 7 metres wide. Further, the site is:<br>• Located within an urban area.<br>• Designated as 'Active Public Open Space' in the Msunduzi 2017 Land Use Scheme.<br>• Located within an Environmental Management Framework (EMF) listed area. |
| **6.** | *The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more…*<br>*a. KwaZulu-Natal…*<br>*xiii. Inside urban areas:*<br>*(aa) Areas zoned for use as public open space;…* | This activity is **applicable** as the proposed redevelopment site will include the development of a hotel. Further, the site is:<br>• Located within an urban area.<br>• Designated as 'Active Public Open Space' in the Msunduzi 2017 Land Use Scheme.<br>• Located within an EMF listed area. |
| **10.** | *The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres…*<br>*a. KwaZulu-Natal…*<br>*xiv. Inside urban areas:*<br>*(aa) Areas zoned for use as public open space; or…* | This activity **is applicable** as the proposed redevelopment site will include a proposed Filling Station. Further, the site is:<br>• Located within an urban area.<br>• Designated as 'Active Public Open Space' in the Msunduzi 2017 Land Use Scheme.<br>• Located within an EMF listed area. |
| **14.** | *The development of…*<br>*(ii) infrastructure or structures with a physical footprint of 10 square metres or more;…*<br>*where such development occurs—* | This activity is **applicable** as the proposed redevelopment site is traversed by watercourses. Further, the site is:<br>• Located within an urban area. |

| ACTIVITY NO. | LEGISLATION EXTRACT | COMMENT |
|---|---|---|
| | *(a) within a watercourse;*<br>*(b) in front of a development setback; or*<br>*(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;…*<br>*a. KwaZulu-Natal…*<br>*xi. Inside urban areas:*<br>*(aa) Areas zoned for use as public open space;…* | • Designated as 'Active Public Open Space' in the Msunduzi 2017 Land Use Scheme.<br>• Located within an EMF listed area. |
| **15.** | *The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010.* | This activity is **applicable** as the proposed redevelopment site will result in the transformation of land which is zoned as 'Active Public Open Space'. |

The existing infrastructure on site will need to be decommissioned prior to the redevelopment of the site. The activities outlined in Table 3 are associated with the decommissioning phase. As per guidance provided by the Competent Authority (CA), the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA), both activities relating to decommissioning, and relating to existing infrastructure which is to be decommissioned, must be included in the EA application.

**Table 3: Applicable Listed Activities in terms of the NEMA: EIA Regulations, 2014 (as amended 2017 & 2021), for the decommissioning of existing structures and infrastructure.**

| Activity No. | Legislation Extract | Comment |
|---|---|---|
| **GNR 327 of 2014 (as amended 2017 & 2021)** | | |
| **4.** | *The development and related operation of facilities or infrastructure for the concentration of animals in densities that exceed—*<br>*(i) 20 square metres per large stock unit and more than 500 units per facility;*<br>*(ii) 8 square meters per small stock unit and;*<br>*a. more than 1 000 units per facility excluding pigs where (b) applies; or*<br>*b. more than 250 pigs per facility excluding piglets that are not yet weaned;*<br>*(iii) 30 square metres per crocodile and more than 20 crocodiles per facility;*<br>*(iv) 3 square metres per rabbit and more than 500 rabbits per facility; or*<br>*(v) 250 square metres per ostrich or emu and more than 50 ostriches or emus per facility.* | The Royal Agricultural Showgrounds is sometimes used to temporarily house animals at different densities in the existing facilities designed to cater for such. Although the densities of animals accommodated is unknown as it varies, the existing facilities used to house these animals will be closed and deconstructed. As such this activity **may be applicable**. |
| **5.** | *The development and related operation of facilities or infrastructure for the concentration of—* | The Royal Agricultural Showgrounds is sometimes used to temporarily house poultry at different densities in the existing facilities designed to cater for such. Although the densities of |

| Activity No. | Legislation Extract | Comment |
|---|---|---|
| | *(i) more than 1 000 poultry per facility situated within an urban area, excluding chicks younger than 20 days;*<br>*(ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;*<br>*(iii) more than 5 000 chicks younger than 20 days per facility situated within an urban area; or*<br>*(iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.* | poultry accommodated is unknown as it varies, the existing facilities used to house the poultry will be closed and deconstructed. As such this activity **may be applicable**. |
| **GNR 324 of 2014 (as amended 2017 & 2021)** | | |
| **3.** | *The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower—*<br>*(a) is to be placed on a site not previously used for this purpose; and*<br>*(b) will exceed 15 metres in height—*<br>*but excluding attachments to existing buildings and masts on rooftops.*<br>*a. KwaZulu-Natal…*<br>*i. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;*<br>*ii. Inside urban areas:…*<br>*(aa) Areas zoned for use as public open space; or…* | This activity is **applicable** for the deconstruction of existing masts and towers on site. |
| **4.** | *The development of a road wider than 4 metres with a reserve less than 13,5 metres.*<br>*b. KwaZulu-Natal…*<br>*i. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;…*<br>*ii. Inside urban areas:*<br>*(bb) Areas zoned for use as public open space;* | This activity **may be applicable** for the closure and deconstruction of any existing internal roads should they be wider than 4 metres. |
| **9.** | *The development and related operation of zip-lines or foefie-slides exceeding 100 metres in length.*<br>*a. KwaZulu-Natal…*<br>*i. Inside urban areas:…*<br>*(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;…* | This activity **may be applicable** for the closure and deconstruction of the existing foefie slide, if it is greater than 100 metres in length. |

| Activity No. | Legislation Extract | Comment |
|---|---|---|
| | *(ff) Areas zoned for use as public open space; …*<br>*(hh) Areas within a watercourse or wetland;* | |
| **14.** | *The development of…*<br>*(iii) infrastructure or structures with a physical footprint of 10 square metres or more;…*<br>*where such development occurs—*<br>*(d) within a watercourse;*<br>*(e) in front of a development setback; or*<br>*(f) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;…*<br>*b. KwaZulu-Natal…*<br>*xii. Inside urban areas:*<br>*Areas zoned for use as public open space;…* | This activity is **applicable** for the closure and deconstruction of infrastructure or structures within watercourses or within 32 metres of watercourses. |

The activities outlined in Table 4, constitute activities which were previously considered, but which were found to not be applicable.

**Table 4: Listed Activities in terms of the NEMA: EIA Regulations, 2014 (as amended 2017 & 2021), which were previously considered, but were found to not be applicable.**

| ACTIVITY NO. | LEGISLATION EXTRACT | COMMENT |
|---|---|---|
| **GNR 327 of 2014 (as amended 2017 & 2021)** | | |
| **12.** | *The clearance of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan…*<br>*a. KwaZulu-Natal…*<br>*vii. On land where at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning…*<br>*xii. Sensitive areas as identified in an environmental management framework, as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority,…* | This activity is **not applicable** as all the areas which are not under hard transformation are landscaped. Some of the areas are landscaped with indigenous vegetation, however these areas would not constitute natural indigenous vegetation areas given that they are as a result of landscaping. Further, much of the indigenous vegetation and larger trees are to be retained within the development layout as far as possible or relocated and re-utilised in newly proposed landscaping areas. |
| **27.** | *The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-*<br>*(i) the undertaking of a linear activity; or*<br>*(ii) maintenance purposes undertaken in accordance with a maintenance management plan.* | This activity is **not applicable** as the areas on site which are not under hard transformation are landscaped. Some of the areas are landscaped with indigenous vegetation, however these areas would not constitute natural indigenous vegetation areas given that they are as a result of landscaping. Further, much of the indigenous vegetation and larger |

| ACTIVITY NO. | LEGISLATION EXTRACT | COMMENT |
|---|---|---|
| | | trees are to be retained within the development layout as far as possible or relocated and re-utilised in newly proposed landscaping areas. |
| **GNR 324 of 2014 (as amended 2017 & 2021)** | | |
| **12.** | *The clearance of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan…*<br>*b. KwaZulu-Natal…*<br>*vii. On land where at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning…*<br>*xii. Sensitive areas as identified in an environmental management framework, as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority,…* | This activity is **not applicable** as all the areas which are not under hard transformation are landscaped. Some of the areas are landscaped with indigenous vegetation, however these areas would not constitute natural indigenous vegetation areas given that they are as a result of landscaping. Further, much of the indigenous vegetation and larger trees are to be retained within the development layout as far as possible or relocated and re-utilised in newly proposed landscaping areas. |

## 1.3 List of Legislation, Policies and / or Guidelines that are relevant to the application

There are a number of significant sections of environmental and other legislation that need to be recognised and adhered to during this EA Process. Table 5 below provides a list of legislation, policies and / or guidelines that are relevant to the application.

**Table 5: 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 Integrated Development Plan (IDP) | uMgungundlovu District Municipality | 2020 / 2021 |
| Msunduzi District Municipality IDP | Msunduzi District Municipality | 2021 / 2022 |
| Msunduzi District Municipality EMF | Msunduzi District Municipality | 2021 |
| The Municipal Systems Act (Act 32 of 2000) | South African Government | 2000 |
| The National Environmental Management Act (Act107 of 1998) | Department of Environmental Affairs (DEA) | 1998 |
| The Constitution of South Africa (Act 108 of 1996) | Department of Justice and Constitutional Development (DOJCD) | 1996 |
| Environmental Impact Assessment (EIA) Regulations promulgated under the NEMA | DEA | 2017 |
| Integrated Environmental Management (IEM) Information Series | DEA | 2010 |
| The National Water Act (NWA) (Act 36 of 1998) | Department of Water and Sanitation (DWS) | 1998 |
| Water Services Act (Act 108 of 1997) | DWS | 1997 |

| TITLE OF LEGISLATION, POLICY OR GUIDELINE | ADMINISTERING AUTHORITY | DATE |
|---|---|---|
| National Heritage Resources Act (NHRA) (Act 25 of 1999) | South African Heritage Resources Authority (SAHRA) | 1999 |
| KwaZulu-Natal Heritage Resources Act (Act 10 of 1997) | SAHRA | 1997 |
| National Road Traffic Act (Act 93 of 1996) | Department of Transport (DoT) | 1996 |
| The National Environmental Management: Waste Act (NEM:WA) (Act 59 of 2008) | DEA | 2008 |
| The National Environmental Management: Waste Amendment Act (NEM: WAA) (Act 26 of 2014) | DEA | 2014 |
| The Hazardous Substances Act (Act 15 of 1973) | South African Government | 1973 |
| The Occupational Health and Safety Act (OHSA) (Act 85 of 1993) | South African Government | 1993 |
| The Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) | South African Government | 2002 |
| The South African National Standard (SANS, 10103:2008): The measurement and rating of environmental noise with respect to annoyance and speech communication | SANS | 2008 |
| The National Environmental Management: Air Quality Act (NEM:AQA) (Act 39 of 2004) | DEA | 2004 |
| The National Environmental Management: Biodiversity Act (NEM:BA) (Act 10 of 2004) | DEA | 2004 |
| The National Environmental Management: Protected Areas Act (NEM:PAA) (Act 53 of 2003) | DEA | 2003 |
| The Biodiversity Policy | South African National Biodiversity Institute (SANBI) | 2021 |
| KwaZulu-Natal Nature Conservation Management Act (Act 9 of 1997) | Centre for Environmental Rights (CER) | 1997 |
| The National Forests Act (NFA) (Act 84 of 1998) | South African Government | 1998 |
| The National Veld and Forest Fire Act (Act 101 of 1998) | South African Government | 1998 |
| EIA Guideline and Information Document Series: Guideline on Alternatives | Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning (DEA&DP) | 2010 |

| TITLE OF LEGISLATION, POLICY OR GUIDELINE | ADMINISTERING AUTHORITY | DATE |
|---|---|---|
| EIA Guideline and Information Document Series: Guideline on Public Participation | Provincial Government of the Western Cape: DEA&DP | 2011 |
| EIA Guideline and Information Document Series: Guideline on Need and Desirability | Provincial Government of the Western Cape: DEA&DP | 2010 |
| EIA Guideline and Information Document Series: Information Document on Generic Terms of Reference for EAPs and Project Schedules | Provincial Government of the Western Cape: DEA&DP | 2010 |
| Integrated Environmental Guideline: Guideline on Need and Desirability | DEA | 2017 |
| Public Participation Guideline in terms of the NEMA (1998) and the EIA Regulations (2017) | DEA | 2017 |

## 1.4 Physical Address, Farm Name & SG Code

The proposed redevelopment footprint intersects two (2) erven as per property details provided in Table 6 below.

**Table 6: Property Details.**

| PROPERTY 1 | |
|---|---|
| **ADDRESS** | Pietermaritzburg Royal Agricultural Showgrounds, Chief Albert Luthuli Street |
| **PROPERTY NAME** | ERF10065 |
| **21 DIGIT SG CODE** | N0FT02580001006500000 |
| **TOWN** | Pietermaritzburg |
| **POSTAL CODE** | 3201 |
| **PROPERTY 2** | |
| **ADDRESS** | Pietermaritzburg Royal Agricultural Showgrounds, Chief Albert Luthuli Street |
| **PROPERTY NAME** | Portion 3 of ERF 9147 |
| **21 DIGIT SG CODE** | N0FT02580000914700003 |
| **TOWN** | Pietermaritzburg |
| **POSTAL CODE** | 3201 |

## 1.5 Co-ordinates of the Property

**Table 7: Site Co-ordinates.**

| POSITION | LATITUDE (SOUTH) | LONGITUDE (EAST) |
|---|---|---|
| North-east corner (Chatterton Road, Hereford Group of Companies) | 29°35'20.10"S | 30°22'28.54"E |
| North-west corner (Hyslop Road) | 29°35'18.85"S | 30°22'22.38"E |
| South-west corner (Chief Albert Luthuli Street) | 29°35'40.28"S | 30°22'20.96"E |
| South-east corner (Chatterton Road, Blackwoods Nursery) | 29°35'31.47"S | 30°22'32.92"E |

## 1.6 Detailed Project Description of the Activities to be undertaken

### *1.6.1.1 Site Description*

The Applicant, Vu-Tact Trade and Invest (Pty) Ltd., wishes to obtain Environmental Authorisation for the Proposed Redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds, Msunduzi Local Municipality, KwaZulu-Natal. A Locality Map and Mixed Use Layout Plan is provided in Figure 1 and 2 below and attached at **Appendix A** (high resolution).

The proposed redevelopment will traverse two (2) erven; ERF 10065 and Portion 3 of ERF 9147, which currently contain buildings and infrastructure owned by the Royal Agricultural Society. The site is located at GPS co-ordinates 29°35'29.45"S and 30°22'25.02"E and is approximately 16 hectares in extent. The site is bounded by Hyslop Road and Howick Road (R103) on the west and Chatterton Road on the east. A small section of the site is abutted by Chief Albert Luthuli Street. The existing Banking Precinct is located north of the site and the Railway Site is on the south. Access to the site can be obtained from several points, however the main access point is along Howick Road (R103), opposite the Voortrekker High School sports fields.

At present, the buildings and premises comprise of halls, fields, offices and buildings used for various purposes. The annual Royal Agricultural Show is hosted on the site, which has constituted the primary use for many years. At other times of the year, the buildings and premises are used for other service offerings such as venue hire. The site also has lease agreements with several lessees such as the Blackwoods Nursery, Sagewood Café, the COVID-19 Vaccination Centre & Clinic and Hereford Group of Companies. MTN and Vodacom also lease parts of the site where their reception towers are located. An advertising company leases a portion of the land for placement of their large billboard along Hyslop Road.

### *1.6.1.2 Closure and Decommissioning*

Prior to the redevelopment of the site, closure of existing facilities, and deconstruction of buildings, structures and infrastructure which are not to be utilised, will be undertaken. The Royal Agricultural Society will be re-using some structures, including those for animal pens. These will be removed off-site, to a location for storage by the Royal Agricultural Society. Structures and infrastructure identified to be retained according to the Heritage Impact Assessment (HIA) (Phase 2 for Built Environment) (Refer to **Appendix E2**) and the Bulk Services Report (Refer to **Appendix E8**), will not be removed.

These decommissioning activities will likely take place both prior to, and concurrently with redevelopment activities. Further, the decommissioning activities will be planned in accordance with the phasing of construction activities, to ensure structures are only deconstructed when necessary. It is recommended that existing periphery fencing and the controlled access points be retained for as long as possible, to maintain security during the transition of the site.

### *1.6.1.3 Proposed Activities and Infrastructure*

The site is no longer considered to be suitable for hosting the annual Royal Agricultural Show given the many logistical challenges of transporting large numbers of animals into a site which is now in close proximity to the Pietermaritzburg CBD. As such, the annual Royal Agricultural Show is proposed to be relocated to a more suitable site/s, possibly in a more rural or semi-rural agricultural landscape. This change is similar to the international trends noted for agricultural shows across the world, which have noted a shift of similar shows being relocated to more suitable agricultural settings, or transitioning to mobile shows. The proposed redevelopment also comes in response to the changing market demands, making the proposed redevelopment of the site a more profitable and economically feasible option than the continued use of the site as is. The site which is currently zoned as 'Active Public Open Space' will be rezoned to 'Low Impact Mixed Use', to accommodate the proposed land uses.

At the inception of the project, two (2) alternative Conceptual Plans were investigated for the proposed redevelopment i.e. a Mixed Use Precinct and an Office Park. Following an investigation of market demands and assessment socio-economic and environmental feasibility, the applicant has selected the Mixed Use Precinct as the preferred option. The proposed Mixed Use Precinct will have a building footprint of approximately 72 100 $m^2$, and features the following:

- A Filling Station;
- A Heritage Building Shopping Centre;
- Retail / Residential Facilities;
- Standalone Shops / Showrooms;
- Offices;
- A 150 Room Hotel and Conference Centre;
- A 120 Bed Hospital;
- Offices / Medical Consultation Rooms;
- Retail Buildings;
- Respective parking areas;
- Sidewalks and walkways;
- Landscaped areas;
- Feature canal area and watercourse areas, and;
- Internal Roads.

It is proposed that these features will be developed in five phases as per below:

- Phase 1 – Filling Station, Heritage Buildings Shopping Centre and Retail / Residential Facilities.
- Phase 2 – Retail / Residential Facilities, Standalone Shops / Showrooms, and Offices.
- Phase 3 – Hotel.
- Phase 4 – Hospital and Offices / Medical Consultation Rooms.
- Phase 5 – Offices and Retail Facilities.

Table 8 below outlines the details of the proposed features as well as the phasing thereof.

**Table 8: Details of proposed features within the Mixed Use Precinct.**

| PROPOSED FEATURE | NUMBER OF STOREYS | NUMBER OF BUILDINGS | LOCATION | APPROXIMATE EXTENTS & SPECIFICATIONS | PHASE |
|---|---|---|---|---|---|
| Filling Station | 1 | 1 | North-east of the site, adjacent to Chatterton Road. | • Office Area – 50 $m^2$<br>• Convenience Shop – 200 $m^2$<br>• Fast Food Outlet – 150 $m^2$<br>• Total Building Footprint – 400 $m^2$<br>• Site Footprint - 2800 $m^2$ | 1 |
| Heritage Buildings Shopping Centre | 1 | 4 | South-west of the site, adjacent to Chief Albert Luthuli Street and north of the railway line. | • Building Footprint – 4750 $m^2$ | 1 |
| Retail / Residential | 3 | 3 | Within Heritage Building Shopping Centre Precinct, southern periphery of the Dorpspruit River. | • Building Footprint – 7000 $m^2$ | 1 |
| | 3 | 2 | Within Precinct for Standalone Shops / Showroom, north of proposed hotel. | • Building Footprint – 5000 $m^2$ | 2 |
| Standalone Shops / Showrooms | 1 | 3 | Along Hyslop Road. | • Building Footprint – 3300 $m^2$ | 2 |
| Offices | 3 | 2 | Along Howick Road (R103), northern periphery of Dorpspruit River. | • Building Footprint – 7000 $m^2$ | 2 |

| PROPOSED FEATURE | NUMBER OF STOREYS | NUMBER OF BUILDINGS | LOCATION | APPROXIMATE EXTENTS & SPECIFICATIONS | PHASE |
|---|---|---|---|---|---|
| | 3 | 2 | South of proposed Filling Station. | • Building Footprint – 3500 $m^2$ | 5 |
| | 3 | 1 | Along Chatterton Road. | • Building Footprint – 3000 $m^2$ | 5 |
| | 2 | 1 | South of proposed Filling Station. | • Building Footprint – 2000 $m^2$ | 5 |
| 150 Room Hotel and Conference Centre | 6 | 1 | Centrally located within site, on northern periphery of Dorpspruit River. | • Hotel – 4500$m^2$<br>• Conference Facility – 3000m2<br>• Total Building Footprint - 7500 $m^2$ | 3 |
| 120 Bed Hospital | 3 | 1 | Adjacent to and west of proposed Filling Station. | • Building Footprint – 14500 $m^2$ | 4 |
| Offices / Medical Consultation Rooms | 3 | 1 | North of proposed Hospital. | • Building Footprint – 4000 $m^2$ | 4 |
| Retail | 1 | 1 | East of Heritage Buildings, will form part of Shopping Centre. | • Building Footprint – 10 150 $m^2$ | 5 |
| Parking Areas | - | - | Throughout site. | • Total extent – 39 000 $m^2$ | All |
| Sidewalks and Walkways | - | - | Throughout site. | • Total extent – 16 000 $m^2$ | All |
| Landscaped areas | - | - | Throughout site. | • Total extent – 32 500 $m^2$ | All |
| Feature canal area and watercourse areas | - | - | Dorpspruit River and tributary. | N/A | All |
| Internal Roads | - | - | Throughout site. | • Total extent – 8 500 $m^2$<br>• Width – 3.5 to 7 metres<br>• Length – 900 metres | All |

Required parking for proposed features, as calculated based on Msunduzi Municipal Land Use Management Plan (2018) is outlined in Table 9 below:

**Table 9: Estimated parking requirements for the proposed development.**

| FEATURE | PARKING BAYS REQUIRED |
|---|---|
| Offices | 620 |
| Medical Consultation Rooms | 267 |
| Hospital | 195 |
| Hotel & Conference Centre | 285 |
| Shopping Centre | 894 |
| Standalone Shops / Showrooms | 132 |
| Retail / Residential | 459 |
| Filling Station | 24 |
| **Total** | **2876** |

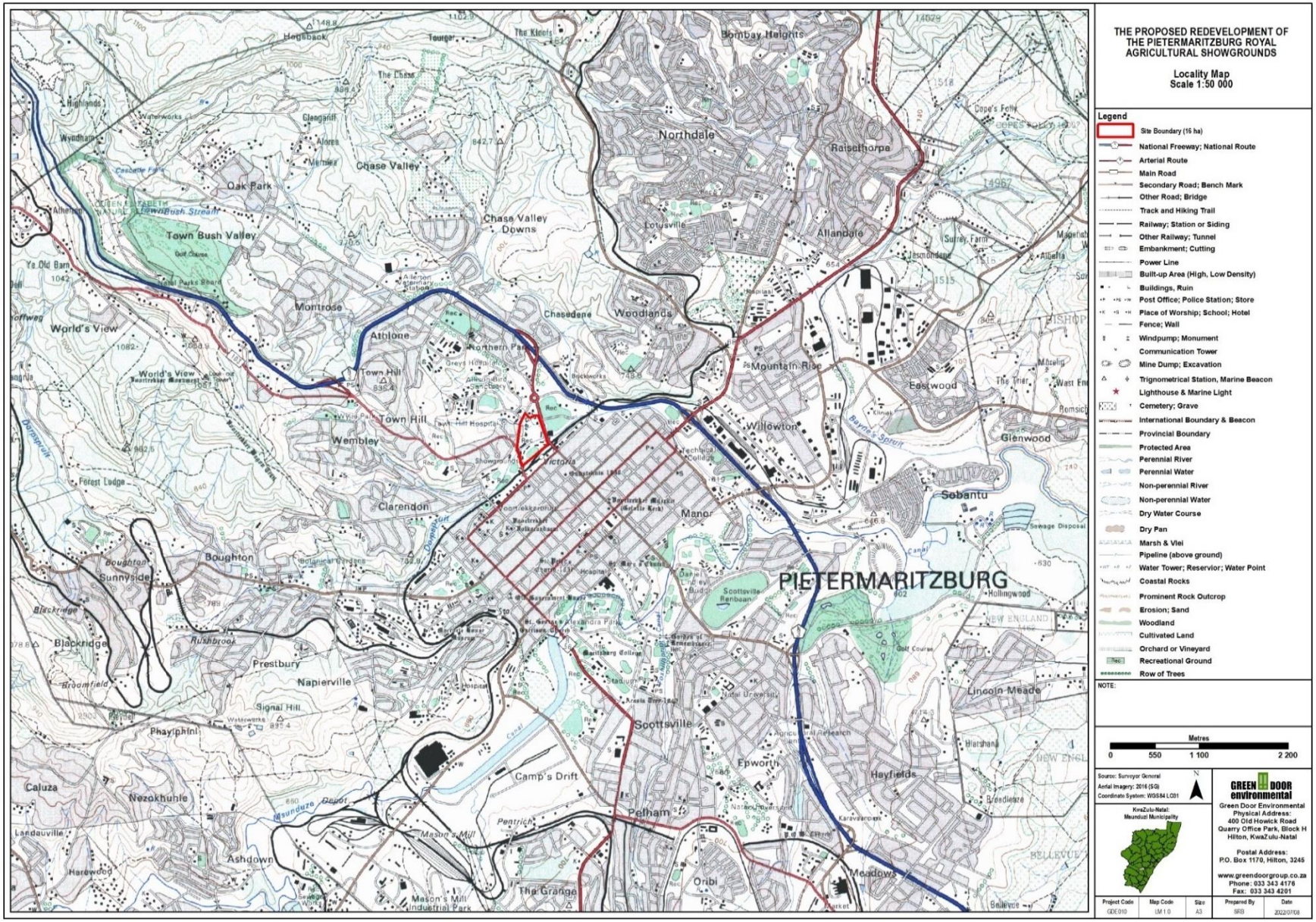


**Figure 1: Locality Map of the proposed redevelopment site.**

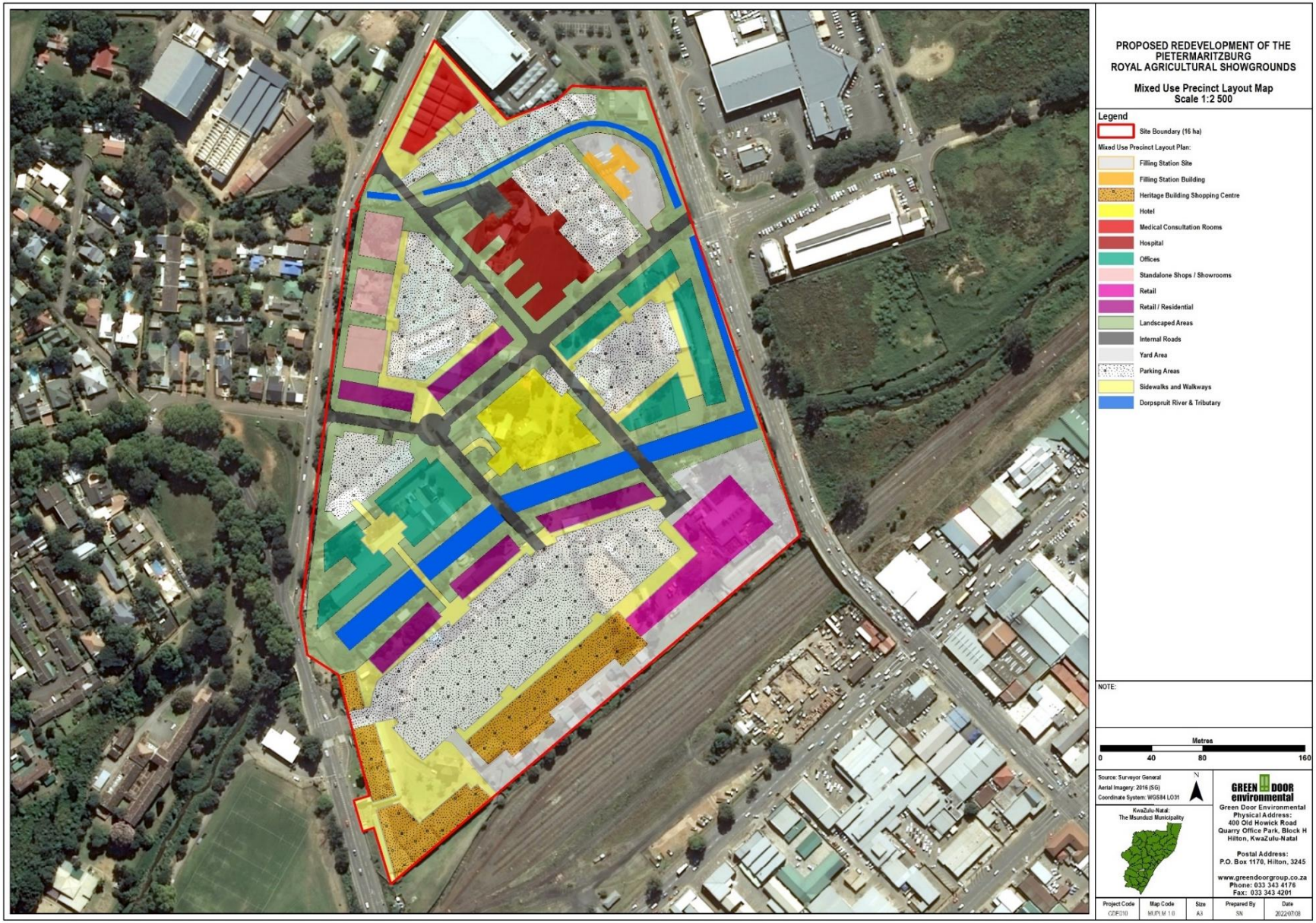


**Figure 2: Mixed Use Precinct Layout Plan.**

### *1.6.1.4 Services*

**Roads and Access**

At present, the site can be accessed from various access points. The main entrance is located along Howick Road (R103), opposite the Voortrekker High School sports fields. There are four (4) alternative entrance gates located on Hyslop Road, and one access point along Chatterton Road, which also provides entrance into the Blackwoods Nursery and Hereford Offices.

The proposed Mixed Use Precinct will contain one (1) entrance along Hyslop Road which will provide access into the internal road network. This access point will be located where there is an existing entrance gate, directly opposite the Hyslop Road 3-forked intersection. The access point on Howick Road (R103) will be retained and will serve as an entrance into the internal road network. An additional entrance will be added along Chief Albert Luthuli Street providing access into a large parking lot for the Heritage Buildings Shopping Centre. This will be designed as a stop-controlled intersection. The access point along Chatterton Road will also be retained as a signalised intersection and will join the internal road network.

The internal road network will connect the various spaces and their parking areas and will now also allow for traffic to move between Hyslop Road, Howick Road (R103) and Chatterton Road, which was not possible previously due to the site being a closed site. The internal road network will comprise of roads ranging from 3.5 metre to 7 metre widths. There will be one (1) intersection central to the site, and one turning circle closer to Howick Road (R103).

Parking areas will be designed according to standard parking bay sizes of 2.5 metres x 5 metres. Internal roads and parking areas will have a gentle slope between 1% - 2% to convey stormwater appropriately. No final design has been decided for the pavements as these will be dependent on cost and suitability and will be subject to a full Pavement Design Certificate and detailed Geotechnical Study. Options to be investigated will include a standard pavement design with asphalt surfacing, or alternatively interlocking pavers or cobbles.

The Phase 2 Built Environment Heritage Impact Assessment (HIA) identified the bridge located at the entrance of Blackwoods Nursery to be of significant heritage value, dating back to the late 1800s and early 1900's and being a unique Victorian architectural design. As per the recommendations in the Built Environment HIA, the bridge will be retained in its current form within the development layout. The bridge can be utilised as a pedestrian crossing bridge allowing access over the canal from one area to another.

**Water**

There are two (2) existing bulk water connections:

- One (1) 75 mmø connection along Chatterton Road, and;
- One (1) 160 mmø connection (off the 375 mmø municipal water main along Howick Road (R103) close to the main entrance.

The total water demand for the proposed development is estimated to be 257 kℓ / day or 2.98 ℓ / s. These flows are to be shared between the two existing bulk water connections. The proposed development will require approximately 85 kℓ / day more than the current development, and the capacity to provide such has been confirmed and approved by the municipality (Refer to Appendix H10).

The existing internal water reticulation comprises 75 mmø HDPe pipes which feed all the internal areas. Given the age of the existing internal water reticulation, it is to be decommissioned to avoid breakages or leakages. The proposed new internal water reticulation, which will tie into the bulk municipal connections, will comprise:

- 75 mmø uPVC pipes;

- 110 mmø uPVC pipes, and;
- 160 mmø uPVC pipes.

In addition, the necessary isolation valves, scour valves and air valves will be installed and bulk water zone meters will be placed at strategic points.

Reservoirs / tanks will be required for water storage for fire response. The storage requirement will likely exceed 250 cubic metres, however will not be greater than 50 000 cubic metres. The likely storage requirement will be approximately 2000 cubic metres, however will need to be confirmed through consultation with the municipality.

**Sanitation**

At present there is a 600 mmø concrete sewer outfall pipe which runs from Chatterton Road through the site and out along Howick Road (R103).

The estimated sewage flow for the proposed Mixed Use Precinct is 225 kℓ / day, with an average flow of 3.386 ℓ / s. This will be an increase of 69.75 kℓ / day or 2.624 ℓ / s more than the existing demands. There is sufficient capacity (according to the GIS database) within the municipal infrastructure to support the proposed development demands. The Municipality has confirmed capacity to provide such (Refer to Appendix H10).

The existing internal sewer reticulation consists of 110 mmø and 160 mmø uPVC pipes, served by two (2) pumpstations. The proposed internal sewer reticulation will comprise 160 mmø and 200 mmø uPVC Class 34 sewer pipes. Circular precast concrete manholes will be placed a maximum spacings of 80 metres, or at changes in direction. Each node within the development will be given a connection point linked to the main sewerline and outfall sewer. Additional pump stations may be required, which will be determined during the detailed design stage.

**Stormwater**

The existing stormwater system comprises larger and smaller stormwater channels and pipe networks which collect runoff from hardened surfaces and discharge into the *Dorpspruit* River and canal.

For the proposed development, stormwater will be collected in stormwater attenuation structures or parking areas before tying into the stormwater infrastructure or discharging to the *Dorpspruit* River and canal. Stormwater from buildings is to be collected via gutters and down pipes and directed into the attenuation system. Permission to discharge into the existing municipal stormwater infrastructure will be obtained prior to connection.

Stormwater infrastructure will be designed according to the following standards:

- Flood Recurrence Interval: 5 years and critical points 10 years
- Attenuation structures; 50 years
- Pipe material: Concrete
- Pipe class: 100D in traffic areas, 75D in other areas
- Pipe diameters: 300 mmø (minimum)
- Bedding: Class C
- Inlets: Splayed catchpits / steel grid inlets
- Outlets: Headwalls and energy dissipators
- Junctions: Points of deflection pipelines

**Electricity**

There is an existing supply of 1700 kVA to the site via three (3) 11kV municipal substations. The estimated demand for the proposed development is approximately 4217 kVA, and approximately 40%

of the development can be supplied by the existing supply. The existing supplies will need to be re-configured to cater for the proposed demand and additional capacity applied for. The estimated demand has not made provision for implementation of green technology, which is anticipated to be adopted.

### 1.6.1.5 Site Photographs

**Plate 1: The Dorpspruit River which is in a canalised state, with a walkway along the side.**

**Plate 2: Examples of some of the bridges crossing the Dorpspruit River.**

**Plate 3: The Dorpspruit Tributary, and bridges and walkway crossings.**

**Plate 4: Manicured lawn fields within the site.**

**Plate 5: Communications infrastructure (reception towers) within the site.**

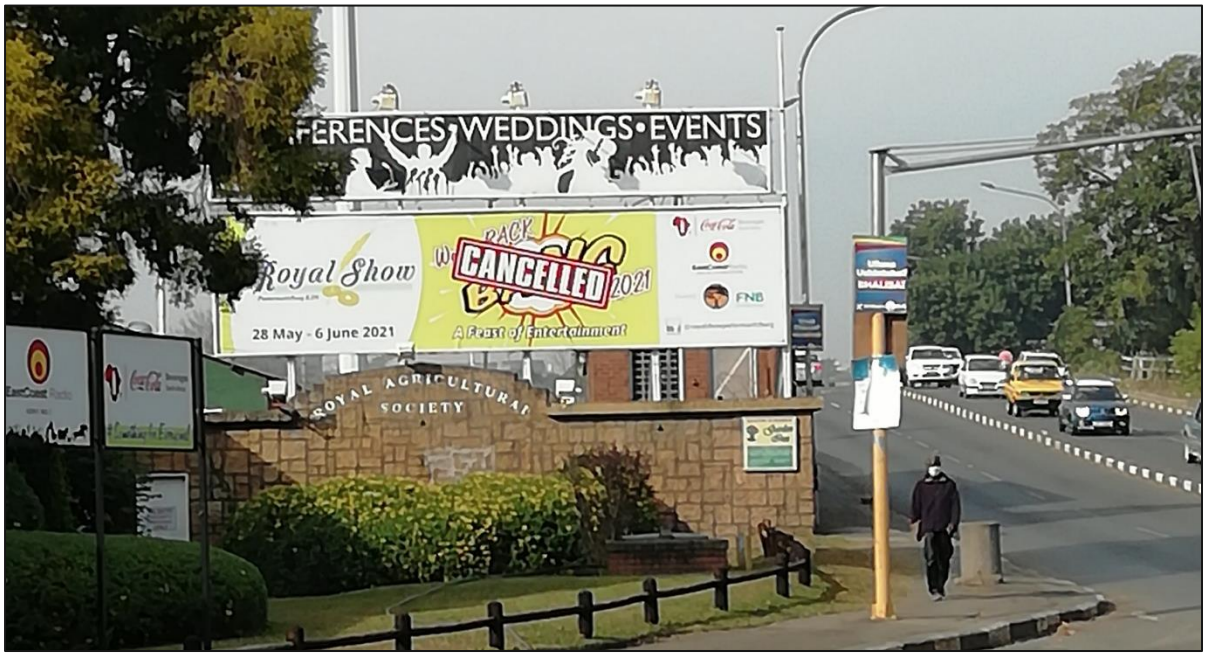


**Plate 6: Billboard located within the site.**


**Plate 7: Main Gate Post and Gate House which constitutes an important heritage structure.**


**Plate 8: Industrial Hall which constitutes an important heritage building.**


**Plate 9: Crafts hall which constitutes an important heritage building.**

**Plate 10: Some of the many existing buildings within the site.**

**Plate 11: Existing temporary animal pens used to house livestock temporarily during the annual shows.**

**Plate 12: Indigenous plants and trees planted in various parts of the site for ornamental purposes as 'garden' species.**

# 2 NEED AND DESIRABILITY

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

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

The site is currently zoned as 'Public Active Open Space'[1], according to the 2021 Msunduzi Land Use Scheme (Refer to **Appendix H1**). However, a rezoning application is being undertaken to rezone the site to 'Low Impact Mixed Use', a new proposed zone, which will permit the proposed activities for the site. Details of allowances within the proposed 'Low Impact Mixed Use' zone are attached at **Appendix H2**.

**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 vision of the Provincial Spatial Development Framework (SDF) is '*Optimal and responsible utilisation of human and environmental resources, building on addressing need and maximising opportunities toward greater spatial equity and sustainability in development*'. As such, 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 compromising meeting the needs of future generations.

The proposed redevelopment has taken cognisance of the environmental features on the site through undertaking the relevant specialist assessments, which identified that no significant loss of environmental assets would occur. The proposed redevelopment will also respect the mitigation measures proposed by specialists to ensure protection of environmental features. Furthermore, sustainable management practices are to be adopted during operation, which promote activities such as recycling, energy efficiency and water use efficiency wherever possible. As such, the proposed activities are considered to be in line with the Provincial SDF and its goals relating to sustainable development.

Furthermore, the Provincial SDF indicates that Pietermaritzburg and its nearest surrounds are classified as 'Economic Value Adding Areas' (Figure 3). The Provincial SDF further identifies Msunduzi to be located within a 'Secondary Node' i.e. an urban centres with a good existing economic development and the potential for growth and services to the regional economy. Furthermore, key strategic interventions specifically targeted for the 'Secondary Node' includes, but is not limited to:

- Primary Economic Growth Area.
- Promotion of compact urban development and combat urban sprawl.
- Promotion of densification and infill development.
- Infill where high levels of services are available.
- Increased residential density (number of dwellings).

The proposed redevelopment activities will directly contribute to achieving the above listed strategic interventions, given that it will be a Mixed Use Development, inclusive of residential and commercial

[1] **Means Land reserved for a sports ground, playing field or Recreation Building which may be used by the general public (2021, Msunduzi Land Use Scheme).**

components, within a part of the city which allows for infill development[2] and helps combat urban sprawl by confining the development to existing developed areas.

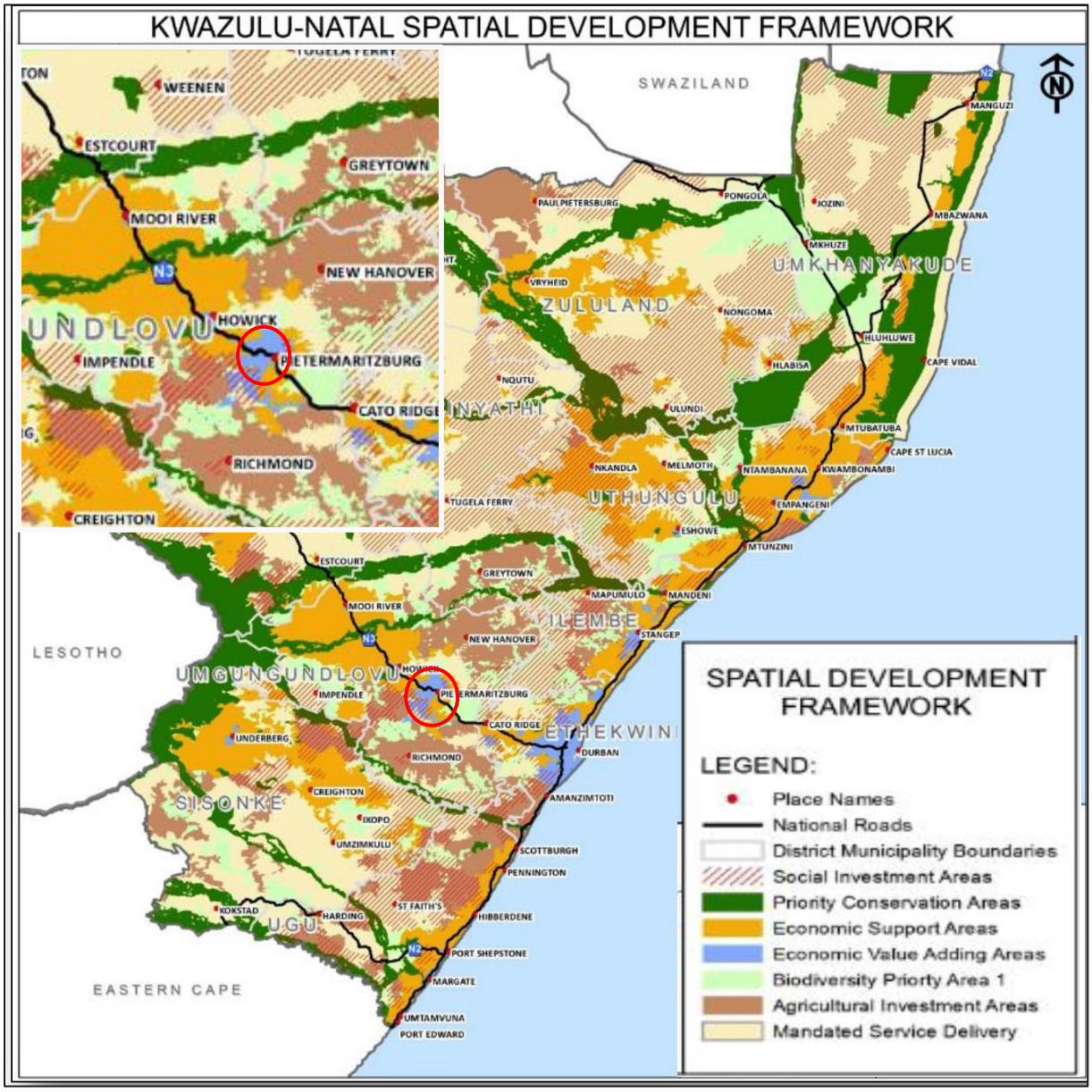


**Figure 3: KwaZulu-Natal SDF (August 2011). Site indicated by red polygon.**

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

The site is located with the Urban Core of Pietermaritzburg, and the proposed redevelopment will be more in line with land uses for this area, as compared to the current land use.

**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?**

The proposed activity will be in line with the Municipal Integrated Development Plan (IDP) and SDF and will not compromise the integrity of the existing approved and credible Municipal IDP and SDF.

[2] **Infill Development refers to building within unused and underutilized lands within existing development patterns, typically but not exclusively in urban areas. Infill development is critical to accommodating growth and redesigning our cities to be environmentally- and socially-sustainable.**

The 2021 / 2022 Msunduzi Municipal IDP outlines the Vision for Msunduzi as "*By 2030 Msunduzi is a safe, vibrant city in which to live, learn, raise a family, work, play and do business*". The Msunduzi Municipality shall deliver on six strategic city-wide outcomes to achieve this vision as follows:

1. A well-serviced city;
2. An accessible, connected city;
3. A clean, green city;
4. A friendly, safe city; and
5. An economically prosperous city.
6. A financially viable and well-governed city.

The proposed redevelopment activities will contribute to achieving the vision and outcomes of the Municipal IDP, in that it will contribute to creating a clean, green, safe and economically prosperous city, by providing a landmark development within a central location of Pietermaritzburg.

The 2021 Reviewed Msunduzi SDF designates the site as 'Active Public Open Space'[3] as per the previously drafted SDF (Refer to **Appendix H3**). It must be noted that this SDF designation is as a result of the site being a landmark site which has remained unchanged in terms of land use for over 100 years. The proposed redevelopment is not consistent with the 2021 Reviewed SDF designation. However, a rezoning application is being undertaken to rezone the site to 'Low Impact Mixed Use', a new proposed zone, which will permit the proposed activities for the site. Details of allowances within the proposed 'Low Impact Mixed Use' zone are attached at **Appendix H2**. The motivations for the change in land use are described further in Question 13 below.

There are parts of the 2021 Reviewed Msunduzi SDF, which are however consistent with the proposed redevelopment, and support such:

- It does not identify environmental or development constraints.
- It identifies the site to contain seriously modified watercourse.
- According to the designated Growth Management Zones, it identifies the site to form part of the Urban Core Zone (Refer to **Appendix H4**). See below an overview of the Urban Core, as extracted from the 2021 Reviewed Msunduzi SDF:
    - *The focus of the Urban Core (UC) is on spatial targeting investment, incentivising private sector investment, incremental upgrading and maintenance of infrastructure (especially where it restricts development), urban regeneration and intensification, prioritise budgets to support investment and support land acquisition for inclusionary housing projects.*
    - *Development is encouraged within this zone. The following section provides an overview of the desired land uses which should be promoted within the UC Zone.*
        - *High density residential development within intensification areas. Densities up to 100du / ha should be encouraged.*
        - *Promotion of 2$^{nd}$ dwelling and micro-unit development on erven larger than 750m$^2$.*
        - *Promotion of high-density mixed-use development along IRPTN corridors and within nodes.*
        - *Development for mono-functional and single storey public sector buildings should be discouraged.*
        - *Encourage inclusionary housing projects.*
        - *Discourage any development within environmentally sensitive areas.*
        - ***Redevelopment of vacant and underutilised properties.***

[3] **A land use zone that provides for sporting and recreational needs and permits a limited range of associated development and parking space.**

- *It is assumed that all properties within the UC Zone typically has access to basic infrastructure provision (although quality and reliability of the access is not guaranteed). The following relates to infrastructure in the UC Zone:*
  - *The existing infrastructure should incrementally be upgraded to attract new investment opportunities in the form of public and private sector investment.*
  - *Infrastructure maintenance plans should become a high priority and implemented to facilitate urban regeneration.*
  - *Green and sustainable infrastructure measures should be encouraged.*
  - *Promotion of public access to ICT infrastructure at public sector buildings e.g. libraries, municipal offices, etc.*
  - *Safe non-motorised networks within the Pietermaritzburg CBD, etc.*

Based on the above, the proposed redevelopment is consistent with the vision for the Urban Core Zone, within which the site is located. Further to the above, it must be noted that one of the visions of the Msunduzi SDF is to sustainably exploit the municipality's wide variety of agricultural, tourist and cultural resources. The SDF promotes the intervention of the tourism sector, by providing more land for holiday housing and accommodation (hotels and B&B's). Furthermore, the SDF states that urban development should take place along the Main Road to take advantage of the passing trade and present a positive image to passers-by, and should be governed by appropriate design guidelines. The proposed redevelopment will aid in achieving these objectives.

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

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

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

The Environmental Management Framework (EMF) Report for the site is attached at **Appendix H5**. Table 10 below presents the constraints identified by the EMF, and comments on each constraint in relation to the proposed redevelopment activities.

**Table 10: EMF Constraints for the site.**

| EMF FEATURE | COMMENT |
|---|---|
| High Wetland Development Constraint | This constraint has likely been identified due to the Dorpspruit River and its tributary intersecting the site. A Wetland Assessment and a Baseline Aquatic Assessment have been undertaken to fully assess this constraint, together with groundtruthing. These studies are attached at **Appendix E6** and **E7** respectively.<br><br>According to these studies, this constraint can be managed through the application of a recommended buffer along the Dorpspruit River. The additional recommendations and mitigation measures prescribed in these reports are to be respected in the proposed redevelopment. |
| **Biodiversity Development Constraint** | This constraint has likely been identified due to the site comprising some 'undeveloped' areas. However, it has been noted that these undeveloped areas mainly comprise recreational fields or landscaped areas, with the exception of the degraded riparian habitat surrounding the Dorpspruit River. A Biodiversity Assessment has been undertaken to fully assess this constraint, together with groundtruthing. This study is attached at **Appendix E11**. |

| EMF FEATURE | COMMENT |
|---|---|
| | According to the study, this constraint can be managed through the application of a recommended buffer along the Dorpspruit River, as this is mainly where any biodiversity features may be present or find resource and protection in. The Dorpspruit River will also provide ecological connectivity to adjacent sites. The additional recommendations and mitigation measures prescribed in this report are to be respected in the proposed redevelopment. |
| **High Flood Potential** | This constraint has likely been identified due to the site being relatively flat and in a low-lying part of Pietermaritzburg, with the Dorpspruit River and tributary intersecting the site. A Floodline and Flood Risk Analysis Study has been undertaken to fully assess this constraint, together with groundtruthing and relevant modelling. The study is attached at **Appendix E4**.<br><br>According to the study, this constraint can be managed to an extent through appropriate stormwater management. The additional recommendations and mitigation measures prescribed in the report is to be respected in the proposed redevelopment. |
| **Good Agricultural Potential** | This constraint has likely been identified due to the site being owned by the Royal Agricultural Society and being utilised annually for the Royal Agricultural Show. However, given the location of the site within an urban and developed area, in close proximity to the Pietermaritzburg CBD, the site is not considered suitable for agricultural practices. It is also for this reason, that the Royal Agricultural Society has sought to sell the site for redevelopment to a more suitable land use. |
| **Gentle Slopes (0 – 10 degrees)** | This constraint has likely been identified due to the site being relatively flat and in a low-lying part of Pietermaritzburg. A Geotechnical Assessment has been undertaken to fully assess this constraint, together with groundtruthing and assessment of geological conditions. The study is attached at **Appendix E10**.<br><br>According to the study, this constraint can be managed through various measures being adopted in building approaches and designs, particularly where risks exist. The additional recommendations and mitigation measures prescribed in this report are to be respected in the proposed redevelopment. |
| **High Water Quality Constraints** | This constraint has likely been identified due to the Dorpspruit River and its tributary intersecting the site. A Baseline Aquatic Assessment has been undertaken to fully assess this constraint, together with groundtruthing. This study is attached at **Appendix E7**.<br><br>According to these studies, there are existing threats to water quality in the form of solid waste pollution and litter, and nitrates and E. coli were detected. The proposed redevelopment of the site will allow for better management of this constraint and the potential improvement of water quality, by implementing mitigation measures to better manage and maintain the watercourses during construction and operation. |
| **High Air Quality Constraints** | This constraint has likely been identified due to the site being within close proximity to the Pietermaritzburg CBD, and residential areas and falling below the inversion layer in the region. As such, activities which compromise air quality and pose health risks would not be suitable for the site. Therefore, the proposed redevelopment, which does not comprise such land uses which directly generate air emissions or diminish air quality, are considered suitable for the site, in addressing this constraint. |

| EMF FEATURE | COMMENT |
|---|---|
| **High Cultural Heritage Significance** | This constraint has likely been identified due to the site being historically used by the Royal Agricultural Society, for more than 100 years, and as such comprising many buildings, structures and architectural features which may be of historical, cultural and heritage significance. A HIA (Phase 1), a HIA (Phase 2 for Built Environment) and a Palaeontological Assessment were undertaken to fully assess this constraint. The studies are attached at **Appendix E1**, **E2** and **E3** respectively.<br><br>According to these studies, this constraint can be managed through retaining certain historical buildings and architecture of significant value, and respecting protocols when encountering any cultural, heritage or palaeontological finds. The additional recommendations and mitigation measures prescribed in these reports are to be respected in the proposed redevelopment. |
| **Very High Service Provision** | This constraint has likely been identified due to the site being located within a well-developed area, which has existing service infrastructure. A Bulk Services Report has been compiled which presents the findings regarding existing available service infrastructure and required service infrastructure to adequately service the proposed redevelopment. The report is attached at **Appendix E8**.<br><br>No confirmations have yet been received from the Msunduzi Municipality regarding availability of infrastructure and associated capacities. However, it is proposed that a condition of the EA be that Service Level Agreements are finalised before construction commences. |

Based on the comments outlined above, the proposed redevelopment activities will be in line with the municipal EMF and will not compromise the existing environmental management priorities for the area, provided relevant recommendations and mitigations measures as prescribed by specialists, are implemented.

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

The proposed redevelopment is in line with the following:

- The Msunduzi IDP;
- The uMgungundlovu IDP.;
- The 2006 C-Plan, which the site to have 0% Irreplaceability (Refer to **Appendix H6**);
- The 2006 Environmental Priority Areas, which identifies the site to not be located in any Environmental Priority Areas (Refer to **Appendix H7**), and;
- The 2013 Central and CBD Extension Area Local Area Plan, which identifies the site to be located within the CBD Extension Area (Refer to **Appendix E8**).

**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)?**

The proposed redevelopment is consistent with the timeframes associated with the Msunduzi IDP, which seeks to achieve its objectives by 2030.

The timeframes associated with the Msunduzi SDF are not applicable, given that the proposed redevelopment activities are not consistent with the Municipal SDF designation, and the site is being rezoned accordingly.

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

The proposed redevelopment will result in local economic growth and the creation of local employment and business opportunities and contribute to skills development. These activities will attract investment into the area and have direct and indirect benefits in the local area, and surrounds. These benefits will be realised both during the construction and operational phases.

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

A Bulk Services Report has been compiled which presents the findings regarding existing available service infrastructure and required service infrastructure to adequately service the proposed redevelopment. The report is attached at **Appendix E8**.

No confirmations have yet been received from the Msunduzi Municipality regarding availability of infrastructure and associated capacities. However, it is proposed that a condition of the EA be that Service Level Agreements are finalised before construction commences.

**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?)**

Given that the site is within an existing urban landscape, serviced by the municipality, there is existing municipal infrastructure within the area. An Engineering Bulk Services Report (Refer to **Appendix E8**) has been compiled, reporting on the service infrastructure availability, to service the proposed redevelopment. Confirmation of capacities to service the proposed redevelopment has been confirmed by Msunduzi Municipality (Refer to Appendix H10).

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

Yes, whilst the proposed redevelopment is not at a national scale, it addresses regional needs which indirectly contribute to addressing national concerns. Some of the national concerns which are addressed / contributed to, at a regional scale, include, but are not limited to:

- The need for housing;
- High unemployment rates, and;
- Need for economic growth.

**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 site is considered to be favourable and suitable for the proposed redevelopment for the following reasons:

- It is located directly adjacent to and in close proximity to the existing Pietermaritzburg CBD;
- It is located within the designated Urban Core Zone and CBD Extension Area, which supports redevelopment of underutilised sites.
- It is surrounded by similar existing land uses.
- It will bring additional business and employment opportunities, and subsequently economic growth into the region, which is much needed following the effects of COVID-19 and the 2021 looting incidents on Pietermaritzburg.
- It is well located in terms of access and visibility along major roads such as Hyslop Road, Howick Road (R103), Chief Albert Luthuli Road and Chatterton Road, and is also in close proximity to the N3.
- It is suitably sized to accommodate the proposed land uses and their required supporting infrastructure, access and parking.

- It is already in a transformed and developed state, located in an urban area, and as such has fewer environmental constraints and risks associated with it, as compared to an undeveloped and untransformed site.
- It will provide much needed housing options, in a region where it is currently lacking.
- It will diversify the retail and office options available within the immediate vicinity.
- The proposed redevelopment of the site can act as a catalyst for much needed road upgrades.
- It is more suitable than the current land use for the following reasons:
    - It is logistically challenging to continue with the existing land use, especially in relation to transporting large numbers of livestock and agricultural equipment into and out of the Pietermaritzburg CBD.
    - It is less financially feasible and profitable to continue using the site as is, as compared to a proposed redevelopment opportunity.
    - There are fewer socio-economic benefits and opportunities associated with continuing to utilise the site as is.

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

Yes, the proposed redevelopment has been considered as the preferred option after undertaking a detailed Alternatives Assessment (refer to Section 3). It was noted in the assessment that the proposed redevelopment will have the least environmental impact, whilst ensuring the desired socio-economic benefits are realised, provided the mitigation measures outlines in this report and the Environmental Management Programme (EMPr), are implemented.

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

Yes, the proposed redevelopment will yield more benefits than adverse impacts, which outweigh the adverse impacts. This is provided that the mitigation measures outlined in this report and the EMPr are implemented in the process. The socio-economic benefits in particular, are of great value, and if the proposed redevelopment were not to occur, the negative socio-economic impacts associated with this approach, outweigh impacts associated with the proposed redevelopment.

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

The proposed redevelopment will not set a precedent for the immediate surrounding areas, as it will result in the site being redeveloped to be more aligned to these surrounding and already existent land uses. However, the proposed redevelopment, which intends to utilise the Dorpspruit River as a key feature of tourism value, can set the precedent in terms of how watercourses are utilised within urban landscapes. The project can create the opportunity to afford greater protection to the stretch of the Dorpspruit within the site, which can then begin to be adopted on adjacent (upstream and downstream) sites in a collaborative manner, ensuring the watercourse remains clean and well maintained. Such approaches can then also be adopted for other watercourses within the municipality which traverse urban landscapes.

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

No, based on the findings of the specialist studies, and the Impact Assessment, no person's rights will be negatively affected by the proposed activities, provided the mitigation measures outlined in this report and the EMPr, are implemented.

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

According to the Infrastructure Development Act, Act 23 of 2014, Strategic Integrated Projects (SIPs) constitute:

*A public infrastructure project or group of projects contemplated in section 7 and may comprise of one or more installation, structure, facility, system, service or process relating to any matter specified in Schedule 1 or which had been added by the Council in terms of section 7(1)(a).*

Given that the proposed redevelopment constitutes a private development, it does not contribute to any SIPs.

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

As extracted from the Needs and Desirability Assessment compiled by Urban Econ Development Economists (Refer to **Appendix E12**), the benefits to society in general and to the local community will include:

- Temporary employment opportunities during the construction phase.
- Permanent employment opportunities during the operational phase.
- Msunduzi Municipality will benefit from the contributions to rates and taxes, once the development is complete.
- The region will benefit from increased availability of residential premises, given that there is currently a lack of availability of such.
- The municipal area will benefit from additional revenue streams and related economic growth.

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

There are no other need and desirability considerations related to the proposed redevelopment.

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

The National Development Plan (NDP) for 2030, highlights none (9) primary challenges within South Africa, which need to be addressed:

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.

The proposed redevelopment addresses challenge 1 of the NDP for 2030, through the generation of employment opportunities.

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

According to Section 23 of NEMA,

*(2) The general objective of integrated environmental management is to-*

*(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;*

*(b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;*

*(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;*

*(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;*

*(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and*

*(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.*

The objectives of Environmental Management have been considered by:

- Undertaking the BA Process which allows for identifying, predicting and evaluating impacts associated with the proposed redevelopment.
- Undertaking specialist assessments as part of the BA Process, which allows for a full understanding of the impact of the proposed redevelopment on the receiving environment.
- Undertaking public participation processes in accordance with legislation and guidelines for the BA Process.
- Compiling of an EMPr, to guide management and mitigation of any foreseen and potential impacts.

**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

*(2) 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.*

Similarly to the above question, the principles of environmental management have been considered by:

- Undertaking the BA Process which allows for identifying, predicting and evaluating impacts associated with the proposed redevelopment.
- Undertaking specialist assessments as part of the BA Process, which allows for a full understanding of the impact of the proposed redevelopment on the receiving environment.
- Undertaking public participation processes in accordance with legislation and guidelines for the BA Process.
- Compiling of an EMPr, to guide management and mitigation of any foreseen and potential impacts.

# 3 ALTERNATIVES

## 3.1 Alternatives Considered

'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 property on which or location where it is proposed to undertake the activity**

The property and location of the proposed Mixed Use Precinct was considered to be suitable for the following reasons:

- The proposed redevelopment is envisioned to be an extension of the Pietermaritzburg CBD, adding an exciting new feature to the city and encapsulating a concept such as that adopted along the V&A Waterfront in Cape Town. The location of the site in relation to the remainder of the CBD and the Dorpspruit River (also viewed as a canal), provide the ideal location for this vision.
- The current land use of the site was already being proposed for sale and redevelopment for some time, due to the current land uses becoming less profitable and feasible for long-term continuation.
- The site is well located in terms of access and visibility along major roads such as Hyslop Road, Howick Road (R103), Chief Albert Luthuli Road and Chatterton Road, and is also in close proximity to the N3.
- The site is suitably sized to accommodate the proposed land uses and their required supporting infrastructure, access and parking.
- The site is already in a transformed and developed state, located in an urban area, and as such has fewer environmental constraints and risks associated with it, as compared to an undeveloped and untransformed site.
- It is located within the designated Urban Core Zone and CBD Extension Area, which supports redevelopment of underutilised sites.

Other properties and locations were investigated (prior to this application[4]) but not considered as suitable by the developer for the following reasons:

- Properties were not available for purchase;
- Properties were not located along existing main roads or along an existing canal;
- Properties were not suitably located in relation to the CBD, and;
- Properties were not large enough for the proposed purpose.

**(b) The type of activity to be undertaken**

Alternative types of activities in the form of other proposed land uses were not considered as the proposed Mixed Use Precinct offers a land use which is best suited for the site, given that it is consistent with the current surrounding land uses.

**(c) The design or layout of the activity**

At the inception of the project, two (2) alternative Conceptual Plans were investigated for the proposed redevelopment i.e. a Mixed Use Precinct and an Office Park.

The proposed Mixed Use Precinct will have a building footprint of approximately 72 100 $m^2$, and features the following:

- A Filling Station;
- A Heritage Building Shopping Centre;
- Retail / Residential Facilities;

[4] **Please note that these alterative properties and locations were investigated directly by the applicant, prior to commissioning of a Sales Agreement for this property, and prior to this Basic Assessment Process.**

- Standalone Shops / Showrooms;
- Offices;
- A 150 Room Hotel and Conference Centre;
- A 120 Bed Hospital;
- Offices / Medical Consultation Rooms;
- Retail Buildings;
- Respective parking areas;
- Sidewalks and kerbing areas;
- Landscaped areas;
- Feature canal area and watercourse areas, and;
- Internal Roads.

The proposed Office Park will have a building footprint of approximately 81 050 $m^2$, and will feature mixed uses (offices, a hotel and conference centre and a shopping centre), but the predominant land use will be office facilities. Refer to Figure 4 for a layout of this alternative Office Park Layout Plan.

The advantages and disadvantages of the proposed Mixed Use Precinct are outlined in Table 11 below.

**Table 11: Advantages and disadvantages associated with the proposed Mixed Use Precinct.**

| ADVANTAGES | DISADVANTAGES |
|---|---|
| • Provides a diversity of uses, more resilient and adaptable in an ever changing economic climate.<br>• More feasible for the local region in relation to the current and predicted future demands.<br>• Provides an internal road network, which can work well with the proposed road upgrades in the area.<br>• The layout avoids the Dorpspruit River and tributary, and allows for it to become a feature in the development layout.<br>• More interest and support has been shown to this layout in the public participation processes thus far. | • The Hotel and Conference Centre will likely only reach its full potential after some time, given that travel has somewhat reduced.<br>• There are more hardened surfaces associated with this layout, and more stringent stormwater management and attenuation is required. |

The advantages and disadvantages of the proposed Office Park are outlined in Table 12 below.

**Table 12: Advantages and disadvantages associated with the proposed Office Park.**

| ADVANTAGES | DISADVANTAGES |
|---|---|
| • The layout avoids the Dorpspruit River and tributary, and allows for it to become a feature in the development layout.<br>• The layout has more landscaped areas and fewer hardened surface associated with it as compared to the Mixed Use Precinct. | • There is an excess of office space in the local region at present, and together with the shift in how offices spaces are used (increase in working from home), the proposed land use may be less feasible.<br>• The Hotel and Conference Centre will likely only reach its full potential after some time, given that travel has somewhat reduced. |

Following an investigation of market demands and assessment socio-economic and environmental feasibility, the applicant has selected the Mixed Use Precinct as the preferred option.

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

Technology alternatives are not applicable to this application.

**(e) The operational aspects of the activity**

The operational aspects of the proposed Mixed Use Precinct are considered to be more feasible and practical than the continued use of the site as is for its current operations and activities.

**(f) The option of not implementing the activity**

The 'do-nothing' approach will result in the Pietermaritzburg Royal Agricultural Showgrounds being retained for its current use. This option is considered to be unfeasible for the following reasons:

- The hosting of the annual Royal Agricultural Show at its current location is logistically challenging, especially with regards to the transporting of large numbers of livestock and equipment from rural farming areas into the city, and to an area in close proximity to the CBD. This endeavour also proves expensive for exhibitors. Therefore, the 'do-nothing' option will result in the site becoming redundant as current land uses become less suitable and profitable to be continued.
- The current land use is inconsistent with the surrounding urban and commercial land uses and town planning. Instead, the site is more suited to commercial, retail, office and mixed use land uses, similarly to the surrounding areas.
- In its current form there is not sufficient parking for large events. When events do take place, attendees park on any available land near to the showground which results in safety concerns for both vehicles manoeuvring into parking positions, attendees commuting between the showgrounds to their cars, and pedestrians traversing the pavements to access the venue.
- The continued use of the site will have a lessened contribution to local economic development and growth in Pietermaritzburg, as compared to the proposed redevelopment of the site.
- Many of the current uses of the site have been largely impacted by COVID-19, and there is possibility of these impacts re-occurring or continuing and affecting profitability. The Royal Agricultural Show was cancelled for two (2) years due to lockdown regulations and health and safety concerns. Furthermore, there has been decreased use of halls and fields for events and gathering, which has been exacerbated by the spread of COVID-19. The decreased use of the site may likely lead to many site features becoming redundant.

Further to the above, research on the international trends relating to agricultural shows were undertaken, and the following was found:

- The greatest interest in agricultural shows come from smaller to medium scale farmers. With the lack of larger scale interest, the hiring of halls for exhibitions becomes costly, increasing pricing for both exhibitors and visitors.
- Economic changes in the last few years impact small scale farmers most significantly. Given that these farmers are the main supporters of agricultural shows, more cost-effective and logistically feasible options would be most suitable.
- The impacts of climate changes, in terms of pests, diseases and natural disasters are increasingly impacting farmers. This poses a challenge to their consistent involvement in such shows.
- There is a gradual transition occurring to online-platforms for agricultural marketing and trading.
- Many agricultural shows have shown evidence of losing money for years and becoming financially unviable. The British Royal Show was cancelled indefinitely in 2009, after 170 years.
- The timeframes associated with shows are a constraint as farmers cannot afford to take too much time away from operations. As such, many shows have transitioned and diversified, however the focus on agriculture becomes lost. At the same time, shows which do not adapt to increasing diversity often fail. As such there is a balance which needs to be maintained between agriculture, and creating contemporary experiences for visitors, both farmers and non-farmers.

## 3.2 Preferred / Recommended Option

Based on the above assessment of alternatives, the applicant has selected the proposed Mixed Use Precinct as the Preferred Option.

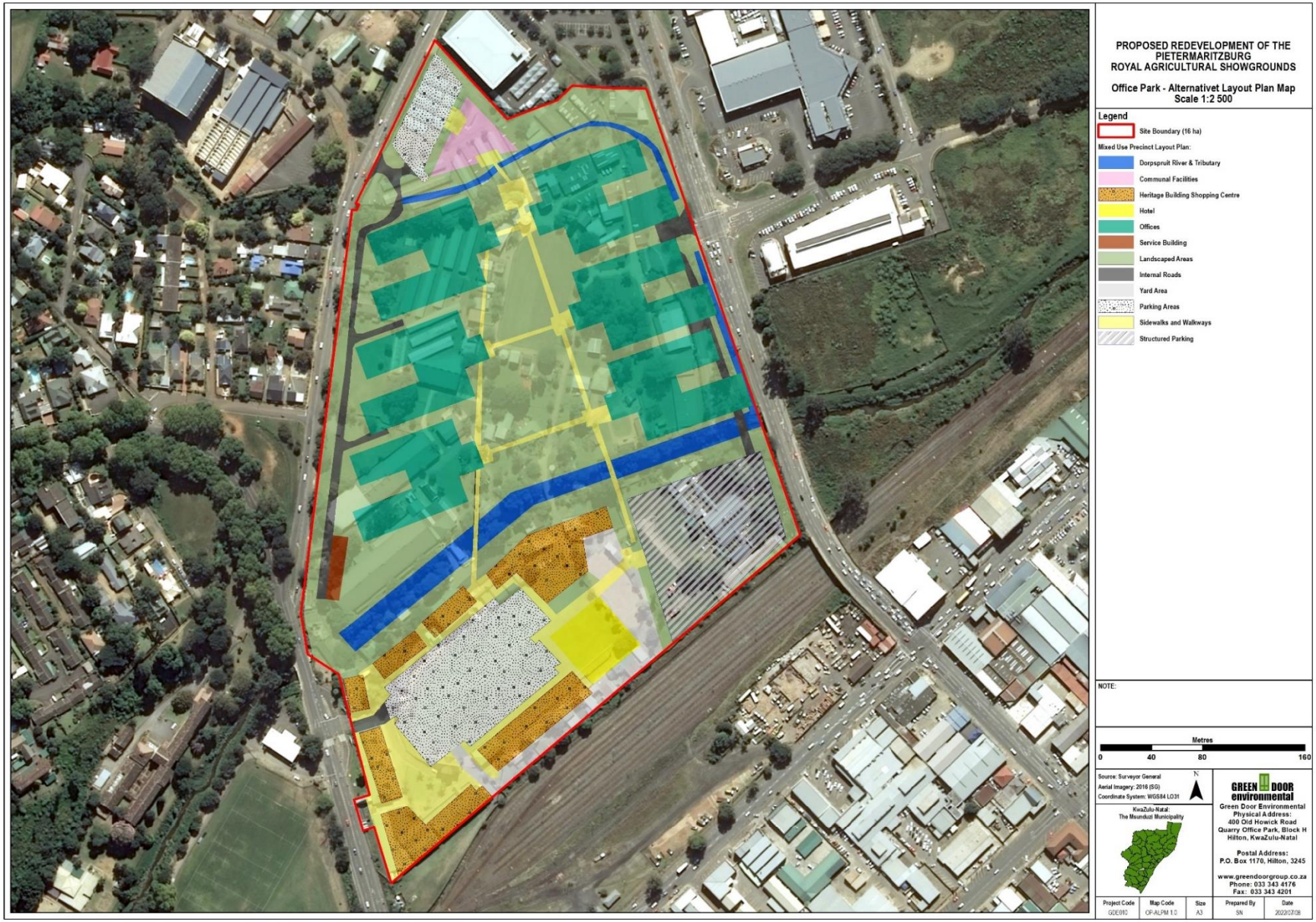


**Figure 4: Office Park - Alternative Layout Plan Map.**

# 4 PUBLIC PARTICIPATION PROCESS

## 4.1 Protection of Personal Information Act (POPIA) (Act 14 of 2013)

The Protection of Personal Information Act (POPIA) (Act 14 of 2013) came into effect on 1 July 2021 and aims to promote the protection of personal information. In terms of the POPIA, personal information refers to '*the name of the person if it appears with other personal information relating to the person or if the disclosure of the name itself would reveal information about the person'*. The EIA Regulations require, *inter alia*, transparent disclosure of registered Interested and Affected Parties (I&APs) and their comments. I&APs who submit comment, attend a Public Information Session (PIS) or request registration in writing for the BA Process are deemed registered I&APs who must be added to the list of I&APs. By registered, I&APs are deemed to give their consent for relevant information to be processed and disclosed, in fulfilment of the requirements of the EIA Regulations.

For the purposes of this BA Process and in terms of the requirements of the POPIA, only the names, affiliations and comments of I&APs have been included in this report. Should additional personal information be required by the DEDTEA, consent to share this personal information will be obtained from the I&AP prior to doing so.

## 4.2 Interested and Affected Parties

A register of I&APs was compiled at the inception of the project. The register includes names and contact details of Authorities, Government Departments, Municipal Departments, Non-Government Organisations, community representatives, local interest groups, local business owners and surrounding landowners and neighbours. The list of I&APs has been continually updated to include persons responding to the various notification mediums. The I&AP list which takes cognisance of POPIA, is attached at **Appendix D1**.

## 4.3 Notification of the Proposed Development

Notification of the proposed activity was given through:

- Publication of English and isiZulu advertisements in the Witness on 26th August 2021 and the Maritzburg Echo on 26th August 2021 respectively.
- Placement of English and isiZulu site poster on the periphery of the site and in close proximity to the site on 25th August 2021

The adverts and site posters informed the public of the proposed redevelopment and invited them to register their interest in the project. Adverts are attached at **Appendix D2**, and Site Posters at **Appendix D3**.

## 4.4 Background Information Document

Written notification in the form of a Background Information Document (BID) was circulated from 30th August 2021. The BID provides details of the aims and processes of the EA application process and invites all I&APs to register on the project and provide preliminary comments on the proposal. The BID and comments received on the BID are attached at **Appendix D4** and **Appendix D7** respectively.

Comments on the BID and responses thereto are outlined in Section 4.8.1.

## 4.5 Public Information Session

A Public Information Session (PIS) was held on Thursday, 4th November 2022 in a hall within the Royal Agricultural Showgrounds. The purpose of the PIS was to provide information to I&APs regarding the proposed project and give the I&APs an opportunity to raise any concerns of questions they feel should be addressed during the process.

Information on the proposed redevelopment and the EA Process was provided in the form of presentation posters displayed at the venue. The I&APs were given the opportunity to peruse the presented information and discuss any concerns or questions with the Environmental Assessment Practitioner (EAP).

The Presentation Posters, Meeting Minutes, Attendance Register are attached at **Appendix D5**.

Comments received in the PIS and responses thereto are outlined in Section 4.8.2.

## 4.6 Consultation with Competent Authority

The following consultations have been undertaken with the DEDTEA to date:

- A Pre-application Meeting with DEDTEA was held on Friday, 17th September 2021 via the Zoom virtual meeting platform. The Pre-application Meeting Presentation, Meeting Minutes and Attendance Register are attached at **Appendix D6**.
- A copy of the Draft Basic Assessment Report (DBAR) will be submitted to the DEDTEA for the legislated 30 Day Comment Period.

The following consultation is still to occur:

- DEDTEA will provide a response and comments on the DBAR within 30 Days of receipt of the DBAR.
- An Environmental Authorisation Application form has been submitted to DEDTEA. The Draft EA Application Form is attached at Appendix B. An Acknowledgement Letter will then be received from DEDTEA, quoting a reference number.
- The Final Basic Assessment Report (FBAR) will be submitted to DEDTEA for decision making.

## 4.7 Circulation of the Draft Basic Assessment Report

Copies of the DBAR were circulated to the following key I&APs for review and comment within the 30 Day comment period:

- Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) – Mavis Padayachee
- Department of Water & Sanitation (DWS) – Zama Hadebe
- Department of Agriculture, Forestry and Fisheries (DAFF) – Nandipha Sontangane
- Department of Agriculture and Rural Development (DARD) – Bongiwe Thabede, Petrus Mans
- Department of Transport (DoT) – Michele Schmid
- Msunduzi Local Municipality – Gideon Duma
- uMgungundlovu District Municipality – Mandisa Khomo
- Ezemvelo KwaZulu-Natal Wildlife – Nerissa Pillay
- AMAFA Heritage KwaZulu-Natal – Bernadet Pawandiwa
- Eskom – Michele Nicol
- SANRAL – Judy Marx
- Transnet Freight Rail – Earnest Kettle
- Fuel Retailers Association – Zibele Sokabo

All remaining I&APs are notified of the availability of the DBAR for review and comment and are afforded 30 days to provide comments. Comments received and responses thereto will be provided in the FBAR.

## 4.8 Comments & Response Register

Comments and Responses for the following are outlined in the sections hereafter:

- Comments and responses on the BID (Table 13);
- Comments and responses from the PIS (Table 14), and;
- Comments and responses from the Pre-Application Meeting with DEDTEA (Table 15).

### *4.8.1 Background Information Document Comments & Responses*

**Table 13: Comments & Responses on the BID.**

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| Interested Party | • Your development schedule summary shows the proposed Filling Station as 400 $m^2$. | • The footprint has been verified. The 400 $m^2$ pertains specifically to the building footprint (Office Area, Convenience shop and Fast Food Outlet). The overall extent of the proposed Filling Station, inclusive of this building footprint is 2800 $m^2$. |
| MTN | • MTN has a Base Transceiver Station (BTS) located at the Royal Showgrounds to provide GSM Coverage.<br>• I assume the structure our antennas are mounted on will have to be imploded. What plans are being made to mitigate the risk of the immediate / surrounding area being void of coverage once our BTS will be decommissioned?<br>• Is a replacement structure being incorporated in the proposed design phase? I think it should. We don't pay attention to the Urban Development principals hence we can't successfully say we have smart cities, this is due to the marginal efforts made by developers and the lack of guidance from municipalities / government.<br>• Having a new development precinct without proper communication infrastructure is definitely a stride in the wrong direction from a smart city. I will engage with Msunduzi Municipality around their plans / framework around smart cities. | • Noted.<br>• Based on the coverage map posted on the MTN Website, it is noted that there is sufficient coverage within the region.<br>• At this stage, no replacement structures have yet been considered. However, this may be considered in the long-term.<br>• The proposed redevelopment will endeavour to ensure proper service infrastructure and communication infrastructure as necessary for users. |
| KwaZulu-Natal DARD | General:<br>• The provincial Department of Agriculture and Rural Development: Agricultural Resource Management Land Use Regulatory Unit acknowledges the receipt of the above mentioned application.<br>• The main objective of the application is to request Provincial Department of Agriculture and Rural Development to recommend, provide valuable inputs and comments on the | • Noted. |

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| | proposed redevelopment of Pietermaritzburg Royal Agricultural Showgrounds.<br>Background:<br>• Vu-Tact Trade and Invest (Pty) Ltd. wish to obtain the Environmental Authorisation for the proposed redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds located on ERF 10065.<br>• The proposed redevelopment of the site has been investigated for some time now given the growing logistical challenges associated with hosting the annual Royal Agricultural Show close to the Pietermaritzburg Central Business District.<br>• The conceptual plans for the proposed development encompass a Mixed Use Precinct and an Office Park.<br>• The proposed Mixed Use Precinct (Conceptual Plan 1) has a building footprint of approximately 70 000 m2, featuring retail component, a hotel, a hospital, offices, residential components and a petrol filling station.<br>• While the proposed Office Park (Conceptual Plan 2) has a building footprint of approximately 80 000m2 and will contain mixed uses (offices, a hotel and conference centre and a shopping centre).<br>• Activities that are triggered include Activities 14, 19 and 31 of GNR 327, Activities 4, 6, 10, 14, 15 and 18 of GNR 324.<br>Comments on what is proposed:<br>• The land or site where development is proposed is highly over urban area as it is under Local Town Planning Scheme which is Umsunduzi.<br>• The site is fully developed and is of no value to direct agricultural production based on the location, size and the current zoning.<br>• If that is the base Land Use Regulatory Unit focuses its area of concern over natural resources that might be affected by the proposed development. | • Noted.<br><br>• Noted, this is correct.<br><br>• Noted, this is agreed.<br><br>• Noted. |

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| | • As indicated the document we commenting on is just a BID, therefore little information is provided regarding the project for the office to make a sound call.<br>• It is important that the office receives enough information regarding the mitigation measures that will be applicable to the project.<br>Recommendation:<br>• Please be advised that the Provincial Department of Agriculture and Rural Development: Land Use Regulatory Component cannot conclude on the redevelopment of the Pietermaritzburg Royal Agricultural Showgrounds located on ERF 10065. The no conclusion is because the office has to wait for a detailed application as to make a final recommendation. | • Noted.<br>• Noted.<br>• Noted. The DBAR, which contains more detailed information, will be circulated to the Provincial Department of Agriculture and Rural Development: Land Use Regulatory Component for comment. |
| Eskom | • We confirm that an investigation has been carried out with regard to any encroachment into Eskom's Servitudes, in respect to the application as set out above referring to the KMZ file supplied by Green Door Environmental.<br>• Eskom has no objection to the proposed application, as there are no Eskom HV Lines i.e. 132-kV, 88-kV and 33-kV lines neither are there MV Lines i.e. 22-kV or 11-kV lines / cables depicted on our system that traverse over area of interest. Please note that Eskom's LV data is currently not available. If you come across any other lines or underground cables in the area, please contact Eskom immediately on 08600 37566.<br>• Whilst on the ground, should you physically detect any other conductors and / or underground cables (not Eskom property) located on the site, kindly inform the relevant Municipality / authority who will advise you accordingly. | • Noted.<br>• Noted, thank you for your comment. Eskom will be contacted should any other lines or underground cables be encountered.<br>• Noted, thank you for your comment. The relevant Municipality / authority will be contacted should any other conductors or underground cables, which is not Eskom property, be encountered. |
| ACDC | • Please advise if this is selling as free hold? | • At present, there are no plans to sell units as freehold, and they are planned to be leased instead. |
| Blackwoods Nursery | • Blackwood Agric (Pty) Ltd, trading as Blackwoods Home of Gardening currently holds a notarial deed of sublease for the use | • Any issues pertaining to the lease agreements will be addressed directly between the Royal Agricultural Society and lessees. |

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| | of a portion of the land and buildings that has been identified in the redevelopment of the 'Royal Showgrounds' property. This notarial deed of sublease is registered against the titles of the proposed property and has an expiry date of June 2030. | |
| Surrounding Filling Station Owners - Competitor | • Area is already totally overtraded with at least 10 filling stations already in the immediate vicinity.<br>• Please consult all filling stations listed as they will be affected. We will oppose the development jointly. | • Thank you for your comment. A Feasibility Study, Socio-Economic Impact Assessment and Need and Desirability Assessment (Refer to **Appendix 12**) was undertaken as part of the process, to consider whether the proposed land uses are suitable from a socio-economic perspective. The specialist has considered comments raised relating to nearby filling stations. The Feasibility Assessment noted that considered traffic growth patterns in the area, the proposed Filling Station would be considered as 'Highly Feasible'.<br>• Noted, these filling stations have been added to the I&AP list. Your objection has been noted. |
| Nearby Filling Station Owner – 9 Armitage Road | • The position of the service station has not been clearly shown on the conceptual layout.<br>• Currently the existing surrounding roads experience significant congestion with creating a dense and populated mixed-use development will significantly adversely impact the traffic. Consideration for the entire area must be made.<br>• Storage of container of dangerous goods – it's a dense area, impact many people.<br>• Trucks will impact the traffic and road conditions. | • Revised mapping attached at Appendix A, reflects the location of the proposed Filling Station more clearly.<br>• A Traffic Impact Assessment has been undertaken. The following was noted from the study (Refer to **Appendix E9**):<br>  ○ Major congestion is anticipated based on future traffic modelling. However, traffic congestion can be managed through certain upgrades and recommendations as per the Traffic Impact Assessment.<br>• This risk has been noted and it is the same risk that exits for all Filling Stations within urban areas. As such, the same general prevention and mitigation measures which are adopted to minimise these risks in other urban Filling Stations, will be adopted within the proposed Filling Station.<br>• The Traffic Impact Assessment study also indicated that provided the recommended upgrades and recommendations are implemented, no major deterioration in road conditions is expected. |

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| | | Traffic from trucks will be similar to that of other urban Filling Stations, which comprises mainly of fuel delivery trucks. Fuel deliveries can be planned to prevent traffic congestion. Given that a greater influx of trucks into the area is not expected as a result of the proposed Filling Station, no adverse impacts to the road conditions are expected. |
| Romans Pizza | • We received the attached proposed redevelopment of the Royal Showgrounds and would like to ask if you could please keep us updated for any retail sites, preferably front view and lowerground sites.<br>• We currently own the two Roman's Pizza stores in Pietermaritzburg (Commercial road opened in 2013 and Hayfields branch opened in 2015). We are looking to open our third generic Roman's Pizza branch and feel this new development will be an excellent site for us to expand as a brand.<br>• Could you kindly keep us updated and keep our business on your development list for any available sites? | • Romans Pizza has been added as an I&AP for the BA Process and contact details have been forwarded to developers.<br>• Noted, thank you for the information.<br>• Romans Pizza has been added as an I&AP for the BA Process and contact details have been forwarded to developers. |
| PADCA | • Please register PADCA, we own the Woodgrove Retirement Village at 28A Howick Rd, as an interested party.<br>• A point of concern is the impact the development will have on traffic flow. The road infrastructure in that area can't cope with the current levels of traffic, how will it cope with the additional load? | • PADCA have been registered as an I&AP.<br>• A Traffic Impact Assessment has been undertaken. The following was noted from the study (Refer to **Appendix E9**):<br>○ Major congestion is anticipated based on future traffic modelling. However, traffic congestion can be managed through certain upgrades and recommendations as per the Traffic Impact Assessment. |

### *4.8.2 Public Information Session Comments & Responses*

**Table 14: Comments & Responses from the PIS.**

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| Surrounding Service Stations Representatives | • Has an application been lodged with the Department of Energy for the proposed Filling Station and for the required retail licenses? | • This BA Process is being undertaken specifically to apply for EA for the proposed redevelopment, in relation to the NEMA EIA Regulations. A separate application will need to be undertaken with the Department of Energy for retail licenses or approvals required specifically for the proposed Filling Station. This will be undertaken by a separate consultant and will likely only be undertaken closer to the time of development of the proposed Filling Station. The Department of Energy (DoE), will however be included as an I&AP in the BA Process. |
| | • Competition with surrounding service stations must be considered. The proposed filling station is within 3 kilometres of other filling stations and will remove customer traffic to these existing service stations. | • A Feasibility Study, Socio-Economic Impact Assessment and Need and Desirability Assessment was undertaken as part of the process, to consider whether the proposed land uses are suitable from a socio-economic perspective. The specialist has considered comments raised relating to nearby filling stations. The Feasibility Assessment noted that considered traffic growth patterns in the area, the proposed Filling Station would be considered as 'Highly Feasible'. |
| | • Service stations within the area must be consulted with in the process. | • All service station owners from the surrounding areas, who have registered as I&APs have been included in the I&AP Register. |
| | • Office spaces are considered to be more feasible. | • Noted. |
| Real Estate Agent | • Recommendation made to do away with the proposed Filling Station and replace with a car parking lot which can be rented out to users. | • Noted. |
| Msunduzi Business Development Agency | • The City must consider future development for nearby and adjacent undeveloped land portions, which creates more opportunities for informal business trading. | • Noted. |
| Adjacent Landowner – Voortrekker High School | • The School supports the proposed redevelopment but requires clarity on how their agreement with the Royal Agricultural Society to use the Sports Fields will be affected. | • The adjacent property and Sports Field is not included within the proposed redevelopment site. The I&AP is to interact directly with |

| I&AP | COMMENT | RESPONSE |
|---|---|---|
| | • The Mixed-Use provides a more feasible option. | the Royal Agricultural Society to understand if any agreements will be affected indirectly.<br>• Noted. |
| I&AP | • The Mixed-Use provides a more feasible option for Pietermaritzburg's needs. | • Noted. |
| I&AP | • Where will the Annual Royal Agricultural Show be relocated to. | • At present no specific new location has been selected, however it is understood that the new location/s will be in a more appropriate agricultural landscape, better suited to the main purpose of the Annual Royal Agricultural Show. |

### *4.8.3 Pre-Application Meeting Comments & Responses*

**Table 15: Comments & Responses from the Pre-Application Meeting.**

| COMMENT | RESPONSE |
|---|---|
| • DEDTEA confirmed that all activities listed by the EAP are indeed applicable, including the activity pertaining to closure / decommissioning of the facilities. | • Noted. |
| • DEDTEA requested that the additional activities below be investigated for inclusion:<br>  • Listing Notice 1 – Activity 27, Activity 67 and any activities applicable for existing facilities which are to be decommissioned.<br>  • Listing Notice 3 – Activity 12. | • These activities have been added to the application. |
| • DEDTEA queried whether the existing facilities are to be completely closed and infrastructure deconstructed. | • The EAP confirmed that apart from the heritage buildings and structure which must be retained and / or preserved, most other buildings, facilities and infrastructure are to be deconstructed and will no longer be in use. The Royal Agricultural Society (current landowners) will try and preserve some structures and relocate them to their new show sites for re-use. |
| • In response to this DEDTEA confirmed that the activity relating to decommissioning / closure is applicable and must be included in the application. Further to this, DEDTEA requested that all Listed Activities applicable to the current infrastructure which is to be decommissioned and closed must also be identified and included in the application. | • These activities have been added to the application. |

| COMMENT | RESPONSE |
|---|---|
| • DEDTEA requested that the identified Listing Notice 3 activities be updated to reflect that they are applicable not only in terms of the current zoning, but also as the site intersects an Msunduzi EMF Zone. | • The EAP confirmed that these Listing Notice 3 activities will be included and that both applicable zones (i.e. zoning & Msunduzi EMF) will be listed. |
| • DEDTEA requested confirmation on the site ownership and confirmation as to whether the entire site is owned by this party. | • The EAP confirmed that the entire site is owned by the Royal Agricultural Society. The site will be transferred to the applicant upon receipt of relevant approvals. In the interim, landowner consent from the present owners will be provided. |
| • DEDTEA requested confirmation as to whether the entire site is zoned as 'Active Public Open Space' | • The EAP confirmed that the entire site is zoned as 'Active Public Open Space'. Whilst the site includes a mixture of land-uses (i.e. parking, institute retail and office buildings, sports grounds and events halls), the predominant use of the site has been for shows open to the public, and it is for this reason we believe the entirety of the site has been zoned as such. |
| • DEDTEA strongly recommended that a Preferred Layout be presented in the Basic Assessment submission for decision making purposes. | • A Preferred Layout has been presented. |
| • DEDTEA requested confirmation on the proposed Public Participation (PP) plan. | • The EAP presented the PP Plan in accordance to the PP Plan document that was submitted to DEDTEA prior to the Pre-Application Meeting. DEDTEA approved the PP Plan, however requested that the Public Meeting must be held either virtually or in-person, and that the circulation of presentation slides will not suffice. |
| • DEDTEA requested that the Fuel Retailers Association be included in the I&AP register if not already included. | • The EAP confirmed that the Fuel Retailers Association has already been included in the I&AP register. |
| • DEDTEA stated that it must be ensured that all PP processes comply with Regulation 40 and 41 of the EIA Regulations. | • The EAP confirmed that this will be ensured. |
| • DEDTEA requested that all specialist studies should be independent and if they are not, they should be peer-reviewed. | • The EAP confirmed that this will be ensured. |

## 4.9 Summary of Issues Raised

The main issues, concerns and queries which have been raised to date are outlined below:

- Concern about adequate reception coverage following the deconstruction and removal of communication infrastructure.
- Queries about how existing lease agreements will be impacted.
- Concerns about competition with existing Filling Stations.
- Concern regarding the storage of dangerous goods within a dense urban area.
- Concerns about traffic congestion and impacts on road conditions and infrastructure.
- Concern about additional trucks entering the area.
- Queries on the relocation site for the Annual Royal Agricultural Show.

# 5 POTENTIAL IMPACTS ON THE SOCIAL AND ECONOMIC ENVIRONMENTS

## 5.1 Local Economy and Employment Opportunities / Need and Desirability

**Description**

A Feasibility Study, Socio-Economic Impact Assessment & Need and Desirability Assessment (**Appendix E12**) was conducted for the site, the findings and recommendations of which are presented in Section 7.12. of this report. The Need and Desirability Assessment is outlined in Section 2 of this report.

**Implication / Risk / Impact**

- The proposed redevelopment will have a positive impact on the local economy by contributing to economic growth and development.
- Employment opportunities will be created during both the construction and operation phases.
- The proposed redevelopment will have a greater socio-economic benefit than continuing to use the site as is.
- The Royal Agricultural Society will need to find a new suitable location for the Royal Agricultural Show.
- Current employment and business opportunities associated with the Royal Agricultural Society and the annual Royal Agricultural Show may be temporarily disrupted or lost due to relocation of the organisation and the show.
- The lessees of property portions within the site, will need to find alternative rental locations for their activities.
- There may be temporary competition with other competing entities in the area. However, based on the feasibility assessment, the anticipated levels of growth and expansion will provide sufficient market demand to accommodate existing facilities and the proposed new facilities.

**Mitigation / Recommendation**

- Sufficient notice is to be provided to lessees, employees and service providers associated with the site, the Royal Agricultural Society and the annual show, to allow for these parties to plan adequately for the changes.

## 5.2 Planning Initiatives

**National Spatial Development Perspective (NSDP)**

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

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

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

In defining potential, the NSDP has drawn on recent tradition of “institutional economics” a field that has come to dominate both developmental economics and regional planning. The institutional approach suggests that beyond the usual sources of comparative advantage, the institutional adequacy of a

locality will help determine whether development is sustainable or not. The NSDP therefore uses concepts of potential that rely strongly on the presence of institutional capacity to realize the developmental impact of other resources.

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

**KZN Growth and Development Strategy (PGDS)**

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

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

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

It is a framework for public and private sector investment, indicating areas of opportunities and development priorities. It addresses key issues of implementation blockages whilst providing strategic direction. The PGDS implies a developmental approach to government. This implies a pro-active and facilitative approach to development and not one based of formulating and applying regulations and restrictions. The PGDS on the one hand involves preparing policies, strategies and guidelines and on the other hand it involves preparing mechanisms to align and facilitate the implementation, monitoring and evaluation of key growth and development priorities.

**Millennium Development Goals**

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

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

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

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

**Alignment with Municipal Goals and Objectives**

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

**Implication / Risk / Impact**

- The proposed redevelopment is in line with the goals and objectives of the Msunduzi Municipality IDP and the above mentioned national and provincial strategies.
- The proposed redevelopment is not aligned to the Msunduzi Municipality SDF and Land Use Planning Scheme, which designates the site as 'Public Active Open Space'. However, a rezoning application is being undertaken to change the current zoning to 'Low Impact Mixed Use', which is aligned to the proposed redevelopment, but is also a more feasible land use for the location.

**Mitigation / Recommendations**

- The rezoning of the site must be completed and approved prior to the change of land use.

## 5.3 Cultural, Historical and Archaeological Resources

**Description**

A Phase 1 HIA, Phase 2 HIA and Palaeontological Assessment was undertaken for the proposed redevelopment to assess the potential impacts on cultural, heritage and archaeological resources (Refer to **Appendix E1**, **E2** and **E3**).

**Implication / Risk / Impact**

- No archaeological sites were identified within the proposed redevelopment site.
- The likelihood of significant fossils in the bedrock beneath the site is low.
- The proposed redevelopment is unlikely to have any impact on palaeontological resources and there is no need for mitigation.
- The Block 2: Industrial Hall, Block 4: The Crafts Hall and Gate 1 are the most historically significant buildings within the site.
- The Olympia Hall gable façade and the Dorpspruit River walkways and bridges are considered landmark features.
- The Blackwoods / Boshoff Street bridge is a structure of historical value to Pietermaritzburg, and a fine example of Victorian architectural design.
- The Block 2: Industrial Hall, Block 4: The Crafts Hall and Gate 1 are the most historically significant buildings within the site.
- The Olympia Hall gable façade and the Dorpspruit River walkways and bridges are considered landmark features.
- The Blackwoods / Boshoff Street bridge is a structure of historical value to Pietermaritzburg, and a fine example of Victorian architectural design.

**Mitigation / Recommendation**

- Should construction or operational activities expose archaeological, palaeontological or historical remains, old graves or fossil material, activities must cease immediately, pending evaluation by the provincial heritage agency. This is in alignment with the South African Heritage Resources Act (SAHRA) (Act 25 of 1999) and the AMAFA Research Institute and Heritage Act (Act 5 of 2018).

- The following buildings and structures must be retained for their heritage value (at their current locations):
    - The main Gate House and Gate Posts.
    - The Industrial Hall.
    - The Crafts Hall.
    - The Shuter and Shooter Building.
    - The historic Boshoff Street Bridge.
- The following structures should be incorporated into the development, and can be upgraded where necessary:
    - The gable façade of the Olympia Hall.
    - The Dorpspruit Walkway and Bridges.

## 5.4 Surrounding Land Use and Aesthetics

**Description**

The proposed redevelopment will result in a change from the current land use.

**Implication / Risk / Impact**

- The proposed land use change will be more similar to the surrounding land uses and will be better suited to the current urban landscape and associated aesthetics.
- The aesthetics of the area will be temporarily disturbed during the construction phase.

**Mitigation / Recommendation**

- The building designs are to comply with SANS standards.
- The buildings must be designed to fit suitably within the surrounding urban landscape.
- Screening is to be utilised where necessary to limit views of construction activities.

## 5.5 Traffic, Roads and Access

**Description**

A Traffic Impact Assessment was undertaken to assess the potential impacts on traffic and road conditions (Refer to **Appendix E10**), the findings and recommendations of which are presented in Section 7.9. of this report.

**Implication / Risk / Impact**

- The proposed redevelopment will result in major traffic congestion, if no road upgrades are undertaken.
- The proposed redevelopment is not expected to cause road conditions to deteriorate.

**Mitigation / Recommendation**

The proposed redevelopment cannot be undertaken without the following recommendations being implemented:

- The N3 Sanctuary Road interchange must be upgraded.
- The Chatterton Road roundabout must be converted to a 4-legged signalised intersection.
- The Hyslop Road must be upgraded to two lanes in each direction.
- The four (4) existing access intersections to the site must be retained. The configuration of each access intersection is to be modified to match the expected traffic demand, such that the access intersections operate efficiently.
- Proper public transport laybys are to be provided outside each of the access intersections. Exact locations of these laybys can be finalised during the detail design stage.
- The good network of existing pedestrian sidewalks surrounding the site is to be retained as far as possible. More detail on the internal sidewalk network will be provided in the detail design stage.

## 5.6 Construction Activities, Noise and Dust

**Implication / Risk / Impact**

- There may be an increase in noisy activities during both the construction and operational phases.
- There may be an increase in dusty conditions during the construction phase.
- There will be a greater influx of construction vehicles within the area during the construction phase.
- The safety of land users immediately adjacent to the site may be at risk, during the demolition of buildings.

**Mitigation / Recommendation**

- Noisy activities must be avoided and minimised wherever practically possible during the construction phase.
- Construction machinery are to be fitted with noise reduction fittings.
- Noisy construction activities must only be undertaken during working hours, to prevent undue disturbance outside of these times.
- Surrounding residents and land users are to be notified when significantly noisy activities are to be undertaken, particularly during the demolition of buildings.
- Tenants (during the operational phase) are to adhere to rules regarding noise, limiting unduly noisy activities which is a disturbance to surrounding land users.
- Pro-active dust suppression must be undertaken regularly on site, during the construction phase.
- Construction vehicles must adhere to speed limits and rules of the road.
- Traffic generated from construction vehicles must be minimised by proper planning of trips and routes.
- Contractors are to ensure that all demolition is undertaken safely, with necessary planning to ensure demolished material remains contained within the site, and that adjacent areas are not destabilised.

## 5.7 Security

**Description**

Security of the site can be threatened during the construction phase, the operational phase and during the transition between these two (2) phases.

**Implication / Risk / Impact**

- Criminal activity can increase during the construction phase once the site becomes less secured.
- Criminal activity can increase during the operational phase as a greater number of people utilise the site.

**Mitigation / Recommendation**

- Existing periphery fencing, walls and controlled access points are to be maintained for as long as possible during the construction phase, to keep the site secured. Decommissioning and construction activities can continue to occur whilst this security infrastructure remains in place.
- Access control to the site must be maintained during the construction phase. A controlled register system is to be utilised to record entry of labourers, suppliers and visitors.
- Construction staff must not be allowed to trespass onto adjacent properties during the construction phase.
- During construction, 24 hour security is recommended to be procured by Contractors.
- During the operational phase, security is recommended. Procurement thereof is to be agreed upon between leasers and lessees.

- During the operational phase, it is recommended that alarm systems be installed where necessary. Procurement thereof is to be agreed upon between leasers and lessees.
- Restricted and / or dangerous areas must be clearly demarcated with appropriate warning signage, during both the construction and operational phases.

## 5.8 Coronavirus (COVID-19) Pandemic

**Description**

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

**Implication / Risk / Impact**

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

**Mitigation / Recommendation**

- During the construction phase, local businesses unemployed people in the immediate area must be considered first, before employing labour and services from further afield.
- Where possible, any additional employment opportunities created during the operational phase, must include labour from the local region.

# 6 POTENTIAL IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

## 6.1 Topography

**Description**

The site is generally level, with very gentle undulating slopes in places. The site is also located in a low-lying part of the city.

**Table 16: 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 |

**Table 17: Landform describing the site.**

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

**Table 18: Groundcover of the site.**

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

**Implication / Risk / Impact**

- Given the sites location within the low-lying alluvial plain of the Dorpspruit River and its tributaries, heavy rainfall can result in very shallow perched groundwater seepage in places, creating the need for subsoil drainage.

**Mitigation / Recommendations**

- As the site occurs within the alluvial plain of the Dorpspruit River and its tributaries, both stormwater and groundwater must be appropriately managed:
    - If groundwater seepage is encountered during construction, these zones should be controlled with effective subsoil drains, particularly where water is likely to gain ingress into the structure layers of roads and paved areas.
    - It is expected that all cuttings will attract groundwater over time and judicious installation of subsoil drainage is strongly recommended to protect water ingress into the structural layers of roads and paving, as well as foundations.

## 6.2 Climate

**Description**

Mean Annual Precipitation and Mean Annual Temperature in KwaZulu-Natal are illustrated in the Figure 5 and Figure 6 below. The site receives a mean 800 – 1000 millimetres of precipitation per annum. The mean annual temperature for the site is 18 degrees Celsius. A Floodline and Flood Risk Analysis Study (Refer to **Appendix E4** was conducted for the site, the findings and recommendations of which are presented in Section 7.4. of this report.

**Implication / Risk / Impact**

- More than 60% of the site is located within the 1:100 year floodline[5].
- The area between the Dorpspruit River and the northern tributary is at risk of flooding during all modelled return periods.
- Flood risks are medium to high for all modelled return periods.

**Mitigation / Recommendations**

- All culverts and channels must be kept clear of debris and rubble, to increase the capacity of the channels. Litter traps upstream of culverts, and at appropriate locations along the channel banks can be utilised. These will need to be maintained and emptied on a regular basis and after each rain event.
- Where there are breached areas along the channel banks, as mentioned above, it could be recommended that raised earthen berms be constructed to close these areas to prevent flooding in lower return periods. These berms will need to consist of material with a high clay content that could be sufficiently compacted so as to withstand the energies of the flow. These should tie into the raised portions of the levies on either side of the breached areas, at approximately 1 metre in height. To reduce erosion potential, the berms should be armoured with rock packing or a form of erosion control blanket, and densely vegetated with an appropriate grass seed mix and indigenous vegetation suitable to this environment.
- The Stormwater Management Plan (Refer to **Appendix E5**) must be implemented, to ensure flows are appropriately attenuated.
- Risk management measures should be put on place to mitigate risks in areas of high consequence where the flood severity is medium to high. These areas include bridges, walkways, parking bays and roadways. These measures can include stable railings, highly sufficient stormwater management, alternative access areas and parking bays in the case of a flood warning.

[5] **Hydraulic modelling to delineate the floodline was undertaken, excluding any existing or proposed stormwater infrastructure, given that there was a lack of such data available.**

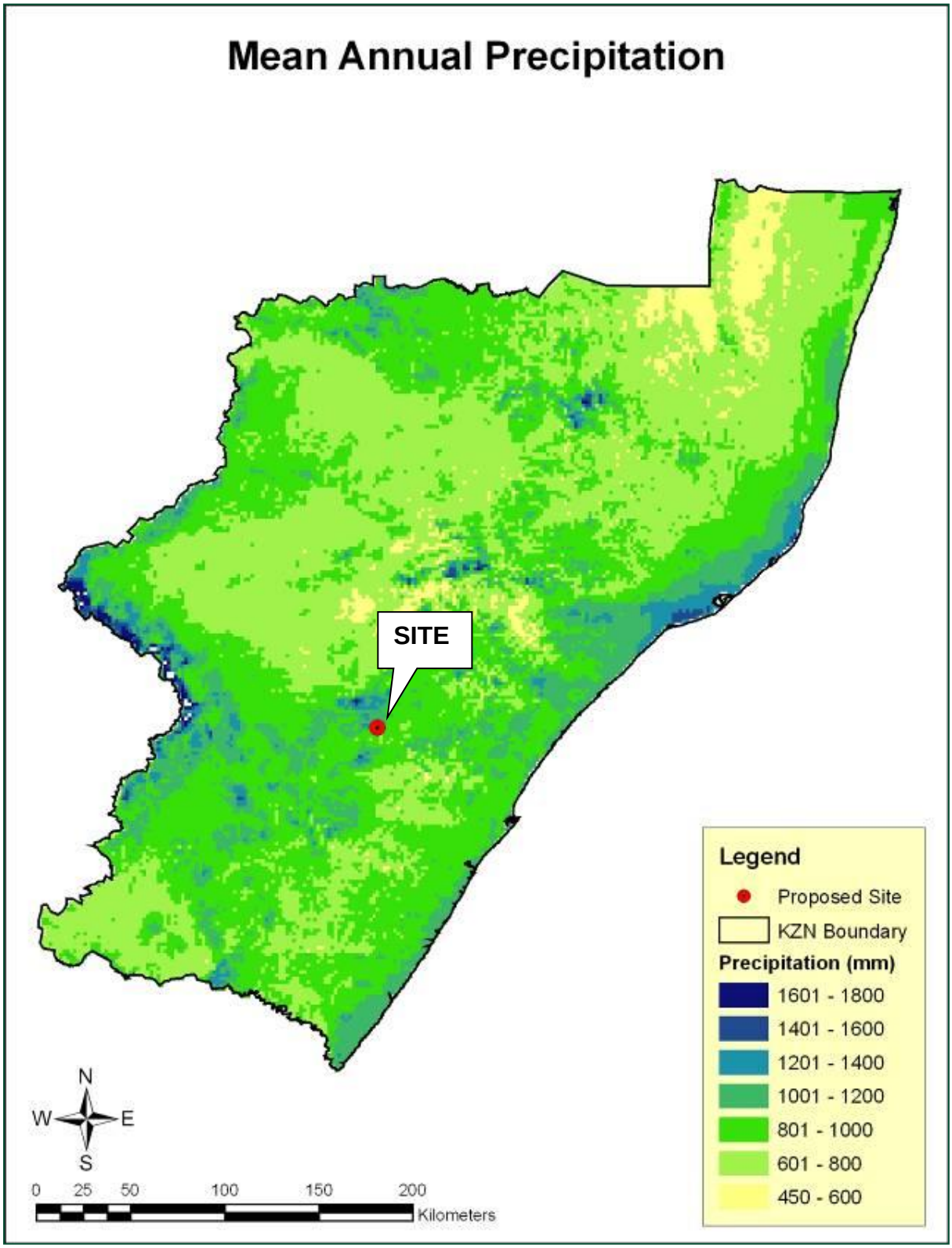


**Figure 5: Mean Annual Precipitation in KwaZulu-Natal.**

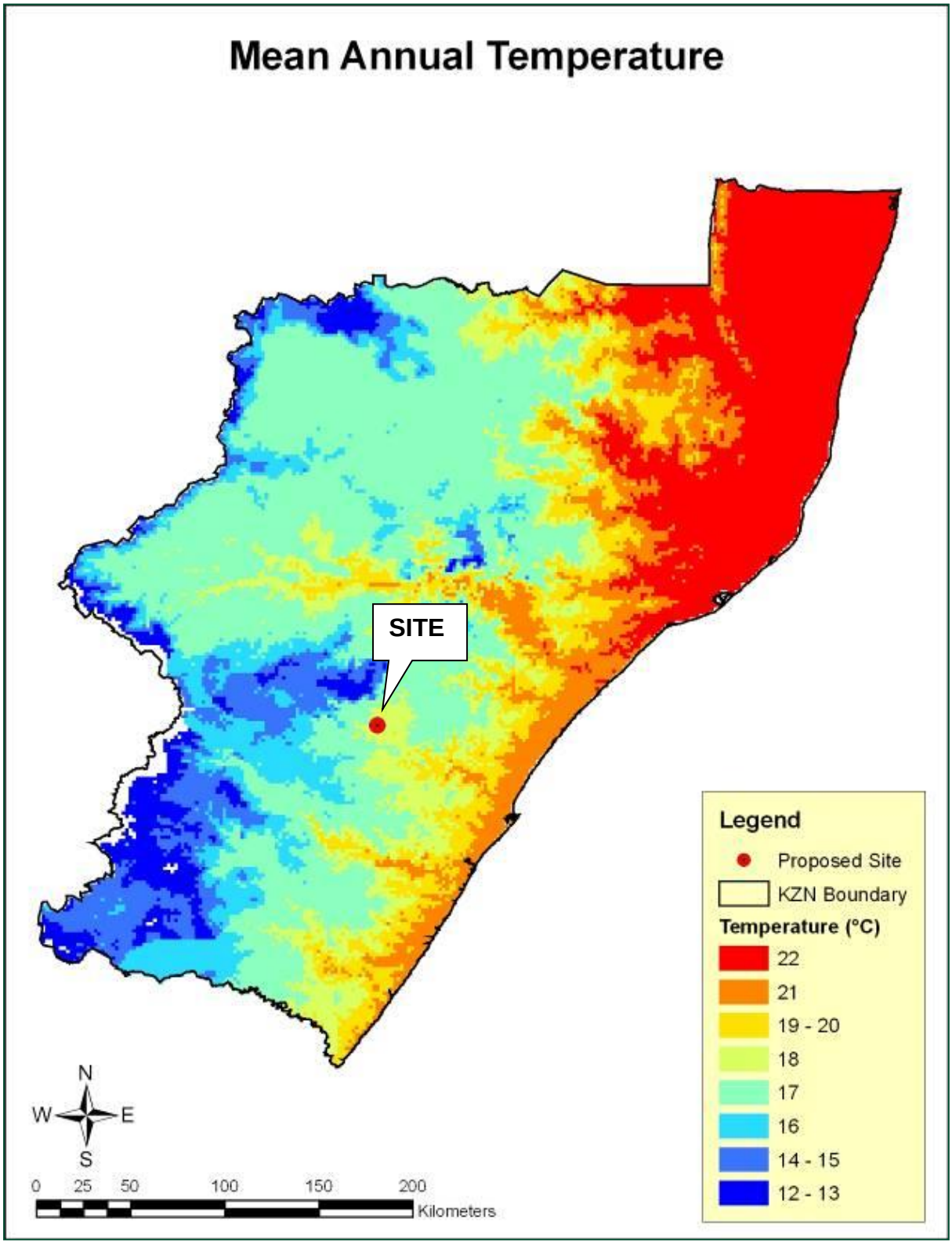


**Figure 6: Mean Annual Temperature in KwaZulu-Natal.**

## 6.3 Climate Change

**Description**

Climate change is a global challenge, which is both impacted by development and activities, and which has effects on development and activities. In South Africa, the effects of climate change are increasing, with more frequent heat waves, droughts, flood events and severe weather conditions. These conditions

are especially challenging considering the water scarcity in the country, the high fire danger in many areas and the high dependence on our wide-spread agricultural areas. At the same time, South Africa is challenged with the great need to promote development as a developing country, with the high-impact mining sector and linked electricity generation sector being predominant contributors to economic growth, whilst also being a predominant contributor to climate change.

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

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

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

**Implication / Risk / Impact**

- The proposed development may contribute to climate change to a minor extent through energy usage, water usage and waste generation during the construction and operational phases.
- The proposed development is likely to be directly impacted by the effects of climate change due to the flood risks associated with the site.
- The proposed development may be directly impacted by flood events which pose a risk to the infrastructure.

**Mitigation / Recommendations**

- All development infrastructure must promote the efficient use of energy, water and limit wastage of resources.
    - Rainwater harvesting and re-use of water is encouraged.
    - Contaminated surface runoff must be kept separate from uncontaminated surface runoff.
- Waste generation must be minimised and waste must be managed in an environmentally responsible manner and in accordance with the waste management hierarchy. The EMPr outlines specific waste management mitigation measures which comply with the waste management hierarchy.
    - The development must make use of recycling and recyclable waste must be stored in separate waste receptacles.
    - Hazardous waste, electronic waste and printer ink cartridges must be disposed of separately and safely, and must be recycled where possible.
    - Waste food from the restaurant and grocery shops, which is still edible, should be kept separate from general solid waste and appropriately stored prior to distribution for example, a local school, orphanage or charity.
- The proposed development must be implemented in accordance with approved layout plans which have been planned and assessed to ensure that locations and layouts of least environmental impact and risk are utilised.
- It must be ensured that the proposed redevelopment and associated activities are duly authorised through a Water Use License (WUL) application process. All relevant conditions and monitoring requirements associated with these authorisations must be complied with.

- The proposed development must ensure the protection of on-site environmental features which thereby protects ecological infrastructure important for building climate change resilience.
    - The management of the Dorpspruit River must be improved to retain it as an ecological asset within the landscape, and to maintain the ecological connectivity to other sides, which it provides.
    - Indigenous plants must be used for landscaping purposes.
- The materials from the buildings, structures and infrastructure which are to be demolished on site must be recycled where possible.

## 6.4 Geology and Soils

**Description**

A Geotechnical Assessment (**Appendix E10**) was conducted for the site, the findings and recommendations of which are presented in Section 7.10. of this report.

**Implication / Risk / Impact**

- The site is underlain by a relatively thick mantle of soils comprising erratic fill layers, transported (alluvial) and residual soils overlying the weathered shale of the Pietermaritzburg Formation of the Ecca Group.
- Based on preliminary investigations, it is expected that bedrock occurs well below 6 metres depth below existing ground level.

**Mitigation / Recommendations**

- Given the deep, compressible ground conditions, structures higher than double storey will require piling.
- Foundation designs for single and double story structures will need to take cognisance of the potentially expansive nature of the alluvial and residual soils.
- Given that subgrade conditions beneath most of the site is expected to be very poor (predominantly clay soils), undercutting below the top of subgrade level of the roads and surface beds and importation of a selected material will be required. Importing a capping layer of suitable material which is placed over areas designated for roads, parking and paved areas can also be considered.
- A site specific Geotechnical Investigation is to be carried out for each phase of the proposed development.

## 6.5 Surface Water

**Description**

A Stormwater Management Plan (**Appendix E5**) was compiled for the proposed redevelopment, the findings and recommendations of which are presented in Section 7.5. of this report.

**Implication / Risk / Impact**

- The site may experience flooding of stormwater designs and controls are inadequate.
- Erosion may occur if stormwater measures are not in place to prevent such.
- If attenuation is not undertaken, for the higher volumes of runoff from hardened surfaces, the site will become flooded.
- Stormwater from the site is to be discharged and tied into municipal bulk infrastructure.

**Recommendations**

- Planning Phase:
    - The stormwater design parameters used must be accepted and approved by the local authorities once the final layout plan has been provided.

- The proposed stormwater system must be designed to have minimal impact on existing drainage areas.
- The stormwater system design must make provision for erosion control.
- Floodline delineations may result in large amounts of bulk earthworks to raise the current topography pf the site and / or enforcement of ground floor parking areas of buildings being designed to flood and first floor level, above 1:20 year floodline.

- Construction Phase:
  - Temporary stormwater attenuation measures and control must be implemented.
  - Regular monitoring and maintenance of temporary measures must be undertaken.
  - Silt screening of inlets must eb utilised to trap sediment and debris.
  - Dust control must be undertaken.
  - Bare embankments must be topsoiled and seeded, with the use of soilsavers where necessary.
  - Chemicals, cement, fuel, and other hazardous materials used during construction, must be stored in controlled areas.
- Operational Phase:
  - The stormwater system should be self-regulating and require no manual operation.
  - Stormwater attenuation must occur in accordance with stormwater calculations.
  - Attenuation ponds can be used as focal points / features within the development landscape. Aesthetically pleasing bio-retention mechanisms such as reed beds and specialised vegetation may be included to ensure that the quality of the controlled release of runoff is not compromised.
  - Attenuation ponds and parking areas must not be positioned in locations which result in flooding of natural drainage areas.
  - Attenuation ponds must have mechanisms for trapping of silt.
  - Erosion control measures such as stone pitching, gabion baskets / mattresses, energy dissipators and grass lined drains, must be implemented along parking areas, roads and at stormwater outlets.
  - Rainwater harvesting is encouraged throughout the development.
  - Rainwater should be utilised for maintenance of landscaped areas and other non-potable water uses.
  - The stormwater system must be kept separate from the wastewater system.
  - All stormwater structures must eb regularly monitored and maintained.
  - Concentration of stormwater must be prevented where possible.
  - Energy dissipators must be provided in areas on concentration of stormwater.
  - Refuse must be regularly collected from open grasses areas and from inlet structures.
  - Silt must be regularly removed from collection points and from silt traps in attenuation ponds.

## 6.6 Watercourses

**Description**

A Baseline Aquatic Study (**Appendix E7**) was conducted for the site, the findings and recommendations of which are presented in Section 7.7. of this report.

**Implication / Risk / Impact**

- The ecological and water quality assessments, confirmed the presence of organic pollution in the system.
- Benthic diatoms and habitat integrity assessments revealed that the riverine system was in a fair condition for the most part, whilst sample site 3 was rated as seriously / critically modified due to pipeline conversion of the watercourse.
- Overall, it is evident that the development pressures and human activities have adversely affected the integrity of the watercourses.

- The proposed development will incur the following direct impacts on the watercourses:
    - The initial clearing of existing buildings, infrastructure and grubbing of soils near the watercourses that may lead to possible erosion and deposition of sediment as a result of poor erosional control measures during clearing activities.
    - Compaction of soils and disturbance of vegetation;
    - Possible erosion as a result of poor back-filling;
    - Increased run-off or sediment deposition directed to the watercourses;
    - Potentially poor quality seepage from the bulk services (leaks);
    - Removal of watercourse soils or alteration to the watercourse extent due to the excavations for bulk services and the proposed road bridge establishments.
    - The proposed development may incur the following indirect impacts on the watercourses:
    - Stormwater impacts;
    - Erosion and sedimentation; and
    - Likely alien invasive plant species infesting the disturbed areas due to lack of invasive alien plant management control.

**Mitigation / Recommendations**

- Workers should not use the water from the riverine system for drinking or for washing of tools and personal protective equipment.
- The sources of the organic pollution (particularly domestic sewage) and nutrients (nitrates) with the project area need to be investigated and suitable measures implemented during the redevelopment process to prevent the influx into these watercourses (if the source is within the project area).
- The river system, including its tributaries, must not be used as a means of disposing water uses to wash vehicles or clean spill areas during the construction phase, or domestic effluent and greywater generated during the operational phase.
- Only clean stormwater must be permitted to enter the river system and its tributaries.
- The redevelopment process should seek to enhance these watercourses to facilitate natural ecosystem services, such as water purification, through greening / planting with appropriate indigenous riparian and aquatic vegetation. Such interventions would also compliment the proposed development from an aesthetics perspective.
- To ensure that the associated impacts of the proposed development does not impart direct and indirect impacts on the identified HGM Units, the following is recommended:
    - All road and bulk service crossings over the HGM Units must be constructed as bridge type crossings and pier placements must not intersect the watercourse delineation extents.
    - The establishment of the proposed roads / bridges and bulk services that intersect the HGM Units and associated 10-metre buffer zone must occur during times of low rainfall or dry periods to minimise erosion and sedimentation.
    - The entire extent of the 10-metre buffer on site applied to the watercourse is to be demarcated with bonnox fencing, or similar temporary robust fencing, and signage identifying the area as a ‘NO-GO’ area during construction.
    - Silt fencing and sandbags must be installed prior to works within the watercourses and associated buffer zone.
    - Disturbance to the HGM Units must be restricted to an established construction right-of-way (ROW) corridor or working servitude. This ROW must be as narrow and constrained as much as possible.
    - All areas outside of the demarcated ROW must be considered NO-GO areas.
    - All construction activities must only utilise existing crossings over the watercourses as access points for construction activities as this will limit the direct impact on the HGM Units.

- Reinstatement of soils must occur with the returned soils to the same levels prior to trenching and construction activities.
- Where no indigenous vegetation is present, the compacted areas must be ripped and seeded immediately as recommended by the Environmental Construction Officer (ECO).
- Embankments must be immediately hydro-seeded upon final shaping.
- Revegetation of the impacted portions of the HGM Units and buffer must occur immediately after the installation of the piers have been completed and not at the end of the construction period.
- Should the identification of any preferential flow paths be identified upon construction, the flows paths before the buffer must have earthen berms installed to dissipate storm flow velocities before being directed to the buffer areas.
- Stormwater management should be implemented where necessary to ensure any envisaged flows are directed the to the HGM Units in a diffuse manner and at a reduced velocity.
- All hazardous substances will be located at least 50 metres away from any watercourse and bunded on a concreted surface during construction.
- All construction material and machinery must be stored at least 50 metres away from any watercourses.
- Post-construction, all areas within 30 metres of disturbed areas of the development must have a once-off alien invasive plant clearing initiative completed with all bare soil areas being revegetated with an appropriate grass seed mix as directed by the ECO.
- A Watercourse Management Report must be compiled for the for the canalised portion of HGM Unit 1 on site. The report, for example, will provide the necessary management guidelines for ensuring the canal remains a feature and the required maintenance works required.
- A detailed Watercourse Monitoring and Rehabilitation Plan must be compiled before construction commences to ensure the watercourses on site are rehabilitated and well as the associated buffer zone.

## 6.7 Biodiversity

**Description**

A Biodiversity Assessment (**Appendix E11**) was conducted for the site, the findings and recommendations of which are presented in Section 7.11. of this report.

**Implication / Risk / Impact**

- No indigenous forest, woodland or grassland occurred on the site. No viable plant communities or populations of protected plant species were found.
- According to desktop databases, the site should traverse the Midlands Mistbelt Grassland, however, given the developed nature of the site, the on-site vegetation was not representative of Midlands Mistbelt Grassland. Further, given the transformed nature of the site, large mammals and reptiles associated with the vegetation type were absent. Suitable habitats for smaller faunal species which are adapted to surviving in the built environment, were present.
- The majority of the vegetation on site is consistent with 'maintained areas' which have been planted with landscaping species, some of which include indigenous and protected plants and trees.
- Most of the indigenous plants and trees of importance within the site can be relocated. The following plant species of importance were noted (which are recommended for 'harvesting' and relocation) all of which were likely planted for landscaping purposes, and not naturally occurring:
    - Natal cycad, *Encephalartos natalensis* (Near Threatened) – likely planted specimens;
    - Tree aloe, *Aloidendron barberae* (Protected species) – likely planted specimens, and;

    - Yellowwood, *Podocaprus henkelli* and *P. latifolius* (some of which may be too large to transplant successfully) – likely planted specimens.
- Avi-faunal species were identified on site and a large colony of Rock Hyrax, *Procavia capensis*, which are occupying a derelict building close to the railway line. The colony is likely part of the larger Athlone populations to the west of the site and the Dorpspruit River culvert is the likely corridor for linking these colonies.
- The Dorpspruit River and riparian habitat is identified as the main development constraint area in terms of fauna and flora, for the following reasons:
    - The Dorpspruit River and its riparian habitat, comprises large indigenous trees, alien trees, shrubs and sedges. Whilst the habitat is in a highly modified condition, it does support a significant portion of the fauna and flora occurring on the property.
    - The Dorpspruit River provides for ecological connectivity with the adjacent properties.
- However, it must be noted that the Dorpspruit River is currently in a highly modified condition, with plastic and solid pollutants. This together with the sedimented water and possible chemical pollutants in the water, is likely to have negatively impacted most fish and amphibian species.
- Similarly, the tributary of the Dorpspruit River is in a highly modified condition. It is also of lesser biodiversity importance in terms of fauna and flora, as compared to the Dorpspruit River.
- One sizable cluster of trees was present on site, approximately 2000m$^2$ in extent, which comprised of large alien and indigenous trees, with overlapping canopies. However, the area comprises predominantly of alien trees and does not constitute an indigenous woodland habitat.
- There may be possible occurrence of the Midlands Dwarf Chameleon which is associated with the Midlands Mistbelt Grassland, however, no specimens were identified on site.
- Other than this, the lack of indigenous habitats and transformed nature of the site, does not provide support for any faunal species of conservation importance. The only faunal species present are consistent with those associated with suburban gardens.
- In the event of redevelopment of the site, any adopted watercourse and buffer delineation, particularly for the Dorpspruit River, despite its highly modified condition, will provide the required protection for indigenous vegetation within this riparian habitat, the necessary protection and resources for faunal species that currently occur on the site, and the necessary ecological connectivity to link the site to adjacent areas.

**Mitigation / Recommendations**

- Majority of the site may be redeveloped, as it is highly transformed and not consistent with indigenous vegetation types and habitats.
- The Dorpspruit River and riparian habitat, which forms the only development constraint, must be maintained to provide the necessary protection for indigenous vegetation and on-site fauna, and to ensure ecological connectivity to adjacent areas.
- The Environmental Management Programme (EMPr) must address watercourses and buffers, to ensure conservation of fauna and flora can occur and ecological connectivity can be maintained.
- Other indigenous and protected plant species of importance must be 'harvested' and relocated to landscaping areas, as per below:
    - All Natal cycads, *Encephalartos natalensis* (Near Threatened) specimens;
    - All Tree aloes, *Aloidendron barberae* (Protected species) specimens, and;
    - Yellowwoods, *Podocaprus henkelli* and *P. latifolius* specimens less than three (3) metres in height.
- Any permits or approvals required for removal or relocation of protected plant and tree species must be applied for prior to removal or relocation.
- Relocation must be supervised by an approved landscaper.
- The EMPr must address watercourses and buffers, to ensure conservation of fauna and flora can occur and ecological connectivity can be maintained.

# 7 SPECIALIST STUDIES: KEY FINDINGS AND RECOMMENDATIONS

The following specialist studies have been undertaken as part of the EA application process:

- Heritage Impact Assessment (Phase 1) Appendix E1
- Heritage Impact Assessment (Phase 2 for Built Environment) Appendix E2
- Palaeontological Assessment Appendix E3
- Floodline and Flood Risk Analysis Study Appendix E4
- Stormwater Management Plan Appendix E5
- Wetland / Riparian Assessment Appendix E6
- Baseline Aquatic Study Appendix E7
- Bulk Services Report Appendix E8
- Traffic Impact Assessment Appendix E9
- Geotechnical Assessment Appendix E10
- Biodiversity Assessment Appendix E11
- Feasibility Study, Socio-Economic Impact Assessment & Need and Desirability Assessment Appendix E12

## 7.1 Heritage Impact Assessment (Phase 1)

A Phase 1 Heritage Impact Assessment (HIA) was undertaken by Frans Prins of Active Heritage. The Phase 1 HIA is attached at **Appendix E1**.

**Key Findings**

- No archaeological sites were identified within the proposed redevelopment site.
- The site forms part of an urban cultural landscape.
- The site contains historical buildings dating back to the early twentieth century, which may have historical significance.
- The Desktop Palaeontological Assessment highlights 'moderate' palaeontological sensitivity for the site, and as such a Desktop Palaeontological Assessment will be required to be undertaken by an AMAFA accredited Palaeontologist.

**Recommendations**

- A Phase 2 Built Environment HIA must be undertaken.
- A Desktop Palaeontological Assessment must be undertaken.
- Should construction or operational activities expose archaeological or historical remains, old graves or fossil material, activities must cease immediately, pending evaluation by the provincial heritage agency. This is in alignment with the South African Heritage Resources Act (SAHRA) (Act 25 of 1999) and the AMAFA Research Institute and Heritage Act (Act 5 of 2018).

## 7.2 Heritage Impact Assessment (Phase 2 for Built Environment)

A Phase 2 Built Environment HIA was undertaken by Lindsay Napier of Lindsay Napier Architect. The Phase 2 Built Environment HIA is attached at **Appendix E2**.

**Key Findings**

- The first Agricultural Society Show was held on 23rd December 1851 on vacant land opposite the Colonial Office in central Pietermaritzburg. In 1898 discussions began regarding the use of a more permanent site to host the annual Agricultural Society Show, and some of the first buildings were built in 1904, on the current site. The site continued to be developed and transformed over time, with additional structures and buildings added as was needed.
- The site is located within a transition zone between the Pietermaritzburg CBD and residential suburbs.

- The site is also located on a major route that links the CBD to Howick, both via the Old Howick Road, and the N3.
- Buildings and structures which were known to be older than 60 years or showed evidence of being older than 60 years, were assessed to ascertain the architectural significance. Other newer and temporary structures were not assessed. A summary of the assessment is outlined in Table 19 below.

**Table 19: Findings of the Phase 2 HIA (Built Environment).**

| BUILDING NAME | PROPOSED HERITAGE GRADE | DATE OF CONSTRUCTION | HERITAGE SIGNIFICANCE | CATEGORY OF HERITAGE SIGNIFICANCE | IMPACT OF THE PROPOSED DEVELOPMENT |
|---|---|---|---|---|---|
| Block 1 | 3C | Approx. 1950 | Low | Local | High |
| Gate 1 | 3A | 1904 – 1915 | High | Local: Architectural, Historical | Medium |
| Block 2: The Industrial Hall | 3A | 1904 | High | Local: Architectural, Historical | Medium |
| Block 4: The Crafts Hall | 3B | 1904 - 1906 | High | Local: Architectural, Historical | Medium |
| The Olympia Hall | 3B | 1930 | Medium | Local: Architectural, Historical | High |
| Shuter and Shooter Building | 3C | Approx. 1910 | Medium | Local | High |
| The Cattle Arena Building / ADCO Stand | 3 | 1910 - 1930 | Low | Material | High |
| The Oval Grandstand & Terrace | 3C | Approx. 1912 - 1965 | Medium | Local | High |
| Dorpspruit Walkway | 3C | - | High | Social / Cultural | High |
| Historic Boshoff Street Bridge / Blackwoods Garden Centre Driveway | 3A | 1880 - 1900 | High | Local | High |
| Blackwoods Garden Centre | 3C | Approx. 1910 | Low | Local | High |
| Dorpspruit Bridges | 3C | 1930 - 1984 | Medium | Local | High |

- The Block 2: Industrial Hall, Block 4: The Crafts Hall and Gate 1 are the most historically significant buildings within the site.
- The Olympia Hall gable façade and the Dorpspruit River walkways and bridges are considered landmark features.
- The Blackwoods / Boshoff Street bridge is a structure of historical value to Pietermaritzburg, and a fine example of Victorian architectural design.

**Recommendations**

Mitigation measures for each identified built environment feature, are described in Table 20 below.

**Table 20: Proposed Mitigation Measures for identified built environment features.**

| BUILDING NAME | PROPOSED MITIGATION |
|---|---|
| Block 1 | • The building can be demolished or recycled, provided that a replacement building / structure addresses the street frontage and respects Gate 1 and Block 2 adjacent to it. |
| Gate 1 | • The Gate House and Gate Posts are to be restored and integrated into the development. |
| Block 2: The Industrial Hall | • The building should be restored and integrated into the development.<br>• Proposed internal interventions should be reversible and external alterations should respect the architectural style.<br>• Motivation for alterations are to be made to AMAFA and Research Institute KZN. |
| Block 4: The Crafts Hall | • The building should be restored and integrated into the development.<br>• Scale and proportion of the building and openings are to be respected in the new development.<br>• Motivation for alterations are to be made to AMAFA and Research Institute KZN. |
| The Olympia Hall | • The gable façade should be restored.<br>• The hall can be replaced with a new building.<br>• Motivations for alterations are to be made to AMAFA and Research Institute KZN. |
| Shuter and Shooter Building | • The building should be restored and integrated into the development.<br>• Scale and proportion of the building and openings are to be respected in the new development.<br>• Motivation for alterations are to be made to AMAFA and Research Institute KZN. |
| The Cattle Arena Building / ADCO Stand | • The building may be demolished. |
| The Oval Grandstand & Terrace | • The building may be demolished (with a permit). |
| Dorpspruit Walkway | • The walkway should be integrated into the development, but may be altered and upgraded to suit the requirements of the proposed development. |
| Historic Boshoff Street Bridge / Blackwoods Garden Centre Driveway | • The face brick and cast iron Victorian style bridge pre-dates the Showgrounds and should be retained in its current form, restored and stabilised if needed, to the original state. |
| Blackwoods Garden Centre | • The building may be demolished. |
| Dorpspruit Bridges | • The four (4) bridges which cross the Dorpspruit River, should be integrated into the development, but may be altered and upgraded. |

## 7.3 Palaeontological Assessment

A Desktop Palaeontological Impact Assessment was undertaken by independent Palaeontologist, Gary Trower. The Desktop Palaeontological Impact Assessment is attached at **Appendix E3**.

**Key Findings**

- The underlying geology of the site is attributed to have a 'moderate' palaeontological sensitivity rating according to the SAHRIS database, and these deposits could contain some palaeontological material.
- The likelihood of significant fossils in the bedrock beneath the site is low.
- The proposed development is unlikely to have any impact on palaeontological resources and there is no need for mitigation.
- No further palaeontological investigations are required and the proposed development may proceed as planned.

**Recommendations**

- If any palaeontological or heritage related materials are unearthed during construction activities, work must immediately cease and the Chance Find Protocol outlined in the Palaeontological Assessment must be followed to ensure compliance with heritage legislation.

## 7.4 Floodline and Flood Risk Analysis Study

A Floodline and Flood Risk Analysis Study was undertaken by GroundTruth. The report is attached at **Appendix E4**.

**Key Findings**

- According to the hydraulic modelling, more than 60% of the study site is within the 1:100 year floodline. However, it must be noted that given the lack of data available on municipal stormwater infrastructure, a number of unverified assumptions had to be made for the hydraulic modelling. As such, the hydraulic flood modelling does not consider the impact of proposed stormwater infrastructure and management on reducing flood risks.
- The hydraulic modelling indicated that the area between the Dorpspruit River and the northern tributary is flooded during each of the return periods (2-, 5-, 10-, 20-, 50-, and 100-year return periods), but less significantly for the lower return periods.
- For all return periods, the modelled flooding between the Dorpspruit River and the northern tributary, began with the northern tributary spilling at three (3) points along its right bank. These three (3) points seemed to be where breaches in the channels bank / levy occur, according to the Digital Elevation Model (DEM) imagery.
- The following was noted from the Flood Event Risk Analysis:
    - For the 1:2 year flood, the overall risk is considered to be low, with a medium risk around the western canal bridge.
    - For the 1:5 year flood, the overall risk is considered to be low, with a medium risk around the western canal bridge. Although the severity is higher than the 1:2 year flood, the probability is less.
    - For the 1:10 year flood, the overall risk is considered to be low, with a high risk around all the bridges.
    - For the 1:20 year flood, the overall risk is considered to be medium, with a high risk within the canal and around the bridges.
    - For the 1:50 year flood, the overall risk is considered to be medium, with a low probability of occurrence. The severity of the event in the areas surrounding buildings and roads is greater as compared to the 1:20 year flood.
    - For the 1:100 year flood, the overall risk is considered to be low, due to the unlikeliness of the event occurring. However, the severity within the canal, and surrounding

buildings and roads is greater, and at a larger extent as compared to the 1:50 year flood.

- Overall, the 1:20 year flood was noted to carry the most risk, with a medium risk for the overall site, and a high risk in areas surrounding the canal.
- Risks associated with the canal remain at a medium to high risk through all events, due to the presence of the bridges and walkways crossing the canal, and the high level of consequence associated with them.

**Recommendations**

- As mentioned above, the modelling does not consider the impact of proposed stormwater infrastructure and management on reducing flood risks. As such effective stormwater management and suitably designed stormwater infrastructure can contribute to reducing flood risks.
- All culverts and channels must be kept clear of debris and rubble to increase the capacity of the channels. Litter traps upstream of the culverts, and at appropriate locations along the channel banks can be utilised. These will need to be maintained and emptied on a regular basis and after each rain event.
- Where there are breached areas along the channel banks, as mentioned above, it could be recommended that raised earthen berms be constructed to close these areas to prevent flooding in lower return periods. These berms will need to consist of material with a high clay content that could be sufficiently compacted so as to withstand the energies of the flow. These should tie into the raised portions of the levies on either side of the breached areas, at approximately 1 metre in height. To reduce erosion potential, the berms should be armoured with rock packing or a form of erosion control blanket, and densely vegetated with an appropriate grass seed mix and indigenous vegetation suitable to this environment.
- A comprehensive Stormwater Management Plan should be developed for the proposed site that can effectively attenuate any increased flood peaks from the development and ensure compliance with the local municipal by-laws.
- Risk management measures should be put on place to mitigate risks in areas of high consequence where the flood severity is medium to high. These areas include bridges, walkways, parking bays and roadways. These measures can include stable railings, highly sufficient stormwater management, alternative access areas and parking bays in the case of a flood warning.

## 7.5 Stormwater Management Plan

A Stormwater Management Plan was compiled by Umsunguli Project Management CC. The plan is attached at **Appendix E5**.

**Key Findings**

- The existing stormwater system has been designed and constructed to suit the present site facilities.
- Unfortunately, no archive documents illustrating current stormwater reticulation was available.
- As such, it was decided that the bulk stormwater infrastructure will be utilised / linked to, and a new internal stormwater reticulation will be designed and implemented, after the existing reticulation is decommissioned and removed.
- Stormwater flow calculations were undertaken as per Table 21 below, to compare pre- and post-development flows and ascertain where attenuation may be required.

**Table 21: Stormwater calculations for the proposed Mixed Use Precinct.**

| AREA NO. | SITE SIZE (m2) | PRE-DEVELOPMENT FLOW (m3 / sec) | POST-DEVELOPMENT FLOW (m3 / sec) | INCREASE IN FLOW (m3 / sec) | ATTENUATION REQUIRED (m3) |
|---|---|---|---|---|---|
| 1 | 8354 | 0.111 | 0.247 | 0.135 | 122 |
| 2 | 25325 | 0.337 | 0.673 | 0.336 | 303 |
| 3 | 24354 | 0.32 | 0.676 | 0.352 | 316 |
| 4 | 7726 | 0.10 | 0.137 | 0.034 | 31 |
| 5 | 13433 | 0.18 | 0.325 | 0.146 | 131 |
| 6 | 16008 | 0.21 | 0.347 | 0.134 | 121 |
| 7 | 20520 | 0.27 | 0.484 | 0.211 | 190 |
| 8 | 19715 | 0.26 | 0.500 | 0.237 | 214 |
| 9 | 13600 | 0.18 | 0.268 | 0.087 | 78 |

- Overall, for the proposed development, stormwater will be collected in stormwater attenuation structures or parking areas before tying into the stormwater infrastructure or discharging to the *Dorpspruit* River and canal. Stormwater from buildings is to be collected via gutters and down pipes and directed into the attenuation system. Permission to discharge into the existing municipal stormwater infrastructure will be obtained prior to connection.
- Stormwater infrastructure will be designed according to the following standards:

| | |
|---|---|
| Flood Recurrence Interval: | 5 years and critical points 10 years |
| Attenuation structures; | 50 years |
| Pipe material: | Concrete |
| Pipe class: | 100D in traffic areas, 75D in other areas |
| Pipe diameters: | 300 mmø (minimum) |
| Bedding: | Class C |
| Inlets: | Splayed catchpits / steel grid inlets |
| Outlets: | Headwalls and energy dissipators |
| Junctions: | Points of deflection pipelines |

**Recommendations**

- Planning Phase:
  - The stormwater design parameters used must be accepted and approved by the local authorities once the final layout plan has been provided.
  - The proposed stormwater system must be designed to have minimal impact on existing drainage areas.
  - The stormwater system design must make provision for erosion control.
  - Floodline delineations may result in large amounts of bulk earthworks to raise the current topography of the site and / or enforcement of ground floor parking areas of buildings being designed to flood and first floor level, above 1:20 year floodline.
- Construction Phase:
  - Temporary stormwater attenuation measures and control must be implemented.
  - Regular monitoring and maintenance of temporary measures must be undertaken.
  - Silt screening of inlets must eb utilised to trap sediment and debris.
  - Dust control must be undertaken.
  - Bare embankments must be topsoiled and seeded, with the use of soilsavers where necessary.
  - Chemicals, cement, fuel, and other hazardous materials used during construction, must be stored in controlled areas.
- Operational Phase:
  - The stormwater system should be self-regulating and require no manual operation.
  - Stormwater attenuation must occur in accordance with stormwater calculations.
  - Attenuation ponds can be used as focal points / features within the development landscape. Aesthetically pleasing bio-retention mechanisms such as reed beds and

specialised vegetation may be included to ensure that the quality of the controlled release of runoff is not compromised.
    - Attenuation ponds and parking areas must not be positioned in locations which result in flooding of natural drainage areas.
    - Attenuation ponds must have mechanisms for trapping of silt.
    - Erosion control measures such as stone pitching, gabion baskets / mattresses, energy dissipators and grass lined drains, must be implemented along parking areas, roads and at stormwater outlets.
    - Rainwater harvesting is encouraged throughout the development.
    - Rainwater should be utilised for maintenance of landscaped areas and other non-potable water uses.
    - The stormwater system must be kept separate from the wastewater system.
    - All stormwater structures must eb regularly monitored and maintained.
    - Concentration of stormwater must be prevented where possible.
    - Energy dissipators must be provided in areas on concentration of stormwater.
    - Refuse must be regularly collected from open grasses areas and from inlet structures.
    - Silt must be regularly removed from collection points and from silt traps in attenuation ponds.

## 7.6 Wetland Assessment

A Wetland Assessment was undertaken by GroundTruth. The report is attached at **Appendix E6**.

Key Findings

- No wetlands were identified on site. Only watercourses (riparian systems) which were identified as 'Lower Foothills' Hydrogeomorphic (HGM) units, were identified to be located on site. These were categorised into HGM Units 1 -4.
- HGM Units 1 and 3 have a Present Ecological Status (PES) of C which is considered 'Fair". HGM Units 2 and 4 have a PES of E which is considered 'Seriously Modified'.
- The watercourse systems have a moderate to moderate-low ability / effectiveness to provide most typical surface water management and water quality functions. HGM 1 in particular noted a high ecosystem service in water supply and tourism due to its canalised transformation.
- The proposed development will incur the following direct impacts on the watercourses:
    - The initial clearing of existing buildings, infrastructure and grubbing of soils near the watercourses that may lead to possible erosion and deposition of sediment as a result of poor erosional control measures during clearing activities.
    - Compaction of soils and disturbance of vegetation;
    - Possible erosion as a result of poor back-filling;
    - Increased run-off or sediment deposition directed to the watercourses;
    - Potentially poor quality seepage from the bulk services (leaks);
    - Removal of watercourse soils or alteration to the watercourse extent due to the excavations for bulk services and the proposed road bridge establishments.
- The proposed development may incur the following indirect impacts on the watercourses:
    - Stormwater impacts;
    - Erosion and sedimentation; and
    - Likely alien invasive plant species infesting the disturbed areas due to lack of invasive alien plant management control.

Recommendations

To ensure that the associated impacts of the proposed development does not impart direct and indirect impacts on the identified HGM Units, the following is recommended:

- All road and bulk service crossings over the HGM Units must be constructed as bridge type crossings and pier placements must not intersect the watercourse delineation extents.

- The establishment of the proposed roads / bridges and bulk services that intersect the HGM Units and associated 10-metre buffer zone must occur during times of low rainfall or dry periods to minimise erosion and sedimentation.
- The entire extent of the 10-metre buffer on site applied to the watercourse is to be demarcated with bonnox fencing, or similar temporary robust fencing, and signage identifying the area as a 'NO-GO' area during construction.
- Silt fencing and sandbags must be installed prior to works within the watercourses and associated buffer zone.
- Disturbance to the HGM Units must be restricted to an established construction right-of-way (ROW) corridor or working servitude. This ROW must be as narrow and constrained as much as possible.
- All areas outside of the demarcated ROW must be considered NO-GO areas.
- All construction activities must only utilise existing crossings over the watercourses as access points for construction activities as this will limit the direct impact on the HGM Units.
- Reinstatement of soils must occur with the returned soils to the same levels prior to trenching and construction activities.
- Where no indigenous vegetation is present, the compacted areas must be ripped and seeded immediately as recommended by the Environmental Construction Officer (ECO).
- Embankments must be immediately hydro-seeded upon final shaping.
- Revegetation of the impacted portions of the HGM Units and buffer must occur immediately after the installation of the piers have been completed and not at the end of the construction period.
- Should the identification of any preferential flow paths be identified upon construction, the flows paths before the buffer must have earthen berms installed to dissipate storm flow velocities before being directed to the buffer areas.
- Stormwater management should be implemented where necessary to ensure any envisaged flows are directed the to the HGM Units in a diffuse manner and at a reduced velocity.
- All hazardous substances will be located at least 50 metres away from any watercourse and bunded on a concreted surface during construction.
- All construction material and machinery must be stored at least 50 metres away from any watercourses.
- Post-construction, all areas within 30 metres of disturbed areas of the development must have a once-off alien invasive plant clearing initiative completed with all bare soil areas being revegetated with an appropriate grass seed mix as directed by the ECO.
- A Watercourse Management Report must be compiled for the for the canalised portion of HGM Unit 1 on site. The report, for example, will provide the necessary management guidelines for ensuring the canal remains a feature and the required maintenance works required.
- A detailed Watercourse Monitoring and Rehabilitation Plan must be compiled before construction commences to ensure the watercourses on site are rehabilitated and well as the associated buffer zone.

## 7.7 Baseline Aquatic Study

A Baseline Aquatic Study was undertaken by GroundTruth. The report is attached at **Appendix E7**.

**Key Findings**

- Most water quality parameters within the four (4) selected sample sites were with the target water quality range.
- However, nitrates and E. coli counts exceeded guideline limits at all four (4) sample sites.
- Benthic diatoms and habitat integrity assessments revealed that the riverine system was in a fair condition for the most part.
- However, habitat integrity at sample site 3, was rated as seriously / critically modified due to pipeline conversion of the watercourse.

- The ecological and water quality assessments, confirmed the presence of organic pollution in the system.
- Overall, it is evident that the development pressures and human activities have adversely affected the integrity of the watercourses.

**Recommendations**

- Workers should not use the water from the riverine system for drinking or for washing of tolls and personal protective equipment.
- The sources of the organic pollution (particularly domestic sewage) and nutrients (nitrates) with the project area need to be investigated and suitable measures implemented during the redevelopment process to prevent the influx into these watercourses (if the source is within the project area).
- The river system, including its tributaries, must not be used as a means of disposing water uses to wash vehicles or clean spill areas during the construction phase, or domestic effluent and greywater generated during the operational phase.
- Only clean stormwater must be permitted to enter the river system and its tributaries.
- The redevelopment process should seek to enhance these watercourses to facilitate natural ecosystem services, such as water purification, through greening / planting with appropriate indigenous riparian and aquatic vegetation. Such interventions would also compliment the proposed development from an aesthetics perspective.

## 7.8 Bulk Services Report

A Bulk Services Assessment was compiled by Umsunguli Project Management CC. The Bulk Services Report is attached at **Appendix E8**.

**Roads and Access**

At present, the site can be accessed from various access points. The main entrance is located along Howick Road (R103), opposite the Voortrekker High School sports fields. There are four (4) alternative entrance gates located on Hyslop Road, and one access point along Chatterton Road, which also provides entrance into the Blackwoods Nursery and Hereford Offices.

The proposed Mixed Use Precinct will contain one (1) entrance along Hyslop Road which will provide access into the internal road network. This access point will be located where there is an existing entrance gate, directly opposite the Hyslop Road 3-forked intersection. The access point on Howick Road (R103) will be retained and will serve as an entrance into the internal road network. An additional entrance will be added along Chief Albert Luthuli Street providing access into a large parking lot for the Heritage Buildings Shopping Centre. This will be designed as a stop-controlled intersection. The access point along Chatterton Road will also be retained as a signalised intersection and will join the internal road network.

The internal road network will connect the various spaces and their parking areas and will now also allow for traffic to move between Hyslop Road, Howick Road (R103) and Chatterton Road, which was not possible previously due to the site being a closed site. The internal road network will comprise of roads ranging from 3.5 metre to 7 metre widths. There will be one (1) intersection central to the site, and one turning circle closer to Howick Road (R103).

Parking areas will be designed according to standard parking bay sizes of 2.5 metres x 5 metres. Internal roads and parking areas will have a gentle slope between 1% - 2% to convey stormwater appropriately. No final design has been decided for the pavements as these will be dependent on cost and suitability and will be subject to a full Pavement Design Certificate and detailed Geotechnical Study. Options to be investigated will include a standard pavement design with asphalt surfacing, or alternatively interlocking pavers or cobbles.

The Phase 2 Built Environment HIA identified the bridge located at the entrance of Blackwoods Nursery to be of significant heritage value, dating back to the late 1800s and early 1900's and being a unique Victorian architectural design. As per the recommendations in the Built Environment HIA, the bridge will be retained in its current form within the development layout. The bridge can be utilised as pedestrian crossing bridge allowing access over the canal from one area to another.

**Water**

There are two (2) existing bulk water connections:

- One (1) 75 mmø connection along Chatterton Road, and;
- One (1) 160 mmø connection (off the 375 mmø municipal water main along Howick Road (R103) close to the main entrance.

The total water demand for the proposed development is estimated to be 257 kℓ / day or 2.98 ℓ / s. These flows are to be shared between the two existing bulk water connections. The proposed development will require approximately 85 kℓ / day more than the current development, and the capacity to provide such has been confirmed by the municipality (Refer to Appendix H10).

The existing internal water reticulation comprises 75 mmø HDPe pipes which feed all the internal areas. Given the age of the existing internal water reticulation, it is to be decommissioned to avoid breakages or leakages. The proposed new internal water reticulation, which will tie into the bulk municipal connections, will comprise:

- 75 mmø uPVC pipes;
- 110 mmø uPVC pipes, and;
- 160 mmø uPVC pipes.

In addition, the necessary isolation valves, scour valves and air valves will be installed and bulk water zone meters will be placed at strategic points.

Reservoirs / tanks will be required for water storage for fire response. The storage requirement will likely exceed 250 cubic metres, but will not be greater than 50 000 cubic metres. The likely storage requirement will be approximately 2000 cubic metres, but will need to be confirmed through consultation with the municipality.

**Sanitation**

At present there is a 600 mmø concrete sewer outfall pipe which runs from Chatterton Road through the site and out along Howick Road (R103).

The estimated sewage flow for the proposed Mixed Use Precinct is 225 kℓ / day, with an average flow of 3.386 ℓ / s. This will be an increase of 69.75 kℓ / day or 2.624 ℓ / s more than the existing demands. There is sufficient capacity (according to the GIS database) within the municipal infrastructure to support the proposed development demands. This has been confirmed with the municipality (Refer to Appendix H10).

The existing internal sewer reticulation consists of 110 mmø and 160 mmø uPVC pipes, served by two (2) pumpstations. The proposed internal sewer reticulation will comprise 160 mmø and 200 mmø uPVC Class 34 sewer pipes. Circular precast concrete manholes will be placed a maximum spacings of 80 metres, or at changes in direction. Each node within the development will be given a connection point linked to the main sewerline and outfall sewer. Additional pump stations may be required, which will be determined during the detailed design stage.

**Stormwater**

The existing stormwater system comprises larger and smaller stormwater channels and pipe networks which collect runoff from hardened surfaces and discharge into the *Dorpspruit* River and canal.

For the proposed development, stormwater will be collected in stormwater attenuation structures or parking areas before tying into the stormwater infrastructure or discharging to the *Dorpspruit* River and canal. Stormwater from buildings is to be collected via gutters and down pipes and directed into the attenuation system. Permission to discharge into the existing municipal stormwater infrastructure will be obtained prior to connection.

Stormwater infrastructure will be designed according to the following standards:

- Flood Recurrence Interval: 5 years and critical points 10 years
- Attenuation structures; 50 years
- Pipe material: Concrete
- Pipe class: 100D in traffic areas, 75D in other areas
- Pipe diameters: 300 mmø (minimum)
- Bedding: Class C
- Inlets: Splayed catchpits / steel grid inlets
- Outlets: Headwalls and energy dissipators
- Junctions: Points of deflection pipelines

**Electricity**

There is an existing supply of 1700 kVA to the site via three (3) 11kV municipal substations. The estimated demand for the proposed development is approximately 4217 kVA, and approximately 40% of the development can be supplied by the existing supply. The existing supplies will need to be re-configured to cater for the proposed demand and additional capacity applied for. The estimated demand has not made provision for implementation of green technology, which is anticipated to be adopted.

## 7.9 Traffic Impact Assessment

A Traffic Impact Assessment was undertaken by Jinyela (Pty) Ltd. The report is attached at **Appendix E10**.

**Key Findings**

- The maximum potential trips that will be generated by the proposed development for both the Mixed Use Precinct, during weekday AM and PM peak hours, are 685 and 1208 respectively.
- Three (3) scenarios were run using the AIMSUM model as per below:
    - Scenario 1 – 2021 Base Year Scenario without development generated traffic
    - Scenario 2 – 2031 Assessment of the background traffic without development generated traffic
    - Scenario 3 – 2031 Assessment of the background traffic plus the proposed redevelopment generated traffic, and other planned developments
- The following was noted regarding each scenario:
    - Scenario 1 – Major congestion problems with the road network. During the AM peak hour the congestion is primarily caused by the Chatterton Road roundabout, which operates at unacceptable levels of service. During the PM peak hour, the congestion is caused as a direct result of the bottleneck encountered on the southbound offramp of the M3 Sanctuary Road interchange.
    - Scenario 2 - Major congestion problems will be encountered with the road network. These congestion problems can be directly tributed to the natural growth in the existing traffic volumes coupled with the lack of capacity on the road network. Gridlock conditions will be encountered on major roads (i.e. Hyslop Road, Chatterton Road, Armitage Road and N3 Sanctuary Interchange), which require upgrades.

    - Scenario 3 - Major congestion problems will be encountered with the road network. Compounded congestion will be experienced, taking into account the added traffic from the proposed redevelopment and other additional planned developments. Major road network improvement will be required on the N3 Sanctuary Road interchange and on the local municipal road network surrounding the site.
- The proposed redevelopment is not expected to cause road safety conditions to deteriorate.

**Recommendations**

The proposed redevelopment cannot be undertaken without the following recommendations being implemented:

- The N3 Sanctuary Road interchange must be upgraded.
- The Chatterton Road roundabout must be converted to a 4-legged signalised intersection.
- The Hyslop Road must be upgraded to two lanes in each direction.
- The four (4) existing access intersections to the site must be retained. The configuration of each access intersection is to be modified to match the expected traffic demand, such that the access intersections operate efficiently.
- Proper public transport laybys are to be provided outside each of the access intersections. Exact locations of these laybys can be finalised during the detail design stage.
- The good network of existing pedestrian sidewalks surrounding the site is to be retained as far as possible. More detail on the internal sidewalk network will be provided in the detail design stage.

## 7.10Geotechnical Assessment

A Preliminary Geotechnical Investigation was undertaken by Mark Richter of Gondwana Geo Solutions. The report is attached at **Appendix E10**.

**Key Findings**

- The site is topographically located in a low-lying part of the city environment.
- The site is generally level with undulating slopes in places.
- The site is underlain by a relatively thick mantle of soils comprising erratic fill layers, transported (alluvial) and residual soils overlying the weathered shale of the Pietermaritzburg Formation of the Ecca Group.
- Based on preliminary investigations, it is expected that bedrock occurs well below 6 metres depth below existing ground level.
- The site lies centrally in the alluvial plain area of the Dorpspruit River and its tributaries, and as such heavy rainfall can result in very shallow perched groundwater seepage in places, creating the need for subsoil drainage.

**Recommendations**

- Given the deep, compressible ground conditions, structures higher than double storey will require piling.
- Foundation designs for single and double story structures will need to take cognisance of the potentially expansive nature of the alluvial and residual soils.
- Given that subgrade conditions beneath most of the site is expected to be very poor (predominantly clay soils), undercutting below the top of subgrade level of the roads and surface beds and importation of a selected material will be required. Importing a capping layer of suitable material which is placed over areas designated for roads, parking and paved areas can also be considered.
- As the site occurs within the alluvial plane of the Dorpspruit River and its tributaries, both stormwater and groundwater must be appropriately managed.
    - Stormwater management systems must allow for adequate drainage of accumulated surface water from building platforms.

- If groundwater seepage is encountered during construction, these zones should be controlled with effective subsoil drains, particularly where water is likely to gain ingress into the structure layers of roads and paved areas.
- It is expected that all cuttings will attract groundwater over time and judicious installation of subsoil drainage is strongly recommended to protect water ingress into the structural layers of roads and paving, as well as foundations.

- A site specific Geotechnical Investigation is to be carried out for each phase of the proposed development.

## 7.11Biodiversity Assessment

A Biodiversity Assessment was undertaken by Peter le Roux, an independent Vegetation Specialist. The report is attached at **Appendix E11**.

**Key Findings**

- No indigenous forest, woodland or grassland occurred on the site. No viable plant communities or populations of protected plant species were found.
- According to desktop databases, the site should traverse the Midlands Mistbelt Grassland, however, given the developed nature of the site, the on-site vegetation was not representative of Midlands Mistbelt Grassland. Further, given the transformed nature of the site, large mammals and reptiles associated with the vegetation type were absent. Suitable habitats for smaller faunal species which are adapted to surviving in the built environment, were present.
- The majority of the vegetation on site is consistent with 'maintained areas' which have been planted with landscaping species, some of which include indigenous and protected plants and trees.
- Most of the indigenous plants and trees of importance within the site can be relocated. The following plant species of importance were noted (which are recommended for 'harvesting' and relocation) all of which were likely planted for landscaping purposes, and not naturally occurring:
  - Natal cycad, *Encephalartos natalensis* (Near Threatened) – likely planted specimens;
  - Tree aloe, *Aloidendron barberae* (Protected species) – likely planted specimens, and;
  - Yellowwood, *Podocaprus henkelli* and *P. latifolius* (some of which may be too large to transplant successfully) – likely planted specimens.
- Avi-faunal species were identified on site and a large colony of Rock Hyrax, *Procavia capensis*, which are occupying a derelict building close to the railway line. The colony is likely part of the larger Athlone populations to the west of the site and the Dorpspruit River culvert is the likely corridor for linking these colonies.
- The Dorpspruit River and riparian habitat is identified as the main development constraint area in terms of fauna and flora, for the following reasons:
  - The Dorpspruit River and its riparian habitat, comprises large indigenous trees, alien trees, shrubs and sedges. Whilst the habitat is in a highly modified condition, it does support a significant portion of the fauna and flora occurring on the property.
  - The Dorpspruit River provides for ecological connectivity with the adjacent properties.
- However, it must be noted that the Dorpspruit River is currently in a highly modified condition, with plastic and solid pollutants. This together with the sedimented water and possible chemical pollutants in the water, is likely to have negatively impacted most fish and amphibian species.
- Similarly, the tributary of the Dorpspruit River is in a highly modified condition. It is also of lesser biodiversity importance in terms of fauna and flora, as compared to the Dorpspruit River.
- One sizable cluster of trees was present on site, approximately 2000m$^2$ in extent, which comprised of large alien and indigenous trees, with overlapping canopies. However, the area comprises predominantly of alien trees and does not constitute an indigenous woodland habitat.
- There may be possible occurrence of the Midlands Dwarf Chameleon, which is associated with the Midlands Mistbelt Grassland, however, no specimens were identified on site.

- Other than this, the lack of indigenous habitats and transformed nature of the site, does not provide support for any faunal species of conservation importance. The only faunal species present are consistent with those associated with suburban gardens.
- In the event of redevelopment of the site, any adopted watercourse and buffer delineation, particularly for the Dorpspruit River, despite its highly modified condition, will provide the required protection for indigenous vegetation within this riparian habitat, the necessary protection and resources for faunal species that currently occur on the site, and the necessary ecological connectivity to link the site to adjacent areas.

**Recommendations**

- Majority of the site may be redeveloped, as it is highly transformed and not consistent with indigenous vegetation types and habitats.
- The Dorpspruit River and riparian habitat, which forms the only development constraint, must be maintained to provide the necessary protection for indigenous vegetation and on-site fauna, and to ensure ecological connectivity to adjacent areas.
- The EMPr must address watercourses and buffers, to ensure conservation of fauna and flora can occur and ecological connectivity can be maintained.
- Other indigenous and protected plant species of importance must be 'harvested' and relocated to landscaping areas, as per below:
    - All Natal cycads, *Encephalartos natalensis* (Near Threatened) specimens;
    - All Tree aloes, *Aloidendron barberae* (Protected species) specimens, and;
    - Yellowwoods, *Podocaprus henkelli* and *P. latifolius* specimens less than three (3) metres in height.
- Any permits or approvals required for removal or relocation of protected plant and tree species must be applied for prior to removal or relocation.
- Relocation must be supervised by an approved landscaper.

## 7.12 Feasibility Study, Socio-Economic Impact Assessment & Need and Desirability Assessment

A Feasibility Study, Socio-economic Impact Assessment and Need & Desirability Assessment was undertaken by Urban Econ Development Economists. The report is attached at **Appendix E12**.

**Feasibility Study**

Table 22 below presents the main findings and recommendations from the Feasibility Study undertaken for each of the proposed land uses, in both conceptual plans.

**Table 22: Feasibility Assessment for land uses associated with the Mixed Use Precinct.**

| LAND USE | DESCRIPTION | PROPOSED DEVELOPMENT | | FEASIBILITY CONCLUSION | |
|---|---|---|---|---|---|
| | | PROPOSED PLAN IN M3 | PROPOSED PHASE | FEASIBILITY / VIABILITY | PHASING |
| Offices | Individual office building developments | 15 500 | Phase 2 (7 000m$^2$)<br>Phase 4 (4 000m$^2$)<br>Phase 5 (5 000m$^2$) | Moderate Feasibility | Phase 2, 4 and 5 |
| Medical Consultation Rooms | Offices wherein medical practitioners are to be accommodated | 4 000 | Phase 4 (4 000m$^2$) | Moderate Feasibility | Phase 3 and 4 |
| Private Hospital | 120 bed facility including 500m$^2$ consulting rooms | 14 500 | Phase 4 (14 500m$^2$) | Moderate Feasibility | Phase 4 |
| Hotel | 150 key hotel with public bars | 4 500 | Phase 3 (4 500m$^2$) | Low Feasibility | Phase 3 |

| | | | | | |
|---|---|---|---|---|---|
| Conference Facility | Facility to form part of the hotel operations | 3 000 | Phase 3 (3 000m$^2$) | Moderate Feasibility | Phase 3 |
| Retail Facilities | Retail facilities will comprise of a 14 900m$^2$ mall; standalone shops of 3 300m$^2$ as well as retail shops which form part of mixed-use developments such as flats of 3 600m$^2$. | 18 800 | Phase 1 (17 800m$^2$)<br>Phase 2 (1 000m$^2$) | Highly Feasible | Phase 1, 2 and 3 |
| Residential Units | Residential apartments forming part of mixed-use building development of 210 residential units | 8 400 | Phase 1 (7 400m$^2$)<br>Phase 2 (1 000m$^2$) | Highly Feasible | Phase 1, 2 and 5 |
| Filling Station | The petrol filling station will comprise of a convenience shop, fast food outlet and an office. | 400 | Phase 1 (400m$^2$) | Highly Feasible | Phase 2 |

From the above assessment:

- Residential Units, Retail Facilities and the Filling Station appear to be the most feasible land-uses for the site.
- Offices, Medical Facilities and Conference Facilities would likely face strong competition since the area under review has well established developments to compete with these land-uses.
- The hotel market is expected to be the toughest segment to gain a market share under the mixed-use option. As has been discussed in preceding sections, current hotels in the area are experiencing high vacancies and restricted travel due to the COVID-19 pandemic has resulted in devastating conditions for these organisations to continue operating as a going concern.

**Socio-Economic Impact Assessment**

Table 23 below presents the identified socio-economic impacts, their status and significance.

**Table 23: Socio-Economic Impact Assessment.**

| TYPE OF IMPACT | DESCRIPTION OF IMPACT | SIGNIFICANCE | STATUS (POSITIVE OR NEGATIVE) | CAN IMPACTS BE MITIGATED/ ENHANCE? |
|---|---|---|---|---|
| **Construction** | | | | |
| Social Impact | Increase in Size and Composition of the Resident Population | Medium | Positive | Yes |
| | Potential Increase in Crime Levels | Low | Negative | Yes |
| | Increase in Demand for School Spaces | Low | Positive | Yes |
| | Increase Infrastructure Development | Medium | Positive | Yes |
| | Pressure on Basic Services | Medium | Negative | Yes |
| | Increase in Noise Levels | Medium | Negative | Yes |
| | Increase in Traffic Volumes | Medium | Positive | Yes |
| | Shutdown of the Royal Showgrounds | Medium | Negative | Yes |
| Economic Impact | Increased Economic Activity (GDP) | Medium | Positive | Yes |
| | Loss of jobs for people currently employed on existing establishments | Low | Negative | Yes |
| | Increased Tax Revenues | Medium | Positive | Yes |
| | Increased Household Income | Medium | Positive | Yes |
| | Establishment of Informal Small Business Operations around the site. | Low | Positive | Yes |
| | Employment Creation during construction | Medium | Positive | Yes |
| **Operation** | | | | |
| Social Impact | Increase in Size and Composition of the Resident Population | Medium | Positive | Yes |
| | Potential Increase in Crime Levels | Low | Negative | Yes |

| TYPE OF IMPACT | DESCRIPTION OF IMPACT | SIGNIFICANCE | STATUS (POSITIVE OR NEGATIVE) | CAN IMPACTS BE MITIGATED/ ENHANCE? |
|---|---|---|---|---|
| | Increase in Demand for School Spaces | Low | Positive | Yes |
| | Increase Infrastructure Development | Medium | Positive | Yes |
| | Pressure on Basic Services | Medium | Negative | Yes |
| | Increase in Traffic Volumes | Medium | Positive | Yes |
| | Shutdown of the Royal Showgrounds | Medium | Negative | Yes |
| Economic Impact | Increased Economic Activity (GDP) | Medium | Positive | Yes |
| | Creation of Employment Opportunities at the New Development | Medium | Positive | Yes |
| | Increased Property Prices | Medium | Positive | Yes |
| | Increased Tax Revenues | Medium | Positive | Yes |

The key findings from the above are:

- Most impacts arising from the proposed development, both social and economic, will be of a positive nature.
- The development is likely to attract unemployed individuals seeking temporary and permanent job opportunities. This has the potential of increasing the levels of crime in the area as some of these individuals will not find employment and resort to theft for survival.
- The development, especially in its construction stage, will increase pressure on basic services such as water and electricity. The level of noise is expected to rise during the construction phase as heavy vehicle and machinery will be utilised during the construction phase.
- The Royal Showgrounds is currently used for the annual PMB Royal Show and for other leisure activities on a seasonal basis. The construction of the new development will have a negative impact on these activities as they would have to close down resulting in job loses for people currently working on the site.

**Needs and Desirability Assessment**

A Needs and Desirability Assessment was undertaken, with the following questions addressed:

- Is the development permitted in terms of the property's existing land use rights?
- Will the development be in line with the various planning and strategy documents?
- Should development occur on the proposed site at this point in time?
- Does the community / area need the project and the associated land use concerned (is it a societal priority)?
- Is this project part of a national programme to address an issue of national concern or importance?
- Do location factors favour this land use (associated with the development proposed and associated listed activity(ies) applied for) at this place?
- Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?
- Will the development impact on people's health and well-being (e.g., in terms of noise,
- odours, visual character and 'sense of place', etc.)?
- Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs?
- What will the cumulative impacts (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?
- Is the development the best practicable environmental option for this land/site?
- What will the benefits be to society in general and to the local communities?

The findings and responses to these questions have been consolidated into Section 2 of this report.

# 8 ASSESSMENT OF ENVIRONMENTAL IMPACTS

## 8.1 Impact Assessment Methodology

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, as per the table below. Each aspect has been divided into a number of different classes, each of which has been assigned various criteria (Table 24).

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 24: 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 place of the activity. |
| | Indirect | The impact induces changes that may occur as a result of the activity. |
| | Cumulative | The impact is as a result from the incremental impact of the proposed activity on a common resource when added 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 (10% - 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 40 kilometres). |
| | 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. |

| ASPECT | CLASS | CRITERIA |
|---|---|---|
| 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. |

## 8.2 Impact Assessment

The table below lists potential impacts associated with the proposed redevelopment, and details what mitigation measures should be taken to minimise these impacts (Table 25).

**Table 25: Assessment of potential impacts associated with the proposed redevelopment.**

| 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 | • The proposed redevelopment will have a positive impact on the local economy by contributing to economic growth and development.<br>• Employment opportunities will be created during both the construction and operation phases.<br>• The proposed redevelopment will have a greater socio-economic benefit than continuing to use the site as is. | • None. | Positive | Partly | Definitely | Definitely | Partly | Partly | Local | Local | Long-Term / Permanent | Long-Term / Permanent | 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 | | SIGNFIICANCE 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 | | |
| | • The Royal Agricultural Society will need to find a new suitable location for the Royal Agricultural Show.<br>• Current employment and business opportunities associated with the Royal Agricultural Society and the annual Royal Agricultural Show may be temporarily disrupted or lost due to relocation of the organisation and the show.<br>• The lessees of property portions within the site, will need to find alternative rental locations for their activities.<br>• There may be temporary competition with other competing entities in the area. However, based on the feasibility assessment, the anticipated levels of growth and expansion will provide sufficient market demand to accommodate existing facilities and the proposed new facilities. | • Sufficient notice is to be provided to lessees, employees and service providers associated with the site, the Royal Agricultural Society and the annual show, to allow for these parties to plan adequately for the changes. | Negative, Indirect | Partly | Definitely | Unlikely | Partly | Possible | Local | Local | Medium-Term | Medium-Term | High | Low |
| PLANNING INITIATIVE | • The proposed redevelopment is in line with the goals and objectives of the Msunduzi Municipality IDP and the above mentioned national and provincial strategies. | • None. | Positive | Partly | Likely | Definitely | Partly | Partly | Local | Local | Long-Term | Long-Term | High | High |

| 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 | | SIGNFIICANCE 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 | | |
| • The proposed redevelopment is not aligned to the Msunduzi Municipality SDF and Land Use Planning Scheme, which designates the site as 'Public Active Open Space'. However, a rezoning application is being undertaken to change the current zoning to 'Low Impact Mixed Use', which is aligned to the proposed redevelopment, but is also a more feasible land use for the location. | • The rezoning of the site must be completed and approved prior to the change of land use. | Negative, Indirect | Partly | Likely | Unlikely | Partly | Possible | Local | Local | Long-Term | Long-Term | Medium | Low |

| DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT | | MITIGATION | NATURE OF IMPACT | DEGREE TO WHICH IMPACT CAN BE MITIGATED | PROBABILITY OF IMPACT OCCURRING | | REVERSIBILITY OF IMPACT | | EXTENT OF IMPACT | | DURATION OF IMPACT | | SIGNFIICANCE 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 | | |
| CULTURAL AND HISTORICAL RESOURCES | • No archaeological sites were identified within the proposed redevelopment site.<br>• The likelihood of significant fossils in the bedrock beneath the site is low.<br>• The proposed redevelopment is unlikely to have any impact on palaeontological resources and there is no need for mitigation.<br>• The Block 2: Industrial Hall, Block 4: The Crafts Hall and Gate 1 are the most historically significant buildings within the site.<br>• The Olympia Hall gable façade and the Dorpspruit River walkways and bridges are considered landmark features.<br>• The Blackwoods / Boshoff Street bridge is a structure of historical value to Pietermaritzburg, and a fine example of Victorian architectural design. | • Should construction or operational activities expose archaeological, palaeontological or historical remains, old graves or fossil material, activities must cease immediately, pending evaluation by the provincial heritage agency. This is in alignment with the South African Heritage Resources Act (SAHRA) (Act 25 of 1999) and the AMAFA Research Institute and Heritage Act (Act 5 of 2018).<br>• The following buildings and structures must be retained for their heritage value (at their current locations):<br>o The main Gate House and Gate Posts.<br>o The Industrial Hall.<br>o The Crafts Hall.<br>o The Shuter and Shooter Building.<br>o The historic Boshoff Street Bridge.<br>• The following structures should be incorporated into the development, and can be upgraded where necessary:<br>o The gable façade of the Olympia Hall.<br>o The Dorpspruit Walkway and Bridges. | Negative, Direct | Highly Likely | Definitely | Unlikely | Not Possible | Possible | Site | Site | Permanent | Short-Term | High | Low |

| DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT | | MITIGATION | NATURE OF IMPACT | DEGREE TO WHICH IMPACT CAN BE MITIGATED | PROBABILITY OF IMPACT OCCURRING | | REVERSIBILITY OF IMPACT | | EXTENT OF IMPACT | | DURATION OF IMPACT | | SIGNFIICANCE 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 | | |
| SURROUNDING LAND USE AND AESTHETICS | • The proposed land use change will be more similar to the surrounding land uses and will be better suited to the current urban landscape and associated aesthetics. | • The building designs are to comply with SANS standards.<br>• The buildings must be designed to fit suitably within the surrounding urban landscape. | Positive, Indirect | Partly | Fair | Likely | Partly | Possible | Site, Local | Site, Local | Long-Term | Long-Term | Medium | Medium |
| | • The aesthetics of the area will be temporarily disturbed during the construction phase. | • Screening is to be utilised where necessary to limit views of construction activities. | Negative, Indirect | Partly | Definitely | Fair | Possible | Possible | Site, Local | Site, Local | Short-Term | Short-Term | Medium | Low |

| DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT | | MITIGATION | NATURE OF IMPACT | DEGREE TO WHICH IMPACT CAN BE MITIGATED | PROBABILITY OF IMPACT OCCURRING | | REVERSIBILITY OF IMPACT | | EXTENT OF IMPACT | | DURATION OF IMPACT | | SIGNFIICANCE 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 | | |
| TRAFFIC, ROADS AND ACCESS | • The proposed redevelopment will result in major traffic congestion, if no road upgrades are undertaken.<br>• The proposed redevelopment is not expected to cause road conditions to deteriorate. | The proposed redevelopment cannot be undertaken without the following recommendations being implemented:<br>• The N3 Sanctuary Road interchange must be upgraded.<br>• The Chatterton Road roundabout must be converted to a 4-legged signalised intersection.<br>• The Hyslop Road must be upgraded to two lanes in each direction.<br>• The four (4) existing access intersections to the site must be retained. The configuration of each access intersection is to be modified to match the expected traffic demand, such that the access intersections operate efficiently.<br>• Proper public transport laybys are to be provided outside each of the access intersections. Exact locations of these laybys can be finalised during the detail design stage.<br>• The good network of existing pedestrian sidewalks surrounding the site is to be retained as far as possible. More detail on the internal sidewalk network will be provided in the detail design stage. | Negative, Direct | Partly | Definitely | Fair | Partly | Possible | Local | Local | Medium-Term | Medium-Term | High | Low |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONSTRUCTION ACTIVITIES, NOISE AND DUST | • There may be an increase in noisy activities during both the construction and operational phases.<br>• There may be an increase in dusty conditions during the construction phase.<br>• There will be a greater influx of construction vehicles within the area during the construction phase.<br>• The safety of land users immediately adjacent to the site may be at risk, during the demolition of buildings. | • Noisy activities must be avoided and minimised wherever practically possible during the construction phase.<br>• Construction machinery are to be fitted with noise reduction fittings.<br>• Noisy construction activities must only be undertaken during working hours, to prevent undue disturbance outside of these times.<br>• Surrounding residents and land users are to be notified when significantly noisy activities are to be undertaken, particularly during the demolition of buildings.<br>• Tenants (during the operational phase) are to adhere to rules regarding noise, limiting unduly noisy activities which is a disturbance to surrounding land users.<br>• Pro-active dust suppression must be undertaken regularly on site, during the construction phase.<br>• Construction vehicles must adhere to speed limits and rules of the road.<br>• Traffic generated from construction vehicles must be minimised by proper planning of trips and routes.<br>• Contractors are to ensure that all demolition is undertaken safely, with necessary planning to ensure demolished material remains contained within the site, and that adjacent areas are not destabilised. | Negative, Direct | Partly | Definitely | Fair | Partly | Partly | Site, Local | Site | Short-Term | Short-Term | Medium | Low |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SECURITY | • Criminal activity can increase during the construction phase once the site becomes less secured.<br>• Criminal activity can increase during the operational phase as a greater number of people utilise the site. | • Existing periphery fencing, walls and controlled access points are to be maintained for as long as possible during the construction phase, to keep the site secured. Decommissioning and construction activities can continue to occur whilst this security infrastructure remains in place.<br>• Access control to the site must be maintained during the construction phase. A controlled register system is to be utilised to record entry of labourers, suppliers and visitors.<br>• Construction staff must not be allowed to trespass onto adjacent properties during the construction phase.<br>• During construction, 24 hour security is recommended to be procured by Contractors.<br>• During the operational phase, security is recommended. Procurement thereof is to be agreed upon between leasers and lessees.<br>• During the operational phase, it is recommended that alarm systems be installed where necessary. Procurement thereof is to be agreed upon between leasers and lessees.<br>• Restricted and / or dangerous areas must be clearly demarcated with appropriate warning signage, during both the construction and operational phases. | Negative, Indirect | Partly | Definitely | Likely | Partly | Partly | Site, Local | Site, Local | Long-Term | Long-Term | Medium | Low |

| DESCRIPTION OF IDENTIFIED ENVIRONMENTAL IMPACT | | MITIGATION | NATURE OF IMPACT | DEGREE TO WHICH IMPACT CAN BE MITIGATED | PROBABILITY OF IMPACT OCCURRING | | REVERSIBILITY OF IMPACT | | EXTENT OF IMPACT | | DURATION OF IMPACT | | SIGNFIICANCE 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 | | |
| COVID-19 PANDEMIC | • Both temporary and permanent jobs will be created during the planning, construction and operational phase of the proposed project.<br>• Increased employment opportunities will result in positive knock-on effects to the surrounding population and the local economy.<br>• As such, although the pandemic has been and will continue to be widespread, the proposed project will play a beneficial role in alleviating its impacts within the surrounding area. | • During the construction phase, local businesses unemployed people in the immediate area must be considered first, before employing labour and services from further afield.<br>• Where possible, any additional employment opportunities created during the operational phase, must include labour from the local region. | Positive, Indirect | Partly | Likely | Definitely | Partly | Partly | Local | Local | Short-Term, Long-Term | Short-Term, Long-Term | Medium (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 | | SIGNFIICANCE OF IMPACT WITHOUT MITIGATION | SIGNIFICANCE OF IMPACT WITH MITIGATION |
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| | | | | | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | | |
| TOPOGRAPHY | • Given the sites location within the low-lying alluvial plain of the Dorpspruit River and its tributaries, heavy rainfall can result in very shallow perched groundwater seepage in places, creating the need for subsoil drainage. | • As the site occurs within the alluvial plain of the Dorpspruit River and its tributaries, both stormwater and groundwater must be appropriately managed:<br>○ If groundwater seepage is encountered during construction, these zones should be controlled with effective subsoil drains, particularly where water is likely to gain ingress into the structure layers of roads and paved areas.<br>○ It is expected that all cuttings will attract groundwater over time and judicious installation of subsoil drainage is strongly recommended to protect water ingress into the structural layers of roads and paving, as well as foundations. | Negative, Direct | Partly | Definitely | Likely | Partly | Partly | Site | Site | Short-Term | Short-Term | Medium | Low |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLIMATE | • More than 60% of the site is located within the 1:100 year floodline .<br>• The area between the Dorpspruit River and the northern tributary is at risk of flooding during all modelled return periods.<br>• Flood risks are medium to high for all modelled return periods. | • All culverts and channels must be kept clear of debris and rubble, to increase the capacity of the channels. Litter traps upstream of culverts, and at appropriate locations along the channel banks can be utilised. These will need to be maintained and emptied on a regular basis and after each rain event.<br>• Where there are breached areas along the channel banks, as mentioned above, it could be recommended that raised earthen berms be constructed to close these areas to prevent flooding in lower return periods. These berms will need to consist of material with a high clay content that could be sufficiently compacted so as to withstand the energies of the flow. These should tie into the raised portions of the levies on either side of the breached areas, at approximately 1 metre in height. To reduce erosion potential, the berms should be armoured with rock packing or a form of erosion control blanket, and densely vegetated with an appropriate grass seed mix and indigenous vegetation suitable to this environment.<br>• The Stormwater Management Plan (Refer to Appendix E5) must be implemented, to ensure flows are appropriately attenuated.<br>• Risk management measures should be put on place to mitigate risks in areas of high consequence where the flood severity is medium to high. These areas include bridges, walkways, parking bays and roadways. These measures can include stable railings, highly sufficient stormwater management, | Negative, Direct | Partly | Definitely | Likely | Partly | Partly | Site | Site | Short-Term | Short-Term | High | Medium |

| 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 | | SIGNFIICANCE 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 | | |
| | | alternative access areas and parking bays in the case of a flood warning. | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLIMATE CHANGE | • The proposed development may contribute to climate change to a minor extent through energy usage, water usage and waste generation during the construction and operational phases.<br>• The proposed development is likely to be directly impacted by the effects of climate change due to the flood risks associated with the site.<br>• The proposed development may be directly impacted by flood events which pose a risk to the infrastructure. | • All development infrastructure must promote the efficient use of energy, water and limit wastage of resources.<br>  ○ Rainwater harvesting and re-use of water is encouraged.<br>  ○ Contaminated surface runoff must be kept separate from uncontaminated surface runoff.<br>• Waste generation must be minimised and waste must be managed in an environmentally responsible manner and in accordance with the waste management hierarchy. The EMPr outlines specific waste management mitigation measures which comply with the waste management hierarchy.<br>  ○ The development must make use of recycling and recyclable waste must be stored in separate waste receptacles.<br>  ○ Hazardous waste, electronic waste and printer ink cartridges must be disposed of separately and safely, and must be recycled where possible.<br>  ○ Waste food from the restaurant and grocery shops, which is still edible, should be kept separate from general solid waste and appropriately stored prior to distribution for example, a local school, orphanage or charity.<br>• The proposed development must be implemented in accordance with approved layout plans which have been planned and assessed to ensure that locations and layouts of least environmental impact and risk are utilised.<br>• It must be ensured that the proposed redevelopment and associated | Negative, Indirect | Partly | Likely | Likely | Partly | Partly | Local | Local | Permanent | Permanent | Medium | Medium |

| 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 | | SIGNFIICANCE 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 | | |
| | | activities are duly authorised through a Water Use License (WUL) application process. All relevant conditions and monitoring requirements associated with these authorisations must be complied with.<br>• The proposed development must ensure the protection of on-site environmental features which thereby protects ecological infrastructure important for building climate change resilience.<br>• The management of the Dorpspruit River must be improved to retain it as an ecological asset within the landscape, and to maintain the ecological connectivity to other sides, which it provides.<br>• Indigenous plants must be used for landscaping purposes.<br>• The materials from the buildings, structures and infrastructure which are to be demolished on site must be recycled where possible. | | | | | | | | | | | | |

| 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 | | SIGNFIICANCE 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 | • The site is underlain by a relatively thick mantle of soils comprising erratic fill layers, transported (alluvial) and residual soils overlying the weathered shale of the Pietermaritzburg Formation of the Ecca Group.<br>• Based on preliminary investigations, it is expected that bedrock occurs well below 6 metres depth below existing ground level. | • Given the deep, compressible ground conditions, structures higher than double storey will require piling.<br>• Foundation designs for single and double story structures will need to take cognisance of the potentially expansive nature of the alluvial and residual soils.<br>• Given that subgrade conditions beneath most of the site is expected to be very poor (predominantly clay soils), undercutting below the top of subgrade level of the roads and surface beds and importation of a selected material will be required. Importing a capping layer of suitable material which is placed over areas designated for roads, parking and paved areas can also be considered.<br>• A site specific Geotechnical Investigation is to be carried out for each phase of the proposed development. | Negative, Direct | Partly | Definitely | Likely | Partly | Partly | Site | Site | Long-Term | Long-Term | Medium | Low |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE WATER | • The site may experience flooding if stormwater designs and controls are inadequate.<br>• Erosion may occur if stormwater measures are not in place to prevent such.<br>• If attenuation is not undertaken, for the higher volumes of runoff from hardened surfaces, the site will become flooded.<br>• Stormwater from the site is to be discharged and tied into municipal bulk infrastructure. | Planning Phase:<br>• The stormwater design parameters used must be accepted and approved by the local authorities once the final layout plan has been provided.<br>• The proposed stormwater system must be designed to have minimal impact on existing drainage areas.<br>• The stormwater system design must make provision for erosion control.<br>• Floodline delineations may result in large amounts of bulk earthworks to raise the current topography pf the site and / or enforcement of ground floor parking areas of buildings being designed to flood and first floor level, above 1:20 year floodline.<br>Construction Phase:<br>• Temporary stormwater attenuation measures and control must be implemented.<br>• Regular monitoring and maintenance of temporary measures must be undertaken.<br>• Silt screening of inlets must eb utilised to trap sediment and debris.<br>• Dust control must be undertaken.<br>• Bare embankments must be topsoiled and seeded, with the use of soilsavers where necessary.<br>• Chemicals, cement, fuel, and other hazardous materials used during construction, must be stored in controlled areas.<br>Operational Phase:<br>• The stormwater system should be self-regulating and require no manual operation.<br>• Stormwater attenuation must occur in accordance with stormwater calculations.<br>• Attenuation ponds can be used as focal points / features within the | Negative, Direct | Partly | Definitely | Fair | Partly | Partly | Site, Local | Site, Local | Long-Term | Long-Term | High | Low |

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| | | development landscape. Aesthetically pleasing bio-retention mechanisms such as reed beds and specialised vegetation may be included to ensure that the quality of the controlled release of runoff is not compromised.<br>• Attenuation ponds and parking areas must not be positioned in locations which result in flooding of natural drainage areas.<br>• Attenuation ponds must have mechanisms for trapping of silt.<br>• Erosion control measures such as stone pitching, gabion baskets / mattresses, energy dissipators and grass lined drains, must be implemented along parking areas, roads and at stormwater outlets.<br>• Rainwater harvesting is encouraged throughout the development.<br>• Rainwater should be utilised for maintenance of landscaped areas and other non-potable water uses.<br>• The stormwater system must be kept separate from the wastewater system.<br>• All stormwater structures must eb regularly monitored and maintained.<br>• Concentration of stormwater must be prevented where possible.<br>• Energy dissipators must be provided in areas on concentration of stormwater.<br>• Refuse must be regularly collected from open grasses areas and from inlet structures.<br>• Silt must be regularly removed from collection points and from silt traps in attenuation ponds. | | | | | | | | | | | | |

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| WATERCOURSES | • The ecological and water quality assessments, confirmed the presence of organic pollution in the system.<br>• Benthic diatoms and habitat integrity assessments revealed that the riverine system was in a fair condition for the most part, whilst sample site 3 was rated as seriously / critically modified due to pipeline conversion of the watercourse.<br>• Overall, it is evident that the development pressures and human activities have adversely affected the integrity of the watercourses.<br>The proposed development will incur the following direct impacts on the watercourses:<br>• The initial clearing of existing buildings, infrastructure and grubbing of soils near the watercourses that may lead to possible erosion and deposition of sediment as a result of poor erosional control measures during clearing activities.<br>• Compaction of soils and disturbance of vegetation;<br>• Possible erosion as a result of poor back-filling;<br>• Increased run-off or sediment deposition directed to the watercourses;<br>• Potentially poor quality seepage from the bulk services (leaks);<br>• Removal of watercourse soils or alteration to the watercourse extent due to the excavations for bulk services and the proposed road bridge establishments.<br>• The proposed development may incur the following indirect impacts on the watercourses:<br>• Stormwater impacts;<br>• Erosion and sedimentation; and | • Workers should not use the water from the riverine system for drinking or for washing of tools and personal protective equipment.<br>• The sources of the organic pollution (particularly domestic sewage) and nutrients (nitrates) with the project area need to be investigated and suitable measures implemented during the redevelopment process to prevent the influx into these watercourses (if the source is within the project area).<br>• The river system, including its tributaries, must not be used as a means of disposing water uses to wash vehicles or clean spill areas during the construction phase, or domestic effluent and greywater generated during the operational phase.<br>• Only clean stormwater must be permitted to enter the river system and its tributaries.<br>• The redevelopment process should seek to enhance these watercourses to facilitate natural ecosystem services, such as water purification, through greening / planting with appropriate indigenous riparian and aquatic vegetation. Such interventions would also compliment the proposed development from an aesthetics perspective.<br>To ensure that the associated impacts of the proposed development does not impart direct and indirect impacts on the identified HGM Units, the following is recommended:<br>• All road and bulk service crossings over the HGM Units must be constructed as bridge type crossings and pier placements must not | Negative, Direct | Highly Likely | Definitely | Fair | Partly | Possible | Site | Site | Medium-Term | Short-Term | Medium | Low |

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| | • Likely alien invasive plant species infesting the disturbed areas due to lack of invasive alien plant management control. | intersect the watercourse delineation extents.<br>• The establishment of the proposed roads / bridges and bulk services that intersect the HGM Units and associated 10-metre buffer zone must occur during times of low rainfall or dry periods to minimise erosion and sedimentation.<br>• The entire extent of the 10-metre buffer on site applied to the watercourse is to be demarcated with bonnox fencing, or similar temporary robust fencing, and signage identifying the area as a 'NO-GO' area during construction.<br>• Silt fencing and sandbags must be installed prior to works within the watercourses and associated buffer zone.<br>• Disturbance to the HGM Units must be restricted to an established construction right-of-way (ROW) corridor or working servitude. This ROW must be as narrow and constrained as much as possible.<br>• All areas outside of the demarcated ROW must be considered NO-GO areas.<br>• All construction activities must only utilise existing crossings over the watercourses as access points for construction activities as this will limit the direct impact on the HGM Units.<br>• Reinstatement of soils must occur with the returned soils to the same levels prior to trenching and construction activities.<br>• Where no indigenous vegetation is present, the compacted areas must be ripped and seeded immediately as recommended by the Environmental Construction Officer (ECO). | | | | | | | | | | | | |

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| | | • Embankments must be immediately hydro-seeded upon final shaping.<br>• Revegetation of the impacted portions of the HGM Units and buffer must occur immediately after the installation of the piers have been completed and not at the end of the construction period.<br>• Should the identification of any preferential flow paths be identified upon construction, the flows paths before the buffer must have earthen berms installed to dissipate storm flow velocities before being directed to the buffer areas.<br>• Stormwater management should be implemented where necessary to ensure any envisaged flows are directed the to the HGM Units in a diffuse manner and at a reduced velocity.<br>• All hazardous substances will be located at least 50 metres away from any watercourse and bunded on a concreted surface during construction.<br>• All construction material and machinery must be stored at least 50 metres away from any watercourses.<br>• Post-construction, all areas within 30 metres of disturbed areas of the development must have a once-off alien invasive plant clearing initiative completed with all bare soil areas being revegetated with an appropriate grass seed mix as directed by the ECO.<br>• A Watercourse Management Report must be compiled for the for the canalised portion of HGM Unit 1 on site. The report, for example, will provide the necessary management guidelines for ensuring the canal | | | | | | | | | | | | |

| 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 | | SIGNFIICANCE 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 | | |
| | | remains a feature and the required maintenance works required.<br>• A detailed Watercourse Monitoring and Rehabilitation Plan must be compiled before construction commences to ensure the watercourses on site are rehabilitated and well as the associated buffer zone. | | | | | | | | | | | | |

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| BIODIVERSITY | • No indigenous forest, woodland or grassland occurred on the site. No viable plant communities or populations of protected plant species were found.<br>• According to desktop databases, the site should traverse the Midlands Mistbelt Grassland, however, given the developed nature of the site, the on-site vegetation was not representative of Midlands Mistbelt Grassland. Further, given the transformed nature of the site, large mammals and reptiles associated with the vegetation type were absent. Suitable habitats for smaller faunal species which are adapted to surviving in the built environment, were present.<br>• The majority of the vegetation on site is consistent with 'maintained areas' which have been planted with landscaping species, some of which include indigenous and protected plants and trees.<br>• Most of the indigenous plants and trees of importance within the site can be relocated. The following plant species of importance were noted (which are recommended for 'harvesting' and relocation) all of which were likely planted for landscaping purposes, and not naturally occurring:<br>o Natal cycad, *Encephalartos natalensis* (Near Threatened) – likely planted specimens;<br>o Tree aloe, *Aloidendron barberae* (Protected species) – likely planted specimens, and;<br>o Yellowwood, *Podocaprus henkelli* and *P. latifolius* (some of which may be too large to transplant successfully) – likely planted specimens. | • Majority of the site may be redeveloped, as it is highly transformed and not consistent with indigenous vegetation types and habitats.<br>• The Dorpspruit River and riparian habitat, which forms the only development constraint, must be maintained to provide the necessary protection for indigenous vegetation and on-site fauna, and to ensure ecological connectivity to adjacent areas.<br>• The EMPr must address watercourses and buffers, to ensure conservation of fauna and flora can occur and ecological connectivity can be maintained.<br>• Other indigenous and protected plant species of importance must be 'harvested' and relocated to landscaping areas, as per below:<br>o All Natal cycads, *Encephalartos natalensis* (Near Threatened) specimens;<br>o All Tree aloes, *Aloidendron barberae* (Protected species) specimens, and;<br>o Yellowwoods, *Podocaprus henkelli* and *P. latifolius* specimens less than three (3) metres in height.<br>• Any permits or approvals required for removal or relocation of protected plant and tree species must be applied for prior to removal or relocation.<br>• Relocation must be supervised by an approved landscaper.<br>• The EMPr must address watercourses and buffers, to ensure conservation of fauna and flora can occur and ecological connectivity can be maintained. | Negative, Direct | Highly Likely | Definitely | Fair | Partly | Possible | Site | Site | Long-Term | Short-Term | Medium | Low |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | • Avi-faunal species were identified on site and a large colony of Rock Hyrax, Procavia capensis, which are occupying a derelict building close to the railway line. The colony is likely part of the larger Athlone populations to the west of the site and the Dorpspruit River culvert is the likely corridor for linking these colonies.<br>• The Dorpspruit River and riparian habitat is identified as the main development constraint area in terms of fauna and flora, for the following reasons:<br>  o The Dorpspruit River and its riparian habitat, comprises large indigenous trees, alien trees, shrubs and sedges. Whilst the habitat is in a highly modified condition, it does support a significant portion of the fauna and flora occurring on the property.<br>  o The Dorpspruit River provides for ecological connectivity with the adjacent properties.<br>• However, it must be noted that the Dorpspruit River is currently in a highly modified condition, with plastic and solid pollutants. This together with the sedimented water and possible chemical pollutants in the water, is likely to have negatively impacted most fish and amphibian species.<br>• Similarly, the tributary of the Dorpspruit River is in a highly modified condition. It is also of lesser biodiversity importance in terms of fauna and flora, as compared to the Dorpspruit River.<br>• One sizable cluster of trees was present on site, approximately 2000m2 in extent, which comprised of large alien and indigenous trees, with overlapping canopies. However, the area comprises predominantly of alien | | | | | | | | | | | | | |

| 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 | | SIGNFIICANCE OF IMPACT WITHOUT MITIGATION | SIGNIFICANCE OF IMPACT WITH MITIGATION |
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| | | | | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | WITHOUT MITIGATION | WITH MITIGATION | | |
| trees and does not constitute an indigenous woodland habitat.<br>• There may be possible occurrence of the Midlands Dwarf Chameleon which is associated with the Midlands Mistbelt Grassland, however, no specimens were identified on site.<br>• Other than this, the lack of indigenous habitats and transformed nature of the site, does not provide support for any faunal species of conservation importance. The only faunal species present are consistent with those associated with suburban gardens.<br>• In the event of redevelopment of the site, any adopted watercourse and buffer delineation, particularly for the Dorpspruit River, despite its highly modified condition, will provide the required protection for indigenous vegetation within this riparian habitat, the necessary protection and resources for faunal species that currently occur on the site, and the necessary ecological connectivity to link the site to adjacent areas. | | | | | | | | | | | | |

# 9 ENVIRONMENTAL MANAGEMENT PROGRAMME

In terms of the regulations stated in Appendix 4 of Chapter 8 of NEMA GNR 326, 2014 (as amended 2017 & 2021) an Environmental Management Programme (EMPr) has been compiled (Refer to **Appendix F**), which contains guidelines for ensuring that all activities associated with the proposed development are carried out in an environmentally responsible and acceptable manner. 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:

- Pre-Construction and Planning;
- Decommissioning of existing buildings and infrastructure;
- Construction;
- Post Construction and Rehabilitation, and;
- Operational / Occupation.

# 10 POSITIVE AND NEGATIVE IMPLICATIONS OF THE PROPOSED ACTIVITY

## 10.1Positive and Negative Implications of the Preferred Option – Mixed Use Precinct

**Table 26: Positive and negative implications of the proposed Mixed Use Precinct.**

| POSITIVE IMPLICATIONS | NEGATIVE IMPLICATIONS |
|---|---|
| • There will be socio-economic benefits, by contributing to local economic growth and development.<br>• Employment opportunities will be created during both construction and operation phases.<br>• The proposed redevelopment will be more visually consistent with the surrounding land uses.<br>• The proposed land uses will be more socio-economically feasible.<br>• The proposed redevelopment will act as a catalyst for much needed road upgrades.<br>• There will be opportunity for the Dorpspruit River and tributary to be better managed and maintained, as compared to its present state.<br>• No significant biodiversity impacts are anticipated. | • There may be temporary traffic congestion.<br>• There will be temporary disturbances with noise and dust associated with construction activities.<br>• There will be an increase in hardened surfaces, resulting in increased stormwater and erosion risks.<br>• The Hotel and Conference Centre may require some time before it becomes fully feasible, given the recent effects of COVID-19 on travel.<br>• The site may be prone to flood risk, without the appropriate stormwater management and infrastructure. |

## 10.2Positive and Negative Implications of the 'No Go Option'

**Table 27: Positive and negative implications of the 'No Go Option'.**

| POSITIVE IMPLICATIONS | NEGATIVE IMPLICATIONS |
|---|---|
| • The annual Royal Agricultural Show will likely continue. | • The potential socio-economic impacts, including local economic growth and creation of business and employment opportunities, associated with redevelopment of the site will not be realises.<br>• There will be increased difficulties associated with hosting the annual Royal Agricultural Show close to the Pietermaritzburg CBD.<br>• There will likely be economic losses to the Royal Agricultural Society, as their continued use of the site becomes less economically viable.<br>• Parking will become insufficient for annual shows, and result in a safety risk. |

## 10.3Positive and Negative Implications of Identified Alternatives

**Table 28: Positive and negative implications of the Office Park Alternative Layout.**

| POSITIVE IMPLICATIONS | NEGATIVE IMPLICATIONS |
|---|---|
| • There will be socio-economic benefits, by contributing to local economic growth and development. | • There may be temporary traffic congestion.<br>• There will be temporary disturbances with noise and dust associated with construction activities. |

| POSITIVE IMPLICATIONS | NEGATIVE IMPLICATIONS |
|---|---|
| • Employment opportunities will be created during both construction and operation phases.<br>• The proposed redevelopment will be more visually consistent with the surrounding land uses.<br>• The proposed land uses will be more socio-economically feasible.<br>• The proposed redevelopment will act as a catalyst for much needed road upgrades.<br>• There will be opportunity for the Dorpspruit River and tributary to be better managed and maintained, as compared to its present state.<br>• No significant biodiversity impacts are anticipated. | • There will be an increase in hardened surfaces.<br>• The site may be prone to flood risk, without the appropriate stormwater management and infrastructure.<br>• There may be a surplus of office space, with supply of office space being less than the demand. This would make the layout less economically feasible and at risk of economic losses. |

# 11 EAP RECOMMENDATIONS AND 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: 7 August 2022

Signed:  Date: 10 August 2022

## 11.1Recommendations

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

**Table 29: Recommended conditions of the EA.**

| ASPECT | RECOMMENDATION |
|---|---|
| Planning | • The rezoning of the site must be approved prior to the change of land use. |
| Heritage Impacts | The following buildings and structures must be retained for their heritage value (at their current locations):<br>• The main Gate House and Gate Posts.<br>• The Industrial Hall.<br>• The Crafts Hall.<br>• The Shuter and Shooter Building.<br>• The historic Boshoff Street Bridge.<br><br>The following structures should be incorporated into the development, and can be upgraded where necessary:<br>• The gable façade of the Olympia Hall.<br>• The Dorpspruit Walkway and Bridges. |
| Traffic | The proposed redevelopment cannot be undertaken without the following recommendations being implemented:<br>• The N3 Sanctuary Road interchange must be upgraded.<br>• The Chatterton Road roundabout must be converted to a 4-legged signalised intersection.<br>• The Hyslop Road must be upgraded to two lanes in each direction.<br>• The four (4) existing access intersections to the site must be retained. The configuration of each access intersection is to be modified to match the expected traffic demand, such that the access intersections operate efficiently.<br>• Proper public transport laybys are to be provided outside each of the access intersections. Exact locations of these laybys can be finalised during the detail design stage.<br>• The good network of existing pedestrian sidewalks surrounding the site is to be retained as far as possible. More detail on the internal sidewalk network will be provided in the detail design stage. |
| Flood Risk and Stormwater Management | • All culverts and channels must be kept clear of debris and rubble, to increase the capacity of the channels. Litter traps upstream of culverts, and at appropriate locations along the channel banks can be utilised. |

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| | These will need to be maintained and emptied on a regular basis and after each rain event.<br>• Where there are breached areas along the channel banks, as mentioned above, it could be recommended that raised earthen berms be constructed to close these areas to prevent flooding in lower return periods. These berms will need to consist of material with a high clay content that could be sufficiently compacted so as to withstand the energies of the flow. These should tie into the raised portions of the levies on either side of the breached areas, at approximately 1 metre in height. To reduce erosion potential, the berms should be armoured with rock packing or a form of erosion control blanket, and densely vegetated with an appropriate grass seed mix and indigenous vegetation suitable to this environment.<br>• The Stormwater Management Plan (Refer to **Appendix E5**) must be implemented, to ensure flows are appropriately attenuated.<br>• Risk management measures should be put on place to mitigate risks in areas of high consequence where the flood severity is medium to high. These areas include bridges, walkways, parking bays and roadways. These measures can include stable railings, highly sufficient stormwater management, alternative access areas and parking bays in the case of a flood warning. |
| Geotechnical | • Given the deep, compressible ground conditions, structures higher than double storey will require piling.<br>• Foundation designs for single and double story structures will need to take cognisance of the potentially expansive nature of the alluvial and residual soils.<br>• Given that subgrade conditions beneath most of the site is expected to be very poor (predominantly clay soils), undercutting below the top of subgrade level of the roads and surface beds and importation of a selected material will be required. Importing a capping layer of suitable material which is placed over areas designated for roads, parking and paved areas can also be considered.<br>• A site specific Geotechnical Investigation is to be carried out for each phase of the proposed development. |
| Watercourses | • The sources of the organic pollution (particularly domestic sewage) and nutrients (nitrates) with the project area need to be investigated and suitable measures implemented during the redevelopment process to prevent the influx into these watercourses (if the source is within the project area). |
| Biodiversity | • The Dorpspruit River and tributary, and respective buffers are to be respected in the development layout.<br>• Any permits or approvals required for removal or relocation of protected plant and tree species must be applied for prior to removal or relocation.<br>• The Natal cycads, Tree aloes and Yellowwoods must be 'harvested' and relocated to landscaping areas within the site. |

## 11.2Conclusion

The proposed redevelopment does not feature major sensitive environmental features. The Dorpspruit River and tributary is the environmental feature of the greatest value on site, however, it is presently in a degraded and polluted condition. The proposed redevelopment, can allow for a greater level of protection and maintenance off these watercourses, whilst retaining ecological connectivity in the urban landscape. Furthermore, the socio-economic benefits associated with the proposed redevelopment,

outweigh the potential negative socio-economic impacts (including feasibility, traffic and service concerns), which can be easily mitigated by the recommendations provided in this report. Therefore, the proposed redevelopment will have an overall positive impact, provided recommended mitigation measures are implemented, and can improve the existing environmental features on site.

The findings from the Specialist Studies and the Impact Assessment support to proposed redevelopment, provided mitigation measures contained in this report and the EMPr are implemented.

The EAP concludes that no fatal flaws have been identified during the BA Process, and recommends that the proposed redevelopment be approved, provided mitigation measures contained in this report and the EMPr are implemented, there should be no significant, detrimental impacts on the environment.

# 12 APPENDICES

Appendix A: Site Mapping & Layout Plans
Appendix B: Draft Environmental Authorisation Application Form
Appendix C: Landowner Consent Form
Appendix D: Public Participation Documents
*Appendix D1: I&AP List*
*Appendix D2: Advertisements*
*Appendix D3: Site Posters*
*Appendix D4: Background Information Document*
*Appendix D5: Public Information Session*
*Presentation Poster*
*Meeting Minutes*
*Attendance Register*
*Appendix D6: DEDTEA Consultation*
*Pre-application Meeting Documents*
*Appendix D7: Comments*
*BID Comments*
*DBAR Comments*
Appendix E: Specialist Reports & Declaration Forms
*Appendix E1: Heritage Impact Assessment (Phase 1)*
*Appendix E2: Heritage Impact Assessment (Phase 2 for Built Environment)*
*Appendix E3: Palaeontological Assessment*
*Appendix E4: Floodline and Flood Risk Analysis Study*
*Appendix E5: Stormwater Management Plan*
*Appendix E6: Wetland Assessment*
*Appendix E7: Baseline Aquatic Study*
*Appendix E8: Bulk Services Report*
*Appendix E9: Traffic Impact Assessment*
*Appendix E10: Geotechnical Assessment*
*Appendix E11: Biodiversity Assessment*
*Appendix E12: Feasibility Study, Socio-Economic Impact Assessment & Need and Desirability Assessment*
Appendix F: Environmental Management Programme (EMPr)
Appendix G: Environmental Assessment Practitioner Documents
*Appendix G1: Environmental Assessment Practitioner Declaration*
*Appendix G2: Environmental Assessment Practitioners CV*
*Appendix G3: EAPASA Registration Certificate*
Appendix H: Other Information
*Appendix H1: 2021 Msunduzi Land Use Scheme*
*Appendix H2: Proposed Low Impact Mixed Use Zone*
*Appendix H3: 2021 Msunduzi SDF*
*Appendix H4: 2021 Msunduzi Growth Management Zones*
*Appendix H5: Site EMF Report*
*Appendix H6: 2006 C-Plan*
*Appendix H7: 2006 Environmental Priority Areas*
*Appendix H8: CBD and CBD Extension Map*
*Appendix H9: Site Screening Tool Report*
*Appendix H10: Msunduzi Municipality Services Approval*