



FINAL BASIC ASSESSMENT REPORT

FOR

WFA CHRISTIAN BUSINESS SCHOOL - GERARDSVILLE

REF: Gaut 002/19-20/E2415

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DEFINITIONS

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.
Alternatives	Different means of meeting the general purpose and requirements of the activity, which may include site or location alternatives; alternatives to the type of activity being undertaken; the design or layout of the activity; the technology to be used in the activity and the operational aspects of the activity.
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	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 impact	The impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Decommissioning	The demolition of a building, facility, structure or infrastructure.
Direct Impact	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.
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) (No 107 of 1998)(as amended), “Environment” means the surroundings within which humans exist and that are made up of: a) the land, water and atmosphere of the earth; b) micro-organisms, plants and animal life; c) any part or combination of (i) of (ii) and the interrelationships among and between them; and d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
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 (EAP)	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 Management	Ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.
Environmental Management Programme (EMPr)	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. This EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.
Environmental Impact	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 Issue	A concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity.
Fatal Flaw	Issue or conflict (real or perceived) that could result in developments being rejected or stopped. In the context of an environmental impact assessment a fatal flaw can be termed as an environmental issue that cannot be mitigated by any means
General Waste	Household waste, construction rubble, garden waste and certain dry industrial and commercial waste, which does not pose an immediate threat to man or the environment.
Groundwater	Water in the ground that is in the zone of saturation from which wells, springs, and groundwater run-off are supplied.
Hazardous Waste	Waste that may cause ill health or increase mortality in humans, flora and fauna.
Hydrology	The science encompassing the behaviour of water as it occurs in the atmosphere, on the surface of the ground, and underground.
Important areas	Sites that are important for the conservation of biodiversity in Gauteng; (Gauteng C-Plan Version 3)
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.
Interested and Affected Party (I&AP)	Any person, group of persons or organisation interested in or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.
Irreplaceable areas	Sites, which are essential in meeting targets set for the conservation of biodiversity in Gauteng; (Gauteng C-Plan Version 3)
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.
Public Participation Process	A process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.
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	Any environment identified as being sensitive to the impacts of

Environments	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.
Undeveloped	means that no facilities, structures or infrastructure have been effected upon the land or property during the preceding 10 years
Urban areas	means areas situated within the urban edge (as defined or adopted by the competent authority), or in instances where no urban edge or boundary has been defined or adopted, it refers to areas situated within the edge of built-up areas
Vacant	Means not occupied for the purpose of its lawful land use during the preceding ten year period
Watercourse	Means (a) a river or spring; (b) a natural depression in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and bank
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

ABBREVIATIONS

BID	Background Information Document
CC	Close Corporation
CGS	Council for Geoscience
C-Plan	Gauteng Conservation Plan Version 3.3
COT	City of Tshwane
GDARD	Gauteng Department of Agriculture and Rural Development
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EMZ	Environmental Management Zone
Ha	Hectares
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP's	Integrated Development Plans
Km	Kilometers
m	Meters
MSDF	Metropolitan Spatial Development Framework
NEMA	National Environmental Management Act
NGO's	Non-Governmental Organisations
OHSA	Occupational Health and Safety Act
PHRA-G	Provincial Heritage Resources Authority - Gauteng
(Pty) Ltd	Proprietary Limited
RSDF	Regional Spatial Development Frameworks
SAHRA	South African Heritage Resources Agency

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

N/A

Is a closure plan applicable for this application and has it been included in this report? **NO**

if not, state reasons for not including the closure plan.

The Activity applied for does not relate to the decommissioning or closure of a facility and it is not envisaged that the development will be decommissioned

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity? **YES**

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? **YES**

If no, state reasons for not attaching the list.

Please refer to Appendix I

Have State Departments including the competent authority commented? **NO**

If no, why?

State Departments have not commented on the Draft BAR. Attempts were made to obtain comments however no comments were received to date.

The Competent Authority provided their comments on 22 July 2019.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

Project title (must be the same name as per application form):

WFA Christian Business School - Gerardsville

Select the appropriate box

The application is for an upgrade of an existing development The application is for a new development Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES NO

If yes, describe the legislation and the Competent Authority administering such legislation

Authorisation is required in terms of Section 16(4) of the City of Tshwane Land Use Management By-Law, 2016. The Competent Authority administering the legislation is the City of Tshwane Metropolitan Municipality.

The proposed development will be serviced by a private treatment works/package plant and grey water harvesting will be implemented for irrigation purposes. A Water Use Licence will be applied for in terms of the National Water Act, 1998 (Act No 36 of 1998). The competent authority is the Department of Water and Sanitation.

If yes, have you applied for the authorisation(s)?

YES NO

If yes, have you received approval(s)? (attach in appropriate appendix)

YES NO

2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
NEMA EIA Regulations, 2014 (Government Notice Nos. GN R982, R983, R984, R985) as amended 2017.	National Department of Environmental Affairs and GDARD	2014
<u>Activity listed under GN R983:</u> <u>Activity 27</u> - The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.		
<u>Activity listed under GN R985:</u> <u>Activity 12</u> - The clearance of an area of 300 square metres or more of indigenous vegetation c) Gauteng: i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically		

endangered in the National Spatial Biodiversity Assessment 2004; ii. Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans.		
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	National Department of Environmental Affairs and GDARD	2004
National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA)	National Department of Environmental Affairs and GDARD	2008
National Water Act (Act No. 36 of 1998)	Department of Water and Sanitation	1998
National Heritage Resources Act (Act No. 25 of 1999)	SAHRA	1999
Occupational Health & Safety Act (Act No. 85 of 1993) (OHSA) as amended in July 2001, Including Major Hazard Installation Regulation, GNR 692, 30 July 2001.	National Government	2001
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Department of Agriculture Forestry and Fisheries	1983
National Development Plan	National Planning Commission	2011
Gauteng Conservation Plan (C-Plan Version 3.3)	GDARD	2011
Gauteng Provincial Environmental Management Framework	GDARD	2015
Gauteng Spatial Development Framework	Provincial	2011
City of Tshwane: Draft 2017/21 Integrated Development Plan	City of Tshwane Metropolitan Municipality	2017
City of Tshwane: Metropolitan Spatial Development Framework (MSDF)	City of Tshwane Metropolitan Municipality	June 2012
City of Tshwane: Regional Spatial Development Framework (RSDF): Region 4	City of Tshwane Metropolitan Municipality	2017
City of Tshwane: Compaction and Densification Strategy	City of Tshwane Metropolitan Municipality	2005
City of Tshwane By-Laws	City of Tshwane Metropolitan Municipality	-

Description of compliance with the relevant legislation, policy or guideline:

Legislation, policy or guideline	Description of compliance
National Environmental Management	NEMA establishes the basis for environmental governance and sets out the principles for decision-making on matters affecting the environment. The principles of the Act are provided in

Act, 1998 (Act No. 107 of 1998 as amended).

Section 2 and it is the responsibility of all organs of state to take these principles into account when making decisions that could affect the environment.

In terms of the NEMA principles, the following are of particular relevance to the development:

- a) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interest equitably.
- b) Development must be socially, environmentally and economically sustainable.
- c) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (section 2(4)(b)).
- d) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (section 2(4)(c)).
- e) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination (section 2(4) (d)).
- f) The participation of all Interested and Affected Parties in environmental governance must be promoted, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured (section 2(4)(f)).
- g) Decisions must take into account the interests, needs and values of all Interested and Affected Parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge (section 2 (4) (g)).
- h) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment (section 2(4)).
- i) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure (section 2(4) (g)).

Sustainable development requires the integration of social, economic and environmental practices in the planning, implementation and evaluation of decisions. This integration will ensure that development serves present and future generations. Development has to be done in the manner provided for in the National Environmental Management Act and based on the following environmental management principles:

	<ul style="list-style-type: none"> • Prevention of pollution and ecological degradation, • Promotion of conservation; • Secure ecologically sustainable development and use of natural resources; • Promotion of justifiable economic and social development. <p>The proposed development does not occur in contrast with the principles and main objective of the Act.</p>
<p>NEMA EIA Regulations, 2014 (Government Notice Nos. GN R982, R983, R984, R985) as amended 2017.</p>	<p>The EIA process, applicable to this application, is determined by the Environmental Impact Regulations published in Government Notice R982 in Government Gazette No 38282 of 4 December 2014 promulgated under Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and amended in 2017.</p> <p>The EIA regulations inter alia describe the procedure for EIA and provide a description of activities that would require authorisation through either 1) a Basic Assessment (in terms of Government Notices R983 and R985 of 2014) or 2) Scoping and Environmental Impact Assessment (in terms of Government Notice R984 of 2014).</p> <p>An application is submitted in terms of Chapter 4 of the EIA Regulations as the proposed development triggers activities that require a Basic Assessment.</p>
<p>National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</p>	<p>The objectives of this Act are - Within the framework of the National Environmental Management Act, to provide for –</p> <ul style="list-style-type: none"> (i) the management and conservation of biological diversity within the Republic and of the components of such biological diversity; (ii) the use of indigenous biological resources in a sustainable manner and (ii) the fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources. <p>The proposed development does not occur in contrast with the objectives of the Act.</p>
<p>National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA)</p>	<p>The objective of this act is to protect health, well-being, and the environment by providing measures for-</p> <ul style="list-style-type: none"> • Minimising consumption of natural resources; • Avoiding and minimising the generation of waste; • Reducing, reusing, recycling and recovering waste; • Treating and safely disposing of waste as last resort; • Preventing pollution and ecological degradation; • Securing ecologically sustainable development while promoting justifiable economic and social development. <p>The proposed development does not occur in contrast with the objectives of the Act.</p>
<p>National Water Act (Act No. 36 of 1998)</p>	<p>The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that takes into account amongst other factors:</p> <ul style="list-style-type: none"> • Promoting equitable access to water

	<ul style="list-style-type: none"> • Redressing the results of past racial and gender discrimination; • Promoting the efficient, sustainable and beneficial use of water in the public interest; • Facilitating social and economic development; • Providing for growing demand for water; • Protecting aquatic and associated ecosystems and their biological diversity; • Reducing and preventing pollution and degradation of water resources; • Meeting international obligations • Promoting dam safety; • Managing floods and drought. <p>In terms of the act “Pollution” “means the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it;</p> <p>a) less fit for any beneficial purpose for which it may reasonably be expected to be used; or</p> <p>b) harmful or potentially harmful –</p> <ul style="list-style-type: none"> ▪ to the welfare, health or safety of human beings; ▪ to any aquatic or non-aquatic organism; ▪ to the resource quality; or ▪ to property <p>“<i>Water resources</i>” includes watercourses, surface water, estuary or aquifer.</p> <p>Section 19 deals with the situations where pollution of water resources occurs or might occur as a result of activities on land. The person who owns controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources.</p> <p>“Waste” is defined as “includes any solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water resource in such volume, composition or manner as to cause, or to be reasonably likely to cause, the water resource to be polluted”. Waste is the solid, liquid or gaseous by-products that must be accommodated in the environment in a manner that is sustainable.</p> <p>The proposed development does not occur in contrast with the objectives of the Act. Furthermore a Water Use Licence is being applied for in terms of the Act for the irrigation of treated waste water.</p>
<p>National Heritage Resources Act (Act No. 25 of 1999)</p>	<p>This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. Our heritage is unique and precious and it cannot be renewed. It helps us to define our cultural identity and therefore lies at the heart of our spiritual well-being and has the power to build our nation. It has the potential to affirm our diverse cultures, and in so doing shape our national character.</p>

	<p>Our heritage celebrates our achievements and contributes to redressing past inequities. It educates, it deepens our understanding of society and encourages us to empathise with the experience of others. It facilitates healing and material and symbolic restitution and it promotes new and previously neglected research into our rich oral traditions and customs.</p> <p>Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and, as they are valuable, finite, non-renewable and irreplaceable, they must be carefully managed to ensure their survival.</p> <p>Every generation has a moral responsibility to act as trustee of the National Heritage for succeeding generations and the State has an obligation to manage heritage resources in the interest of all South Africans.</p> <p>The proposed development does not occur in contrast with the principles and main objective of the Act. Furthermore, a Heritage Impact Assessment is currently underway and will be included in the Final Basic Assessment Report.</p>
<p>Occupational Health & Safety Act (Act No. 85 of 1993) (OHSA) as amended in July 2001, Including Major Hazard Installation Regulation, GNR 692, 30 July 2001.</p>	<p>The main objective of the Act is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected herewith.</p> <p>The proposed development site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) [OHSA] and the National Building Regulations.</p>
<p>Conservation of Agricultural Resources Act (Act No. 43 of 1983)</p>	<p>The proposed development will ensure that no Agricultural Resources are impacted upon.</p>
<p>National Development Plan</p>	<p>The National Development Plan (NDP) offers a long-term perspective. It defines a desired destination and identifies the role different sectors of society need to play in reaching that goal.</p> <p>As a long-term strategic plan, it serves four broad objectives:</p> <ul style="list-style-type: none"> • Providing overarching goals for what the nation want to achieve by 2030. • Building consensus on the key obstacles to us achieving these goals and what needs to be done to overcome those obstacles. • Providing a shared long-term strategic framework within which more detailed planning can take place in order to advance the long-term goals set out in the NDP. • Creating a basis for making choices about how best to use limited resources.

	<p>The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality. The core elements of a decent standard of living identified in the Plan are:</p> <ul style="list-style-type: none"> • Housing, water, electricity and sanitation • Safe and reliable public transport • Quality education and skills development • Safety and security • Quality health care • Social protection • Employment • Recreation and leisure • Clean environment • Adequate nutrition <p>The proposed development is not in contrast with the NDP.</p>
<p>Gauteng Conservation Plan (C-Plan Version 3.3)</p>	<p>GDARD's (Gauteng Department of Agriculture and Rural Development) C-Plan (Gauteng Conservation Plan Version 3.3) was used to determine the sensitivities of the site and is provided in the figure below.</p> <p>Conservation planning was started in Gauteng in the year 2000 and the aim was to revise the C-Plan at least every 5 years. C-Plan Version 1 was produced in 2001 and was followed by version 2 in 2005. Version 2 was refined in 2007 and was named Version 2.1. The small size of the province made it feasible to conduct an extensive biodiversity survey, named BGAP, which aimed to provide the information on spatial occurrence of biodiversity necessary for rigorous conservation planning. C-Plan 3 represents priority areas for biodiversity conservation in the Gauteng province.</p> <p>C-Plan 3 is based on the systematic conservation protocol developed by Margules & Pressey (2000) and is based on the principles of complementarity, efficiency, defensibility and flexibility, irreplaceability, retention, persistence and accountability. Systematic conservation planning is an iterative process.</p> <p>Knowledge of the distribution of biodiversity, the status of species, approaches for dealing with aspects such as climate change, methods of data analysis, and the nature of threats to biodiversity within a planning region are constantly changing, especially in the Gauteng province which is developing at an extremely rapid rate. This requires that the conservation plan be treated as a living document with periodic review and updates.</p> <p>An extract of the sensitivities that could affect the site in terms of the C-Plan is provided below for ease of reference.</p>

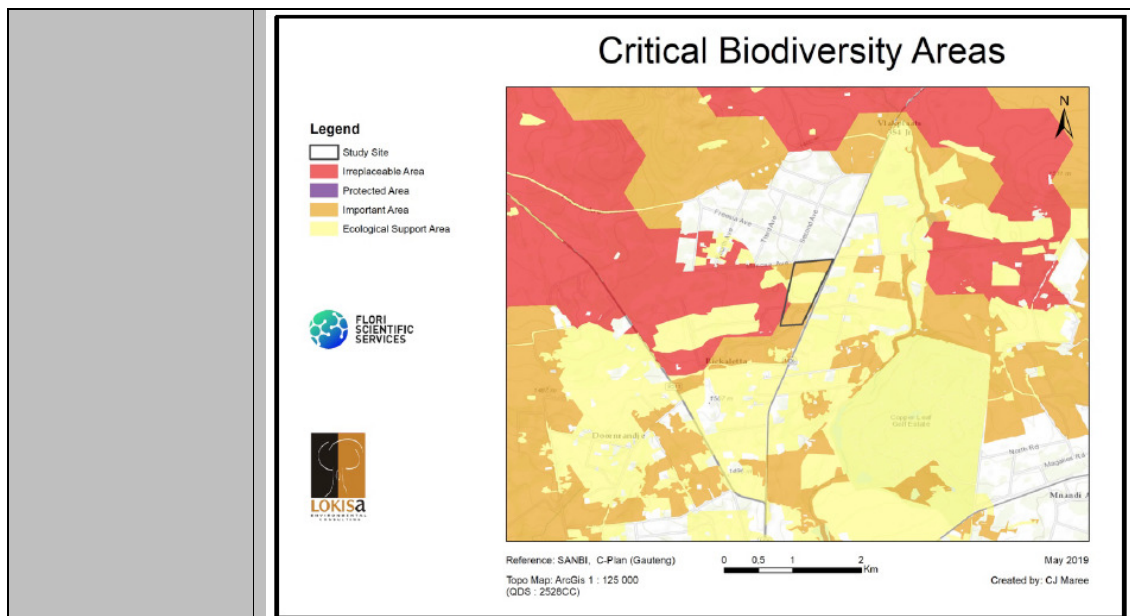


Figure 1: C-Plan

In terms of GDARD’s C-Plan the site is situated within an Ecological Support Area (ESA), and a Critical biodiversity Area. The CBA is Important and Irreplaceable.

Gauteng Provincial Environmental Management Framework

The guiding objectives that emerged during the course of the developed of the GEMF are:

- To facilitate the optimal use of current industrial, mining land and other suitable derelict land for the development of non-polluting industrial and large commercial developments.
- To protect Critical Biodiversity Areas (CBAs as defined in C-Plan 3.3) within urban and rural environments.
- To ensure the proper integration of Ecological Support Areas (ESAs as defined in C-Plan 3.3) into rural land use change and development.
- To use ESAs as defined in municipal bioregional plans in spatial planning of urban open space corridors and links within urban areas.
- To focus on the sustainability of development through the implementation of initiatives such as:
 - Energy efficiency programmes, plans and designs;
 - Waste minimisation, reuse and recycling;
 - Green infrastructure in urban areas; and
 - Sustainable Drainage Systems (SuDS).

The Environmental Management Zones (EMZ) were derived from the desired state, the environmental sensitivity as well the unique control areas as identified in sections 1, 2 and 3. The EMZs were also presented to the Gauteng Planning Forum 6 where it was generally accepted as a suitable contribution to facilitate appropriate development in Gauteng. The EMZs also took the Gauteng Growth and Management Perspective, 2014, into account and is therefore aligned to the general development policy for Gauteng.

Five EMZs were identified and overlaying those a further six

Special Management Areas were identified where specific planning and policy measures are necessary to achieve the development objective of those areas.

According to the GPEMF, the site is identified as the following Environmental Management Zones:

- Zone 3: High Rural Control Zone: Undesirable or the proposed development.
- Zone 4: Normal Control Zone: Conditionally compatible with the proposed development



Figure 2: GPEMF of the site

Gauteng Spatial Development Framework

The GSDF are in pursuit of planning for shared, equitable, sustainable and inclusive growth and development in the country. The Gauteng Provincial Government (GPG) seeks to:

- provide a clear future provincial spatial structure that is robust to accommodate growth and sustainability;
- specify a clear set of spatial objectives for municipalities to

	<p>achieve in order to ensure realisation of the future provincial spatial structure;</p> <ul style="list-style-type: none"> • propose a set of plans that municipalities have to prepare in their pursuit of these objectives; • provide a common language and set of shared planning constructs for municipalities to use in their planning processes and plans; and • enable and direct growth. <p>The proposed development does not occur in contrast with the objectives of the GSDF.</p>
<p>City of Tshwane: Draft 2017/21 Integrated Development Plan</p>	<p>According to Section 25 of the Local Government: Municipal Systems Act, 2000 (Act 32 of 2000), each Municipal Council must, after the start of its elected term, adopt a single, inclusive and Strategic Plan (Integrated Development Plan or IDP) for the development of the municipality which links, integrates and coordinates plans and takes into account proposals for the development of the municipality and which aligns the resources and capacity of the municipality with the implementation of the said plan.</p> <p>An Integrated Development Plan is a super plan for an area that gives an overall framework for development. It aims to co-ordinate the work of local and other spheres of government in a coherent plan to improve the quality of life for all the people living in an area. It takes into account the existing conditions and problems and resources available for development. It looks at economic and social development for the area as a whole. It is used by municipalities as a tool to plan short and long term future development.</p> <p>The 2017/21 IDP is the first IDP for the 2017–2021 term of office. It sets the agenda for the term of office, which will focus on the following three strategic framers: stabilisation, revitalisation and delivery.</p> <p>The following are the strategic pillars that will guide the development in the term of office:</p> <ul style="list-style-type: none"> • City that facilitates economic growth and job creation • City that cares for residents and promotes inclusivity • City that delivers excellent services and protects the environment • City that keeps residents safe • City that is open, honest and responsive <p>The proposed development does not occur in contrast with the IDP.</p>
<p>City of Tshwane: Metropolitan Spatial Development Framework (MSDF)</p>	<p>Every great city has a vision. In order to realise that vision, a strategy that responds to the various elements of that vision is required. The vision of the CoT is to become the African Capital City of Excellence.</p> <p>The purpose of a Spatial Framework for the city is to provide a spatial representation of the City Vision and to be a tool to integrate all aspects of spatial (physical) planning such as land</p>

	<p>use planning; planning of a pedestrian, vehicular and other movement patterns; planning regarding buildings and built-up areas; planning of open space systems; planning of roads and other service infrastructure; as well as to guide all decision-making processes regarding spatial (physical) development.</p> <p>The MSDF aims to address the following towards the achievement of the City vision:</p> <ul style="list-style-type: none"> • Addressing social need • Restructuring of a spatially inefficient City • Promotion of sustainable use of land resources • Strategic direction around infrastructure provision • Creating opportunities for both rural and urban areas • Guiding developers and investors as to appropriate investment localities • Rural management programmes to improve livelihoods and stimulate employment. <p>The proposed development does not occur in contrast with the MSDF.</p>
<p>City of Tshwane: Regional Spatial Development Framework (RSDF): Region 4</p>	<p>The City of Tshwane (COT) embarked on processes to compile seven Regional Spatial Development Frameworks (RSDF's) for the administrative planning regions of the metropolitan area in 2011.</p> <p>The RSDF's needed to be inter-linked and also support the Tshwane Metropolitan Spatial Development Framework (MSDF) of 2017 as well as the Tshwane City Development Strategy (CDS), Tshwane Densification and Compaction Strategy (2005) and Tshwane Open Space Framework.</p> <p>The RSDF for Region 4 was therefore prepared within the context of the MSDF, the City Development Strategy and in support of the other RSDF's.</p> <p>A Spatial Development Framework must:</p> <ul style="list-style-type: none"> • Indicate where public and private development infrastructure investment should take place. • Indicate desired development and land use patterns for different areas. • Indicate where development of particular land uses should be discouraged or restricted. • Provide broad indication of the areas where priority spending should take place. • Shall provide guidelines for development and land use decision-making by the municipality. <p>The proposed development does not occur in contrast with the RSDF.</p>
<p>City of Tshwane: Compaction and Densification</p>	<p>The rationale for densifying the city (i.e. increasing the gross overall density), stems from the following needs:</p> <ul style="list-style-type: none"> • Managing the spatial growth of the city • Increasing efficiency and cost effectiveness

<p>Strategy</p>	<ul style="list-style-type: none"> • Increasing convenience and quality of life • Creating the necessary population thresholds for economic growth and healthy businesses in specific areas. <p>It is important to understand that densification and compaction is not an end in itself, but a means to achieve an overall efficient, integrated and sustainable metropolitan area. Densification should therefore not be done for the sake of densification, but to achieve a range of other goals.</p> <p>The broad goals of spatial interventions in the Tshwane metro are to (1) develop sustainable human settlements and (2) rectify the apartheid imbalances in the access to, and the ownership of wealth. This closely links up with the broad goals of the Tshwane City Strategy, namely:</p> <ul style="list-style-type: none"> • Creating a better life for all • Establish Tshwane as a successful urban economy <p>Densification is an important tool or means to achieve the above goals, as it addresses the question of where people live and how close they are to opportunities.</p> <p>The proposed development does not occur in contrast with the Compaction and Densification Strategy.</p>
<p>City of Tshwane By-Laws</p>	<p>The proposed development will be constructed to comply with the City of Tshwane By-Laws</p>

3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not include the no go option into the alternative table below.**

Note: After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

In terms of the EIA Regulations, 2014 (as amended 2017), the definition of alternatives is given as: ‘Alternatives’ in relation to a proposed activity, means different means of meeting the general purpose and requirement of the activity, which may include alternatives to the -

- (a) Property on which or location where the activity is proposed to be undertaken;**
- (b) Type of activity to be undertaken;**
- (c) Design or layout of the activity;**
- (d) Technology to be used in the activity; or**
- (e) Operational aspects of the activity; and includes the option of not implementing the activity;**

and includes the option of not implementing the activity.

Alternatives can therefore be used to achieve the same result as the originally proposed project in a way that potentially offsets the negative implication of the original plan. However, alternatives that are to be considered must be reasonable

and feasible.

(a) **Property on which or location where the activity is proposed to be undertaken:**

Five (5) sites were initially investigated for the proposed school (all within 5 km from Gerardsville). Three (3) of the sites were situated to the south of the N14 and two (2) were rejected due to the exorbitant cost of the properties. The other site was rejected due to restrictions relating to access.

The two remaining sites, including the subject site, situated in close proximity to Gerardsville, were further investigated. The subject site was chosen because the Dolomitic Stability Report provides recommendations that bring the development to an acceptable risk. Furthermore the Council for Geoscience has provided provisional support for the proposed development subject to the Council's conditions and Recommendations from the Report.

(b) **Type of activity to be undertaken:** No alternative in terms of type of activity was investigated because according to the Town Planning Motivating Memorandum the education system in South Africa is currently in a crisis as the government is struggling to provide adequate quality education infrastructure and learning facilities. There are a number of schools in the Gauteng Province however very few offer boarding facilities because of the challenges that come with running such a facility. The proposed development will play a significant role in attending to such issues.

(c) **Design or layout of the activity**

The layout alternative is discussed in detail below, where the Alternative 1 layout was deemed unfavourable because it does not include the road reserve information for the proposed K46 and does not indicate a line of no access from the K46 road.

(d) **Technology to be used in the activity:**

According to the services report, there is no existing sewerage infrastructure in the vicinity of the proposed development site. This was also confirmed by GLS. The nearest existing development is Copperleaf Golf Estate serviced with a Private treatment works. Seeing that there is no existing network nearby, it is proposed as for other developments not currently serviced with a municipal gravity system, that the development is serviced with a private treatment plant.

According to the services report there are various examples of such solutions recently approved in the absence of a municipal service. It is understood that a similar proposal was submitted for a development to be known as Rietvlei Country Estate in Grootfontein which was approved in principle by the City of Tshwane Metropolitan Municipality.

The alternative to this proposal is the installation of a network in terms of the Sewer Masterplan with an interim pump station and rising main with a final outlet at the Copperleaf Private Treatment Works.

This type of pump station will be normally designed to handle sewage that is fed from underground gravity pipelines. Sewage will be fed into and stored in a pit, commonly known as a wet well. The well will be equipped with electrical instrumentation to detect the level of sewage present. When the sewage level rises to a predetermined point, a pump will be started to lift the sewage upward through a pressurized pipe system called a sewer force if the sewage is transported some significant distance, in this case to the Copperleaf Private Treatment Works.

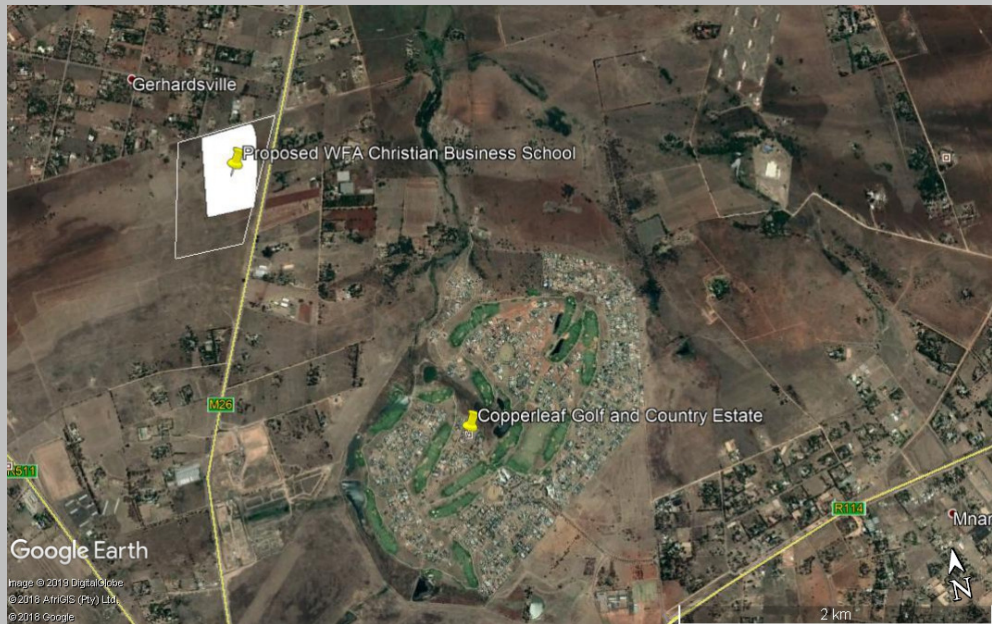


Figure 3: Proximity of site to Copperleaf Golf & Country Estate

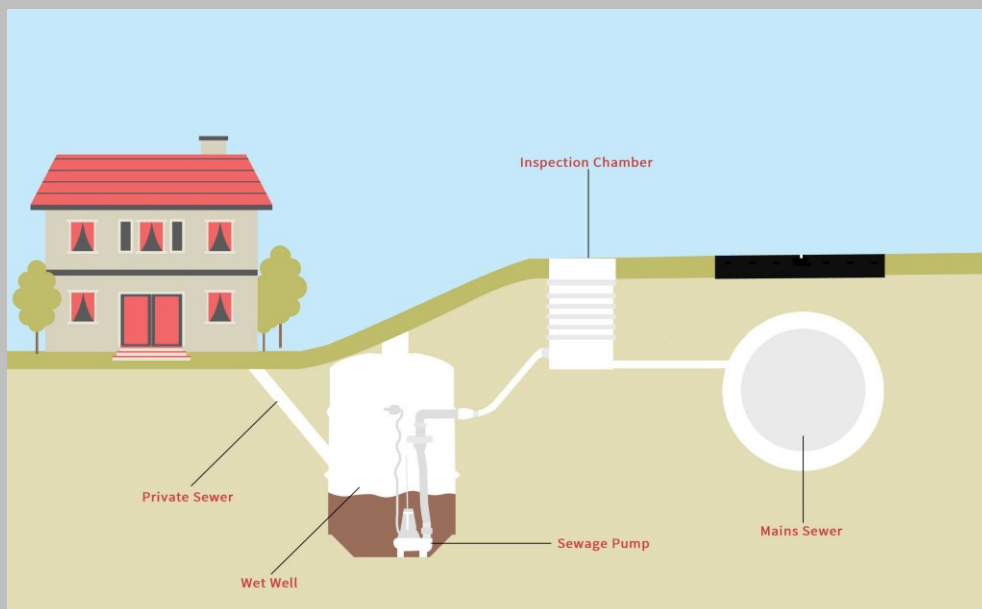


Figure 4: An example of a sewage pumping station

The interior of a sewage pump station is a very dangerous place. Poisonous gases such as methane and hydrogen sulfide can accumulate in the wet well; an ill equipped person entering the well could be overcome by fumes very quickly. An entry into the wet well requires the correct confined space entry method for a hazardous environment. To minimize the need for entry, the facility is normally designed to allow pumps and other equipment to be removed from outside the wet well.

This alternative was found to be unfavourable and the reasons are provided below:

- The Copperleaf Golf Estate's treatment works is privately owned and it is uncertain as to whether the private owners will agree to the external

connection.

- The fact that the Copperleaf Treatment works is privately owned and operated would make it difficult for this proposed development Applicant to have control over the operational aspects of the treatment works.
- The Engineers confirmed that greater spillage risk exists if this alternative is followed.
- The maintenance of the pump station is considered unfavorable.

Furthermore according to a study conducted by Tulleken J 2012, various common problems regarding pump stations have been recorded. These problems include but not limited to the following:

- Blockages of pumps and pipelines;
- Electrical failure within the pump station;
- Failure of alarms and monitoring equipment;
- Uncontrolled discharge from tankers along the reticulation systems;
- Inadequate inspection;
- Lack of maintenance planning;
- Odour problems;
- Criminal activities (theft, vandalism) etc.

Two types of Sewerage Private Treatment Plants were furthermore investigated namely the Bio-sewage system and Becon Watertech. These alternatives are described in detail in the section below.

(e) Operational aspects of the activity:

Two alternatives were investigated regarding the operational phase of the development. The first was the provision of buildings and facilities for the 2000 learners and the other is the phasing of the school. The latter is the feasible solution as the school will be given a significant amount of time and an opportunity to gradually expand in quantity, thus allowing the school to cater for more grades in a yearly basis.

(f) No-Go option:

Should the no-go option be followed, this would entail not using the site and maintaining it as is. In terms of the cumulative impact if the no-go option was followed, additional stress could unknowingly be placed on more sensitive undeveloped sites elsewhere in or outside the Urban Edge. By not developing the site there will be indirect socio-economic impacts such as:

- No employment opportunities will be created
- No educational facilities will be constructed thus the shortage of schools in Gauteng will continue to be a challenge.

(g) Sustainable development principles/techniques that were investigated for the proposed development :

- **Water efficiency:** The school will include sport facilities and some landscape features which will need to properly maintained and this will require the use of water. Since the development will make use of a Private Sewerage Treatment Plant grey water harvesting will be implemented for irrigation purposes.
- **Energy efficiency:**
 - Solar water heater - As regular geysers are the biggest consumers of domestic electricity. Solar hot water cylinders can remain connected to

the regular supply in case of back up required over cloudy or very cold periods. The electrical back-up should be managed with a timer switch. Unsightly storage tanks can be hidden in the roof void and need not be visible.

- **Gas** - Although not renewable it is less polluting and recommended for cooking and heating. Electric stoves use a huge amount of electricity.
- **Aerated Shower Head** - Daily shower consumes more energy than all electrical household appliances together, including light. An aerated shower head uses less water overall, due to insertion of oxygen in each drop.
- **Lighting** - Low energy lamps will be used for interior and exterior lighting, with timers or light sensors for switching where necessary.
- **Waste minimisation**: Excess building rubble during the construction phase of the development will be re-used for filling. The following waste minimisation methods will be incorporated into the operational phase of the development.

1. Reduce the waste you produce

- Avoid over-packaged products such as plastic-wrapped vegetables in polystyrene trays.
- Buy in bulk, as this gives you more products and less packaging
- Buy refills and concentrates – these usually involve less packaging.
- Buy local South African Products.
- Choose products that have not been heavily processed.
- Try to buy only what you need.
- Choose durable items rather than products that will soon need replacing.
- Repair broken items, or pay someone to repair them for you.
- Printing using both sides of the paper saves money on buying paper and on storage and postage.
- Only print what is necessary e.g. information on fax or printer cover sheets is usually unnecessary or can be included in the main document.
- Make electronic copies accessible. When an electronic database or document is more “accessible” than a paper version, people often choose to print less, thus saving paper.

2. Reuse items before they become waste

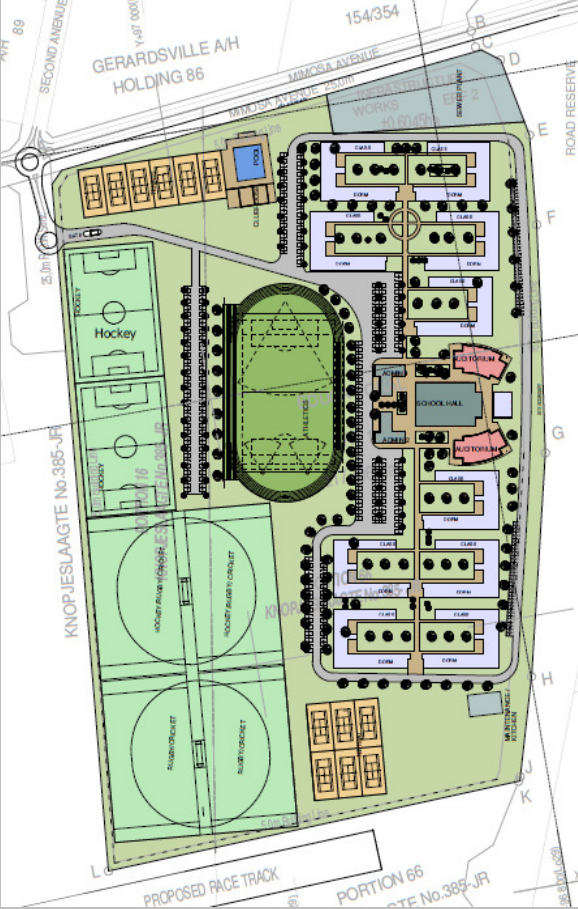
- Reuse items such as cardboard toilet cores, boxes, jars, margarine tubes and scrap paper for school projects.
- Reuse a product as many times as possible. If you have no further use for it, find someone who does.
- Many charities welcome donations of unwanted gifts, clothes, furniture, toys and books.

3. Recycle your waste

- Buy recycled – choose tissues, rubbish bags, stationary, hand towel and toilet rolls made from recycled materials (is should be indicated on the label).
- Separate waste into organic waste, plastic, glass, tin cans and paper. All these can be recycled into useful products.

Provide a description of the alternatives considered

No	Alternative type, either alternative: site on property, properties, activity, design,	Description

	<p>technology, energy, operational or other (provide details of "other")</p>	
<p>1</p>	<p>Proposal</p>	<p>Project description The proposed development entails the establishment of a school that is to accommodate approximately 2000 learners and will consist of learning and boarding facilities. The school will be developed on 18.8344 hectares and is to be serviced with a private sewerage treatment works/package plant. Grey water harvesting will be implemented for irrigation purposes.</p>  <p>Figure 5: Site Plan</p>

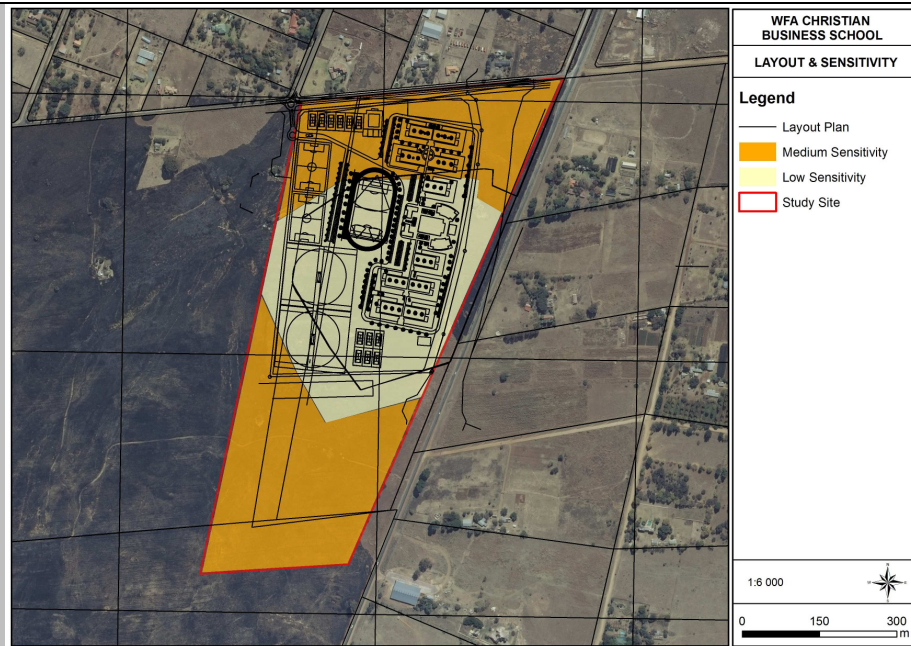


Figure 6: Sensitivity + Site Plan

Project locality

The development will take place on a Part of Portion 66 and a Part of Portion 16 of the Farm Knopjeslaagte 385 JR. The properties are located in Ward 48 of Region 4. The application property is located on the south-eastern part of Region 4, approximately 20 km south west of Pretoria Central. Mimosa Avenue is located to the north of the application property within the jurisdiction of the City of Tshwane Metropolitan Municipality.



Figure 7: Locality

Services to the proposed development entail the following:

Water

Demand: The water demand is based on the current CoT standards:

Table 1: Water demand

Land use	Size (m2)	Number of pupils/rooms	Unit demand	Total demand kl/day
School	10 000	2 000	0.6kl/pupil	120kl
Hostel	20 000		0.9kl/100m 2	180kl
Sporting grounds	55 000	-	Nil	Nil

No demand is calculated and applied for irrigation of sport grounds. With the outflow from the hostels, grey water harvesting will be implemented, stored and if required supplemented from existing boreholes and rainwater harvesting on the property. However, compulsory residency will generate significant effluent from the grey water system to be used for irrigation.

Existing infrastructure

The development falls within the Mnandi Reservoir zone will in future fall under Knopjeslaagte reservoir zone. Being part of the Vaal River basin there is sufficient water source for the development.

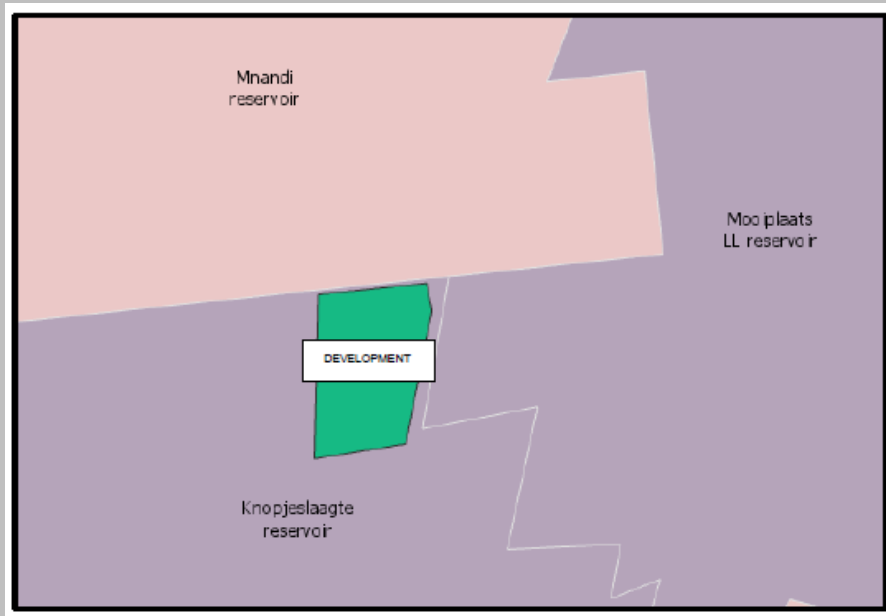


Figure 8: Existing infrastructure

Proposed upgrades and new infrastructure

Bulk items (items required to alleviate existing problems in the bulk water system)	
MNR.B1	1 x 700mmØ Bulk connection Rand Water
MNR.B1.1	1 x 400mmØ Valve to install and close
MNR.B2	14m x 700mmØ Pipe to install
MNR.B5	71m x 500mmØ Pipe to install
Reticulation items 9items required to alleviate existing problems in the water distribution system	
None	
Items required to accommodate the proposed development (excluding fire flow requirements)	

KLR.47	585m x 355 mm Ø main pipe
KLR.48	320m x 315mm Ø main pipe

Proposed connections

A minimum 160mm Ø connection to the existing network will be proposed Mimosa Avenue and Tweede Avenue to the north of the development.

Conclusion

The development is serviceable and network upgrades will be undertaken once finally negotiated with the city of Tshwane. The developer is committed to ensure a sufficient grey water system is installed to provide sufficient water for irrigation of sport grounds and open areas. A separate network will be provided for this purpose.

Sewer

Table 2: Sewer flow

<u>Land use</u>	<u>Size (m2)</u>	<u>Number of pupils/rooms</u>	<u>Unit flow</u>	<u>Total demand kl/day</u>
School	10 000	2000	0.6kl/pupil	120kl
Hostel	20 000	-	0.9kl/pupil	180kl
Sporting grounds	55 000	-	Nil	Nil

Existing infrastructure

There is no existing infrastructure in the vicinity and this was also confirmed by GLS. The nearest is Copperleaf Golf Estate serviced with a Private treatment works.

Proposed sewer treatment

Seeing there is no existing network nearby, it is proposed that the development is serviced with a private treatment plant.

There are various examples of such solutions recently approved in the absence of a municipal service. It is understood that a discussion was held with City of Tshwane where it was consented that the CoT will evaluate private plants more favourable if no network exists and provision of such infrastructure is planned for the near future.

Part of the service provider's contract will include a ten year maintenance program from the installer. In addition maintenance guarantees will be provided as may be required from CoT.

All treated flow will be stored on site in lined dams that will be used for irrigation purposes. It is anticipated that just the hostels will generate a total of 180kl/day, whereas the sports field and open areas require 82.5 kl day. Excess flow will be deposited into the storm water system.

The Bio Sewage System Waste Water Treatment Plant alternative was investigated and preferred for this proposal.

Bio Sewage System Waste Water Treatment Plant: The primary treatment consists of a septic/collection tank with two chambers that

receives the raw untreated sewage from source. Most of the settleable solids accumulate in the first compartment from where the settled sewage flows into the second compartment. The inorganic materials (items that can't be processed) remain in the first chamber. The organic material in the sewage is reduced as a result of sedimentation and anaerobic digestion.

The septic/collection tank is fitted with a submersible pump which is used to transfer the settled and partially treated waste water into the sewage treatment plant.

The plant consists of various processing stages which are further explained in the Method Statement attached in Appendix F. Below is a figure that depicts how the process takes place.

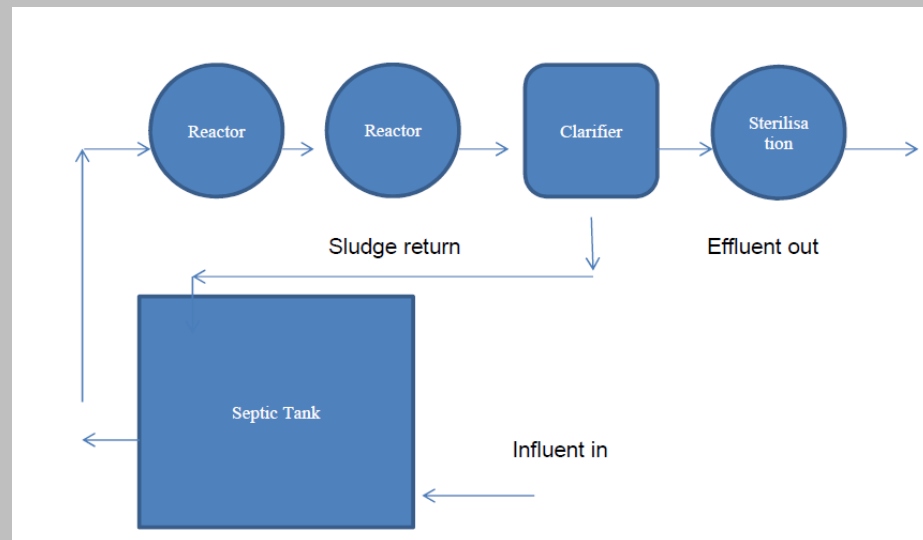


Figure 9: Bio-sewage process

The resultant clear effluent flows into a sterilisation tank for disinfection. Ozone is used for disinfection. The ozone destroys any remaining coliforms, hormones and any other harmful by-products of sewage. The benign disinfected water is then either stored for irrigation, released into the environment or can be re-used as grey water for flushing.

This system is preferred for the following advantages:

Green

- Recycles black and grey water: Allows greatly reduced consumption of municipal water.
- Environmentally friendly - No sewage contamination of the environment, underground water or open water sources.
- No chemicals used at all in the process.
- Very small footprint.

Economical

- Very cost effective.
- Very quick to install with minimal civil works.
- Simple and 100% natural process.
- Very light on electrical consumption.

- Can be run off solar power.
- Fully designed and manufactured in South Africa.

Socio-Economic Benefits

- Human dignity.
- Better Sanitation for WASH program, especially in areas that have no water borne sewage systems.
- Job creation through micro-contractors.
- Can be used in both rural and densely populated areas.

Low maintenance

- No sludge handling required.
- Unskilled monitoring of plant.
- No chemicals or additives.
- Replacement of any failed pumps simple and economical.

Water usage

- Low fresh water consumption.
- Processed water can be re-used for toilet flushing
- Processed water can be used for irrigation or gardens, lawns and crops.
- One litre of sewage produces one litre of processed water.

Proposed network and treatment plant position

The treatment plant will be located in the lowest part of the property which is the south eastern part of the site.

Storm Water

A Storm Water Master plan was compiled for the development and its surrounding areas. The existing infrastructure has sufficient capacity to support the development however it is proposed that an open channel from Node R1-7 from the K46 draining east towards the low point be constructed.

There is no floodline affecting the development.

Roads

A traffic impact study has been compiled based on discussions with City of Tshwane Transportation division.

Trip generation

The weekday morning peak hour trip generation are shown in the table below:

Table 3: Proposed weekday morning peak hour trip generation

Land use rights	Extent	Trip rate	Split		Peak hour trips		
			In	Out	In	Out	Total
School	2000 pupils	0.8 / pupil	50%	50%	800	800	1600
TOTAL TRIPS GENERATED					800	800	1600

Existing Roads Network

The existing and future road network according to the updated City of Tshwane's 2015 Road Master Plan has been used in the compilation

of the Traffic Impact Study together with the road master plan for the proposed development area which was updated and finalised by Civil Concepts (Pty) Ltd at the request of the City of Tshwane Integrated Roads Planning Department.

- M26 (K46) is a class 2 road that runs in a north-south direction. It is located to the east of the development site.
- R511 (K27) is a class 2 road that runs in a north-south direction. It is located to the west of the development site.
- R114 is a class 3 road that runs in an east-west direction. It is located to the development site.
- Mimosa Avenue is a class 4b road that runs in an east-west direction. It is located to the north of the development site. This road intersects with the M26 (K46) in the form of a priority controlled 4- legged junction. This road changes to a class 3 road at its junction with M26 (K46) to the east.
- Second Avenue is a class 4b road that runs in a north-south direction and lies to the north of the development site. This road currently intersects with Mimosa Avenue in the form of a stop controlled all-way T-junction.

Future Roads Network

- M26 (K46) road will in future be realigned and extended northwards to intersect with the existing K103, a class 2 road and intersect with planned class 1 roads, PWV6 and PWV7 respectively.
- R511 (K27) road will in future intersect with planned K44, K103, K38, and K20 (class 2 roads) and the existing K16 (class 2 road).
- A class 4b (proposed access link road) road is proposed to the west of the development site at its junction with Mimosa Avenue opposite Second Avenue. This road will serve as an access to the proposed school development and it will in future be extended southwards to link with the proposed class 4 roads (east-west link road between K27 and K46).

It is recommended that the developer constructs the pedestrian and parking facilities in consultation with the relevant departments of CoT.

It is recommended that pedestrian walkways be provided along the site frontage of the proposed development.

All pick-ups and drop-offs take place within the site.

Regulatory process for the proposed development

In terms of the National Environmental Management Act, Act 1998 (Act No. 107 of 1998) and associated EIA Regulations, an Environmental Authorisation should be obtained from the relevant decision making authority, prior to the commencement of certain listed activities that may result in negative impacts on the environment.

Authorisation is sought for the following activities triggered by the proposed development:

Table 4: Listed activities triggered by the proposed development

Government Notice	Activity	Description of activity as per the wording in the listing notices:
GN. R 983, December 2014 (As amended 2017)	27	<p>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 – (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>The proposed school will be developed on 18.8344 ha.</p>
GN. R 985, December 2014 (As amended 2017)	12	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>c. Gauteng:</p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii. Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans.</p> <p>In terms of the GDARD's C-PLAN the site falls within an Ecological Support Area (ESA) and a Critical Biodiversity Area (CBA). The CBA is Irreplaceable and Important.</p>
<p><u>Alignment with the Gauteng Provincial Environmental Management Framework, 2015 (GPEMF, 2015)</u></p>		
<p>The GPEMF, 2015 classified the site as falling within Zone 3 and Zone 4. The GPEMF Land use – Zone Compatibility Matrix identified the proposed development as conditionally compatible with Zone 4 and undesirable for the development and land use of Zone 3.</p>		
<p><u>Regulatory process for the services proposed for the development:</u></p>		
<p><u>Regulatory process in terms of the National Environmental Management Act, 107 of 1998</u></p>		
<p>The sewage outflow per day is 300kl per day. This volume is less than the volumes listed in Activity 25 of Listing Notice 1 (GN 983) which reads as follows:</p>		

		<p><i>The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.</i></p> <p>It is for this reason that this activity is not applied for in this Application.</p> <p><u>Regulatory process in terms of the National Water Act, 36 of 1998</u> A Water Use Licence will be applied for in terms of the National Water Act, 1998 (Act No 36 of 1998) for the irrigation of treated waste water.</p> <p><u>Alignment with the Gauteng Provincial Environmental Management Framework, 2015 (GPEMF, 2015)</u></p> <p>According to the Gauteng Provincial Environmental Management Framework, 2015 (GPEMF, 2015), the proposed infrastructure that relates to roads, water network, sanitation network and electricity network is compatible with the intentions for Zone 4 and conditionally compatible with the intentions for Zone 3</p> <p>Table 5: GPEMF Land Use Compatibility Matrix</p> <table border="1"> <thead> <tr> <th>Category of developments or land uses</th> <th>Developments or land uses</th> <th>Compatible with the development or land uses</th> <th>Conditionally compatible with the development land use</th> <th>Undesirable for developments or land uses</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Infrastructure and transport</td> <td>Roads</td> <td>1,4&5</td> <td>2&3</td> <td>-</td> </tr> <tr> <td>Water network</td> <td>1,4&5</td> <td>2&3</td> <td>-</td> </tr> <tr> <td>Sanitation network</td> <td>1,4&5</td> <td>2&3</td> <td>-</td> </tr> <tr> <td>Electricity network</td> <td>1,4&5</td> <td>2&3</td> <td></td> </tr> </tbody> </table>	Category of developments or land uses	Developments or land uses	Compatible with the development or land uses	Conditionally compatible with the development land use	Undesirable for developments or land uses	Infrastructure and transport	Roads	1,4&5	2&3	-	Water network	1,4&5	2&3	-	Sanitation network	1,4&5	2&3	-	Electricity network	1,4&5	2&3	
Category of developments or land uses	Developments or land uses	Compatible with the development or land uses	Conditionally compatible with the development land use	Undesirable for developments or land uses																				
Infrastructure and transport	Roads	1,4&5	2&3	-																				
	Water network	1,4&5	2&3	-																				
	Sanitation network	1,4&5	2&3	-																				
	Electricity network	1,4&5	2&3																					
2	Alternative 1	<p>This alternative entails the establishment of a school that is to accommodate approximately 2000 learners and will consist of learning and boarding facilities. The school will be developed on 19.9140 hectares, as represented on the layout below.</p> <p>The site is bordered by the proposed K46 Road on the eastern boundary and the layout needs to take cognisance of the road reserve for the proposed road. Furthermore no line of access will be allowed from this K46 Road.</p>																						

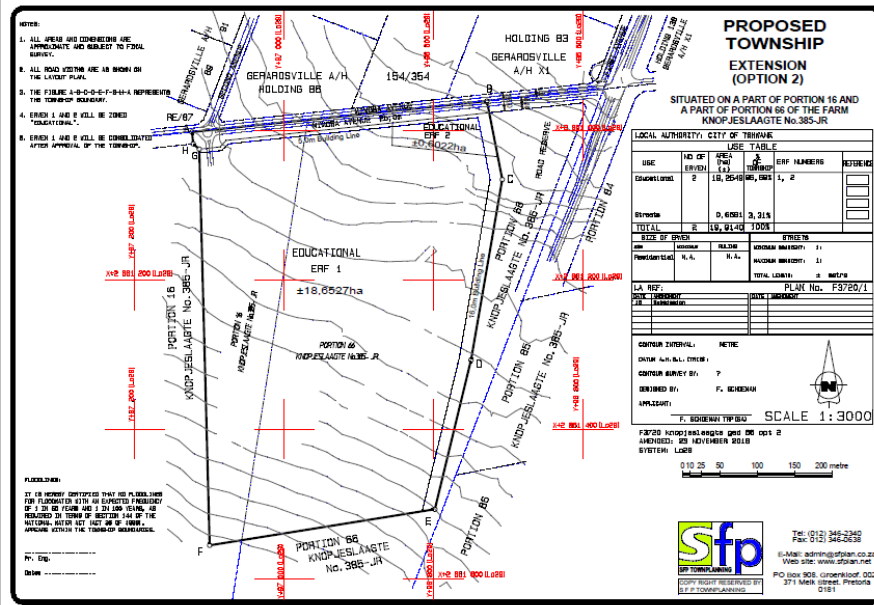


Figure 10: Alternative 1 Layout

This alternative layout is not preferred as it does not include the road reserve information for the Proposed K46 Road as received from the Land Surveyor recently. Furthermore no indication is provided on the layout that no line of access will be provided from the K46 road.

Furthermore the Watertech Becon private treatment plant was investigated for this alternative.

Becon Watertech: Becon Bio-Filter RBC plants are most economical for the handling of sewage and effluents from Schools, Hotels, Resorts, Mines and Smaller Villages where flows from 50 persons up to 2500 persons are relevant. The RBC process is also suitable for treating bio-degradable industrial wastewater

The operational process of the plants is simple and comprises of a primary combined settlement tank and anaerobic digester, a secondary aerobic process comprising of the Becon Bio-Filter RBC fixed film reactor units, followed by a humus settlement tank and a disinfection tank. Reactor tanks are normally RC structures, but prefabricated skid mounted or containerised units are available for small plants

The RBC process is simplistic and requires a minimum of attention. The units can be installed near to buildings and require a minimum space, are clean and aesthetically pleasing, and are designed to produce an effluent to Specified Standards. Features of the RBC units are low power demand, noise free operation, low operator skill requirements and low maintenance costs.

This system is well known however it has a more intense maintenance and operational requirement than the Bio-Sewage alternative.

3	Alternative 2	No further alternatives were investigated.
---	---------------	---

	Etc.	
--	------	--

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

N/A

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (*Total environmental (landscaping, parking, etc.) and the building footprint*)

Size of the activity:

**18.8344
Ha/188344m²**

Alternatives:

Alternative 1 (if any)

19.9140Ha/199140m²

Alternative 2 (if any)

Ha/ m²

or, for linear activities:

Proposed activity

Length of the activity:

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

Size of the site/servitude:

**145.2819
Ha/1452819m²**

Alternatives:

Alternative 1 (if any)

**145.2819
Ha/1452819m²**

Alternative 2 (if any)

Ha/m²

5. SITE ACCESS

Proposal

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
	m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Access to the development will be from Mimosa Avenue at the intersection of Tweede Avenue. A new circle will be constructed and a link road will be provided to the development's access, approximately 100m from the Mimosa/Tweede intersection.



Figure 11: Access to the site

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 1

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Access will be the same as per the proposal, see above

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
 - A4 size for activities with development footprint of 10sqm to 5 hectares;
 - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
 - A2 size for activities with development footprint of >20 hectares to 50 hectares);
 - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
 - A0 = 1: 500
 - A1 = 1: 1000
 - A2 = 1: 2000
 - A3 = 1: 4000
 - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
 - Rivers and wetlands;
 - the 1:100 and 1:50 year flood line;
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

7. SITE PHOTOGRAPHS

Refer to Appendix B

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

8. FACILITY ILLUSTRATION

Refer to Appendix C

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route times

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives times (complete only when appropriate)

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route (complete only when appropriate for above)

Section B – Location/route Alternative No. (complete only when appropriate for above)

1. PROPERTY DESCRIPTION

Property description:
(Including Physical Address and Farm name, portion etc.)

Portion 16 of the farm Knopjeslaagte No. 385-JR - To be known as part of Portion 16 of the farm Knopjeslaagte 385-JR

Portion 66 of the farm Knopjeslaagte No. 385-JR – To be known as a part of Portion 66 of the farm Knopjeslaagte 385-JR

2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

Latitude (S):	Longitude (E):
-25.859139°	28.032667°

In the case of linear activities:

Alternative:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):	Longitude (E):
°	°
°	°
°	°

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

The 21 digit Surveyor General code of each cadastral land parcel

Portion 66 and Portion 16 of the farm Knopjeslaagte No. 385-JR																					
PROPOSAL	T	O	J	R	0	0	0	0	0	0	0	0	0	0	3	8	5	0	0	6	6
ALT. 1	T	O	J	R	0	0	0	0	0	0	0	0	0	0	3	8	5	0	0	1	6
ALT. 2																					
etc.																					

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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4. LOCATION IN LANDSCAPE

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

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Slight undulating plain/low hills	River front
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5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)	YES	NO
Dolomite, sinkhole or doline areas	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO
Any other unstable soil or geological feature	YES	NO
An area sensitive to erosion	YES	NO

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

Louis Kruger Geotechnics CC (LKG) was appointed to conduct a dolomitic stability investigation for the proposed development to be situated on a Part of Portion 16 and a Part of Portion 66 of the Farm Knopjeslaagte 385 JR according to SANS 1936-1:2012-Development of Dolomite Land and according to the Home Building Manual (National Home Builders Registration Council, 2015).

Since the layout has not been finalised, the investigation was done to provide the client with an indication on the types of development that is considered suitable for the site.

The initial investigation (Louis Kruger Geotechnics 2007) was only done on Portions 1, 2 and

7 of the farm Rickaletta 387 JR and Portions 16, 64, 66 and 127 of the farm Knopjeslaagte 385 JR and Portion 107 of the farm Doornrandje 386 JR and consisted of a gravity survey and the drilling of 28 percussion boreholes.

Only three of these boreholes could be used for the current investigation. Based on the results of the initial investigation and the proposed development nine additional boreholes were drilled on the site. The results of the percussion boreholes are summarised in the following table:

Table 6: Percussion borehole results

BH	Dolomite Residuuum	Syenite or slate	Dolomite Residuuum	Highly to moderately weathered dolomite	Moderately to slightly weathered dolomite	Dolomite	Air losses	Sample losses	Pen Time <15sec
6065	-	0-9m	-	9-15m	-	15-22m	None	None	None
6965	-	0-23m	-	-	-	23-29m	None	None	None
7061	-	-	0-3m	-	-	3-10m	None	None	None
L1	0-1m	10-27m	-	1-10m	-	-	None	None	None
L2	-	0-25m	-	-	-	-	None	None	None
L3	0-5m	5-10m	-	-	10-22m	22-30m	None	None	None
L4	-	0-9m	-	9-19m	19-27m	27-35m	None	None	None
L5	-	0-5m	-	5-14m	14-21m	21-30m	None	None	None
L6	0-10m	-	-	10-14m	14-22m	22-29m	None	None	6-7m
L7	-	-	0-8m	-	8-19m	19-27m	4-8m	4-8m	5-7m
L8	-	-	0-12m	-	12-18m	18-26m	4-28m	4-28m	3-8m
L9	-	-	0-4m	4-11m	11-21m	21-30m	None	None	None

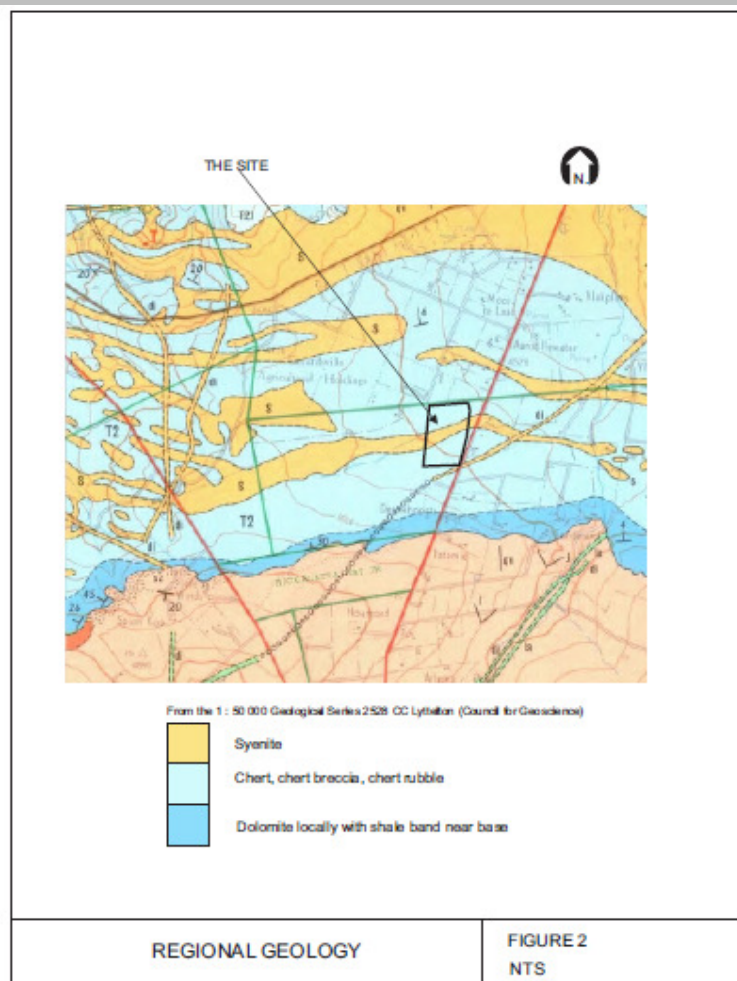


Figure 12: Regional Geology

Ground water was encountered in eight boreholes. In the boreholes where thin syenite is present or syenite is absent and ground water was encountered, the ground water level is situated within the dolomite bedrock. In the boreholes where residual syenite and syenite was encountered, the water level is situated within the syenite. Analysis of the eight boreholes shows that dewatering will not affect the stability of the boreholes. Therefore only surface water was considered as mobilization medium.

The site is zoned as follows:

- The 10 meter radius around boreholes L7 and L8 is zoned as IHC 6//6
- The remainder of the site is zoned as IHC 2/3//2/3.

The risk classification and zoning were discussed with Mr Sifiso Ngubelanga of the Council for Geosciences and he provisionally agreed with the classification

Recommendations to bring the development to an acceptable development risk.

According SANS 1936-1: 2012 the dolomitic stability zones are considered suitable for the following:

- IHC 6: 10 meter radius around boreholes L7 and L8
No residential development (dormitories). Suitable for commercial developments < 3 storeys, including railway stations, shops, wholesale stores, offices, places of worship, theatrical, indoor sports or public assembly venues, other institutional land uses such as universities, schools, colleges, libraries, exhibition halls and museums, light (dry) industrial developments, dry manufacturing, commercial uses such as warehousing, packaging, and electrical sub-stations, filling stations.
It is important to note that the suitability is subject to footprint drilling and the recommendations listed in Section 15.

- IHC 2/3//2/3: The remainder of the site
Commercial and miscellaneous non-residential usage
Commercial developments < 3 storeys, including railway stations, shops, wholesale stores, offices, places of worship, theatrical, indoor sports or public assembly venues, other institutional land uses such as universities, schools, colleges, libraries, exhibition halls and museums, light (dry) industrial developments, dry manufacturing, commercial uses such as warehousing, packaging, and electrical substations, filling stations.

It is important to note that the suitability is subject to footprint drilling and the recommendations listed in Section 15 of the Dolomite Stability Report included hereunder:

Residential development (dormitories)

- a) Attached homes in buildings exceeding 3 storeys
 - AHH3: Up to 160 attached homes per hectare in buildings exceeding 3 storeys (subject to footprint investigations and subject to the recommendations listed in Section 15).
- b) Attached homes in buildings not exceeding 3 storeys
 - AHL2: Up to 80 attached homes per hectare in buildings not exceeding 3 storeys (subject to footprint investigations and subject to the recommendations

listed in Section 15)

c) Detached homes

- **DH3: Detached home or own site or an effective site having an area not less than 1000 sqm (subject to footprint investigations and subject to the recommendations listed in Section 15)**
- **No wet services are recommended in the 10 meter radiuses around boreholes L7 and L8.**
- **The client should note that some form of geotechnical remedial will be necessary. Such measures could include piling, grouting and earth mattresses, it should be noted that irrespective of the number of storeys, geotechnical remediation will be required. *It is important to note that all foundations should be capable of spanning a 5 m diameter sinkhole.* Foundation design confirmation/certification must be submitted to the Council for Geosciences along with the NHBRC enrolment application**
- **If ownership, the layout, density and/or land use change, the influence of the dolomitic stability on the development should be re-assessed and all the relevant documentation has to be resubmitted to the Council for Geosciences for comment.**
- **The developer should take note of the risk if water is anytime allowed to penetrate the soil profile. Exceptionally stringent water precautionary measures should be implemented.**
- **The percussion boreholes should be protected during construction. If the construction includes excavations it is vital that the boreholes be sealed at the final level of excavation since it could act as points of water ingress resulting in instability.**
- **If irrigation is provided for gardens, this aspect should be specifically addressed as a special precautionary measure.**
- **A construction report for the development must be compiled to ensure that adverse conditions are identified and re-evaluated timeously. The developer should take note that if adverse conditions are encountered it will result in changes in the risk classification. This could impact on the proposed development.**
- **Water features, water bearing canals and swimming pools should be not allowed, unless structure specific investigations are done.**
- **The drainage precautionary measures and additional precautionary measures listed in Appendix C should be strictly adhered to.**
- **A specific Risk Management Strategy must be drawn up for the development and managed by the client on behalf of the local authority. Doline and sinkhole formation can be minimised by establishing a Dolomite Risk Management Plan for the development and adhering to the recommendations at all times. As a crucial part of the Risk Management Plan, attention must be given to;**
 - **the surface drainage for the entire development i.e. Storm Water Management Plan, the plan must also be integrated with a Regional**

Storm Water Management Plan which pertains to the area outside the boundaries of the site.

- as well as monitoring and maintenance of all wet services i.e. Wet Services Plan

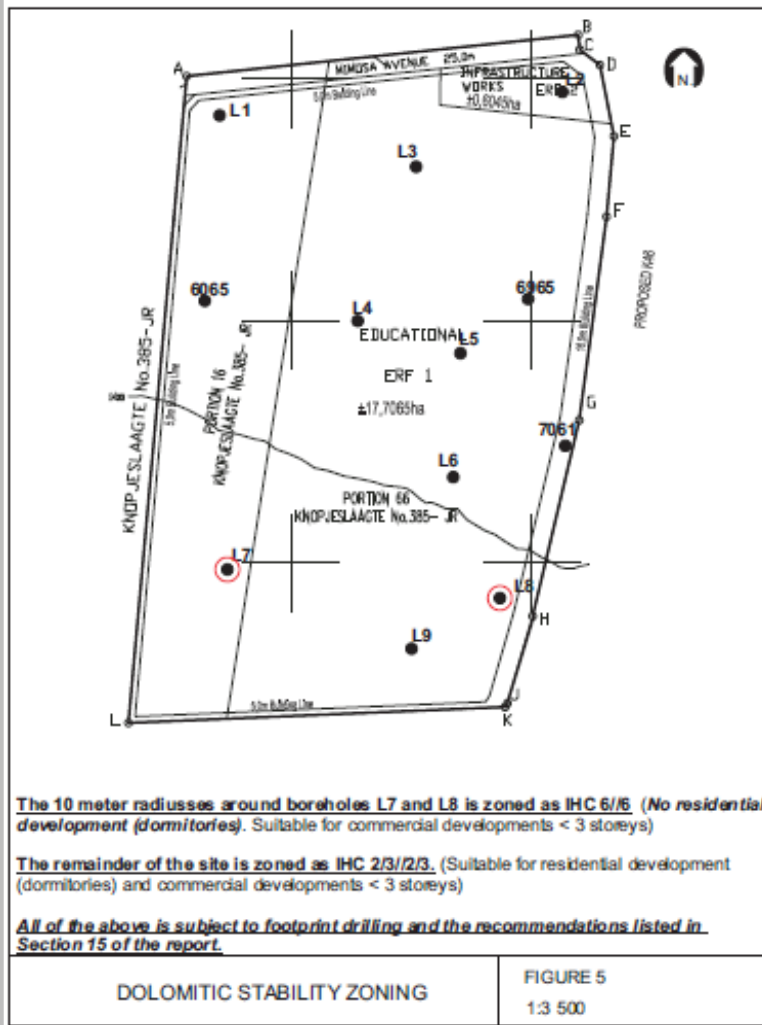


Figure 13: Dolomite Stability Zoning

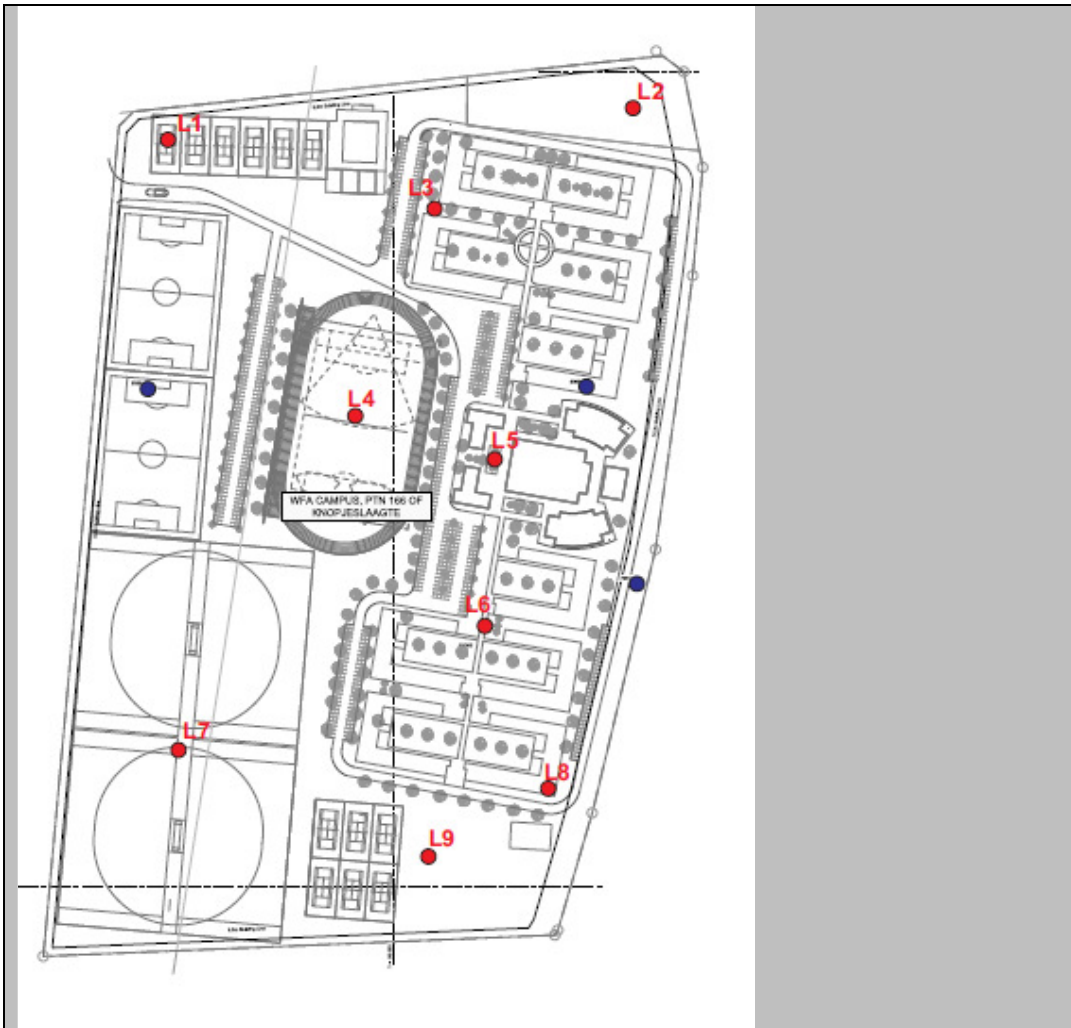


Figure 14: Dolomite Stability Zoning superimposed on proposed development

The report was submitted to the Council for Geoscience (Refer to Appendix G: Specialist Reports) for the comments:

The Council confirms provisional support of the proposed college combined with dormitories and associated sports facilities, C3 type development in Gerardsville Extension 2 situated on a Part of Portion 16 and part of portion 66 of the farm Knopjeslaagte 385 JR, subject to the following:

- a) No residual development is supported within 10m radiuses around borehole L7 and L8.
- b) A certified site development plan (SDP) should be submitted to the Council for co-signing.
- c) Once the SDP has been finalised, additional investigations, including FPI's where necessary, must be conducted and the results thereof, submitted to the Council for further comments prior to any construction on site.
- d) LKG or the professional team involved are to certify that additional investigations, the development proposal and precautionary measures are in accordance with SANS 1936:2012 requirements.
- e) A Dolomite Risk Management Plan in accordance with SANS 1936-4:2012 must be complied and implemented for this site. The owners/responsible persons must be made aware of the risks involved in building on dolomite and be informed about how to be vigilant and act pro-actively by applying sound water management principles.

f) The Local Authority must implement a risk management system. Commenting on the suitability of sites within its jurisdiction is based on the premise that this system will be implemented.

b) are any caves located on the site(s) YES NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	Longitude (E):
°	°

c) are any caves located within a 300m radius of the site(s) YES NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	Longitude (E):
°	°

d) are any sinkholes located within a 300m radius of the site(s) YES NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	Longitude (E):
°	°

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)? YES NO

Approximately 90% of the site is considered to have high agricultural potential (some PWV soils 1:50 000 from ARC/ISCW) with soils with limiting soil depth and high clay content.

The north eastern corner of the site has moderate agricultural potential and is characterised by rocky outcrops with limiting soil depth.

Please note: The Department may request specialist input/studies in respect of the above.

7. GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld – good condition % =	Natural veld with scattered aliens % = 90	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % = 10	Bare soil % =

According to Biodiversity Assessment, the study site is situated within the original extent of the veldtype of Carletonville Dolomite Grassland. According to maps it appears that the southern extreme of the study site is within Egoli Granite Grassland. However, during field investigations it appears that the site is more representative of Dolomite than Granite grassland (although there are some common features and species of both present).

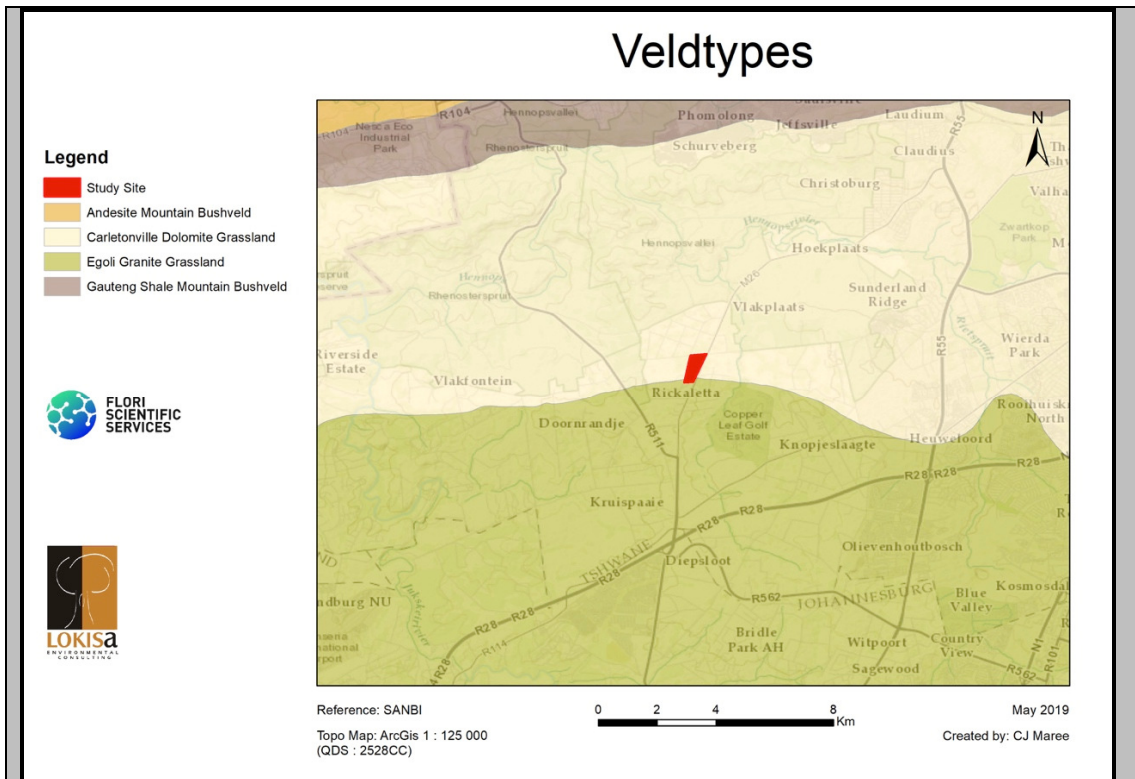


Figure 15: Veldtypes

The vegetation of the study area was historically Carletonville Dolomite Grassland with elements of Egoli Grassland. However, historically much of the study area was cultivated, ploughed farmlands. It would appear from site investigations that the levels of cultivation were moderate and not for intense, high commercial production. Presently the site is not actively cultivated by the grasses are regularly cut, probably for use as cattle fodder. The effect is that there is a loss of natural grassland features. There are some examples of typical Carletonville Dolomite Grassland on the fringes, however there are no areas of pristine grassland on site and the area can be at best be described as moderately degraded grassland with patches of severely degraded to transformed grassland.

The conservation status of Carletonville Dolomite Grassland is Least Threatened (LT). Egoli Granite Grassland, on the other hand, is a threatened veldtype, with a threat status of endangered (EN).



Figure 16: Study site, old cultivated lands.

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site

YES	NO
------------	----

If YES, specify and explain:

According to the Biodiversity Assessment conducted by Flori Scientific Services there are two Orange listed floral species present on site, namely *Boophane disticha* and *Hypoxis hemerocallidea*. The ecological specialist confirmed and advised that these floral species can be easily lifted as they have shallow roots and relocated to a similar environment.



Figure 17: *Boophane disticha*

No Red Data Listed floral species were found on site and no faunal species of conservation concern were encountered on site.

There are no sensitive habitats or distinctive habitats present that would potentially be suitable for many of the RDL and ODL species of the Gauteng Province.

Comments received from GDARD dated 22 July 2019 stated that according to the Departmental GIS there is a presence of the red listed plant species *Cucumis Humifructus* on parts of the site and the red listed African Grass Owl habitat on the southern part.

In response to the above the Ecological specialist stated the following:

Cucumis Humifructus

The presence of the rare, red data species of *Cucumis humifructus* is highly disputed. The plant has a threat status of vulnerable (VU) and requires deep soils and is entirely dependent on aardvark for its dispersal and germination cycles.

According to the red list of South African plants (which can be found online at www.redlist.sanbi.org) the plant is very range restricted and found mostly in the south of Limpopo near Gauteng and North West. According to the information available the plant was historically present in Gauteng, but it is presumed to be extinct in the province and historical locations cannot be located. It is extremely unlikely that the species is present on site.

African Grass Owl

The Endangered Wildlife Trust (EWT) was consulted in order to provide further information about the presence of grass owls on site. According to EWT there are grass owls in the greater area. Their nesting habitat is very closely linked to wetland

areas where dense grass grows. According to the Ecological Specialist there are wet areas to the west and east of the site that could house owls however the habitat on site is not suitable for grass owls to nest and breed. However having the said the above, it is not unlikely that owls may forage over the area from time to time. Obviously with continued development more and more grasslands and open spaces are being lost and it is a real dilemma however the specialist reiterated that the site is not highly sensitive.

Furthermore the EWT confirmed that there are recent presence and signs of the Grass owl within an 8km radius of the development site. Site A, B and C marked in the below Google image are where there have been activities of the owl, as pellets and their tracking data from the tagged bird confirmed.

The EWT suggested a follow up site visit to these areas and expand it to the east side of the site and Copperleaf Estate area. There may very likely be active Grass owl pairs in the area and they have seen some owls breeding in very peculiar patches in the urbanized spaces. The active pairs indicated in the image below are urban birds which have been observed over many years occupying the only available sites. It is understood they have no other choice but to use these small undesirable patches as they have lost significant portions of their natural habitat in this area in particular.

In response to the EWT response the Ecological Specialist emphasized further that the grass owls might be foraging to the west of the proposed site as those areas are still more open and more likely to have small rodents and hares present as a source of food. It is well understood that there will be some loss of open space within the proposed development, but it is unlikely that this will have a negative impact on owls in the greater region.

In short no African Grass Owls were observed on site and the site's ecological state is not capable of hosting such a species.

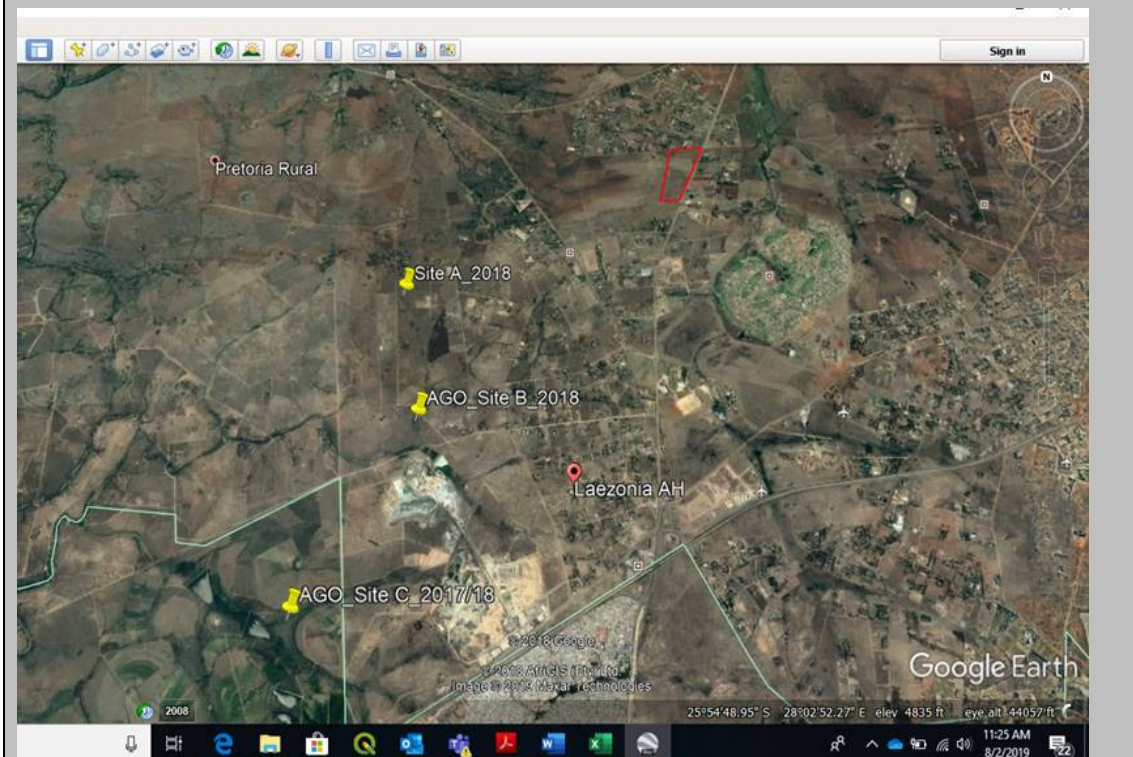


Figure 18: Grass Owl presence activity

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

YES	NO
-----	----

If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on the site?

YES	NO
-----	----

If YES, specify and explain:

In terms of the GDARD’s Conservation Plan the site is situated within an Ecological Support Area (ESA) and a Critical Biodiversity Area (CBA). The CBA is a CBA-Important and Irreplaceable. The area in which the study site is situated is however not pristine grassland or open natural habitat, but is mostly degraded grassland, cultivated farmlands and old farmlands.

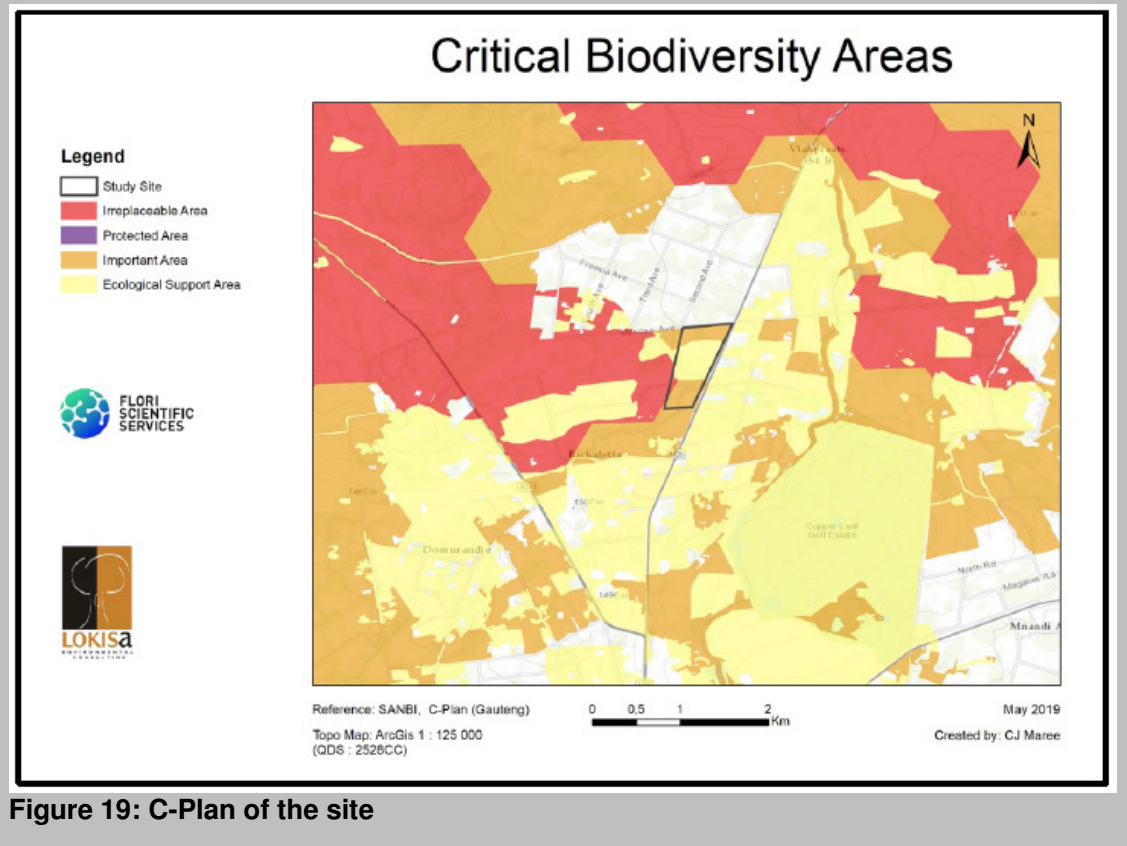


Figure 19: C-Plan of the site



Figure 20: Sensitivity map of the site

Aquatic ecology

There are no watercourses in the study area, including rivers, streams, distinctive drainage lines, wetlands or a freshwater pan (which is a type of wetland). The closest major watercourse is the Hennops River and the Swartbooispruit (stream) (see figure below). The Swartbooispruit is situated between 1 km and 1,2km due east of the study site. The stream flows north and is a tributary of the larger Hennops River. There are a few small wetland areas situated mainly along the course of the Swartbooispruit, but there are none within the study area, or any within a 500 m radius of the outer boundaries of the study area.



Figure 21: Main watercourses in the area



Figure 22: NFEPA wetlands in the area

There are no watercourses in the study area and therefore none could be delineated, or classified.

Ecological Sensitivity Analysis

The ecological sensitivity of the study area is determined by combining the

sensitivity analyses of both the floral and faunal components. Please refer to the table below for the ecological sensitivity of the site.

Table 7: Ecological sensitivity analysis

Ecological community	Floristic sensitivity	Faunal sensitivity	Ecological sensitivity	Development Go-ahead
Degraded Grassland	Medium	Medium/Low	Medium	Go-But

Was a specialist consulted to assist with completing this section

YES	NO
------------	----

If yes complete specialist details

Name of the specialist:

J. Maree of Fori Scientific services

Qualification(s) of the specialist:

MSc; MBA; Pr.Sci.Nat

Postal address:

P O Box 7222 Modimolle

Postal code:

0510

Telephone:

-

Cell: **082 564 1211**

E-mail:

Johannes@flori.co.za

Fax:

-

Are any further specialist studies recommended by the specialist?

YES	NO
------------	----

If YES, specify:

The specialist recommended that a Heritage Impact Assessment be conducted. A Heritage Impact Assessment was conducted for the proposed development please refer to Appendix G for the report.

If YES, is such a report(s) attached?

YES	NO
------------	----

If YES list the specialist reports attached below

Heritage Impact Assessment Report

Signature of specialist:

See attached report

Date:

May 2019


Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport ^N	23. Train station or shunting yard ^N	24. Railway line ^N	25. Major road (4 lanes or more) ^N
26. Sewage treatment plant ^A	27. Landfill or waste treatment site ^A	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam ^A	34. Small Holdings	
Other land uses (describe):				

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

	NORTH					
	34	8	8	34	34	
	34	8	8	34	34	
WEST	1	1		7,34	34	EAST
	1	1	1	34	34	
	1	1	1	34	34	
	SOUTH					

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached

YES	NO
------------	----

If yes indicate the type of reports below

- **Motivating Memorandum in Support of the Township Establishment.**
- **Civil Engineering Services Report**
- **Biodiversity Assessment.**
- **Geotechnical report.**
- **Traffic Impact study.**
- **Heritage Impact Assessment Report.**
- **Palaeontological report.**

9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The project site is situated in Gerardsville and falls within ward 48 in Region 4 of the City of Tshwane Metropolitan Municipality. Region 4 is situated in the south-western portion of the Metropolitan area. The Region borders on the area of jurisdiction of the City of Johannesburg Metropolitan Municipality, Ekurhuleni Metropolitan Municipality as well as Mogale City to the west.

Region 4 is accessible via:

- **The N1 Highway which runs partly through the Region and links the City of Tshwane with the Limpopo Province in the north and Johannesburg, Bloemfontein and Cape Town towards the south.**
- **The R21 Highway, which runs along the eastern boundary of the region and connects the City of Tshwane with the Ekurhuleni Municipality and the Oliver Tambo International Airport.**
- **The R28 (N14) Highway which connects the Region with Mogale City (Krugersdorp) and the North-West Province.**

The Region is highly accessible from a regional point of view as it is served by both north-south and east-west first order roads (Highways) linking it to the rest of Gauteng and the broader region.

The role and function of the Region within the Metropolitan context can be summarized as follows:

- Region 4 contains the mixed-use Centurion Metropolitan Core.
- It provides job opportunities to a large section of the metropolitan population.
- It is the area containing the highest intensity of land uses.
- Region 4 can be described as the high-tech heartland of the metropolitan area.

The main characteristics of the Region 4 are:

- The N1 corridor represents one of the most sought after development strips in South Africa. This corridor manifests primarily within the Midrand and Centurion areas and it is known as one of the high technology belts within the South African economy.
- The region falls within the Economic Core identified for Gauteng Province with the legs of the triangular core the N1 Highway on the western side and the R21 Highway with its linkage to the Oliver Tambo International Airport on the eastern side. This economic core is the primary growth focus for Gauteng Province.
- Region 4 is located at the southern gateway of the City of Tshwane and is easily accessible from the Johannesburg financial and corporate district and the Oliver Tambo International Airport.

The region includes a few prominent land uses of strategic significance to the local as well as the broader urban environment of Tshwane. These include:

- Zwartkop and Waterkloof Military Airports.
- Thaba Tshwane/ Voortrekker Hoogte Military Base.
- Centurion Metropolitan Core.
- Centurion Gautrain Station.
- Super Sport Park.
- Highveld Technopark.
- Highway Business Park.
- Route 21 Corporate Park.
- Sunderland Ridge Industrial Area.
- N1 Corridor – mixed use development.
- Samrand Commercial Area.
- Gateway development.
- Olievenhoutbos Absa Housing development.

The region accommodates the higher income community of the City of Tshwane with the result that many offices and retail functions have relocated to the region during the past few years. The Centurion CBD (Metropolitan Core) is the strongest node in the region. The trend for new development is integrated development nodes which include various land uses and emphasize the need to incorporate job opportunities close to residential development. The following integrated nodes have been established/envisaged within the region:

- Eco-Park (Highveld) – including different housing typologies, commercial, retail, office development.
- Louwlandia / Heritage Hill– Mixed use development.
- Route 21 integrated development consisting of Route 21 Industrial Commercial development and the Irene Central development
- The proposed PWV 9 development corridor.

Opportunities for this Region include:

- The development of the Gautrain station in the Centurion Metropolitan Core area has improved public transport opportunities in the region and will unlock

development opportunities.

- Potential corridor development along the R21 will create new opportunities.
- The future development of Super Sport Park.
- The development of the PWV 9 will complete the ring road system around the metro and greatly improve accessibility at a regional level.
- High-tech Industrial uses along the N1 development corridor will stimulate more high-tech economic opportunities.
- Residential expansion in a westerly direction.

Apart from the core CBD area, areas for job opportunities will be focused around development corridor areas. These areas usually contain a high concentration of population and mixed land uses with the focus on high technology and consist of the areas around the N1 Highway considered with Samrand, Nellmapius, Brakfontein and Olievenhoutbosch Roads as the activity spines through the Kosmosdal, Louwlandia, Highveld and Irene suburbs. The corridor manifests primarily within the Midrand and Centurion areas and it is known as the high technology belt within the South African economy. The region falls within the Economic Core identified for Gauteng Province with the legs of the triangular core being the N1 Highway on the western side and the R21 with its linkage to the International Airport on the eastern side. This Economic Core is the primary growth focus for Gauteng Province. The so-called high-profile developments, such as office, finance and information technology related developments therefore tend to concentrate in Region 4.

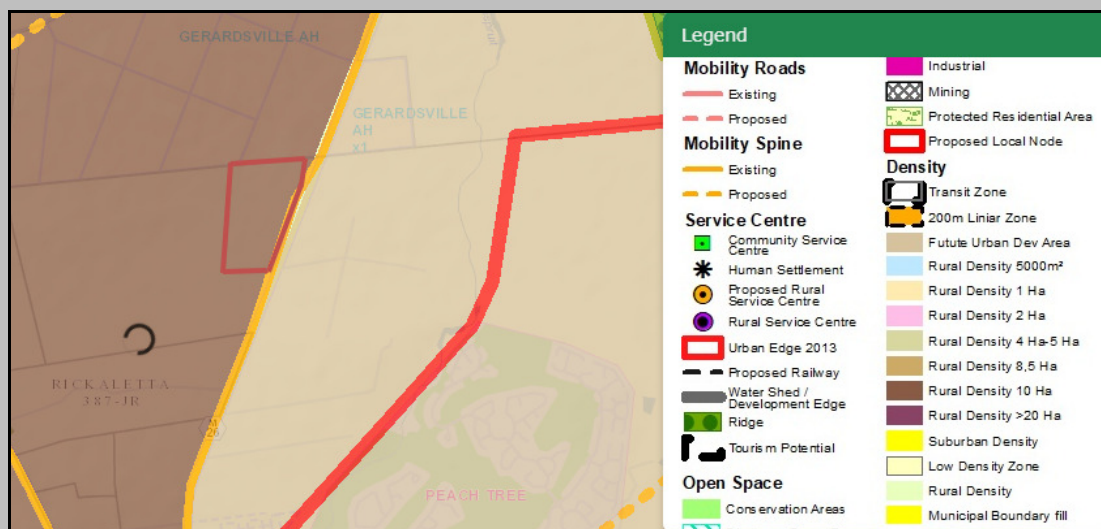


Figure 23: Tshwane RSDf, Region 4

Demographic information

An estimated population figure for this area suggests 463737 people in 2018 (HIS Global insight & City Planning). The average growth rate of Region 4 is the highest of all the regions.

Unemployment in the region

Unemployment rate in region 4 has been relatively unstable, however, over the 2011-2013 period, region 4 recorded improvements. In 2011 the unemployment rate was 12% this slightly improved to 11.4% in 2013.

(Source: Regionalized Spatial Development Framework Region 4, 2018)

An Environmental Noise Impact Assessment Report was conducted as required by

the Environmental Health Department of the City of Tshwane Metropolitan Municipality to form part of the Town Planning Application. The results are provided below please refer to Appendix G for the report.

The noise survey is part of the Noise Control Regulations where it is required to do a noise impact assessment in terms of Section 10 of the Noise Control Regulations, 1999.

The purpose of the noise survey:

- To determine the prevailing ambient noise levels in the vicinity of the proposed development.
- Quantify the impact of noise of the proposed development during the construction and operational phases of the prevailing ambient noise levels and the outdoor environment.
- Determine the noise impact of the additional traffic on the existing residential units in the vicinity of the proposed development.

Noise impacts

The difference between the actual noise and the ambient noise level will determine how people will respond to sound and what noise impact on an individual will be. In order to evaluate such there must be uniform guidelines to evaluate each scenario. The World Health Organization has laid down sound pressure levels for specific districts and SANS 10103 OF 2008 has provided the following recommended equivalent continuous noise levels per district:

Table 8: Typical rating levels for ambient noise in districts

Type of district	Equivalent continuous rating level $L_{Req,T}^{(1)}$ for ambient noise dBA					
	Outdoors			Indoors, with open windows		
	Day-night $L_{Rdn}^{(2)}$	Day-time $L_{Rd}^{(1)}$	Night-time $L_{Rn}^{(1)}$	Day-night $L_{Rdn}^{(2)}$	Day-time $L_{Rd}^{(1)}$	Night-time $L_{Rn}^{(1)}$
a) Rural districts	45	45	35	35	35	25
b) Suburban districts with little road traffic	50	50	40	40	40	30
c) Urban districts	55	55	45	45	45	35
d) Urban districts with some workshops, with business premises and with main roads	60	60	50	50	50	40
e) Central business district	65	65	55	55	55	45
f) Industrial districts	70	70	60	60	60	50

In districts where the $L_{R,dn}$ exceeds 55.0dBA, residential buildings e.g. dormitories, hotel accommodation and residences, these areas should preferably be treated acoustically to obtain indoor $L_{Req,T}$ values in line with Table 1 of SANS 10103 of 2008.

Ambient noise measuring points

For this noise survey, measurements were take form points shown in the image below.



Figure 24 : Measuring points

Measured ambient noise levels

The results of the noise survey are illustrated in the table below where the Leq is the average noise level for the specific measuring point over a period of time, the Lmax is the maximum noise level and the Lmin is the minimum noise level registered during the noise survey for the specific area in dBA.

The prevailing ambient noise levels are typical noise levels which prevail in a district with feeder roads and existing residential properties.

Table 9: Results of noise survey

Position	Daytime - dBA			Remarks
	Ambient daytime	Lmax	Lmin	
1	39.7	63.4	27.2	Distant traffic noise
2	35.0	47.7	26.7	Distant traffic noise
3	39.5	57.0	23.9	Distant traffic noise
4	62.9	80.7	36.9	Traffic noise along the K46 Road
5	38.2	57.2	25.7	Distant traffic noise
6	40.3	59.1	28.9	Distant traffic noise

The prevailing ambient noise levels were from 35.0dBA to 40.3dBA with a traffic noise level of 62.9 along the boundary abutting the K46 road.

Two aspects are important when considering potential noise impacts and it is:

- The increase in the noise level, and;
- The overall noise level produced during the construction and/or operational phase of the project.

The following activities will generate noise during the construction phase of the development:

- Ground work/Excavation;
- Transportation of waste soil/rock from the site;

- Foundations;
- Building activities;
- Transportation of building material to and from the construction site;
- Assembling of equipment/machinery.

The following activities will generate noise during the operational phase of the development.

- Increase in the traffic noise along the feeder roads;
- Traffic noise impact from abutting feeder roads onto the school;
- Emergency generator

The impact significance during the construction phase is low and the impact significance for the operational phase ranges from low to moderate.

Recommendations

- A final location of the school and lay-out to be provided in order to assess the potential noise intrusion levels and the noise mitigatory measures at the school building;
- Construction activities may only take place during the day time;
- The emergency generator (if required) to be encapsulated and installed in such a manner that the noise from the generator and/or exhaust will not exceed the prevailing ambient noise levels as measured at any of the boundaries of the residential development.
- A 2.0m high wall to be along the boundary next to the K46 road.
- A 30m wide servitude to be provided on the eastern side of the development where there will be habitable areas;
- Solid core wooden doors to be fitted at the residential properties facing the K46
- Beam-fill to be done where the roof and the walls join;
- Windows frames to be fitted which can seal off tight when closed;
- Neoprene closed cell seals to be fitted on the mating surfaces of the windows/doors and the frames (the habitable rooms) if the threshold values in Table 1 of SANS 10103 of 2008 is not possible.

Table 10: Recommended noise levels

Type of occupation	Design equivalent continuous rating level (L _{Req,T}) for ambient noise dBA	Maximum equivalent continuous rating level (L _{Req,T}) for ambient noise dBA
Classrooms	35.0	40.0
Secondary "open space" teaching areas	45.0	50.0
Conference rooms up to 250 seats	30.0	35.0
Corridors and lobbies	45.0	50.0
Laboratories – teaching	35.0	40.0
Laboratories – working	40.0	50.0
Lecture, teaching, and research offices	35.0	40.0
Assembly halls up to 250 seats	30.0	35.0
Music Practice rooms	35.0	45.0
Office areas	40.0	45.0
Administrative offices	35.0	45.0
Tutorial rooms	30.0	35.0

Conclusion and summary

The proposed development (educational) will be in line with SANS 10103 OF 2008 - The Measurement and rating of environmental noise with respect to annoyance and to speech communication and the Gauteng Noise Control Regulations, provided that a layout of the school be provided and that acoustic screening measures are in place.

10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000 m2 in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

If YES, explain:

YES	NO
-----	----

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

A Heritage Impact Assessment was undertaken for the proposed development. The HIA is required under section 38(8) of the National Heritage Resource Act (No. 25 of 1999). The findings of the assessment are described as follows:

The farm Knopjeslaagte and surrounding properties were at first commercial farms with their main focus on the production of crops and the raising of livestock. Most of these farms were later sub-divided into small holdings which supported a wide range of businesses and activities. The previous farming activities are still evident as most of the property is still devoid of trees as it was cleared for fields to be ploughed and planted. The study area consisted of agricultural fields from the 1930's onwards. These old fields are now covered with a lush presence of various grass types and are regularly cut for either cattle fodder and for thatching purposes.

The succession of the previous agricultural activities on the property resulted that most of the proposed site was disturbed and damaged from a heritage point of view. No sites or finds of any heritage value or significance was identified within the proposed study site.

Description of identified Heritage Resources (NHRA Section 34-36)

No sites or finds of any heritage value or significance were identified within the proposed study area.

Built Environment (Section 34 of the NHRA)

No standing structures older than 60 years occur in the study area.

Archaeological and paleontological resources (Section 35 of the NHRA)

No archaeological sites or material was recorded during the survey and based on the SAHRIS Paleontological Sensitivity Map the area is of insignificant to very high paleontological significance and an independent study was conducted for this component.

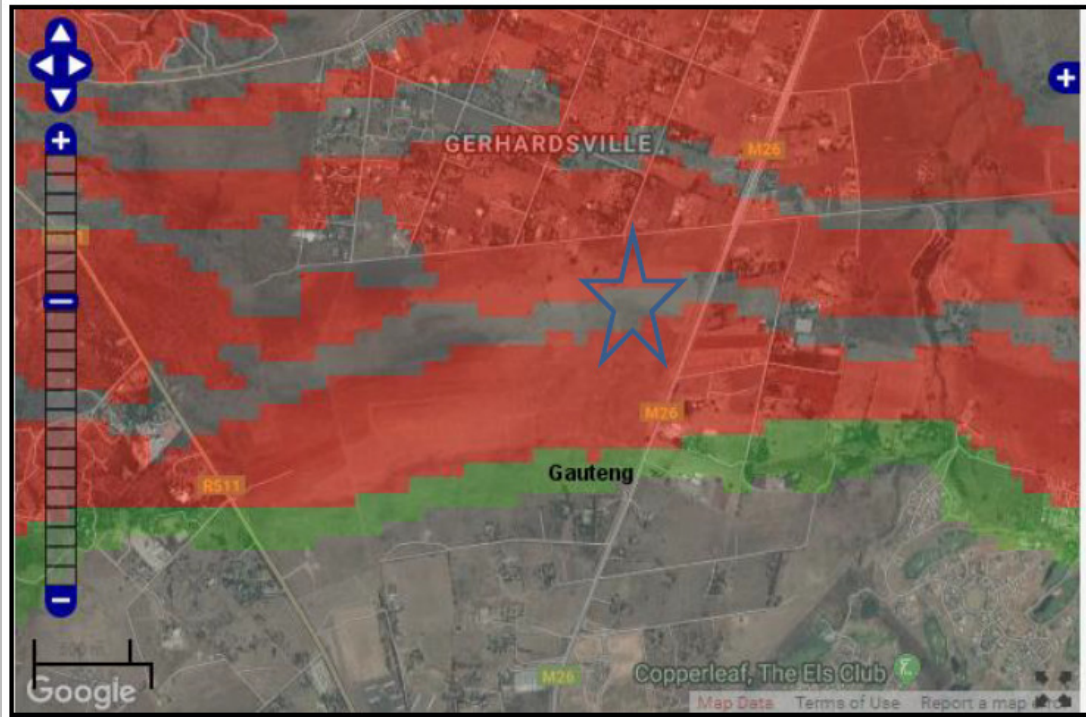


Figure 25: SAHRIS Paleontological Sensitivity Map

Table 11 : Map Legend

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for find is required.
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely.
GREEN	MODERATE	Desktop study is required.
BLUE	LOW	No paleontological studies are required however a protocol for find is required.
GREY	INSIGNIFICANT /ZERO	No paleontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

Burial Grounds and Graves (Section 36 of the NHRA)

In terms of Section 36 of the Act no burial sites were recorded. However, if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation

Cultural Landscape, Intangible and Living Heritage

Long term impact on the cultural landscape is considered to be negligible as the surrounding area consists of a densely-developed zone that was cultivated from 1939 onwards and later developed. Visual impacts to scenic routes and sense of place are also considered to be low due to the extensive developments in the area.

Battlefields and Concentration Camps

There are no battlefields or related concentration camp sites located in the study area.

Table 12: Potential impacts

<i>Nature:</i> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/ excavation of site)
<i>Extent</i>	Local (3)	Local (3)
<i>Duration</i>	Permanent (5)	Permanent (5)
<i>Magnitude</i>	Low (2)	Low (2)
<i>Probability</i>	Not Probable (2)	Not probable (2)
<i>Significance</i>	20 (Low)	20 (Low)
<i>Status (positive or negative)</i>	Negative	Negative
<i>Reversibility</i>	Not reversible	Not reversible
<i>Irreplaceable loss of resources?</i>	Yes	Yes
<i>Can impacts be mitigated?</i>	Yes, a chance find procedure should be implemented.	Yes
<i>Mitigation:</i> Due to the lack of apparent significant archaeological resources no further mitigation is required prior to construction.		
<i>Cumulative impacts:</i> Since the surrounding area is densely developed and due to the lack of significant heritage resources in the study area cumulative impacts are considered to be low.		
<i>Residual Impacts:</i> Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted on but this cannot be quantified		

Conclusion and recommendations

The study concluded that due to the lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMP and based on approval from SAHRA:

- Implementation of a chance find procedure.
- A palaeontological study will have to be conducted prior to development.

A Palaeontological Impact Assessment was conducted as per the above recommendation. The findings are described below please refer to Appendix G for the report.

Palaeontological context

Basement granites and gneisses and the syenite dykes are igneous in origin and too old to preserve fossils so they will not be considered any further.

Black Reef Formation quartz arenites and shales were deposited in medium to low energy marine settings and are too old for body fossils. Dolomites of the Malmani Subgroup, however, sometimes preserve stromatolites. Stromatolites are trace fossils of ancient algal colonies that laid down successive layers of materials such as calcium carbonate, calcium sulphate, magnesium carbonate and magnesium sulphate in flat or dome-like structures. Only very rarely are the algal cells preserved and they would only be visible in thin sections under a petrographic microscope.

The palaeontological sensitivity of the area under consideration is presented in the figure below where the grey colour (no fossils) represents the basement granites and gneisses and the syenite dykes. Malmani Subgroup dolomites are shown as very highly sensitive (red). The site for development is in the Malmani Subgroup. From the google Earth imagery the site has been disturbed by previous agricultural activities and is covered by soils. Soils do not preserve fossils. There might be dolomite below the surface but not all dolomites have stromatolites.

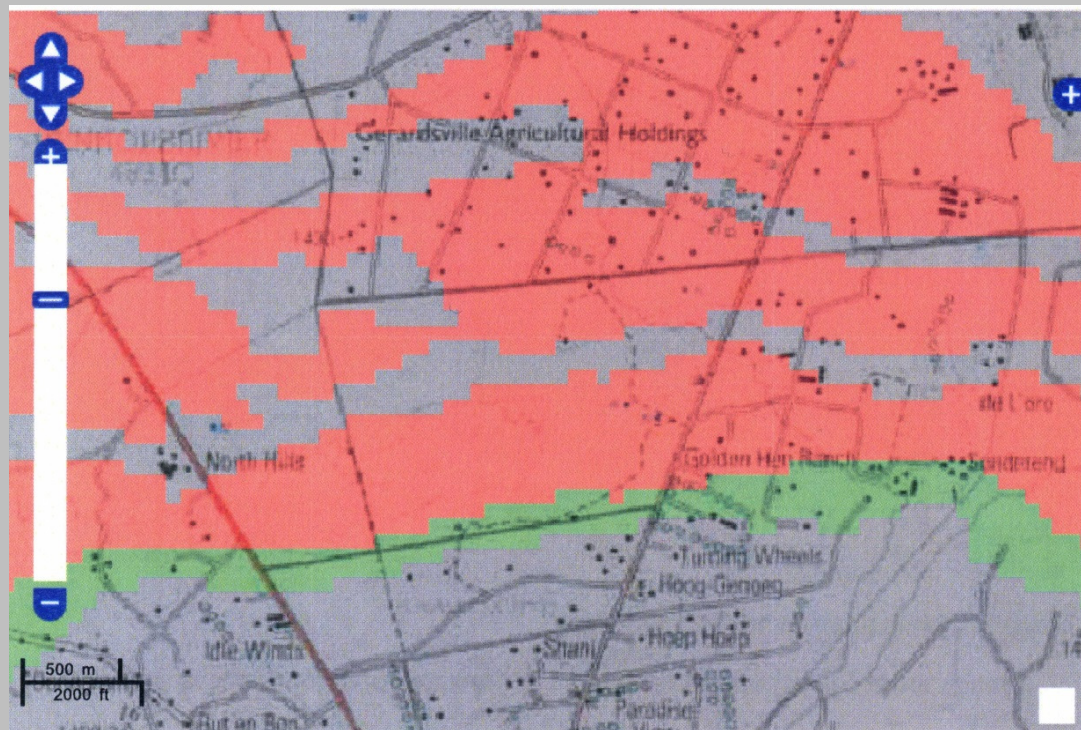


Figure 26: SAHRIS Palaeontological sensitivity map

Impact Assessment

An assessment of the potential impacts to possible palaeontological resources considers the criteria encapsulated in the table below:

Table 13: Criteria for assessing impacts

PART A: DEFINITION AND CRITERIA		
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.

	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/national
PROBABILITY (of exposure to impacts)	H	Definite/ Continuous
	M	Possible/ frequent
	L	Unlikely/ seldom

Table 14: Impact Assessment

PART B : ASSESSMENT		
Severity / Nature	H	-
	M	-
	L	This is likely to be Malmani dolerite below the soils but it is unknown if there are stromatolites in this dolomite. The impact would be very unlikely.
	L+	-
	M+	-
	H+	-
Duration	L	-
	M	-
	H	Where manifest, the impact will be permanent.
Spatial scale	L	Since only the possible fossils within the area would be trace fossils such as stromatolites, the spatial scale will be localised within the site boundary.
	M	-
	H	-
Probability	H	-
	M	-
	L	It is extremely unlikely that any fossils would be found in the stromatolites, even if present, but they have been reported from other outcrops, so a Fossil Chance Find protocol should be added to the eventual EMPr.

Based on the nature of the project, surface activities will not impact upon the fossil heritage if preserved in the development footprint. The geological structures suggest that the rocks are either much too old to contain fossils or could contain trace fossils such as stromatolites, but none has been recorded from this site. They have been recorded from other outcrops of Malmani dolomites in South Africa. Most palaeontologists and geologists do not consider stromatolites to be of any great significance and so do not collect them. Since there is an extremely small chance that fossil algae may be preserved in stromatolites, if present, a Fossil Chance Find protocol has been added to this report. Taking account of the defined criteria, the potential impact to fossil heritage resources is extremely low.

Recommendation

Based on experience and the lack of any previously recorded fossils from the area,

it is extremely unlikely that any fossils would be preserved in the stromatolites of the Malmani Subgroup. If limestones or dolomites are present they can be ignored but if stromatolites are found, photographs should be sent to a professional palaeontologist to determine the importance and scientific value of the trace fossils. If determined to be worth collecting then a SAHRA permit must be obtained by a palaeontologist before collecting material. Therefore a Fossil Chance Find Protocol should be added to the EMPr. As far as the palaeontology is concerned the construction can proceed.

Will any building or structure older than 60 years be affected in any way?
 Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?
 If yes, please attached the comments from SAHRA in the appropriate Appendix

YES	NO
YES	NO

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. THE ENVIRONMENTAL ASSESSMENT PRACTITIONER MUST CONDUCT PUBLIC PARTICIPATION PROCESS IN ACCORDANCE WITH THE REQUIREMENT OF THE EIA REGULATIONS, 2014.

2. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES	NO
-----	----

If yes, has any comments been received from the local authority?

YES	NO
-----	----

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

--

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

<p>Attempts were made in order to obtain comments from the Local Authority however comments were still not received.</p>

3. CONSULTATION WITH OTHER STAKEHOLDERS

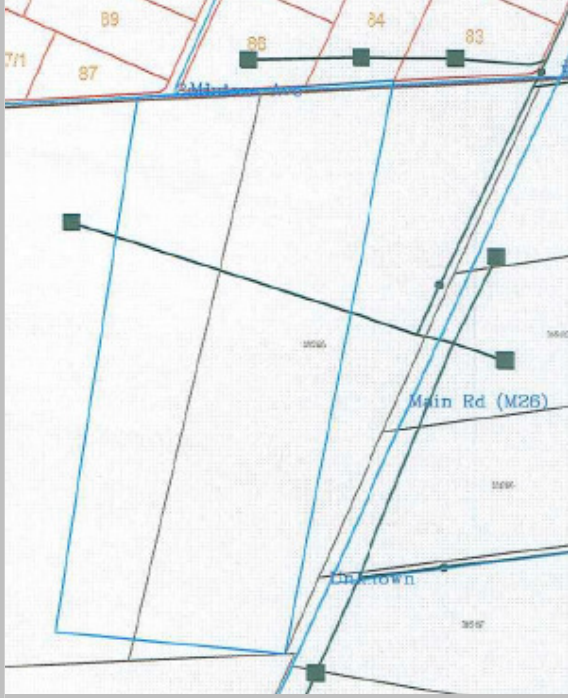
Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
-----	----

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Issue	Name	Date
Transnet pipelines, a division of Transnet SOC Limited, is not affected by the proposal as indicated on the Gerardsville/Pretoria Locality and Site/Project Layout Plans.	T. Hadebe Transnet pipelines	01 February 2019
Sasol Gas is not affected.	S. Reyneke Sasol Gas	30 January 2019
Registration as an I&AP.	B. Cooper Magaliesberg Biospehere	05 February 2019
The following Eskom comment was received on the Town Planning Application.		
The following Eskom distribution services are affected: LAEZONIA/GEM 11Kv Feeder Conductor. The approximate position of these services is indicated as per the drawing below. The exact position of these services cannot be guaranteed.	M.P Maluleke Eskom	25 February 2019

Issue	Name	Date
 <ul style="list-style-type: none"> • Eskom will raise no objection to this application provided its rights and services are acknowledged and respected at all times, and the requirements as laid down by the Occupational Health and Safety Act No 85/1993, are complied with. As additional safety measures Eskom require that the following conditions are complied with: • No construction may commence before the following conditions have been adhered to. All requirements as laid down by the Occupational Health and Safety Act No 85/1993 also have to be complied with: • The applicant or his contractor must notify Hennops Technical Service Centre at 12 725 2104/392, contact person Dumisani 082 336 8147 at least seven days prior to the commencement of any work whatsoever, under or in close proximity to Eskom services. • Under no circumstances will any relocation work proceed prior to the submission of a formal application to Eskom Customer Services at least three months prior to the commencement of any work, and acceptance of the relocation costs by the applicant. • Any cost and claims due to interruptions or interference to Eskom services causing power supply loss or loss of income, due to this application, will be borne by the applicant. • Eskom must have ingress to egress from its services at all times. • No mechanical equipment, including mechanical excavators may be used under or in close proximity to Eskom services without prior approval of Eskom authorized representatives. • The consent is further subject to the Landowner's permission for the proposed works as per this application. A copy of the permission must be filed with Eskom seven days before any work is carried out in the servitude area. • Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property caused in 		

Issue	Name	Date
<p>whatsoever manner by the applicant, his employees, agents or contractors. The applicant indemnifies Eskom against all claims including claims for consequential damages by third parties which includes but is not limited to claims as a result of damage to, or interruption of or interference with Eskom services or equipment. The applicant's attention is drawn to section 27(3) of the Electricity Act 1987.</p> <ul style="list-style-type: none"> • No excavations may be executed closer than six metres from overhead lines and 1.5 metres from underground cables, unless Eskom authorized representatives is on site. • No blasting may be undertaken under or in close proximity of Eskom services unless minimum charges with adequate matting is used, and then only under the strict supervision of Eskom authorized representatives who require at least three days prior notification. • Should the applicant or his contractor damage any of Eskom services during the commencement of any work whatsoever, call Eskom 24 hour fault number 011 800 4441 and it must be dialed immediately to report the incident. • The contractor in charge of the construction or maintenance work on site must at all times be in possession of the letter of approval of the service concerned, as well as all plans that are required and that are referred to in the correspondence, so that during an inspection the contractor can present the documentation to Eskom official(s) when requested to do so. If no approval can be presented then the Eskom official(s) can order the contractor to cease all works until such approval can be presented. • Statutory ground/structure to clearances is to be maintained at all times. If Eskom has to incur any costs to comply with statutory requirements because of the development activities or the presence of equipment or plant in the servitude area, Eskom will be refunded such proven costs on demand. • Should any construction of any services e.g. roads close to Eskom services be necessary in future, the application will have to made to Eskom. • The individual Title Deeds of those Erven affected by Notarial Deed Servitude in favour of Eskom must be made subject to the Notarial Deed of Servitude. <p>Clauses to be included in Conditions of Establishment for Township applications where Eskom is the supplier of electricity:</p> <ul style="list-style-type: none"> • A 3x6m space will be reserved as Private Open Space for Eskom mini substation; • No large rooted trees shall be planted on the pavement the to endanger any electrical cables; • No large rooted trees shall be planted on the pavement to endanger any electrical cables; • No tree shall be planted closer that three meters to any overhead power line on pavements; • The supplier of electricity will have the right to remove/trim any trees or brush on pavements that endanger any power line. 		
<p>Project Summary:</p> <ul style="list-style-type: none"> • The development entails the establishment of a school that is to accommodate approximately 2000 learners and 	<p>K. Khakha Gauteng Department of</p>	<p>22 July 2019</p>

Issue	Name	Date
<p>will consist of learning and boarding facilities.</p> <ul style="list-style-type: none"> The school will be serviced with a private sewerage treatment works/package plant and grey water harvesting will be implemented for irrigation purposes. The proposed development is listed under Activity 27 of Listing Notice 1 and Activity 12 (c) (i) (ii) of Listing Notice 3 of the Environmental Impact Assessment Regulations, 214 as amended. The proposed site covers an area of 18.8344 hectares in extent. <p>Findings of Departmental GIS:</p> <ul style="list-style-type: none"> The proposed site falls within an Ecological Support Area, Important Area and an Irreplaceable Area, with primary vegetation Gauteng Grassland present on parts of the site and the northern part of the site is underlain by dolomite according to the Departmental GIS and Gauteng Conservation Plan Version 3.3. Furthermore, the Departmental GIS reveals the presence of red listed plant species <i>Cucumis Humifructus</i> on parts of the site and red listed bird (African Grass Owl) habitat on the southern part. According to the Gauteng Environmental Management Framework of 2015, the proposed site is classified as being with Environmental Management Zone 4, which is dominated by agricultural uses outside the urban development zone where agricultural rural development is supported. A secondary part of the site is located within Environmental Management Zone 3, which is a high control zone with limited development and only activities related to tourism, and conservation encouraged. <p>Comments on the content of the report:</p> <ul style="list-style-type: none"> The alternatives included in the DBAR are noted by the Department, however, the final BAR should cover all relevant and feasible alternatives including the No-Go alternative for the proposed activity. A site specific Environmental Management Programme (EMPr) is included in the DBAR. The EMPr must however comply with the content requirements as stipulated in Appendix 4 of the Environmental Impact Assessment (EIA) Regulations, 2014. The EMPr will need to address behavior to preserve the untransformed areas of the site and other sensitivities and thus contribute to the principles of sustainable development. The state of the primary vegetation need to be assessed, hence aspects such as the habitats should be considered. The measures to safeguard this habitat as well as general conservation principles must be incorporated into the EMPr. Comments from all relevant stakeholders must be adequately addressed and included in the final Basic Assessment report. In all aspects of planning, consideration should be given to applying principles of sustainable development such as water and energy efficiencies as well as waste minimisation and green building techniques. Facility illustrations have been included in the Draft BAR. However, a legible A3 Layout Plan overlain by a 	<p>Agriculture and Rural Development</p>	

Issue	Name	Date
<p>composite sensitivity map on site with a legend easily linked to activity components and the locality map must be included in the Final BAR.</p> <ul style="list-style-type: none"> It is recommended that an ornithological study be undertaken by a registered professional natural scientist in accordance with the Natural Scientist Act (Act No 27 of 2003) to assess the severity and extent the impact the proposed development will have on the red listed bird habitat for the African Grass Owl. <p>Public Participation Process:</p> <ul style="list-style-type: none"> Public participation should be in accordance to the minimum requirements of Chapter 6 of the EIA Regulations, 2014. Comments of the Interested and Affected Parties must be recorded, and such written comments including their responses must be included in the final Basic Assessment Report as well as incorporating them in the EMPr where applicable. Legible site notices together with the newspaper adverts as well as proof of correspondence (site notice, newspaper advertisement, email, fax, delivery etc.) with stakeholders included in the Draft Basic Assessment report are noted by the Department and must be included in the Final Basic Assessment. Notice to all potential interested and affected parties should be in accordance to regulation 41 of the EIA regulations, 2014. Should you be unable to submit comments, proof of attempts that were made to obtain comments must be submitted to the Department. 		

If "NO" briefly explain why no comments have been received

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Public Participation was conducted according to the following steps:

- **An advert was placed in the Beeld Newspaper on 25 January 2019;**
- **Notice boards were placed on site on 25 January 2019;**
- **Notices were hand delivered to adjacent property owners on 25 January 2019;**
- **Registered letters were sent to neighbouring property owners on 28 January 2019; and**
- **Faxes and emails were sent to the stakeholders including the ward councillor of the area on 25 January 2019.**
- **The Draft Basic Assessment Report was made available to I&APs on 18 June 2019.**
- **The Final Basic Assessment Report was also made available to I&APs on 06 September 2019.**

Please refer to Appendix E for the proof of the Public Participation undertaken.

SECTION D: RESOURCE USE AND PROCESS

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives times (complete only when appropriate)

Section D Alternative No. (complete only when appropriate for above)

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
±1000 m³	

If yes, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

The building rubble and solid construction waste (such as sand, gravel, concrete and waste material) that cannot be used for filling, landscaping and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a licensed landfill site, i.e. a landfill licensed in terms of Section 20 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989).

Where will the construction solid waste be disposed of (describe)?

The material is to be removed to a licensed and operational Landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO
±3000kg	

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

Municipal waste collection

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

YES	NO
-----	----

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A

Note: If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO
-----	----

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

Construction phase

Excess building rubble produced during the construction phase of the development will be re-used for filling.

Operational phase

The following waste minimisation methods will be incorporated into the operational phase of the development:

1. Reduce the waste you produce
 - Avoid over-packaged products such as plastic-wrapped vegetables in polystyrene trays.
 - Buy in bulk, as this gives you more products and less packaging
 - Buy refills and concentrates – these usually involve less packaging.
 - Buy local South African Products.
 - Choose products that have not been heavily processed.
 - Try to buy only what you need.
 - Choose durable items rather than products that will soon need replacing.
 - Repair broken items, or pay someone to repair them for you.
 - Printing using both sides of the paper saves money on buying paper and on storage and postage.
 - Only print what is necessary e.g. information on fax or printer cover sheets is usually unnecessary or can be included in the main document.
 - Make electronic copies accessible. When an electronic database or document is more “accessible” than a paper version, people often choose to print less, thus saving paper.

2. Reuse items before they become waste
 - Reuse items such as cardboard toilet cores, boxes, jars, margarine tubes and scrap paper for school projects.
 - Reuse a product as many times as possible. If you have no further use for it, find someone who does.
 - Many charities welcome donations of unwanted gifts, clothes, furniture, toys and books.

3. Recycle your waste
 - Buy recycled – choose tissues, rubbish bags, stationary, hand towel and toilet rolls made from recycled materials (is should be indicated on the label).
 - Separate waste into organic waste, plastic, glass, tin cans and paper. All these can be recycled into useful products.

Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

YES	NO
	m ³
YES	NO

Will the activity produce any effluent that will be treated and/or disposed of on site?

If yes, what estimated quantity will be produced per month?

YES	NO
	m ³

If yes describe the nature of the effluent and how it will be disposed.

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility?

If yes, provide the particulars of the facility:

Facility name:

YES	NO
-----	-----------

Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

--

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

YES	NO
-----	----

If yes, what estimated quantity will be produced per month?
 If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

YES	NO
-----	----

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
-----	----

If yes describe how it will be treated and disposed off.

There is no existing sewerage infrastructure in the vicinity and the proposed development will need be serviced with a private treatment plant (Bio Sewage System) to the satisfaction of the City of Tshwane. Please refer to Appendix F for the Method Statement for the proposed Bio-Sewage System Package Plant procedure.

A Water Use Licence will be applied for in terms of the National Water Act for the irrigation of treated waste water.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
 If no, describe the emissions in terms of type and concentration:

No gaseous emissions apart from dust and smoke during the construction phase.

2. WATER USE

Indicate the source(s) of water that will be used for the activity

municipal	Directly from water board	groundwater	river, stream, dam or lake	other	the activity will not use water
------------------	---------------------------	-------------	----------------------------	-------	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

	liters
--	--------

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix
 Does the activity require a water use permit from the Department of Water Affairs?

YES	NO
-----	----

If yes, list the permits required

--

If yes, have you applied for the water use permit(s)?

YES	NO
-----	----

 If yes, have you received approval(s)? (attached in appropriate appendix)

YES	NO
-----	----

3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Eskom

If power supply is not available, where will power be sourced from?

--

4. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Regular supply can be supplemented with alternative renewable sources such as:

- **Solar water heater** - As regular geysers are the biggest consumers of domestic electricity. Solar hot water cylinders can remain connected to the regular supply in case of back up required over cloudy or very cold periods. The electrical back-up should be managed with a timer switch. Unsightly storage tanks can be hidden in the roof void and need not be visible.
- **Gas** - Although not renewable it is less polluting and recommended for cooking and heating. Electric stoves use a huge amount of electricity.
- **Aerated Shower Head** - Daily shower consumes more energy than all electrical household appliances together, including light. An aerated shower head uses less water overall, due to insertion of oxygen in each drop.
- **Lighting** - Low energy lamps will be used for interior and exterior lighting, with timers or light sensors for switching where necessary.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

See above

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

- **Services and infrastructure;**
- **Location and project proposal;**
- **Access and traffic;**
- **Security;**
- **Crime;**
- **Ecological impacts;**
- **Visual impact;**
- **Sense of place;**
- **Noise;**
- **Dust;**
- **Odour nuisance.**

Competent Authority summary of comments on Draft BAR received on 22 July 2019:

- **The final BAR should cover all relevant and feasible alternatives including the No-Go Alternative.**
- **The EMPr should be amended to reflect the preservation of untransformed areas and other sensitive areas.**
- **Comments from all relevant stakeholders must be adequately addressed and included in the Final BAR.**
- **In all aspects of planning consideration should be given to Sustainable development.**
- **A legible A3 Layout Plan overlain with a sensitivity map must be included in the Final BAR.**
- **It is recommended that an Ornithological study be undertaken.**
- **Public participation should be in accordance to the minimum requirements of Chapter 6 of the EIA Regulations, 2014.**

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)
(A full response must be provided in the Comments and Response Report that must be attached to this report):

**WFA CHRISTIAAN BUSINESS SCHOOL - GERARDSVILLE
COMMENTS AND RESPONSES REPORT**

Issue	Commentator	Date	Response
Services and infrastructure			
<ul style="list-style-type: none"> Transnet pipelines, a division of Transnet SOC Limited, is not affected by the proposal as indicated on the Gerardsville/Pretoria Locality and Site/Project Layout Plans 	T. Hadebe (Transnet Pipelines)	01 February 2019	<ul style="list-style-type: none"> None required.
<ul style="list-style-type: none"> Sasol Gas is not affected. 	S. Reyneke Sasol Gas	30 January 2019	<ul style="list-style-type: none"> None required.
The following Eskom comment was received on the Town Planning Application			
<ul style="list-style-type: none"> The following Eskom distribution services are affected: LAEZONIA/GEM 11Kv Feeder Conductor. The approximate position of these services is indicated as per the drawing below. The exact position of these services cannot be guaranteed. 	M.P Maluleke	25 February 2019	<ul style="list-style-type: none"> Note is taken of the Eskom comments and conditions. The conditions will be adhered to.

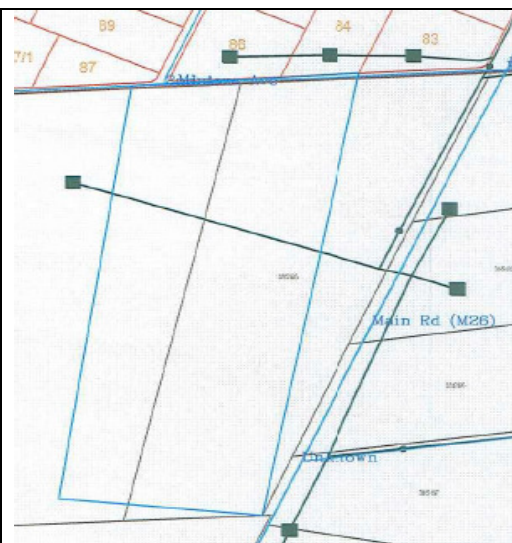


Figure 1: Eskom affected services

- Eskom will raise no objection to this application provided its rights and services are acknowledged and respected at all times, and the requirements as laid down by the Occupational Health and Safety Act No 85/1993, are complied with. As additional safety measures Eskom require that the following conditions are complied with:
- **No construction may commence before the following conditions have been adhered to. All requirements as laid down by the Occupational Health and Safety Act No 85/1993 also have to be**

<p>complied with:</p> <ul style="list-style-type: none"> • The applicant or his contractor must notify Hennops Technical Service Centre at 12 725 2104/392, contact person Dumisani 082 336 8147 at least seven days prior to the commencement of any work whatsoever, under or in close proximity to Eskom services. • Under no circumstances will any relocation work proceed prior to the submission of a formal application to Eskom Customer Services at least three months prior to the commencement of any work, and acceptance of the relocation costs by the applicant. • Any cost and claims due to interruptions or interference to Eskom services causing power supply loss or loss of income, due to this application, will be borne by the applicant. • Eskom must have ingress to egress from its services at all times. • No mechanical equipment, including mechanical excavators may be used under or in close proximity to Eskom services without prior approval of Eskom authorized representatives. • The consent is further subject to the Landowner's permission for the proposed works as per this application. A copy of the permission must be filed with Eskom seven days before any work is carried out in the servitude area. 			
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<ul style="list-style-type: none"> • Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property caused in whatsoever manner by the applicant, his employees, agents or contractors. The applicant indemnifies Eskom against all claims including claims for consequential damages by third parties which includes but is not limited to claims as a result of damage to, or interruption of or interference with Eskom services or equipment. The applicant's attention is drawn to section 27(3) of the Electricity Act 1987. • No excavations may be executed closer than six metres from overhead lines and 1.5 metres from underground cables, unless Eskom authorized representatives is on site. • No blasting may be undertaken under or in close proximity of Eskom services unless minimum charges with adequate matting is used, and then only under the strict supervision of Eskom authorized representatives who require at least three days prior notification. • Should the applicant or his contractor damage any of Eskom services during the commencement of any work whatsoever, call Eskom 24 hour fault number 011 800 4441 and it must be dialed immediately to report the incident. • The contractor in charge of the 			
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<p>construction or maintenance work on site must at all times be in possession of the letter of approval of the service concerned, as well as all plans that are required and that are referred to in the correspondence, so that during an inspection the contractor can present the documentation to Eskom official(s) when requested to do so. If no approval can be presented then the Eskom official(s) can order the contractor to cease all works until such approval can be presented.</p> <ul style="list-style-type: none"> • Statutory ground/structure to clearances is to be maintained at all times. If Eskom has to incur any costs to comply with statutory requirements because of the development activities or the presence of equipment or plant in the servitude area, Eskom will be refunded such proven costs on demand. • Should any construction of any services e.g. roads close to Eskom services be necessary in future, the application will have to made to Eskom. • The individual Title Deeds of those Erven affected by Notarial Deed Servitude in favour of Eskom must be made subject to the Notarial Deed of Servitude. <p>Clauses to be included in Conditions of Establishment for Township applications where Eskom is the supplier of electricity:</p> <ul style="list-style-type: none"> • A 3x6m space will be reserved as Private 			
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<p>Open Space for Eskom mini substation;</p> <ul style="list-style-type: none"> No large rooted trees shall be planted on the pavement the to endanger any electrical cables; No large rooted trees shall be planted on the pavement to endanger any electrical cables; No tree shall be planted closer that three meters to any overhead power line on pavements; The supplier of electricity will have the right to remove/trim any trees or brush on pavements that endanger any power line. 													
<ul style="list-style-type: none"> On the whole he would support the application given that suitable waste water and sewerage solutions implemented do not negatively impact on either local fauna and flora or the general ambience of the adjoining properties 	M. Smith	30 January 2019	<ul style="list-style-type: none"> Noted. See above discussion regarding sanitation 										
<ul style="list-style-type: none"> Registration as an Interested and Affected Party. Requested that relevant documents be provided to her as they become available. 	L. Pattison	05 February 2019	<ul style="list-style-type: none"> Registered as an I&AP The Draft Basic Assessment was made available to her for review and comment. The Final BAR will also be made available to her for review and comment 										
Water													
<ul style="list-style-type: none"> Owner of 2 properties: Plot 89, just off corner of Second Avenue and Mimosa Avenue and plot 87/3, corner Mimosa and second avenue Gerardsville. Both properties will be affected by water issues after construction. 	N. du Plessis	23 February 2019	<p>The services report provided the following information regarding water: <u>Demand:</u> The water demand is based on the current COT standards:</p> <p>Table 1: Water demand</p> <table border="1" data-bbox="1020 1206 1824 1294"> <thead> <tr> <th>Land use</th> <th>Size (m2)</th> <th>Number of pupils/rooms</th> <th>Unit demand</th> <th>Total demand kl/day</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Land use	Size (m2)	Number of pupils/rooms	Unit demand	Total demand kl/day					
Land use	Size (m2)	Number of pupils/rooms	Unit demand	Total demand kl/day									

			<table border="1"> <tr> <td>School</td> <td>10 000</td> <td>2 000</td> <td>0.6kl/pupil</td> <td>120kl</td> </tr> <tr> <td>Hostel</td> <td>20 000</td> <td></td> <td>0.9kl/100m2</td> <td>180kl</td> </tr> <tr> <td>Sporting grounds</td> <td>55 000</td> <td>-</td> <td>Nil</td> <td>Nil</td> </tr> </table> <p>No demand is calculated and applied for irrigation of sport grounds. With the outflow from the hostels, grey water harvesting will be implemented, stored and if required supplemented from existing boreholes and rainwater harvesting on the property. However, compulsory residency will generate significant effluent from the grey water system to be used for irrigation.</p> <p><u>Existing infrastructure</u> The development falls within the Mnandi Reservoir zone and will in future fall under Knopjeslaagte reservoir zone. Being part of the Vaal River basin there is sufficient water source for the development.</p> <p><u>Conclusion</u> The development is serviceable and network upgrades will be undertaken once finally negotiated with the City of Tshwane. The developer is committed to ensure a sufficient grey water system is installed to provide sufficient water for irrigation of sport grounds and open areas. A separate network will be provided for this purpose.</p>	School	10 000	2 000	0.6kl/pupil	120kl	Hostel	20 000		0.9kl/100m2	180kl	Sporting grounds	55 000	-	Nil	Nil
School	10 000	2 000	0.6kl/pupil	120kl														
Hostel	20 000		0.9kl/100m2	180kl														
Sporting grounds	55 000	-	Nil	Nil														
<ul style="list-style-type: none"> Her particular concern is provision of water. 	L. Pattison	05 February 2019	<p><u>Water</u> The water demand is based on the current COT standards and the school will require 120kl /day. The hostel will require 180kl/day. The sports grounds will be irrigated by the grey water harvested from the residency and the school and that has been treated to the highest standards.</p> <p>The site falls in the Mnandi reservoir zone and will in future fall under Knopjeslaagte reservoir zone. The engineers have determined that there is sufficient piped water to serve the development. Upgrades of the bulk water system have been proposed and is to be</p>															

			<p>undertaken by the developer.</p> <p>A minimum 160mm dia connection to the existing network is at Mimosa Avenue and Tweede Avenue is proposed.</p> <p>No abstraction from groundwater resources is planned. Irrigation will be from treated effluent and storm water retention. Supplement of that will be from municipal supply, but with the Hostel generating large amounts of effluent this will be more than sufficient, even in dry periods.</p>
Sanitation			
<ul style="list-style-type: none"> Her particular concern is provision of sanitation. 	L. Pattison	05 February 2019	<p><u>Sanitation</u></p> <p>There is no existing sewer infrastructure in the vicinity and the nearest is Copperleaf Golf Estate serviced by a Private Treatment Works and therefore the development is to be serviced with a private treatment works/package plant.</p> <p>There are various examples of such solutions that have been approved in absence of a municipal service. A Bio Sewage treatment Plant is proposed for the following advantages:</p> <p><u>Green</u></p> <ul style="list-style-type: none"> Recycles black and grey water: Allows greatly reduced consumption of municipal water. Environmentally friendly - No sewage contamination of the environment, underground water or open water sources. No chemicals used at all in the process. Very small footprint. <p><u>Economical</u></p> <ul style="list-style-type: none"> Very cost effective. Very quick to install with minimal civil works. Simple and 100% natural process. Very light on electrical consumption. Can be run off solar power. Fully designed and manufactured in South Africa.

		<p><u>Socio-Economic Benefits</u></p> <ul style="list-style-type: none"> • Human dignity. • Better Sanitation for WASH program, especially in areas that have no water borne sewage systems. • Job creation through micro-contractors. • Can be used in both rural and densely populated areas. <p><u>Low maintenance</u></p> <ul style="list-style-type: none"> • No sludge handling required. • Unskilled monitoring of plant. • No chemicals or additives. • Replacement of any failed pumps simple and economical. <p><u>Water usage</u></p> <ul style="list-style-type: none"> • Low fresh water consumption. • Processed water can be re-used for toilet flushing • Processed water can be used for irrigation or gardens, lawns and crops. • One litre of sewage produces one litre of processed water. <p>The treatment plant is to be located in the lowest portion of the property as it can be seen below.</p>
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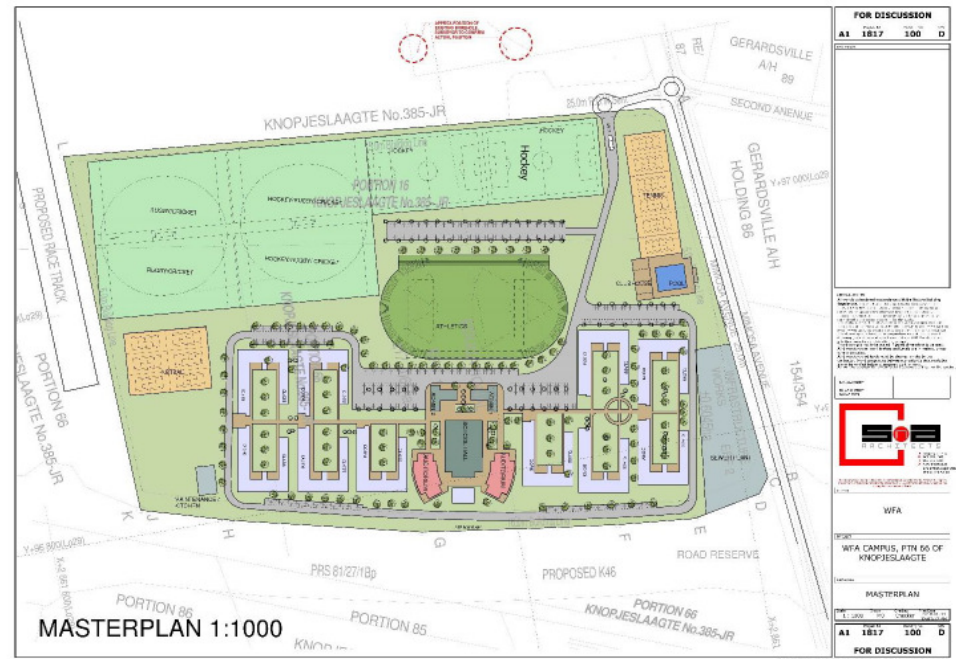


Figure 2: Site Development Plan

Backup generators position on site

The treatment plant will not make use of generators, should a need arise the applicant will make use of necessary measures to ensure that noise is appropriately mitigated.

Pollution /system failure prevention mitigation measures proposed

48 hour emergency storage, with 24 hour reaction time of system operator. This is backed up by an operational agreement with the owner.

Daily maintenance or checklist

Daily – check, ensure power is on, ensure diesel back up, included in service contract.

Weekly – With Ozone, no requirement, basic review for leaks and operational, water is

			<p>clean and odourless</p> <p>Monthly – open valve (3s) on Bio tanks, to ensure no sludge build up</p> <p>Annually – General Service of pumps, General Service Ozone unit</p> <p>Pre Digestion chambers – Sediment grit removal</p>
Public Participation			
<ul style="list-style-type: none"> • Registration as an I&AP • Requested information regarding the application. 	A.. van Staden	29 January 2019	<ul style="list-style-type: none"> • Registered as an I&AP • Information provided as per request. The Draft Basic Assessment was made available for review and comment. The Final BAR will also be made available for review and comment
<ul style="list-style-type: none"> • Registration as an I&AP • He lives in Gerardsville and will be affected to a degree by the school. He will provide comments in due course after studying all the info. 	B. Glossop	25 January 2019	<ul style="list-style-type: none"> • Registered as an I&AP • The Final Basic Assessment report will be provided to all I&AP's for input.
<ul style="list-style-type: none"> • Registration as an I&AP • Their interest in the matter is because they are property owners in Gerardsville and the impact this will have in the area. 	C & K da Silveira	29 January 2019	<ul style="list-style-type: none"> • Registered as an I&AP • The impact on the immediate environment and the residents of Gerardsville was discussed in the Final Basic Assessment report which will be provided to all I&AP's for input. Mitigation measures have also been proposed to mitigate impacts/issues.
<ul style="list-style-type: none"> • Registration as an I&AP and requested additional information as available. 	E. Haas S. Botha	28 January 2019	<ul style="list-style-type: none"> • Registered as an I&AP • The Draft Basic Assessment was made available for review and comment. The Final BAR will also be made available for review and comment
<ul style="list-style-type: none"> • Registration as an I&AP 	G. Watkins	28 January 2019	<ul style="list-style-type: none"> • Registered as an I&AP
<ul style="list-style-type: none"> • Registration as an I&AP 	D.E Williams	05 February 2019	<ul style="list-style-type: none"> • Registered as an I&AP
<ul style="list-style-type: none"> • Registration as an I&AP. • Requested a plan of the school • Would like to know the target market for the school 	P. Millinger	05 February 2019	<ul style="list-style-type: none"> • Registered as an I&AP • Site development provided. • The target market will be the parents that want a school with boarding facilities for their children. In the modern world, most parents have hectic working schedules that require them to move around the country and even outside of the country. In order for them to

			juggle work and parenting they require schools that will have quality boarding facilities either for a weekly or monthly basis.
<ul style="list-style-type: none"> Registration as an I&AP 	N. Patel	27 February 2019	<ul style="list-style-type: none"> Registered as an I&AP
<ul style="list-style-type: none"> Registration as an I&AP 	N. Forster	31 January 2019	<ul style="list-style-type: none"> Registered as an I&AP
<ul style="list-style-type: none"> Welcomes the proposed development The interest in the project is the fact that they are locals and have a construction company, which they believe will add value to the project by participating in the building of the school, whether as sub-contractors or so. 	J. Maseko	29 January 2019	<ul style="list-style-type: none"> Noted The developer will have a tendering process which is outside the range of influence of the EIA team. It is believed that the tendering process will be advertised accordingly and all tendering process will be directed to the developer, directly.
<ul style="list-style-type: none"> Requested information regarding the proposed development 	M. Moss	28 January 2019	<ul style="list-style-type: none"> The Draft Basic Assessment was made available for review and comment. The Final BAR will also be made available for review and comment
<ul style="list-style-type: none"> Registration as an I&AP 	T. Klassen	29 January 2019	<ul style="list-style-type: none"> Registered as an I&AP
<ul style="list-style-type: none"> Requested a Background Information Document. Registration as an I&AP 	S. Botha	30 January 2019	<ul style="list-style-type: none"> Background Information Document provided. Registered as an I&AP
<ul style="list-style-type: none"> Registration as an I&AP 	B. Cooper (Magaliesberg Biosphere)	05 February 2016	<ul style="list-style-type: none"> Registered as an I&AP
<ul style="list-style-type: none"> Registration as an I&AP He is interested in the project as he lives in Gerardsville, approximately 300m from the proposed entrance to the school. He has been in Gerardsville for 16 years and this is the most exciting development ever proposed. <p>They are overjoyed about this development and feel very strongly that it is the kind of development that will serve</p>	C. Rossouw	25 February 2019	<ul style="list-style-type: none"> Registered as an I&AP. Comment noted

Gerardsville well and elevate their community, adding great value while without any material downside.			
<ul style="list-style-type: none"> • Registration as an I&AP. • He supports this project with his whole being. • Will the concerns of tenants in the area be addressed? Him as the land owner should rather be accommodated in his concerns than that of a tenant that can pack up and move away at the drop of a hat. 	Stefan	02 February 2019	<ul style="list-style-type: none"> • Registered as an I&AP. • Comment is noted. It should be understood that the Public Participation Process is undertaken in terms the EIA Regulations in the Government Notice R982 2014 (as amended 2017). The regulations state the following: <i>“The Public Participation Process contemplated in this regulation must provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application unless access to that information is protected by law and must include consultation with –</i> <ol style="list-style-type: none"> <i>a) The competent authority;</i> <i>b) Every state department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation;</i> <i>c) All organs of state which have jurisdiction in respect of the activity to which the application relates; and</i> <i>d) All potential, or, where relevant, registered interested and affected parties.</i> <p><i>Potential or registered interested and affected parties including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in sub-regulation (1) prior to submission of an application and must be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority”.</i></p>
Location and Project Proposal			
<ul style="list-style-type: none"> • He is a resident/owner of a portion of Gerardsville AH and he would like to be kept informed about where the proposed site is exactly situated and what facilities will be on site. He fully supports the school otherwise. 	S. Hand	25 January 2019	<p><u>Location of site</u> The proposed development is situated on Part of Portion 16 and part of Portion 66 of the farm Knopjeslaagte 385 JR.</p> <p>The site is bounded by Mimosa Ave/Gerarsdville A.H to the north. K46 to the east</p>

Remainder of Portion 66 of the farm Knopjeslaagte 385 JR to the south and
Remainder of Portion 16 of the farm Knopjeslaagte 385 JR

Project Proposal (Facilities proposed on site)

Please refer to the site development plan below for the facilities proposed on site.

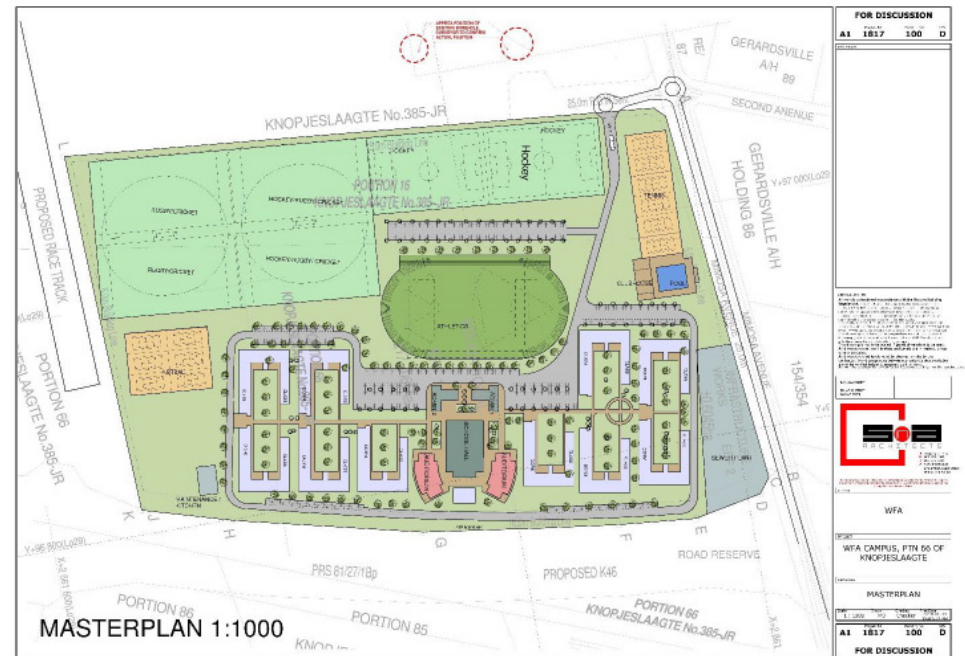


Figure 3: Site Development Plan

The school model is based on a compulsory hostel residence to accommodate 2000 pupils. The number of rooms provided are therefore the same as the number of pupils.

The proposed school is to provide an educational facility to a target market of people; these

			<p>are parents that require a school with a boarding facility. There are a number of schools in the Gauteng province but very few that offer boarding facilities because of the challenges that are associated with the running of such a facility.</p> <p>The school is to be developed in 3 phases. In phase 1 600 are to be enrolled, Phase 2 will host 600 pupils and Phase 3 will accommodate 800 students.</p>
Access and Traffic			
<ul style="list-style-type: none"> What access will be provided and what will be the impact on traffic. 	S. Hand	25 January 2019	<p><u>Access/Traffic</u></p> <p>Access to the development will be from Mimosa Avenue at the intersection of Tweede Avenue. A new circle will be constructed and a link road will be provided to the developments access, approximately 100m from the Mimosa/Tweede Avenue intersection.</p> <p>A Traffic impact study was conducted and it concluded that the proposed development may generate 1600 trips during the weekday AM peak hours. Road upgrades have been proposed at the problematic junctions to mitigate the effect of the anticipated traffic to be generated by the proposed development. Please refer to Appendix G for the Traffic impact study.</p>
<ul style="list-style-type: none"> Access via mimosa would be impractical given it is effectively a single lane road. Any congestion would back up onto the m26 creating a major safety issue not to mention irritation to locals coming and going during peak traffic times. 	M. Smith	30 January 2019	<ul style="list-style-type: none"> See above discussion for traffic concerns.
<ul style="list-style-type: none"> Her particular concerns are provision of, and traffic impacts. 	L. Pattison	05 February 2019	<ul style="list-style-type: none"> See above discussion for traffic concerns.
<ul style="list-style-type: none"> Owner of 2 properties: Plot 89, just off corner of Second Avenue and Mimosa Avenue and plot 87/3, corner Mimosa and second avenue Gerardsville. Both properties will be affected by construction traffic. 	N. du Plessis	23 February 2019	<ul style="list-style-type: none"> The proposed development might have a traffic impact during the construction phase. This impact will be of low significance and will be short lived. The impact will be mitigated by the Environmental Management Programme which will be implemented during the construction phase.
<ul style="list-style-type: none"> Huge spike in traffic and the noise involved 	A van Eeden	30 January	<ul style="list-style-type: none"> Please see above for traffic concerns.

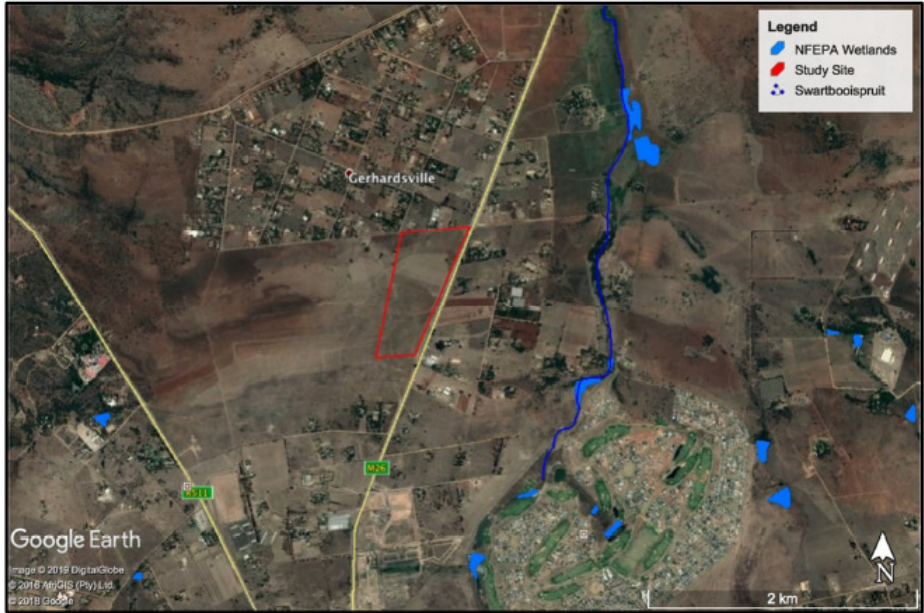
<p>as well.</p> <ul style="list-style-type: none"> • Invitation of public transport to take shortcuts through their area and to come to the school. 		2019	<p><u>Traffic</u></p> <p>According to the Traffic Impact Study buses and taxis do not operate along Mimosa Avenue. However bus stops are provided along the existing Mimosa Avenue / M26. There are no existing public transport facilities located within the vicinity of the study area. Pupils attending the school via public transport will be allowed to be dropped off and picked up at designated public transport lay-by within the school.</p> <p>It cannot be guaranteed that rat running will not take place through Gerardsville, but the roads will be upgraded with signals to ensure improved traffic flow along the main road resulting in route of choice, rather than the agricultural roads through Gerardsville.</p> <ul style="list-style-type: none"> • It is understood that there will be an increase in noise due to an increase in traffic however, the road adjacent to the site is at low speed, so it will be mostly be engine noise. This can be mitigated by introducing speed reducing measures (speed humps, circles, etc).
Security			
<ul style="list-style-type: none"> • Security concerns as this will also apparently consist of a boarding house onsite. 	S. Hand	25 January 2019	<p><u>Security</u></p> <p>The site is to be enclosed with a diamond mesh fence, with razor wire and 40% shade netting if permanent walling/fence is not yet built at the onset.</p>
<ul style="list-style-type: none"> • Owner of 2 properties: Plot 89, just off corner of Second Avenue and Mimosa Avenue and plot 87/3, corner Mimosa and second avenue Gerardsville. Both properties will be affected by security issues after construction. 	N. du Plessis	23 February 2019	See above response.
Crime			
<ul style="list-style-type: none"> • Spiked increase in crime from builders. 	A. van Eeden	30 January 2019	<p><u>Crime.</u></p> <p>Security during the construction phase – Only standard labourers will have access to the site, controlled at the gate. Security guards at night, with minimum 2 night watchmen over plant and material. No labour to be accommodated. Fencing to be maintained during the</p>

			<p>construction as prescriptive item in the BOQ (Bill of Quantities).</p> <p>Security during the operational phase - The project team will enclose the site with a diamond mesh fence, with razor wire and 40% shade netting if permanent walling/fence is not yet built at the onset.</p>
Ecological impacts			
<ul style="list-style-type: none"> Destruction of the natural environment on which wildlife including the endangered Giant African Bullfrog exist. 	A. van Eeden	30 January 2019	<p><u>Ecological Impacts</u></p> <p>A Biodiversity Assessment was undertaken by Flori Scientific Services for the site. The site is predominantly that of an intertwined mix of open, degraded grassland and old cultivated lands, some of which are presently mowed on a regular basis for cattle feeder. The only habitat present can therefore be described as degraded grassland as it cannot be separated out from the old cultivated lands. The site is not situated within or close to any demarcated Gauteng ridges and there are no watercourses on the site and the site is not affected by flood lines. There are however two Orange plant species occurring on site that can be easily lifted and transplanted elsewhere. During field investigations no faunal species on conservation concern were encountered. The mound present in the northern section of the site is not sensitive and can be leveled if required. The study thus concluded that there are no high sensitive areas or No-Go zones identified on site during the field investigations.</p>
Visual Impact			
<ul style="list-style-type: none"> Destruction of their country view. 	A. van Eeden	30 January 2019	<p><u>Impact on view.</u></p> <p>One of the potential impacts of a development is its aesthetic impact. The aesthetic quality of an area is important for several reasons and could be an important contributor to the wellbeing and quality of life for people (Barnard, 1999). A new development should therefore aim to be attractive and visually pleasing. It should preferably improve the visual quality of the area and at the very least should avoid visual degradation of the area (Barnard, 1999). The proposed development of the school will incorporate sport facilities along Mimosa Avenue (please see below) It is understood that these sporting facilities will be landscaped and properly maintained throughout the lifecycle of the school.</p> <p>In addition to the abovementioned, it is uncertain as to what extent the development of the site will affect crime levels of the area or how crime experienced in the area would affect the developed site and its inhabitants. However, according to the CSIR in its report Designing Safer Places – A Manual for Crime Prevention through Planning and Design 2001, the site</p>

			could in its current vacant form be considered as an area of refuge where people can hide and have clear routes of escaping from a crime. For example, houses or neighbourhoods near or adjacent to tracts of open land are often the targets of repeated burglaries. Car hijackings are often planned to allow quick escape. Therefore, a planned development such as this school could have a positive impact in terms of crime solutions in the area.
Sense of Place			
<ul style="list-style-type: none"> • She is a resident in Gerardsville and lives opposite the area where this assessment and school is to take place and she wants it known that she, her family and neighbours are STRONGLY OPPOSED to the assessment and development of the school! They are extremely upset and angry to see this notice and they object to it taking place. • They are lodging this as a STRONG FORMAL COMPLAINT based on the following: <ul style="list-style-type: none"> ○ Disturbance of the peace. ○ Loss of their country activities such as nature walks, horse-riding, cycling etc. 	A. van Eeden	30 January 2019	<p><u>Disturbance of the peace.</u> A typical day at the school is described below in order to estimate the extent of impact to the sense of place/disturbance to peace.</p> <p><u>Typical day at the school:</u></p> <ul style="list-style-type: none"> • Full boarding. No scholar will be allowed to leave the premises. • Five teachers per grade will be live in “parents”. • The only traffic to and from the school daily will not exceed fifteen vehicles. <p><u>Weekends</u></p> <ul style="list-style-type: none"> • All scholars will need to report back to school between six and seven on a Sunday evening. Therefor no scholar traffic on a Monday morning. • On Fridays lectures will start at 6am. It will allow scholars to leave for the week end over an extended time during the afternoon. Grade 8 and 9 will leave between 12 and 1, grade 10 and 11 between 1 and 2, the rest between 2 and three. The arrangement will ease the flow of traffic to a large extent. <p><u>School Bell</u></p> <ul style="list-style-type: none"> • To report to classrooms: it will be expected of scholars to watch the time themselves. They will not be notified or then warned in any way. Should they arrive late their investment account will be debited with a penalty amount. • Because the school will apply a fully integrated computer, television network whereby lectures are broadcasted, the end of such a lecture will imply the end of that class. The start of the next one will managed by way of a time table. By implication the beginning and the end of lectures will be manage similar to that of a university. No bells
<ul style="list-style-type: none"> • Dawie van Eeden, with cell number 0712900688 lives in Gerardsville right next to where the proposed school might be. The new development will have a huge 	D. van Eeden	26 February 2019	<p><u>Ecology</u> See discussion above</p> <p><u>Crime</u></p>

<p>impact on every one living there as well as wildlife. They have jackal, porcupine, owls, duiker and Bullfrogs in the area.</p> <p>If the development would be approved all these wildlife would be lost.</p> <p>Crime will also pick up a lot as it always does with new projects, Gerardsville is rated one of the safest places in Gauteng to live and this will definitely change with development.</p> <p>Is against the proposed development.</p>			<p>See discussion above</p> <p><u>Change of Character of area</u> See impact on view discussion above</p>
Noise			
<ul style="list-style-type: none"> Owner of 2 properties: Plot 89, just off corner of 2cnd and Mimosa Avenue and plot 87/3, corner Mimosa and second avenue Gerardsville. Both properties will be affected by construction noise. 	N. du Plessis	23 February 2019	<ul style="list-style-type: none"> The proposed development will have a noise impact during the construction phase caused by construction personnel, vehicles, machinery used on site etc. This impact will be of low significance and will be short lived. The impact will be mitigated by the Environmental Management Programme which will be implemented during the construction phase.
<ul style="list-style-type: none"> Bad noise from vegetation removers, levelers, cutters, builders etc. 	A. van Eeden	30 January 2019	
Dust			
<ul style="list-style-type: none"> Owner of 2 properties: Plot 89, just off corner of Second Avenue and Mimosa Avenue and plot 87/3, corner Mimosa and second avenue Gerardsville. Both properties will be affected by construction dust. 	N. du Plessis	23 February 2019	<ul style="list-style-type: none"> <u>Dust during construction</u> The proposed development will have a dust impact during the construction phase. This impact will be of low significance and will be short lived. The impact will be mitigated by the Environmental Management Programme which will be implemented during the construction phase.
<ul style="list-style-type: none"> Pollution from building vehicles and dust followed by traffic, directly to their house which will affect their health including that of her toddler child. 	A van Eeden	30 January 2019	
Comments on the Draft Basic Assessment Report			
<ul style="list-style-type: none"> She was thankful for the very well-written report and supporting documents and she 	L. Pattison	17 July 2019	<ul style="list-style-type: none"> None required.

had no comments.			
<ul style="list-style-type: none"> • He had not received any further correspondence regarding the project 	D. Williams	17 July 2019	<ul style="list-style-type: none"> • Duncan Williams was telephonically contacted and provided with the necessary information. Please refer to Appendix I for the proof of email.
<ul style="list-style-type: none"> • Would there be a smell of sewage emanating from the proposed Sewage Treatment Plant that might bother Gerardsville residents? How would any such odours be controlled? • Could the water consumption of the school affect the water supply to Gerardsville in any way (e.g. reduction in pressure?) • Please can it be ensured that noise reduction containers are used for the backup generators. • It is important that the Eskom requirements be followed, so as not to affect the integrity of the electricity supply to Gerardsville residents. • There is natural spring, situated on the proposed site, which sometimes surfaces during rainy periods and runs down to Mimosa Ave: would this spring, and the underground water table, be affected in any way by the proposed development and could nearby existing boreholes be affected? 	Bob & Maxi on behalf of Gerardsville Domiciled Homeowners Association	10 July 2019	<ul style="list-style-type: none"> • The Bio-Sewage Systems General Manager confirmed that no odour would emanate from the package plant. Furthermore a site visit was conducted on 03 September 2019 at a school that makes use of the Bio sewage system which confirmed the General Manager's response. The I&AP was present at the site visit. Please refer to Appendix E, Appendix 11, for the attendance register. • According to the Services Report the proposed development falls within the Mnandi Reservoir zone and will in future fall under Knopjeslaagte reservoir zone. Being part of the Vaal River basin there is sufficient watercourse for the development. <p>Therefore the development is serviceable and network upgrades as recommended by GLS Consulting will be undertaken once finally negotiated with the City of Tshwane. This includes the identified bulk water upgrades which are already being implemented by the City of Tshwane, i.e. Rand Water connection (As confirmed by Mr. Odwa Badi).</p> <p>Furthermore, the developer is committed to ensure a sufficient grey water system is installed to provide sufficient water or irrigation of sport grounds and open areas. A separate network will be provided for this purpose.</p> <ul style="list-style-type: none"> • According to the Bio-Sewage Systems General Manager there will be very limited noise from the package plan and the package plant will not make use of generators. Furthermore the plant machinery will be housed thus mitigating the minimal amount of noise that would occur. The site visit undertaken as mentioned above also confirmed the minimal amount of noise. • The Eskom comments will be adhered to. It is understood that an amicable solution can be reached between the Applicant and Eskom. • According to the Biodiversity Assessment there are no watercourses in the study area including rivers, streams, distinctive drainage lines, wetlands or freshwater pans (which is a type of wetland). The closest major watercourse is the Hennops River and the Swartbooispruit stream. There are a few small wetland areas situated mainly along the

			<p>course of the Swartbooispruit, but there are none within the study area, or any within a 500m radius of the outer boundaries of the study area.</p>  <p>Figure 4: NFEPA wetlands in the area</p>
<p>Project Summary</p> <ul style="list-style-type: none"> • The development entails the establishment of a school that is to accommodate approximately 2000 learners and will consist of learning and boarding facilities. • The school will be serviced with a private sewerage treatment works/package plant and grey water harvesting will be implemented for irrigation purposes. • The proposed development is listed under 	<p>K. Khaka Gauteng Department of Agriculture and Rural Development</p>	<p>22 July 2019</p>	<p>Project Summary</p> <ul style="list-style-type: none"> • No response required. <p>Findings of Departmental GIS</p> <ul style="list-style-type: none"> • The state of vegetation was discussed in detail in the Specialist report and it was mentioned that there is no pristine vegetation present. The presence of the rare, red data species of <i>Cucumis humifructus</i> is highly disputed. The plant has a threat status of vulnerable (VU) and requires deep soils and is entirely dependent on aardvark for its dispersal and germination cycles.

<p>Activity 27 of Listing Notice 1 and Activity 12 (c) (i) (ii) of Listing Notice 3 of the Environmental Impact Assessment Regulations, 214 as amended.</p> <ul style="list-style-type: none"> The proposed site covers an area of 18.8344 hectares in extent. <p>Findings of Departmental GIS</p> <ul style="list-style-type: none"> The proposed site falls within an Ecological Support Area, Important Area and an Irreplaceable Area, with primary vegetation Gauteng Grassland present on parts of the site and the northern part of the site is underlain by dolomite according to the Departmental GIS and Gauteng Conservation Plan Version 3.3. Furthermore, the Departmental GIS reveals the presence of red listed plant species <i>Cucumis Humifructus</i> on parts of the site and red listed bird (African Grass Owl) habitat on the southern part. According to the Gauteng Environmental Management Framework of 2015, the proposed site is classified as being with Environmental Management Zone 4, which is dominated by agricultural uses outside the urban development zone where agricultural rural development is supported. A secondary part of the site is located within Environmental Management Zone 3, which is a high control zone with limited development and only activities related to tourism, and conservation encouraged. <p>Comments on the content of the report</p> <ul style="list-style-type: none"> The alternatives included in the DBAR are noted by the Department, however, the 		<p>According to the red list of South African plants (which can be found online at www.redlist.sanbi.org) the plant is very range restricted and found mostly in the south of Limpopo near Gauteng and North West. According to the information available the plant was historically present in Gauteng, but it is presumed to be extinct in the province and historical locations cannot be located. It is extremely unlikely that the species is present on site.</p> <p>The Endangered Wildlife Trust (EWT) was consulted in order to provide further information about the presence of grass owls on site. According to EWT there are grass owls in the <u>greater area</u>. Their nesting habitat is very closely linked to wetland areas where dense grass grows. According to the Ecological Specialist there are wet areas to the west and east of the site that could house owls however the habitat on site is not suitable for grass owls to nest and breed. However having the said the above, it is not unlikely that owls may forage over the area from time to time. Obviously with continued development more and more grasslands and open spaces are being lost and it is a real dilemma however the specialist reiterated that the site is not highly sensitive.</p> <p>Furthermore the EWT confirmed that there are recent presence and signs of the Grass owl within an 8km radius of the development site. Site A, B and C marked in the below Google image are where there have been activities of the owl, as pellets and their tracking data from the tagged bird confirmed.</p> <p>The EWT suggested a follow up site visit to these areas and expand it to the east side of the site and Copperleaf Estate area. There may very likely be active Grass owl pairs in the area and they have seen some owls breeding in very peculiar patches in the urbanized spaces. The active pairs indicated in the image below are urban birds which have been observed over many years occupying the only available sites. It is understood they have no other choice but to use these small undesirable patches as they have lost significant portions of their natural habitat in this area in particular.</p> <p>In response to the EWT response the Ecological Specialist emphasized further that the grass owls might be foraging to the west of the proposed site as those areas are still</p>
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final BAR should cover all relevant and feasible alternatives including the No-Go alternative for the proposed activity.

- A site specific Environmental Management Programme (EMPr) is included in the DBAR. The EMPr must however comply with the content requirements as stipulated in Appendix 4 of the Environmental Impact Assessment (EIA) Regulations, 2014. The EMPr will need to address behavior to preserve the untransformed areas of the site and other sensitivities and thus contribute to the principles of sustainable development. The state of the primary vegetation need to be assessed, hence aspects such as the habitats should be considered. The measures to safeguard this habitat as well as general conservation principles must be incorporated into the EMPr.
- Comments from all relevant stakeholders must be adequately addressed and included in the final Basic Assessment report.
- In all aspects of planning, consideration should be given to applying principles of sustainable development such as water and energy efficiencies as well as waste minimisation and green building techniques.
- Facility illustrations have been included in the Draft BAR. However, a legible A3 Layout Plan overlain by a composite sensitivity map on site with a legend easily linked to activity components and the locality map must be included in the Final BAR.
- It is recommended that an ornithological

more open and more likely to have small rodents and hares present as a source of food. It is well understood that there will be some loss of open space within the proposed development, but it is unlikely that this will have a negative impact on owls in the greater region.

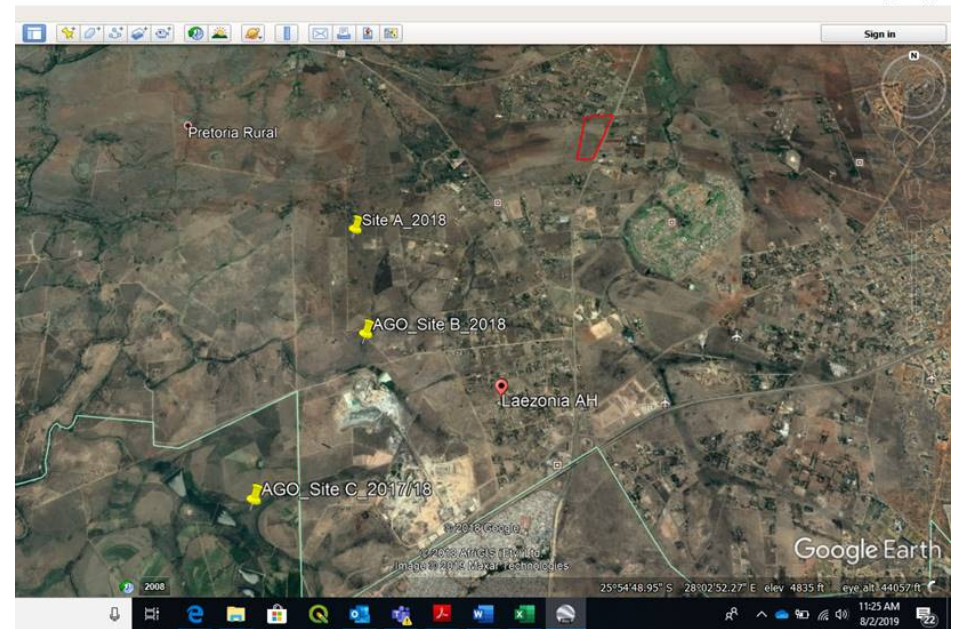


Figure 5: Grass owl presence/activity

- No response required.

Comments on the content of the report

- The Basic Assessment Report was amended to reflect all relevant and feasible alternatives including the No-Go alternative. Additionally principles of sustainable development have also been incorporated in the alternatives discussion. Please refer to Section A, subsection 3 for the discussion of the Alternatives.

<p>study be undertaken by a registered professional natural scientist in accordance with the Natural Scientist Act (Act No 27 of 2003) to assess the severity and extent the impact the proposed development will have on the red listed bird habitat for the African Grass Owl.</p> <p>Public Participation Process</p> <ul style="list-style-type: none"> Public participation should be in accordance to the minimum requirements of Chapter 6 of the EIA Regulations, 2014. Comments of the Interested and Affected Parties must be recorded, and such written comments including their responses must be included in the final Basic Assessment Report as well as incorporating them in the EMPr where applicable. Legible site notices together with the newspaper adverts as well as proof of correspondence (site notice, newspaper advertisement, email, fax, delivery etc.) with stakeholders included in the Draft Basic Assessment report are noted by the Department and must be included in the Final Basic Assessment. Notice to all potential interested and affected parties should be in accordance to regulation 41 of the EIA regulations, 2014. Should you be unable to submit comments, proof of attempts that were made to obtain comments must be submitted to the Department. 			<ul style="list-style-type: none"> The Environmental Management Programme has been amended to encourage principles of sustainable development such as water and energy efficiencies as well as waste minimisation and building techniques. <p>The state of the vegetation was discussed in detail in the Specialist report and mention was made of the fact that there is no pristine vegetation present.</p> <p>Two orange data listed floral species namely <i>Boophane distitcha</i> and <i>Hypoxis hemerocallidea</i> are present on site and the EMPr has been amended to include measures of how to appropriately handle such floral species when found on site</p> <ul style="list-style-type: none"> Comments from all relevant stakeholders have been included in this Comments and Response Report and the Final Basic Assessment Report. Principles of sustainable development such as water and energy efficiency, waste minimization and green building techniques have been discussed in the Final BAR. Please refer to Section A, subsection 3 of the Final BAR. A legible A3 Layout Plan overlain by a composite sensitivity map on site is included in the Final BAR. Please refer to Appendix C of the BAR. Please refer to response above regarding the presence of African Grass Owls on site. In short, no African Grass Owls were observed on site and the site's ecological state is not capable of hosting such a species. Understandably so, there will be some loss of open space with the proposed development but the ecologist does not believe this will have a significant negative impact on owls in the greater region. <p>Public Participation</p> <ul style="list-style-type: none"> Comments from I&APs have been included in the Final BAR and are also incorporated in the Environmental Management Programme where applicable. <p>The proof of Public Participation is included in Appendix E of the Final BAR.</p> <p>Proof of attempts to obtain comments from the City of Tshwane are also attached in Appendix E: Public Participation, Appendix 11.</p>
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2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

Table 15: Methodology

Rating	Definition of Rating	Score
A. Extent – the area in which the impact will be expected		
None		0
Local	Confined to project or study area or part thereof (eg. site)	1
Regional	The region, which may be defined in various ways, eg. Cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
B. Intensity – the magnitude or size of the impact		
None		0
Low	Natural and/or social functions and processes are negligibly altered	1
Medium	Natural and/or social functions and processes continue albeit in a modified way	2
High	Natural and/or social functions or processes are severely altered	3
C. Duration – the time frame for which the impact will be experienced		
None		0
Short term	Up to 2 years	1
Medium term	2 – 15 years	2
Long Term	More than 15 years	3

The combined score of these three criteria corresponds to a Consequence Rating, as set out in

Table below:

Table 16: Method used to determine the consequence score

Combined score (A+B+C)	0 - 2	3 - 4	5	6	7	8-9
Consequence Rating	Not significant	Very low	Low	Medium	High	Very high

Once the consequence is derived, the probability of the impact occurring is considered, using the probability classifications indicated in table below:

Table 17: Probability classification

Probability of impact – the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall significance of impacts is determined by considering consequence and probability using the rating system indicated in table below:

Table 18: Impact Significance Rating

Significance Rating	Consequence		Probability
Insignificant	Very low	&	Improbable
	Very low	&	Possible
Very Low	Very low	&	Probable

	Very low	&	Definite
	Low	&	Improbable
	Low	&	Possible
Low	Low	&	Probable
	Low	&	Definite
	Medium	&	Improbable
Medium	Medium	&	Possible
	Medium	&	Probable
	High	&	Improbable
High	High	&	Possible
	High	&	Probable
	Very high	&	Definite
Very High	Very high	&	Improbable
	Very high	&	Possible
	Very high	&	Probable
	Very high	&	Definite

In conclusion the impacts are also considered in terms of their status (positive or negative impact) and the confidence in the ascribed impact significance rating. The prescribed system for considering impacts status and confidence (in assessment) is indicated in table below.

Table 19: Impact status and confidence classification

Status of Impact	
Indication of where the impact is adverse (negative) or beneficial (positive)	+ ve (positive – a ‘benefit’)
	- ve (negative – a ‘cost’)
	Neutral
Confidence of assessment	
The degree of confidence in predictions based on available information, EAP’s judgement and/or specialist knowledge	Low
	Medium
	High

The impact significance rating should be considered by GDARD in their decision-making process based on the implications of ratings ascribed below:

- Insignificant: the potential impact is negligible and will not have an influence on the decision regarding the proposed activity / development;
- Very low: the potential impact should not have any meaningful influence on the decision regarding the proposed activity / development;
- Low: the potential impact may not have any meaningful influence on the decision regarding the proposed activity / development;
- Medium: the potential impact should influence the decision regarding the proposed activity / development;
- High: the potential impact will affect the decision regarding the proposed activity / development;
- Very high: The proposed activity should only be approved under special circumstances.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Potential Impacts for the Construction and Operational phase

Proposal

Table 20: Potential Impacts for the Construction and Operational Phase - Proposal

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
CONSTRUCTION PHASE								

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
BIOPHYSICAL ENVIRONMENT								
1. ISSUE: AIR QUALITY								
1.1 Dust/Air pollution: The generation of fugitive dust associated with construction activities & earthworks.	Local (1)	High (3)	Medium term (2)	Medium (6)	Definite	Medium & Definite = Medium	-ve	High
2. ISSUE VISUAL IMPACTS								
2.1 Visual Intrusion and Light Pollution: Lights from the contractor's camp and construction site could be visually intrusive.	Local (1)	High (3)	Medium term (2)	Medium (6)	Probable	Medium & Definite = Medium	-ve	High
3. ISSUE GEOLOGY AND SOILS								
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Local (1)	High (3)	Medium term (2)	Medium (6)	Definite	Medium & Definite = Medium	-ve	High
3.2 Soil pollution	Local (1)	High (3)	Medium term (2)	Medium(6)	Probable	Medium & Probable = Medium	-ve	High
3.3 Disturbance of surface geology for development foundations	Local (1)	High (3)	Medium term (2)	Medium(6)	Probable	Medium & Probable = Medium	-ve	High
4. ISSUE FAUNA AND FLORA								
4.1 Degradation, destruction of habitats/ ecosystem – Ecological Support Area and CBA-Important and Irreplaceable area.	Local (1)	High (3)	Medium term (2)	Medium (6)	Definite	Medium & Definite = Medium	-ve	High
4.2 Impacts on fauna and flora (<i>Boophane disticha</i> and <i>Hypoxis hemerocallidea</i>)	Local (1)	High (3)	Medium term (2)	Medium (6)	Probable	Medium & Probable = Medium	-ve	High
5. ISSUE HYDROLOGY								
5.1 Storm water flow and drainage-Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, and sedimentation of nearby water bodies.	Regional (2)	Medium (2)	Medium term (2)	Medium (6)	Probable	Medium & Probable = Medium	-ve	High
SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT								
6. ISSUE AESTHETICS, SITE CHARACTER AND SENSE OF PLACE								
6.1 Noise/ vibration	Local (1)	High (3)	Medium term (2)	Medium (6)	Definite	Medium & Probable = Medium	-ve	High
7. ISSUE SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT								
7.1 Safety and Security	Local (1)	Medium (2)	Medium term (2)	Low (5)	Probable	Low & probable = Low	-ve	High
7.2 Job opportunities	Regional (2)	High (3)	Medium term (2)	High (7)	Definite	High & Definite = High	+ve	Medium
7.3 Hygiene	Local (1)	Medium (2)	Medium term (2)	Low (5)	Definite	Low & Definite = Low	-ve	High

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
8. ISSUE HISTORICAL ENVIRONMENT								
8.1 Destruction of cultural / heritage sites During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.	Local (1)	Medium (2)	Medium term (2)	Low (5)	Possible	Low & Possible = Low	-ve	Medium
9. ISSUE: TRAFFIC								
9.1 Traffic – Construction vehicles	Regional (2)	Medium (2)	Medium term (2)	Medium (6)	Probable	Medium & Definite = Medium	-ve	High
INFRASTRUCTURE, SERVICES AND WASTE								
10. ISSUE: INFRASTRUCTURE AND WASTE								
10.1 Waste	Local (1)	High (3)	Medium term (2)	Medium (6)	Probable	Medium & Probable = Medium	-ve	High
10.2 Pressure on existing infrastructure and services – Eskom Infrastructure	Region (2)	High (3)	Medium term (2)	High (7)	Probable	High & Probable = High	-ve	High
OPERATIONAL PHASE								
1. ISSUE: FAUNA AND FLORA								
1.1 Alien invasion	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	Medium
SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT								
2. ISSUE AESTHETICS, SITE CHARACTER AND SENSE OF PLACE								
2.1 Noise	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	High
2.2 Safety and Security	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	High
2.3 Visual impact	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	+ve	High
2.4 Sense of place	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	Med
2.5 Provision of needed educational facilities	Regional (2)	High (3)	Long term (3)	Very High (8)	Definite	Very High & Definite = Very High	+ve	Med
3. ISSUE: GEOLOGY AND SOILS								
3.1 Soil pollution (Spillage from sewerage treatment plant)	Local (1)	High (3)	Long term (3)	High (7)	Probable	High & Probable = High	-ve	Med
3.2 Geotechnical constraints	Local (1)	High(3)	Long term (3)	High (7)	Probable	High & Probable = High	-ve	Med
4. ISSUE: HYDROLOGY								
4.1 Storm water flow and drainage-Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one	Regional (2)	Low (1)	Long term (3)	Medium (6)	Probable	Medium & Probable =Medium	-ve	Medium

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
area and reducing flow in another.								
5. ISSUE: SOCIAL WELL BEING AND QUALITY OF THE ENVIRONMENT								
5.1 Job opportunities	Regional (2)	Medium (2)	Long term (3)	High (7)	Probable	High & Probable = High	+ve	Medium
6. ISSUE: TRAFFIC								
6.1 Traffic –vehicles from the school development.	Regional (2)	Low (1)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	Medium
INFRASTRUCTURE, SERVICES AND WASTE								
7. ISSUE: INFRASTRUCTURE AND WASTE								
7.1 Waste	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	Medium
7.2 Pressure on existing infrastructure and services –	Local (1)	Medium (2)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	Medium
7.3 Infrastructure for the provision of needed services: Bio-Sewage Private Treatment Plant (Low maintenance, Socio-economic benefits, sustainable etc.)	Local (1)	Medium (2)	Long term (3)	Medium (6)	Definite	Medium & Definite =Medium	+ve	Medium

Potential impacts for the Construction and Operational phase

Alternative 1

The potential impacts for the construction phase and operational phase for Alternative 1 are similar to that of the proposal except for the anticipated impact on the Road Reserve for the proposed K46 Road and the increased financial cost due to the high intensity maintenance associated with the Becon Watertech private treatment plant alternative.

Table 21: Potential Impacts for the Construction and Operational phase - Alternative 1

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
CONSTRUCTION PHASE								
1. ISSUE: INFRASTRUCTURE AND SERVICES								
1.1 Negative impact on the K46 – Road Reserve	Regional (2)	High (3)	Medium term (2)	High (7)	Definite	High & Definite = High	-ve	Medium
OPERATIONAL PHASE								
1. ISSUE: INFRASTRUCTURE AND SERVICES								
1.1 Infrastructure for the provision of needed services: Becon Watertech Private Treatment Plant (More -intense maintenance and financial cost)	Local (1)	High (3)	High (3)	High (7)	Definite	High & Definite = High	-ve	Medium

Potential impacts for the Construction and Operational phase

NO-GO Alternative

Table 22: Potential impacts for the Construction and Operational phase - No-Go Alternative

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
CONSTRUCTION PHASE								
1. ISSUE: IMPACT ON THE ENVIRONMENT								
1.1 Impact on the environment	None	None	None	Not significant	Improbable	Not significant & Improbable = Insignificant	+ve	High
OPERATIONAL PHASE								
1. ISSUE: LOSS OF INVESTMENT								
1.1 Loss of investment	Local (1)	High (3)	Long term (3)	High	Definite	High & Definite = High	-ve	Medium
2. SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT								
2.1 No provision of needed education facilities	Regional (2)	High (3)	Long term (3)	Very High	Definite	Very High & Definite = Very High	-ve	Medium

Significance Rating for the Construction and Operational phase

Proposal

Table 23: Significance Rating for the construction and operational phase - Proposal

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
CONSTRUCTION PHASE				
1. ISSUE: AIR QUALITY				
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	Medium	<ul style="list-style-type: none"> Dust generation should be kept to a minimum. Dust must be suppressed on construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution. It is recommended that the clearing of vegetation from the site should be selective and done just before construction so as to minimise erosion and dust. Excavating, handling or transporting erodible materials in high wind or when dust plumes are visible shall be avoided. All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting materials that have the potential to fly off the 	Low	Negative impact to the ambient air quality of the area.

		<p>construction vehicles.</p> <ul style="list-style-type: none"> • No burning of refuse or vegetation is permitted. • Should construction in areas that have been stripped not commence within a short period of time the exposed areas shall be re-vegetated or stabilised. 		
2. ISSUE VISUAL IMPACTS				
2.1 Visual Intrusion and Light Pollution –. Lights from the contractor's camp and construction site could be visually intrusive.	Medium	<ul style="list-style-type: none"> • The construction camp must be located as far from residential properties as possible. • Light pollution should be minimised. • Construction / management activities must be limited to the daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays. • Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic. • Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents. • In this situation low flux and frequency lighting shall be utilised. • The site area is to be physically screened off with a shade cloth fence (preferably dark green or grey as it will blend in well with the surrounding environment) at least 1.8m in height. 	Low	Negative impact to the visual quality of the area including light pollution.
3. ISSUE GEOLOGY AND SOILS				
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Medium	<ul style="list-style-type: none"> • Appropriate erosion and storm water management structures must be installed around the construction site. • All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks. • Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area. • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Ensure appropriate handling of hazardous substances. • Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes. • Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and banded. • Once earthworks are complete, disturbed area are to be stabilised with an appropriate approved method. • Disturbed surfaces to be rehabilitated with locally indigenous grass species. No open trenches to be left. • No mounds of soils created during construction to be left. Soils around erected poles to be leveled and sculptured to the original contours of the surrounding soils. 	Low	Degradation or impairment of soil quality.
3.2 Soil pollution	Medium	<ul style="list-style-type: none"> • Ensure correct position of construction caps, equipment yards, refueling depots, concrete batching plant etc. to avoid areas susceptible to soil and water pollution. • Ensure appropriate handling of hazardous 	Low	Spilled oil prevents water absorption by soil

		<p>substances</p> <ul style="list-style-type: none"> • Remediate polluted soil. • All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks. • Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area. • Drip trays are to be utilised during daily greasing and re-fueling of machinery and to catch incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes. • Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and banded. 		
3.3 Disturbance of surface geology for development foundations	Medium	<ul style="list-style-type: none"> • Adherence to the recommendations as per the Geotechnical report and Comments from the Council for Geoscience 	Low	<p>Negative impact on the geology of the area.</p> <p>Formation of sinkhole</p>
4. ISSUE FAUNA AND FLORA				
4.1 Degradation, destruction of habitats/ ecosystem. Ecological Support Area and CBA-Important Area & Irreplaceable Area.	Medium	<ul style="list-style-type: none"> • Site clearing is to be limited to only the area necessary for carrying out the specified works and the destruction of vegetation should be minimised. • No littering by construction workers is permitted. Any litter will be collected and removed off-site to a registered waste site. • Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. • Stockpiles of vegetation are only to be located in areas approved by the ECO, and may not exceed 2 m in height. Methods of stacking must take cognisance of the possible creation of a fire hazard. • No burning of stockpiled vegetation is permitted. • The alien plants on site should be removed during construction. • Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material). • Alien vegetation re-growth must be controlled throughout the entire site during the construction period. • No indigenous trees to be removed if not entirely necessary. • Indigenous trees to be planted in open spaces. 	Low	Loss of biodiversity.
4.2 Impacts on fauna and flora (<i>Boophane disticha</i> and <i>Hypoxis hemerocallidea</i>)	Medium	<ul style="list-style-type: none"> • The contractor must ensure that no fauna species are disturbed, trapped, hunted, or killed during the construction phase. • Disturbance to birds, animals and reptiles and their habitats should be prevented at all times. • The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution. • Only indigenous plant species, preferably 	Low	Loss of biodiversity

		<p>species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into landscaped areas. Forage and host plants required by pollinators should also be planted in landscaped areas.</p> <ul style="list-style-type: none"> • Should the <i>Boophone disticha</i> and <i>Hypoxis hemerocallidea</i> orange data species and aloe plants be found on site, they can be easily lifted and transplanted to a similar environment as they have shallow roots. • No trees should be cut down unnecessarily. 		
5. ISSUE HYDROLOGY				
5.1 Storm water flow and drainage- Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, and sedimentation of nearby water bodies.	Medium	<ul style="list-style-type: none"> • Adherence to the storm water master plan and recommendations of the services report. 	Low	Soil erosion, flooding and sedimentation of water bodies and loss of habitat.
SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT				
6. ISSUE AESTHETICS, SITE CHARACTER AND SENSE OF PLACE				
6.1 Noise/ vibration	Medium	<ul style="list-style-type: none"> • Adherence to the noise impact assessment recommendations which have been incorporated into the EMPr. • Noise levels shall be kept within acceptable limits, and construction crew must abide by National Noise Laws and local by-laws regarding noise. • No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. • Construction / management activities involving use of the service vehicle, machinery, hammering etc., must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays. • Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc.) must be preceded by notice being given to the affected neighbours at least 24 hours in advance. • Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly during site operations. • If work is to be undertaken outside normal working hours, permission must be obtained. Prior to commencement of such an activity the Contractor is to advise the potentially affected neighbouring residents. Notification could include letter-drops. 	Low	An increase in the ambient noise levels of the area.
7. ISSUE SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT				
7.1 Safety and Security	Low	<ul style="list-style-type: none"> • Signs should be erected on all entrance gates to the site camp indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 	Very Low	Potential criminal activities such as theft might occur.

		<p>1993) and the National Building Regulations</p> <ul style="list-style-type: none"> • All structures that are vulnerable to high winds must be secured (including toilets). • Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. • The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads. • Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA). • An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and relevant occupational health and safety issues. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • Access to fuel and other equipment stores is to be strictly controlled. • Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided. • Adequate emergency facilities must be provided for the treatment of any emergency on the site. • The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times. • The Contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses. • The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas. • Washing and toilet facilities shall be provided on site and in the Contractors camp. • Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided. 		
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		<ul style="list-style-type: none"> The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. The chemical toilets must be emptied on a regular basis. The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site. 		
7.2 Job opportunities	High (Positive)	<ul style="list-style-type: none"> Make use of local labour Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations. Provide skills training for construction workers. 	High (Positive)	A large influx of uncontrolled numbers of people coming to the site seeking employment opportunities. This might also pose a security risk.
7.3 Hygiene	Low	<ul style="list-style-type: none"> The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas. Washing and toilet facilities shall be provided on site and in the Contractors camp. Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided. The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. The chemical toilets must be emptied on a regular basis. The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site. HIV AIDS awareness and education should be undertaken by all Contractor staff. 	Very Low	Unhealthy working conditions on project site.
8. ISSUE HISTORICAL ENVIRONMENT				
8.1 Destruction of cultural / heritage sites	Low	<ul style="list-style-type: none"> Adherence to the chance find procedures from the Heritage Impact Assessment Report and Palaeontological Report which have been incorporated into the EMPr. 	Low	Impairment of heritage resources
9. ISSUE: TRAFFIC				
9.1 Traffic – Construction vehicles	Medium	<ul style="list-style-type: none"> The contractor to ensure traffic safety at all times and shall implement road safety precautions for this purpose when work is undertaken on or near public roads. Construction vehicles to use public roads outside peak hours. 	Low	Uncontrolled traffic impact might result in accidents
INFRASTRUCTURE, SERVICES AND WASTE				
10. ISSUE: INFRASTRUCTURE AND WASTE				
10.1 Waste	Medium	<ul style="list-style-type: none"> Adequate number of waste disposal receptacles is to be positioned at strategic locations within the development. These are to be emptied weekly to an official waste disposal site. No burning of waste. Waste will be collected and removed off-site to a registered waste site. 	Low	Waste that is not disposed of correctly mainly leads to the following: <ul style="list-style-type: none"> Environmental degradation Water pollution Infestation by rodents and potential disease causing vectors
10.2 Pressure on existing infrastructure and services – Eskom Infrastructure	High	<ul style="list-style-type: none"> Integrity of existing services to be ensured. Adherence to conditions provided by Eskom. Electrical engineer to discuss the 	Medium	Damage to infrastructure resulting in liability costs

		way forward regarding the services affecting the site.		
OPERATIONAL PHASE				
1. ISSUE: FAUNA AND FLORA				
1.1 Alien invasion	Medium	• Site to be kept neat and weed free	Low	Loss of biodiversity.
SOCIO- ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT				
2. ISSUE: SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT				
2.1 Noise	Medium	<ul style="list-style-type: none"> • Ensure acceptable noise levels. • Noise impact from the use of generators for the sewage treatment plant can be mitigated by introducing a noise reduction container, so called silent generator with improvements to the exhaust system. 	Low	Nuisance due to noise increase
2.2 Safety & Security	Medium	<ul style="list-style-type: none"> • The project team will hoard the site with a diamond mesh fence, with razor wire and 40% shade netting if permanent walling/fencing is not yet built at the onset. 	Low	Potential criminal activities such as theft.
2.3 Visual impact	Medium	<ul style="list-style-type: none"> • Keep the school as neat and visually appealing as possible. 	Low	Limited visual impact
2.4 Sense of place	Medium	<ul style="list-style-type: none"> • Daily activities at the school should take place according to the following manner as explained by the project applicant to avoid a nuisance and negative impact on the sense of place: <p><u>Typical day at the school:</u></p> <ul style="list-style-type: none"> • Full boarding. No scholar will be allowed to leave the premises. • Five teachers per grade will be live in "parents". <p><u>Weekends</u></p> <ul style="list-style-type: none"> • All scholars will need to report back to school between six and seven on a Sunday evening. Therefore no scholar traffic on a Monday morning. • On Fridays lectures will start at 6am. It will allow scholars to leave for the week end over an extended time during the afternoon. Grade 8 and 9 will leave between 12 and 1, grade 10 and 11 between 1 and 2, the rest between 2 and three. The arrangement will ease the flow of traffic to a large extent. <p><u>School Bell</u></p> <ul style="list-style-type: none"> • To report to classrooms: it will be expected of scholars to watch the time themselves. They will not be notified or then warned in any way. Should they arrive late their investment account will be debited with a penalty amount. • Because the school will apply a fully integrated computer, television network whereby lectures are broadcasted, the end of such a lecture will imply the end of that class. The start of the next one will be managed by way of a time table. By implication the beginning and the end of lectures will be managed similar to that of a university. No bells 	Low	Loss of sense of place
2.5 Provision of needed educational facilities	Very High (positive)	<ul style="list-style-type: none"> • None required. 	Very High (positive)	Not Applicable
3. ISSUE: GEOLOGY AND SOILS				
3.1 Soil pollution (Spillage from sewerage treatment plant)	High	<ul style="list-style-type: none"> • Adherence to maintenance plan. 	Medium	Spillages and pollution of the immediate environment.
3.3. Geotechnical constraints	High	<ul style="list-style-type: none"> • Adherence to Geotechnical report and Council of Geoscience comments/requirements. 	Medium	Disturbance to surface geology
4. ISSUE: HYDROLOGY				
4.1 Storm water flow and	High	<ul style="list-style-type: none"> • Adherence to the services report. 	Medium	Loss of habitat,

drainage - Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another.				water pollution.
5. ISSUE: SOCIAL WELL BEING AND QUALITY OF THE ENVIRONMENT				
5.1 Job opportunities	High (Positive)	<ul style="list-style-type: none"> • Implement local labour. • Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations. 	High (Positive)	A large influx of uncontrolled numbers of people coming to the site seeking employment opportunities. This might also pose a security risk.
6. ISSUE: TRAFFIC				
6.1 Traffic –vehicles to and from the school development.	Medium	<ul style="list-style-type: none"> • Compliance to Traffic and Municipal By-Laws • Adherence to the Traffic Impact Study recommendations 	Low	Increased levels of traffic
INFRASTRUCTURE, SERVICES AND WASTE				
7. ISSUE: INFRASTRUCTURE AND WASTE				
7.1 Waste	Medium	<ul style="list-style-type: none"> • The site must be managed appropriately and all waste must be removed to a recognized waste facility. • Sorting of waste • Regular removal of waste to Landfill site • Waste yard to be kept clean and neat • Regular cleaning of waste yard so that it does not become a nuisance and source of odour and vermin 	Low	Waste that is not disposed of correctly mainly leads to the following: <ul style="list-style-type: none"> • Environmental degradation • Water pollution Infestation by rodents and potential disease causing vectors
7.2 Pressure on existing infrastructure and services	Medium	<ul style="list-style-type: none"> • Integrity of existing services in the area to be ensured. • Adherence to Eskom's conditions 	Low	Damage to infrastructure
7.3 Infrastructure for the provision of needed services: Bio-Sewage Private Treatment Plant (Low maintenance, Socio-economic benefits, sustainable etc.)	Medium	<ul style="list-style-type: none"> • Adherence to maintenance plan. 	Low	Malfunctioning might occur resulting in accidental spillages.

Significance Rating for the construction and operational phase – Alternative

1

The potential impacts for the construction phase and operational phase for Alternative 1 are similar to that of the proposal except for the anticipated impact on the Road Reserve for the proposed K46 Road and the increased financial cost due to the high intensity maintenance associated with the Becon Watertech private treatment plant alternative.

Alternative 1

Table 24: Significance Rating for the Construction and Operational phase - Alternative 1

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
CONSTRUCTION PHASE				
1. ISSUE: INFRASTRUCTURE AND SERVICES				
1.1 Negative impact on the K46 – Road Reserve	High	• None	High	Possible legal court cases due to the inability of the developer to adhere to the requirements of the Gauteng Department of Roads and Transport as the custodians of the K46 Road.
OPERATIONAL PHASE				
1. ISSUE: INFRASTRUCTURE AND SERVICES				
1.1 Infrastructure for the provision of needed services: Becon Watertech Private Treatment Plant (More - intense maintenance and financial cost)	High	• None.	High	-

Significance Rating for the Construction Phase and Operational Phase – No-Go Alternative

No-Go Alternative

Table 25: Significance Rating for the Construction and Operational Phase - No-Go Alternative

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
CONSTRUCTION PHASE				
1. ISSUE: IMPACT ON THE ENVIRONMENT				
1.1 Impact on the environment	None	• None	None	The no-go alternative will entail leaving the site in its present state and there are no impacts on the environment.
OPERATIONAL PHASE				
1. ISSUE: LOSS OF INVESTMENT				
1.1.. Loss of investment	High	• None	High	If the No-Go alternative were to be followed it will have a negative financial impact and negative socio-economic impacts due to the non-creation of employment opportunities and no educational facilities will be provided.
2. SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT				

2.1. No provision of needed education facilities.	Very High (Negative)	• None	Very High (Negative)	Not applicable
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List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- **Motivating Memorandum in Support of the Township Establishment.**
- **Civil Engineering Services Report**
- **Biodiversity Assessment Report.**
- **Geotechnical report.**
- **Traffic Impact study.**
- **Heritage Impact Assessment.**
- **Palaeontological Report.**
- **Noise Impact Assessment Report.**

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

No impact assessment can be completely certain of the exact nature and extent of the various impacts that would result from a given development activity. However, this assessment strives to limit any uncertainties by optimising the collection of base data, and by following a rigorous impact assessment methodology.

Biodiversity Report

- All information regarding the proposed project and related activities as provided by the Client are taken to be accurate.
- The site is relatively small and uniform in habitat and the two site visits are therefore considered to be sufficient for this project.
- Precise buffer zones, regulated zones etc. or exact GPS positions cannot be made using generalised corridors or kml files on Google Earth. However, the buffer zones drawn are accurate to within 2-3m.
- Standard and acceptable methodologies as required and used in South Africa were used.
- The latest data sets were used in terms of obtaining and establishing background information and desktop reviews for the project. The data sets were taken to be accurate, but were verified and refined during field investigations.

HIA Report

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

Palaeontological Report

Based on the geology of the area and the palaeontological record as we know it, it can be assumed that the formation and layout of the dolomites, sandstones, shales and sands are typical for the country and do not contain fossil plant, insect, invertebrate and vertebrate material. Only if stromatolites are present in the dolomites and only if they contain the fossil algal cells would they be of

palaeontological importance. It is unknown if there are limestones present in this area or if there are dolomites with stromatolites. The surface soils and the ancient igneous rocks would not preserve fossils.

3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Decommissioning and closure phase

No decommissioning is envisaged but should it take place the impacts are described below.

Direct impacts:
 The direct impacts associated with the decommissioning of the site are likely to be similar to the construction phase.

- Dust pollution.
- Noise pollution.
- Visual impact.
- Waste.
- Deep excavations (impact on the surface geology).
- Possible sewage spillages from the private treatment plant.

Indirect impacts:
 The indirect impacts associated with the decommissioning of the site are likely to be similar to the construction phase.

- Security.
- Traffic.
- Spread of alien vegetation.

Socio Economic:

- The decommissioning of the site will result in job losses.
- Loss in revenue for the local economy.
- Loss of educational facilities.

Cumulative impacts:

- Surface water pollution.
- Traffic

Mitigation:
 The site will only be decommissioned if it is no longer needed.

- Decommissioning should take place during the dry winter months.
- Dismantling of equipment must be conducted by an accredited contractor.
- Waste disposal certificates must be obtained for the disposed waste.
- Deep excavations must be cordoned off with safety/barrier net prior to being back filled.
- Once the site has been filled it must be rehabilitated.

Table 26: Significance rating for the Decommissioning phase

Potential impacts	Significance rating of impacts	Proposed mitigation	Significance rating of impacts after	Risk of the impact and mitigation not
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	(positive or negative)		mitigation	being implemented
Direct impacts				
Dust pollution	High	Dust suppression methods to be utilised.	Medium	Negative impact to the ambient air quality of the area.
Noise	High	Working hours Adherence to the EMPr.	Medium	Nuisance to the neighbouring landowners of the area
Visual impact	Medium	Rehabilitation plan is to be adhered to.	Low	Visual nuisance to neighbouring land owners
Waste	High	Waste to be taken to a licensed landfill site	Medium	Pollution and environmental degradation due to poor methods of waste disposal
Deep excavations	High	Rehabilitation plan to be adhere to.	Medium	Accidents might occur
Possible sewage spillages	High	Adherence to maintenance plan.	High	Soil and water pollution
Indirect impacts				
Security	Medium	Safety to be ensured on site.	Low	Security threat
Traffic	High	Compliance to Traffic and Municipal By-Laws	Medium	Increased levels of traffic.
Spread of alien vegetation	High	Rehabilitation plan to be adhere to.	Medium	Loss of biodiversity
Socio-Economic				
Job losses	High	No mitigation measures are possible	High	Possible causes of crime and poverty
Loss of revenue	High	No mitigation measures are possible	High	Possible causes of crime and poverty
Loss of educational facilities	High	No mitigation measures are possible	High	Possible causes of crime and poverty
Cumulative impacts				
Traffic	High	Compliance to Traffic and Municipal By-Laws	Medium	Increased levels of traffic.
Surface water pollution	Medium	Rehabilitation plan to be	Low	Water pollution resulting in

		adhere to.		habitat loss, negative impact on fauna and flora.
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Decommissioning and closure phase:

Alternative 1 has similar impacts to that of the proposal.

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

None

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

No decommissioning is envisaged

4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

Construction phase

Construction impacts may further lead to nuisance noise impacts, the transformation of the general ambience and quality of the site and surrounds and visual concerns.

The EMPr for the construction phase should therefore be implemented to minimise the impact of construction activities on the environment.

Increased run off of Water
Storm water runoff has the potential to erode the topsoil and result in sedimentation of water bodies if not controlled.

Ground Water Pollution
The construction phase could result in increased infiltration of contaminants into the ground water and soil.

The clearing of the site could result in exposed soil surfaces which may be prone to erosion, creation of dust and sedimentation of water bodies.

Cement mixing and the storage of fuel must be conducted so as to prevent contamination of the soil and groundwater.

Socio Economic
Job creation.

Increase in job seekers in the area.

Waste
The construction and subsequent operational activities will be the source of various waste streams which must be managed appropriately.

Operational Impacts

Sense of place
An aesthetic development could cause positive visual impact and impact on the

sense of place of the area.

Socio-Economic

The development of a school at this locality is in the public interest as it will relieve some stress from parents looking for a school with boarding facilities.

5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Proposal

The development of the proposed WFA Christian Business School as per the proposal will have an impact on the immediate biophysical environment which cannot be mitigated. However, the biophysical impact of the development will be limited in a regional context, and will be more than offset by the social benefits of the development.

The construction phase has the greatest impact on the environment even with mitigation. The negative impacts associated with the construction phase include:

- Air pollution;
- Visual Intrusion & Light Pollution;
- Soil erosion, loss of topsoil, soil pollution and deterioration of soil quality;
- Disturbance of surface geology;
- Degradation, destruction of habitats;
- Impacts on fauna and flora;
- Increased run off of water;
- Noise;
- Safety and security;
- Traffic - Construction vehicles;
- Waste;
- Pressure on existing infrastructure and services.

A number of mitigation measures to reduce or improve these impacts have been identified and are presented in the tables above. A key environmental imperative of the construction phase would be to prevent negative impacts on flora (i.e. Orange Plant species on site), soil, air, water, and an impact on existing infrastructure (Eskom) on the site. A further environmental imperative is to ensure that geotechnical constraints are taken into consideration during course of development.

The negative impacts relating to the operational phase include the following:

- Alien invasion;
- Noise;
- Safety and security;
- Increased run-off of water;
- Possible soil pollution (possibility of sewerage spillage);
- Impact on geology due to geotechnical constraints;
- Traffic – vehicles from the school development;
- An impact on the sense of place;
- Waste;
- Pressure on existing infrastructure and services.

A number of mitigation measures to reduce or improve these impacts have been

identified and are also presented in the tables above.

The construction phase will be associated with positive socio-economic impacts in terms of job creation.

The construction phase will be of medium term duration (2-15 years) and the operational phase will have limited environmental impacts if constructed according to the conditions outlined in this report and if managed according to the EMPr.

As a necessary part of infrastructure, the proposed development is bound to have a positive effect on the surrounding area in terms of economic opportunities, liveability of the area and the provision of educational opportunities. Although not entirely confirmed, the development of the site might have a positive impact on the security of the area due to the development of currently vacant land.

Overall the impacts will range from high-very low during the construction phase and from very high-low during the operational phase. Please see below a summary of the identified impacts and their pre-mitigation and post mitigation impact significance rating scores.

Table 27: Proposal - Summary of impacts and significance rating

Potential impacts	Significance rating of impacts before mitigation (negative of positive)	Significance rating of impacts after mitigation
CONSTRUCTION PHASE		
Dust/Air pollution	Medium	Low
Visual Intrusion and Light Pollution	Medium	Low
Soil erosion, loss of topsoil, deterioration of soil quality and soil pollution	Medium	Low
Disturbance of surface geology for development foundations	Medium	Low
Degradation, destruction of habitats/ ecosystem – Irreplaceable and Important Ecosystem.	Medium	Low
Impacts on fauna and flora	Medium	Low
Storm water flow and drainage-Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, and sedimentation of nearby water bodies.	Medium	Low
Noise/ vibration	Medium	Low
Safety and Security	Low	Very Low
Job opportunities	High	High
Hygiene	Low	Very Low
Destruction of cultural / heritage sites	Insignificant	Insignificant
Traffic – Construction vehicles	Medium	Low
Waste	Medium	Low
Pressure on existing infrastructure and services	High	Medium
OPERATIONAL PHASE		
Alien invasion	Medium	Low
Noise	Medium	Low
Safety and Security	Medium	Low

Visual impact	Medium	Low
Sense of place	Medium	Low
Provision of needed educational facilities	Very High (positive)	Very High (positive)
Soil pollution (Spillage from sewerage treatment plant)	High	Medium
Geotechnical constraints	High	Medium
Storm water flow and drainage-Developments cause the modification of drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another.	Medium	Low
Job opportunities	High	High
Traffic –vehicles from the school development	Medium	Low
Waste	Medium	Low
Pressure on existing infrastructure and services	Medium	Low
7.3 Infrastructure for the provision of needed services: Bio-Sewage Private Treatment Plant (Low maintenance, Socio-economic benefits, sustainable etc.)	Medium	Low

Alternative 1

The potential impacts for the construction phase and operational phase for Alternative 1 are similar to that of the proposal except for the anticipated impact on the Road Reserve for the proposed K46 Road and the increased financial cost due to the high intensity maintenance associated with the Becon Watertech private treatment plant alternative.

Potential impacts:	Significance rating of impacts (positive or negative):	Significance rating of impacts after mitigation:
CONSTRUCTION PHASE		
1.1 Negative impact on the K46 – Road Reserve	High	High
OPERATIONAL PHASE		
1.1 Infrastructure for the provision of needed services: Becon Watertech Private Treatment Plant (More - intense maintenance and financial cost)	High	High

Alternative 2

No further alternatives were investigated.

No-go (compulsory)

The do-nothing (“no go”) option would entail not using the site and maintaining the site as is.

The main impact is the financial loss to the owner if the development is not allowed. In terms of the cumulative impact if the no-go option was followed, additional stress could unknowingly be placed on more sensitive undeveloped sites elsewhere in or outside the Urban Edge. By not developing the site there will be indirect socio-economic impacts such as:

- No employment opportunities will be created
- No educational facilities will be constructed thus the shortage of schools in

Gauteng will continue to be a challenge.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The proposal is preferred. The impacts of the proposed development have been summarised under paragraph 5.

For alternative:

The impacts of the proposed activities have been summarised under Paragraph 5 above.

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

It is proposed that the site be developed for the purposes of the WFA Christian Business School.

From an ecological perspective, the site is predominantly that of an intertwined mix of open, degraded grassland and old cultivated lands, some of which are presently mowed on a regular basis for cattle feeder. The only habitat present can therefore be described as degraded grassland as it cannot be separated out from the old cultivated lands. The site is not situated within or close to any demarcated Gauteng ridges and there are no watercourses on the site and the site is not affected by flood lines. There are however two Orange plant species occurring on site that can be easily lifted and transplanted to a similar environment. The Ecological Study thus concluded that there are no high sensitive areas or No-Go zones identified on site during the field investigations.

Furthermore is has been confirmed due to the ecological state of the site that there are no African Grass Owls on site and the presence of the *Cucumis Humifructus* is also highly disputed by the Ecologist. According to the red list of South African plants (which can be found online at (www.redlist.sanbi.org)) the *Cucumis Humifructus* is very range restricted and found mostly in the south of Limpopo near Gauteng and North West. According to the information available the plant was historically present in Gauteng, but it is presumed to be extinct in the province and historical locations cannot be located. It is extremely unlikely that the species is present on site.

From a geotechnical point of view, based on the results of the investigation and the discussions with Council for Geosciences, the site is considered suitable for development, subject to the adherence of the provided recommendations by the specialist and the Council for Geoscience.

From a Noise point of view the proposed development will be in line with SANS 10103 of 2008 – The measurement and rating of environmental noise with respect to annoyance and to speech communication and the GAUTENG Noise Control Regulations, provided that a layout of the school building be provided and the acoustic screening measures are in place.

From a Heritage perspective, the proposed project is acceptable. If the provided recommendations are adhered to and based on approval from SAHRA, The specialist is of the opinion that the development can continue as the development will not impact negatively on the heritage record of the area.

From a Palaeontological perspective Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils

would be preserved in the stromatolites of the Malmani Subgroup. If limestones or dolomites are present they can be ignored but if stromatolites are found, photographs should be sent to a professional palaeontologist to determine the importance and scientific value of the trace fossils. If determined to be worth collecting then a SAHRA permit must be obtained by a palaeontologist before collecting material. Therefore a Fossil Chance Find Protocol should be added to the EMPr. As far as the palaeontology is concerned the construction can proceed.

The services report indicated that the proposed development can be provided with services and infrastructure provided that the necessary upgrades are undertaken. Where the necessary services are not available in the vicinity, an alternative solution to the provision of the service has been provided. From an operational point of view the Bio-Sewage water treatment plant is preferred for a number of reasons including the low maintenance, very cost effective, creation of jobs, low fresh water consumption, very small footprint etc.

From a Traffic Impact point of view upgrades were proposed at the problematic junctions to mitigate the effect of the anticipated traffic to be generated by the proposed development. The upgraded road network will be able to cater for the development trips.

The proposed development site is located outside the urban edge in an area characterised by low density residential and vacant properties. The development pattern is mainly low density residential buildings, the proposed development of a school will fit into the existing development pattern of the surrounding area as the school is a service facility.

According to the Motivating Memorandum, the education system in South Africa is currently in a crisis as the government is struggling to provide adequate quality education infrastructure and learning facilities. Most schools lack one or more of the necessary infrastructures.

The proposed school should not just be viewed as an additional educational infrastructure but as an educational facility that targets a certain market of people; these are the parents that want a school with boarding facilities for their children. There are a number of schools in the Gauteng province but very few that offer boarding facilities because of the challenges that come with running such a facility.

In the modern world, most parents have hectic working schedules that require them to move around the country and even outside of the country. In order for them to juggle work and parenting they require schools that will have quality boarding facilities either for a weekly or monthly basis.

The most common problem parents face when applying to some schools is the requirement that their residence should be within a certain proximity to the school. This becomes a major hurdle for parents who would like their children to obtain a certain level of quality education, who are financially able, however do not reside within the required proximity. This increases the need for boarding schools for such parents.

Boarding school also stimulates children's quality of growth as students are constantly stimulated in a well-rounded academic and social environment. Studies have shown that children who are enrolled in boarding facilities are more likely to succeed in their academic studies more than day scholars. The reason for this is that boarding facilities provide a continuous working environment where academic responsibilities are carried into the areas of accommodation within the school

premises through peer learning and tutoring, compulsory study sessions and extra lessons.

As discipline is the primary non-academic trait parents seek for in schools, boarding schools encourage and nurture this through rules which are applicable to the boarding students throughout the day. Very often for day scholars, discipline is taught within the classroom yet the cycle of habit is often broken when they return home, depending on the contrast of the learning / living environment at home, (SFP Town Planning memo, Township establishment: Gerardsville Extension 2.

7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

Gauteng Spatial Development Framework, 2012

The GSDF are in pursuit of planning for shared, equitable, sustainable and inclusive growth and development in the country. The Gauteng Provincial Government (GPG) seeks to:

- provide a clear future provincial spatial structure that is robust to accommodate growth and sustainability;
- specify a clear set of spatial objectives for municipalities to achieve in order to ensure realisation of the future provincial spatial structure;
- propose a set of plans that municipalities have to prepare in their pursuit of these objectives;
- provide a common language and set of shared planning constructs for municipalities to use in their planning processes and plans; and
- enable and direct growth

The Gauteng City Region aims to develop as a significant emerging conurbation based on sustainable principles:

- significantly reducing reliance on private mobility in favour of safe, convenient and affordable public transport and non-motorised transport;
- significantly reducing present rates of non-renewable energy usage;
- reducing the rates of energy expended in the manufacture of goods, the delivery of these goods to the market and the importation of goods;
- integrating open space systems into the city region and providing sustainable ecosystems, urban agriculture and quality of life as a fundamental of the province's development patterns;
- increasing the intensity of urban form and the complexity of mixed-use development with a view to restricting, as far as possible, the options to extend the present footprint of the province's urban spread; and
- promoting a democratic urban order in terms of access to opportunity for all.

Only a certain number of the principles of the Gauteng SDF are applicable. The property is in close proximity to the R511, M26, N14 and Mimosa Avenue that provides access. The proposed development will result in a more compact city combined with the curbing of urban sprawl. The existing resources i.e. land and infrastructure will be utilised to its full potential.

It is also clearly stated that the optimal use of existing resources i.e. engineering services and social facilities must be promoted. From investigations conducted by the appointed professional team there are sufficient services available and will be optimally used. The development will also promote growth and development of other sectors other than the educational sector. (SFP Town Planning Motivating

8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES	NO
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If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

Lokisa Environmental Consulting CC therefore recommends that Environmental Authorisation be granted for the proposed development based on the following recommendations.
• All recommendations provided in the Specialist studies undertaken for the proposed development should be implemented. This includes recommendations from competent state departments such the Council for Geoscience.
• The proposed sewage private treatment plant should be effectively operated and maintained.
• The issue regarding the Eskom affected services needs to be attended to. It is understood that an amicable solution can be reached between the Applicant and Eskom.
• Development to be respectful of neighbouring properties privacy
• Mitigation measures contained in the Environmental Management Programme (EMPr) attached as Appendix H, must be implemented and adhered to.
• A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMPr
• Inadequate management of exposed surfaces may result in dust pollution and soil erosion occurring from the site, therefore adequate measures such as the use of dust suppression techniques must be employed to minimize the occurrence of these potential impacts.
• All types of waste generated during each stage of the development from site preparation to final construction must be disposed of at a licensed disposal site. No waste must be dumped on open spaces. A proof of disposal at a licensed disposal landfill must be provided.

9. THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT

(as per notice 792 of 2012, or the updated version of this guideline)

According to the Town Planning Memorandum, it is understood that due to the facilities currently being provided at schools, the sizes of schools are getting bigger. Thus, to find large properties within the established urban fabric is actually impossible. Therefore, large new schools can only be developed on the periphery of the urban fabric. This proposed school is a private school which will be developed in 3 phases. Initially 600 pupils in Phase 1, 600 pupils in phase 2 and 800 in Phase 3.

The school is a private school aimed at providing a business orientated education.

The locality of the school is centrally between Johannesburg and Pretoria to ensure that learners can be accommodated from both hubs. Access to any school is of utmost importance and therefore cognizance was taken of the M26 route that is also known as K46 linking Pretoria and Johannesburg.

This good access and good visibility is important to any school.

The impact of the school on the surrounding properties will be limited.

The desirability of an educational development of this nature can be justified due to the following inherent characteristics that the application site has, being:

- Ideal locality
- High Accessibility
- The proposed development is located along a mobility spine being Mimosa Avenue
- Large enough developable area for the necessary school buildings, sports and recreational facilities.

10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED
(CONSIDER WHEN THE ACITIVITY IS EXPECTED TO BE CONCLUDED)

Medium term (2-15 years)

11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

(must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

YES

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.