



TGM ENVIRONMENTAL SERVICES

DRAFT BASIC ASSESSMENT REPORT

FOR

**PROPOSED BULK WATER AND SEWER PIPELINES
HAMMANSKRAAL WEST EXT 10**

REF: GAUT 002/17-18/E0166

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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 Environments	Any environment identified as being sensitive to the impacts of the development.

Significance	Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).
Stakeholder Engagement	The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities.
Sustainable Development	Development which meets the needs of current generations without hindering future generations from meeting their own needs.
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
BSc	Bachelor of Science
CC	Close Corporation
C- Plan	Gauteng Conservation Plan Version 3.3
COJ	City of Johannesburg
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
GDARD	Gauteng Department of Agriculture and Rural Development
EAP	Environmental Assessment Practitioner
EDGE	Environment and Dog Group of Emmarentia
EIA	Environmental Impact Assessment
EISD	Environment and Infrastructure Services Department
EMPr	Environmental Management Programme
ERA	Emmarentia Residents Association
Ha	Hectares
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP's	Integrated Development Plans
JBG	Johannesburg Botanical Garden
JCPZ	Johannesburg City Parks and Zoo
Km	Kilometers
LDO	Land Development Objectives
m	Meters
NEMA	National Environmental Management Act
NGO's	Non-Governmental Organisations
OHSA	Occupational Health and Safety Act
PES	Present Ecological State
PHRA-G	Provincial Heritage Resources Authority - Gauteng
(Pty) Ltd	Proprietary Limited
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?

Comment from the State Departments and the competent authority on the Draft Report is awaited.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Proposed Bulk Water and Sewer Pipelines – Hammanskraal West Ext 10

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

A Water Use Licence is required in terms of the National Water Act, 1998 (Act No 36 of 1998) as part of the project.

The competent authority is the Department of Water and Sanitation.

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

YES	NO
YES	NO

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

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. <u>Activities listed under GN R983:</u> <u>Activity 9</u> - The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water — (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where — (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area. <u>Activity 10</u> - The development and related operation of infrastructure exceeding 1 000	National Department of Environmental Affairs and GDARD	2014

metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where — (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.

Activity 19 – The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.

Activities listed under GN R985:

Activity 12 - 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. 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; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.

Activity 14 - The development of – (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs — (a) within a watercourse; c. Gauteng: i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within

threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority; vii. Sites or areas identified in terms of an international convention; viii. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA; ix. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or x. Sites zoned for conservation use or public open space or equivalent zoning.		
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 Heritage Resources Act (Act No. 25 of 1999)	SAHRA	1999
National Water Act (Act No. 36 of 1998)	Department of Water and Sanitation	1998
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
Reconstruction and Development Programme	National & Provincial	1995
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Department of Agriculture Forestry and Fisheries	1983
Gauteng Conservation Plan (C-Plan Version 3.3)	GDARD	2011
Gauteng Provincial Environmental Management Framework	GDARD	2015
Gauteng Open Space Plan (GOSP)	City of Tshwane	2005
The Gauteng Department of Agriculture and Rural Development's (GDARD) Requirements for Biodiversity Assessments (Version 3)	Gauteng Department of Agriculture and Rural Development	March 2014
National Development Plan	National Planning	2011

	Commission	
Gauteng Spatial Development Framework	Provincial	2011
Gauteng Planning and Development Act (Act No. 3 of 2003)	Gauteng Provincial Legislature	2003
City of Tshwane Integrated Development Plan	City of Tshwane Metropolitan Municipality	2015/2016
City of Tshwane Spatial Development Strategy	City of Tshwane Metropolitan Municipality	(2010 and beyond)
City of Tshwane: City Development Strategy	City of Tshwane Metropolitan Municipality	2013
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 Act, 1998 (Act No. 107 of 1998 as amended).	<p>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 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.</p> <p>In terms of the NEMA principles, the following are of particular relevance to the development:</p> <ul style="list-style-type: none"> 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

	<p>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)).</p> <p>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)).</p> <p>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)).</p> <p>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)).</p> <p>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)).</p> <p>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:</p> <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 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</p>

	<p>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> <p>(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> <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 • 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;

	<ul style="list-style-type: none"> • 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.</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>Reconstruction and Development Programme</p>	<p>One of the six principles of the Reconstruction and development programme is meeting basic needs and building the infrastructure.</p>

	<p>The RDP integrates growth, development, reconstruction, redistribution and reconciliation into a unified programme. The key link is an infrastructural programme that will provide access to modern and effective services such as electricity, water, telecommunications, transport, health, education and training for all our people.</p> <p>The proposed development does not contrast with one of the six principles of the RDP.</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>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>

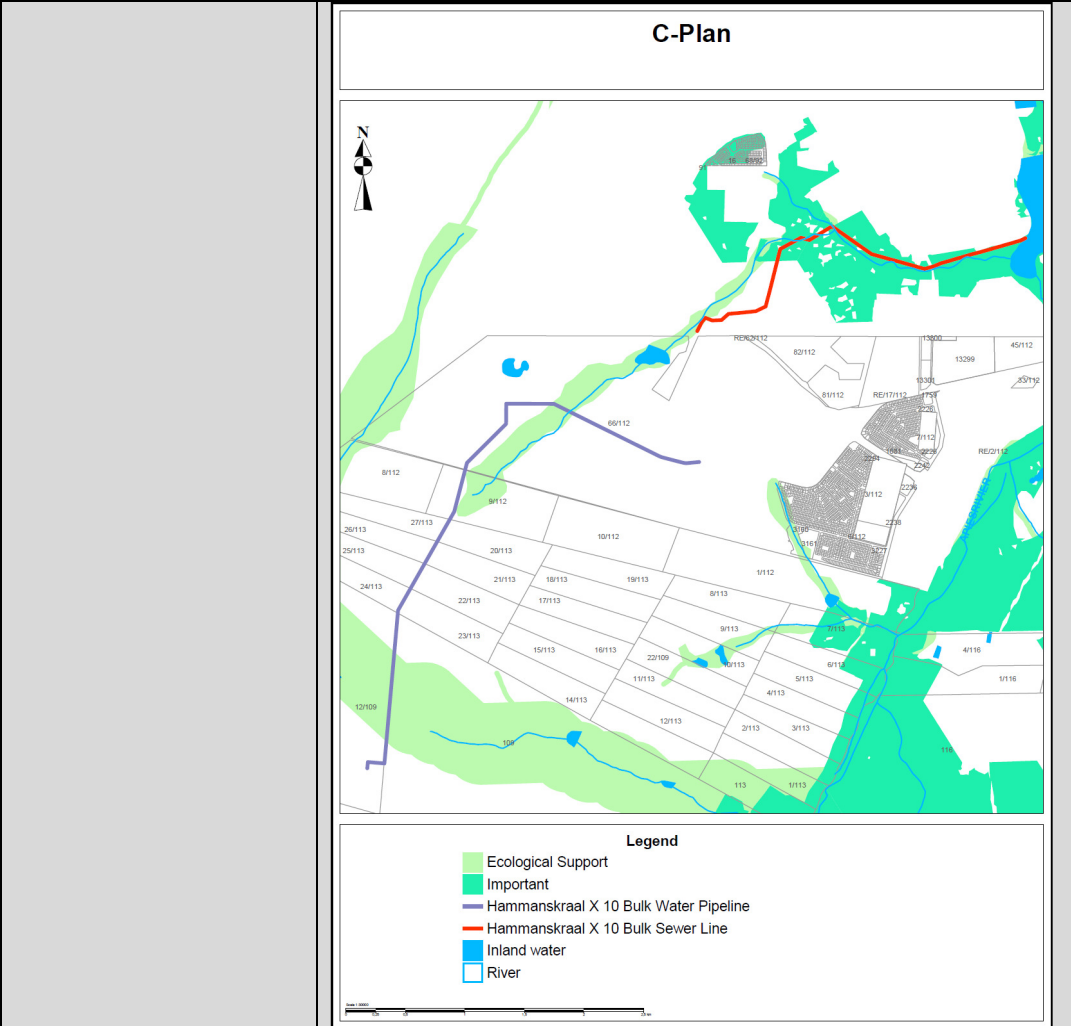


Figure 1: C-Plan

The eastern and central portion of the sewer pipeline falls within a CBA (Important Area), considered important for “Red” and “Orange” listed plant, “Red” listed mammal habitat and for primary vegetation. A CBA is an area considered important for the survival of threatened species and includes valuable ecosystems such as wetlands, untransformed vegetation and ridges.

The water pipeline traverses two areas considered to be ESAs, while the western most section of the sewer pipeline is also situated within an ESA. An ESA provides connectivity and important ecological processes between CBAs and is therefore important in terms of habitat conservation.

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

	<p>commercial developments.</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ➤ Energy efficiency programmes, plans and designs; ➤ Waste minimisation, reuse and recycling; ➤ Green infrastructure in urban areas; and ➤ Sustainable Drainage Systems (SuDS). <p>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.</p> <p>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.</p> <p>According to the GPEMF, the site is identified as the following Environmental Management Zones:</p> <ul style="list-style-type: none"> ➤ Zone 1: Urban Development Zone ➤ Zone 2: High Urban Control Zone ➤ Zone 3: High Rural Control Zone ➤ Zone 4: Normal Control Zone <p>This means that the proposed development is compatible with the intention of Zones 1 & 4 and conditionally compatible with the intention of Zones 2 & 3.</p>
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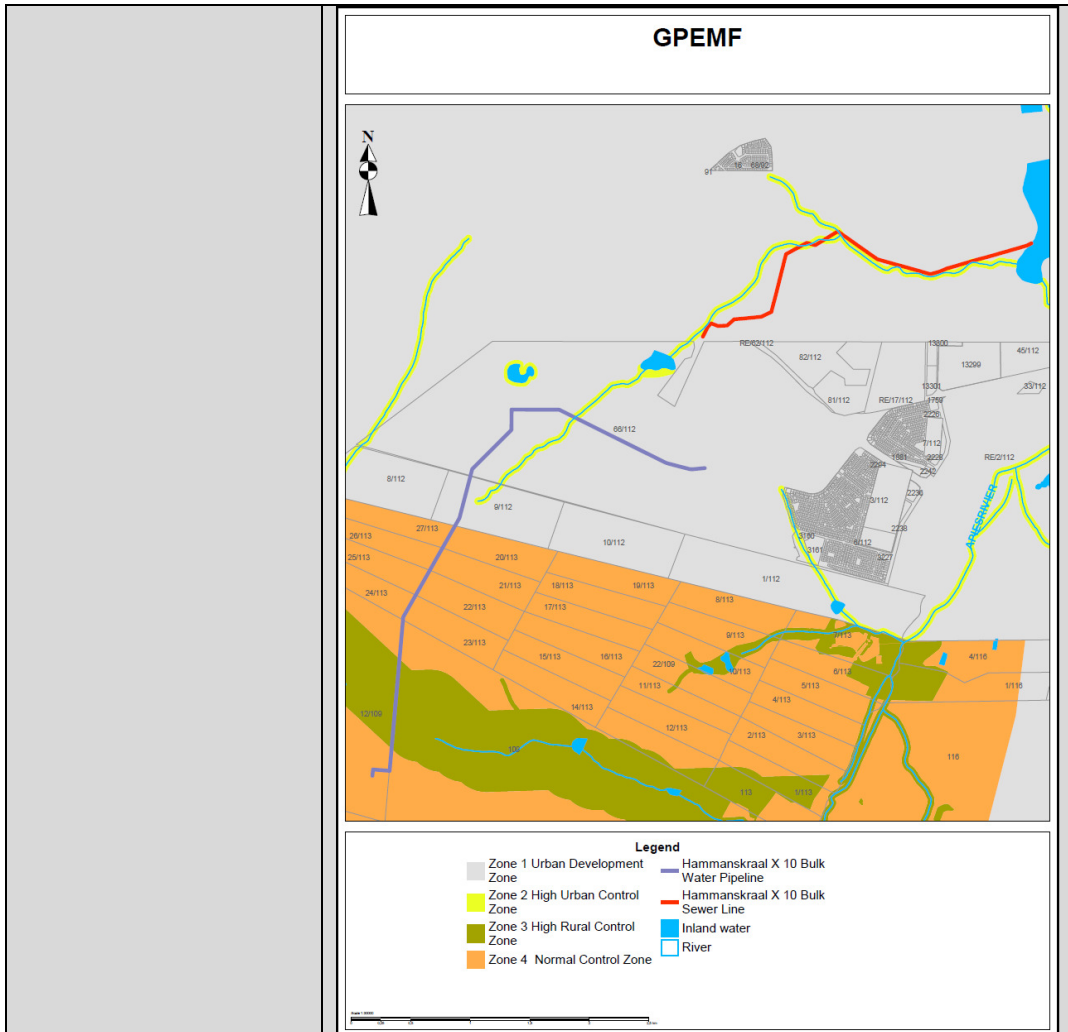


Figure 2: GPEMF

National Development Plan

National Development Plan, 2030

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.

As a long-term strategic plan, it serves four broad objectives:

- 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>
Gauteng Spatial Development Framework	<p>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:</p> <ul style="list-style-type: none"> • 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. <p>The proposed development does not occur in contrast with the objectives of the GPG.</p>
City of Tshwane By-Laws	<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

TGM was provided with 2 different layouts that have been used for the alternatives.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	Proposal	<p>The project entails the provision of bulk services (water and sewage) to the Hammanskraal West area.</p> <p><u>Bulk water pipeline</u> The proposed steel bulk water pipeline (indicated on the image below) will be 800mm in diameter and approximately 5.2km in length. The bulk water pipeline will be constructed from the Hammanskraal West Reservoir (indicated as 1 on the image below) in an eastern direction (reservoir access road) for approximately 150m. The construction of the pipeline will then continue in a northern direction for approximately 3.3km and in an eastern direction for approximately 1.7km where it will connect with an existing pipeline (indicated as 2 on the image below).</p> <p>The pipeline will follow the same route as the existing DN600 pumping main, but will as far as possible be constructed on the opposite side of the road. The pipeline will be constructed:</p> <ul style="list-style-type: none"> • Along the Northern side of the reservoir access road • Along the western side of the road on the North-running section • Along the southern side of the road on the East-running section <p>The scope includes the connection of the proposed bulk water pipeline to existing pipework at the Hammanskraal reservoir and connection to other proposed and existing pipelines.</p> <p><u>Bulk sewer pipeline</u> The proposed concrete bulk sewer pipeline will be 525mm - 600mm in diameter, except at 3 major road crossings where it will be 900mm in diameter, and is approximately 3.4km in length. The bulk sewer pipeline will follow, for the most part, approximately the same route as the existing DN315 / DN400 outfall sewer that serves Hammanskraal Ext. 2, but will be constructed on the opposite side of the stream in the middle section.</p> <p>The proposed pipeline will be constructed from a point on the northern side of Hammanskraal Ext. 10 where it will collect flow from Ext. 4 (indicated as 3 on the image below). The pipeline will cross the K224 Provincial road (Harry Gwala Avenue) and continue in an easterly direction to cross the unnamed road towards Temba.</p>

From there it will run in a northerly direction parallel to and on the western side of the existing outfall sewer serving Ext. 2 and then in a north eastern direction to a point indicated as 4 on the image below. The pipeline will continue along the northern side of the unnamed tributary of the Apies River in an easterly direction where it will cross Temba Road and will connect at an existing manhole (indicated as 5 on the image below) to the existing 1200mm dia. outfall sewer that is running on the western side along the Apies River to the Temba Wastewater Treatment Plant.

The scope of the contract includes the “design of water reticulation for metered yard connections and /or waterborne sanitation and toilet top structures including all the bulk services if necessary in Hammanskraal West Extension 10”. This application however only deals with the provision of bulk services as the water reticulation for metered yard connections and /or waterborne sanitation and toilet top structures do not constitute a listed activity in terms of the NEMA Regulations, 2014 (as amended) and confirmation thereof was obtained form GDARD (Refer to Appendix I).

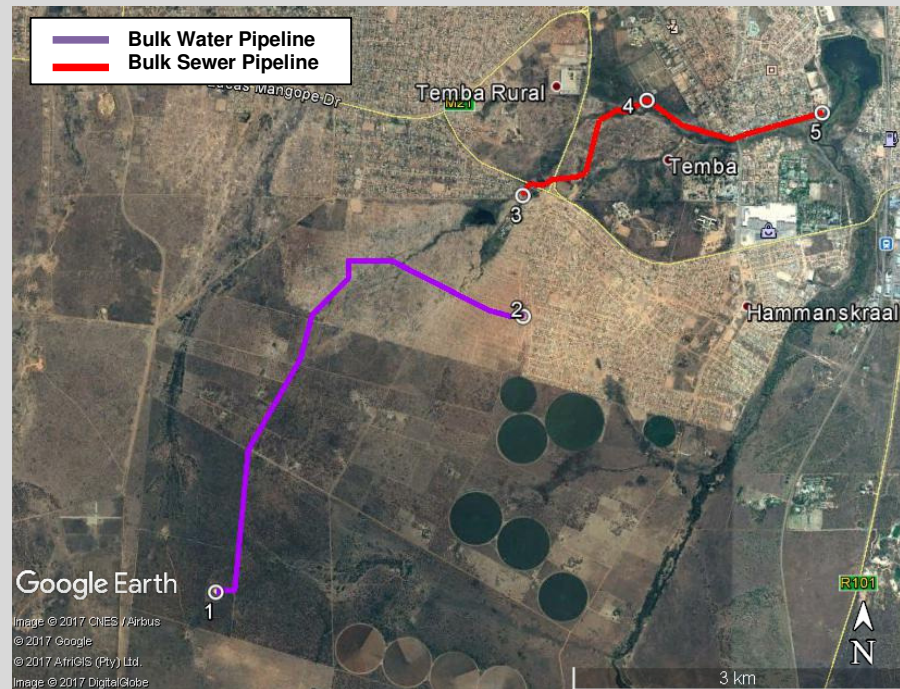
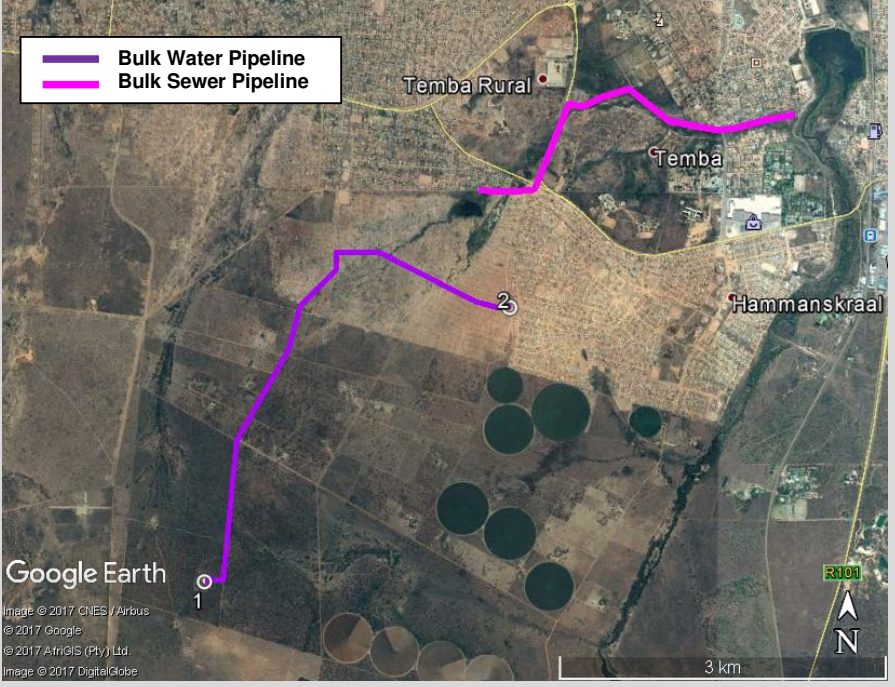


Figure 3: Proposal

2	Alternative 1	Alternative 1 will be similar to the Proposal except for a slightly different alignment for the bulk sewer pipeline as indicated in the image below.
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		 <p>Figure 4: Alternative 1</p>
3	Alternative 2	No other alternative presented.
	Etc.	

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

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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:

20 ha (5ha)

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

--

Ha/ m²

or, for linear activities:

Proposed activity

Length of the activity:

± 8.6 km

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:

± 8.6 km

Alternatives:

Alternative 1 (if any)

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:

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:

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

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

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

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 12 of the Farm Rondavel alias Schoongezicht 109 JR**
- **Remainder of the Farm Rondavel alias Schoongezicht 109 JR**
- **Portion 20 of the Farm Inderminne 113 JR**
- **Portion 21 of the Farm Inderminne 113 JR**
- **Portion 22 of the Farm Inderminne 113 JR**
- **Portion 23 of the Farm Inderminne 113 JR**
- **Portion 24 of the Farm Inderminne 113 JR**
- **Portion 25 of the Farm Inderminne 113 JR**
- **Portion 26 of the Farm Inderminne 113 JR**
- **Portion 27 of the Farm Inderminne 113 JR**
- **Portion 9 of the Farm Hammanskraal 112 JR**
- **Portion 66 of the Farm Hammanskraal 112 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):

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In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

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

Latitude (S):	Longitude (E):
-25.436063 °	28.219294 °
-25.435846 °	28.220731 °
-25.429923 °	28.221343 °
-25.423923 °	28.221888 °
-25.416768 °	28.226581 °
-25.412950 °	28.227414 °
-25.409947 °	28.230903 °
-25.408529 °	28.230858 °
-25.408466 °	28.234855 °
-25.411171 °	28.240709 °
-25.412977 °	28.246890 °

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

PROPOSAL & ALTERNATIVE 1	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	1	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	0	0
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	9
	T	0	J	R	0	0	0	0	0	0	0	0	0	0	1	1	6	0	0	0	0	6

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	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)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
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).

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
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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 % = 30	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 % =	Bare soil % = 70

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
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If YES, specify and explain:

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998. Refer to figure below.

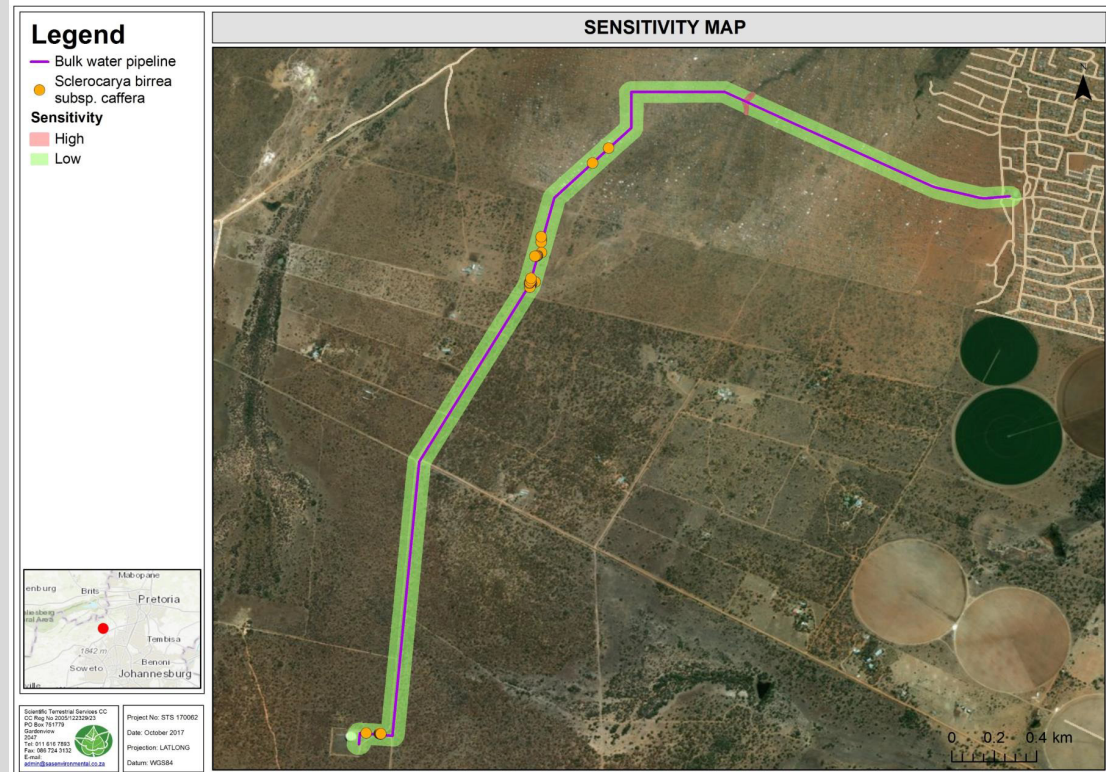


Figure 5: Terrestrial Sensitivity Map for the Bulk Water Pipeline

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:

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998.

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

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

If YES, specify and explain:

The water pipeline falls within the Central Bushveld Group 3 (Endangered) wetland vegetation type.

The proposed pipeline will directly traverse a section of an ephemeral drainage line, and therefore, the perceived impact significance of the construction of the proposed pipeline is deemed to be of Medium risk levels (refer to image below).

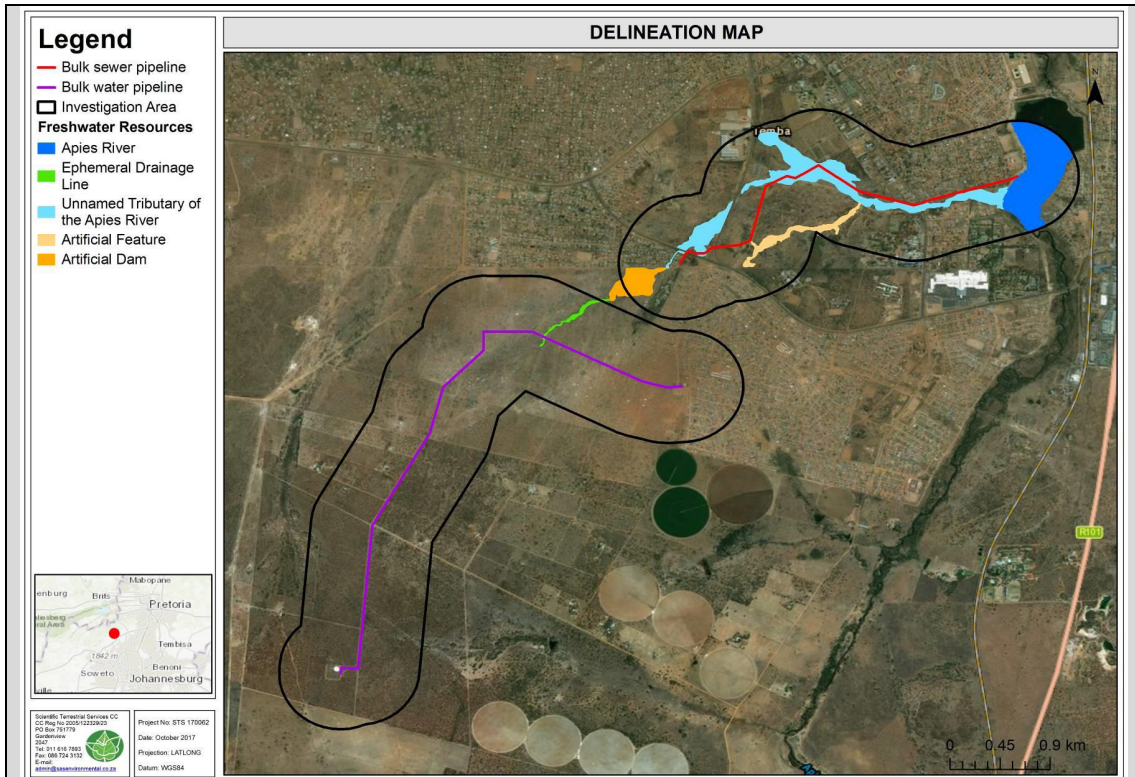


Figure 6: Identified freshwater resources within the investigation area – Bulk Water Pipeline

PES Category: D (Largely modified)

This ephemeral drainage line was found to have undergone some intensive impacts, which include the construction of informal houses along the embankment of the drainage line, fragmentation of the vegetation component of the drainage line, and disrupting the hydrological connectivity from the upstream to the downstream portions through the construction of informal roads and soil compaction. Where roads traverse the drainage line, it has resulted in localised incidences of increased sediment inputs, which has overall altered the ecological integrity of the drainage line.

Habitat and biota

Only reed species (*Typha capensis*) were identified within the active channel of the ephemeral drainage line, with very little other vegetation (wetland or terrestrial species) present within the surrounding area. Invasive alien species such as *Asclepia fruticosa* and *Tagetus minuta*. This drainage line is not considered large enough to support significant populations of larger animals but could potentially provide habitat for avifaunal species.

Was a specialist consulted to assist with completing this section **YES** **NO**

If yes complete specialist details

Name of the specialist:	C. du Preez & S. Van Staden		
Qualification(s) of the specialist:	S. Van Staden (Pr. Sci. Nat)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	christel@sasenvgroup.co.za stephen@sasenvironmental.co.za	Fax:	086 724 3132
Are any further specialist studies recommended by the specialist?			YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES, specify:	<input type="text"/>		
If YES, is such a report(s) attached?			YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES list the specialist reports attached below	<input type="text"/>		

Signature of specialist: **See attached report** Date: **October 2017**

Name of the specialist:	H. De Beer & E. Van Der Westhuizen		
Qualification(s) of the specialist:	E. van der Westhuizen (SACNASP REG.NO: 100008/15)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	emile@sasenvironmental.co.za	Fax:	086 724 3132
Are any further specialist studies recommended by the specialist?			YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES, specify:	<input type="text"/>		
If YES, is such a report(s) attached?			YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES list the specialist reports attached below	<input type="text"/>		

Signature of specialist: **See attached report** Date: **October 2017**

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

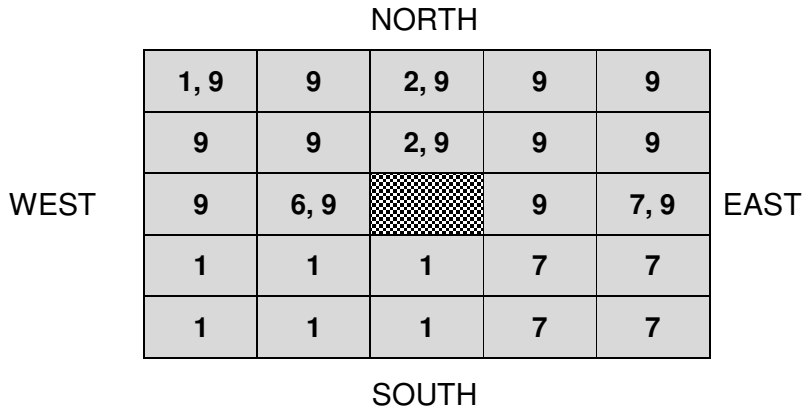
8. LAND USE CHARACTER OF SURROUNDING AREA

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



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

- **Freshwater Resource Ecological Assessment**
- **Terrestrial Ecological Habitat Integrity Investigation**

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.

Hammanskraal falls within Region 2 of the City of Tshwane Metropolitan Municipality.

The northern areas of Region 2 include Hammanskraal, Kudube, Stinkwater, Suurman and Babelegi and are located on the northern periphery of the CoT. The area, although urban in character is not integrated with the larger urban environment of the metropolitan area.

There are 18 000 informal units in the region located in the Temba/Hammanskraal area.

The population is extremely reliant on bus and taxi transport from and to the Hammanskraal and Temba areas due to there being no rail service serving the

area.

According to the Regional Spatial Framework for Hammanskraal and the Northern Cross Border Area of the CoT (2005) there are major backlogs being experienced with regards to services

The development of the Jubilee Mall in the Hammanskraal/ Temba district of about 52 000 m² provided the area with much needed retail facilities.

The areas in the far north such as Hammanskraal/ Temba are not expected to see massive housing developments. The existing development is expected to be formalized, if not included into formal townships. The focus will be on the New Eersterust and Hammanskraal West Extensions areas

(Source: Tshwane Draft RSDF, 2017)

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 specialist report has not been conducted.

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 B - Section of Route

Bulk sewer pipeline – Proposal

(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.)

Remainder of Portion 1 of the Farm Leeuwkraal 92 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):
<input type="text"/>	<input type="text"/>

In the case of linear activities:

Alternative:

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

	Latitude (S):	Longitude (E):
• Starting point of the activity	-25.403069°	28.246720°
• Middle point of the activity	-25.401055°	28.252550°
• Middle point of the activity	-25.396753°	28.253680°
• Middle point of the activity	-25.395106°	28.258054°
• Middle point of the activity	-25.398355°	28.265832°
• End point of the activity	-25.396027°	28.274053°

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

PROPOSAL &	T	0	J	R	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	0	1
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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	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)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
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).

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
-----	-----------

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 % = 65	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % = 5	Building or other structure % =	Bare soil % = 30

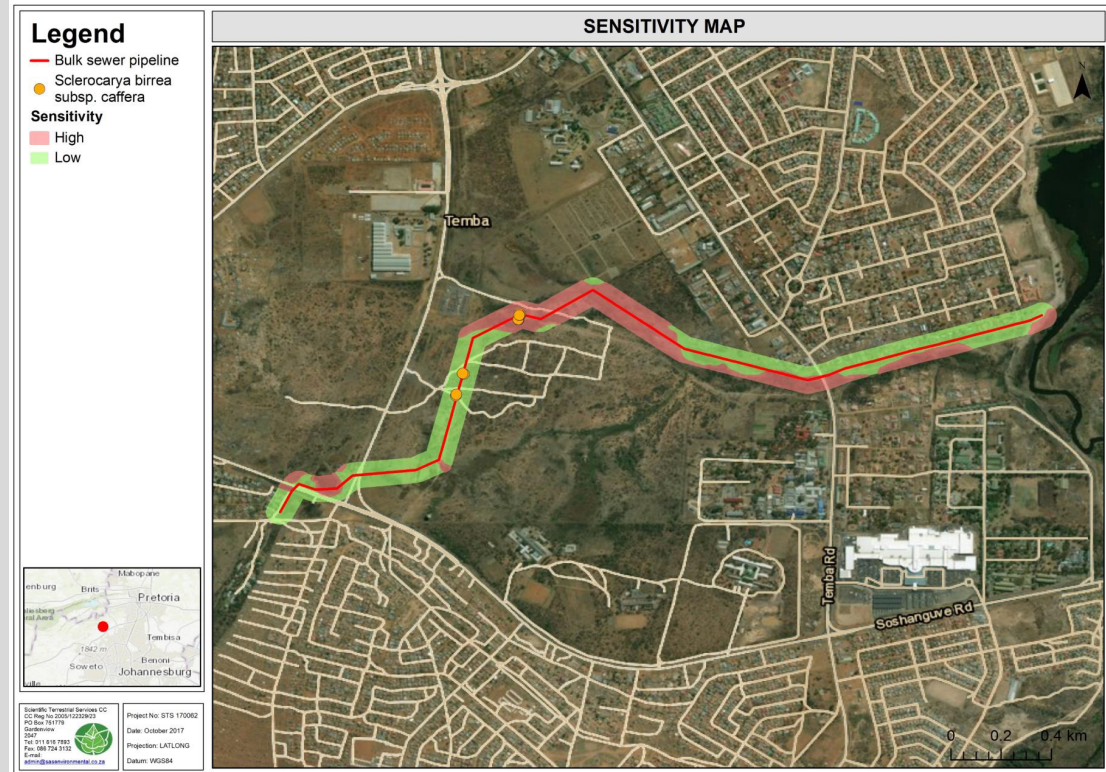
Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

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:

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998. Refer to figure below.



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:

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998.

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

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

If YES, specify and explain:

The western portion of the sewer pipeline falls within the Central Bushveld Group 3 (Endangered) wetland vegetation type, while the eastern portion of the sewer pipeline falls within the Central Bushveld group 2 (Vulnerable) wetland vegetation type.

The proposed sewer pipeline will directly traverse an unnamed tributary of the

Apies River, and therefore, the perceived impact significance of the construction of the proposed sewer pipeline is deemed to be of Medium risk significance

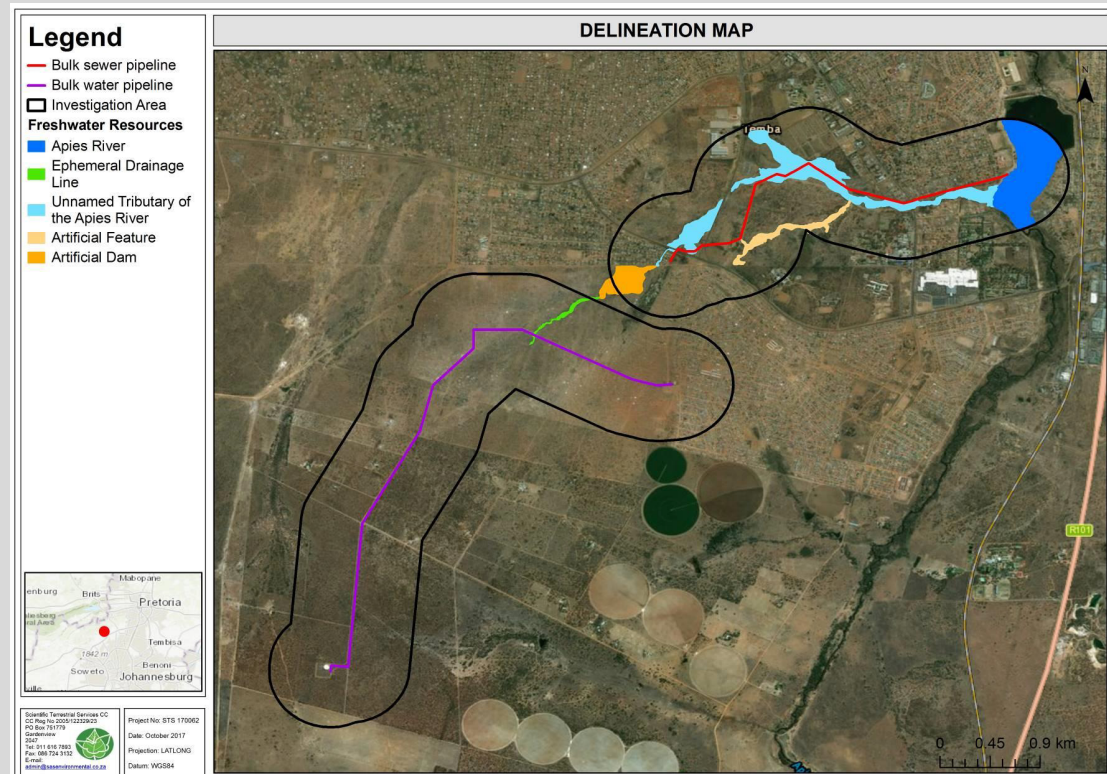


Figure 8: Identified freshwater resources within the investigation area – Bulk Sewer Pipeline

IHI Riparian PES Category: D (Largely to Seriously modified)

VEGRAI Category: D

Alterations to the riparian zone of this tributary is mainly due to ongoing disposal of household and building rubble within the non-marginal zone of the tributary. Additionally, this clearing of the non-marginal zone, and therefore removal of the protective buffer strip has increased the probability of impacts occurring on this tributary. These disturbances have also increased the proliferation of alien vegetation in this area, with specific mention of the non-marginal zone. Excavated trenches to drain runoff from informal roads is present along the entire length of the tributary.

Habitat and biota

This tributary boasts a large woody component within the marginal zone of the tributary. These are mostly indigenous tree species (i.e. *Acacia karoo*). However, the non-marginal zone is considered to be highly disturbed with a variety of alien invasive species present along the entire extent of the tributary, especially where disruptions (such as excavated trenches, infrastructure) have occurred.

The most eastern end of the proposed sewer pipeline would be routed approximately 60m upstream of the Apies River. Even though no direct impacts are expected to occur on this section of the river related to the construction phase of the proposed sewer pipeline, edge effects from such activities may occur.

Was a specialist consulted to assist with completing this section YES NO

If yes complete specialist details

Name of the specialist:	C. du Preez & S. Van Staden		
Qualification(s) of the specialist:	S. Van Staden (Pr. Sci. Nat)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	christel@sasenvgroup.co.za stephen@sasenvironmental.co.za	Fax:	086 724 3132
Are any further specialist studies recommended by the specialist?			<input type="checkbox"/> YES <input type="checkbox"/> NO
If YES, specify:			
If YES, is such a report(s) attached?			<input type="checkbox"/> YES <input type="checkbox"/> NO
If YES list the specialist reports attached below			

Signature of specialist: **See attached report** Date: **October 2017**

Name of the specialist:	H. De Beer & E. Van Der Westhuizen		
Qualification(s) of the specialist:	E. van der Westhuizen (SACNASP REG.NO: 100008/15)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	emile@sasenvironmental.co.za	Fax:	086 724 3132
Are any further specialist studies recommended by the specialist?			<input type="checkbox"/> YES <input type="checkbox"/> NO
If YES, specify:			
If YES, is such a report(s) attached?			<input type="checkbox"/> YES <input type="checkbox"/> NO
If YES list the specialist reports attached below			

Signature of specialist: **See attached report** Date: **October 2017**

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

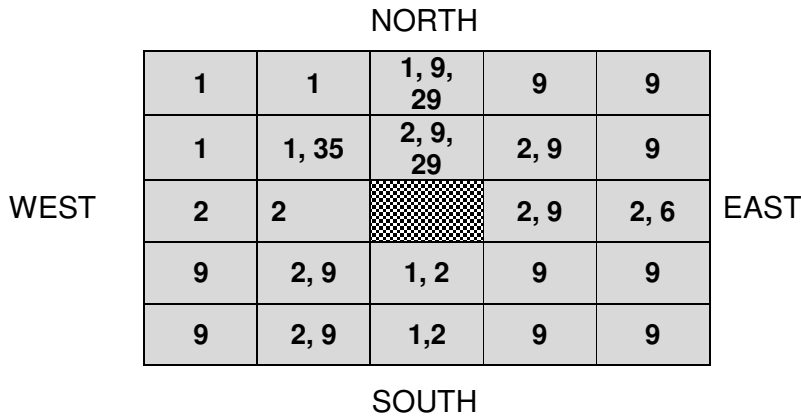
8. LAND USE CHARACTER OF SURROUNDING AREA

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):	35. Substation			

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



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

- | |
|---|
| <ul style="list-style-type: none"> • Freshwater Resource Ecological Assessment • Terrestrial Ecological Habitat Integrity Investigation |
|---|

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.

Hammanskraal falls within Region 2 of the City of Tshwane Metropolitan Municipality.

The northern areas of Region 2 include Hammanskraal, Kudube, Stinkwater, Suurman and Babelegi and are located on the northern periphery of the CoT. The area, although urban in character is not integrated with the larger urban environment of the metropolitan area.

There are 18 000 informal units in the region located in the Temba/Hammanskraal area.

The population is extremely reliant on bus and taxi transport from and to the Hammanskraal and Temba areas due to there being no rail service serving the area.

According to the Regional Spatial Framework for Hammanskraal and the Northern Cross Border Area of the CoT (2005) there are major backlogs being experienced with regards to services

The development of the Jubilee Mall in the Hammanskraal/ Temba district of about 52 000 m² provided the area with much needed retail facilities.

The areas in the far north such as Hammanskraal/ Temba are not expected to see massive housing developments. The existing development is expected to be formalized, if not included into formal townships. The focus will be on the New Eersterust and Hammanskraal West Extensions areas

(Source: Tshwane Draft RSDF, 2017)

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?

YES	NO
-----	----

If YES, explain:

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 specialist report has not been conducted.

Will any building or structure older than 60 years be affected in any way?

YES	NO
YES	NO

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

Section B - Section of Route

**Bulk sewer pipeline –
Alternative 1**

(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.)

Remainder of Portion 1 of the Farm Leeuwkraal 92 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):

--	--

In the case of linear activities:

Alternative:

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

Latitude (S):

Longitude (E):

	Latitude (S):	Longitude (E):
• Starting point of the activity	-25.403531 °	-25.403531 °
• Middle point of the activity	-25.403165 °	28.249071 °
• Middle point of the activity	-25.395952 °	28.252196 °
• Middle point of the activity	-25.394907 °	28.257749 °
• Middle point of the activity	-25.397468 °	28.261336 °
• Middle point of the activity	-25.398251 °	-25.398251 °
• End point of the activity	-25.396892 °	28.272907 °

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

PROPOSAL &	T	0	J	R	0	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	0	1
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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
-------------	-------------	-------------	-------------	--------------	-------------	------------------

4. LOCATION IN LANDSCAPE

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

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
-----------	---------	--------------------------	--------	--------------	----------------------------	--------------------

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)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
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).

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
-----	-----------

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 % = 65	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % = 5	Building or other structure % =	Bare soil % = 30

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:

Although this route was not assessed, it will be similar to the proposal.

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998.

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:

Although this route was not assessed, it will be similar to the proposal.

The Transformed, Transformed Bushveld habitat units and Watercourses contain floral SCC in the form of *Sclerocarya birrea* subsp. *caffra*, which is protected in terms of the National Forest Act (NFA) of 1998.

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

YES	NO
-----	----

If YES, specify and explain:

Although this route was not assessed, it will be similar to the proposal.

The western portion of the sewer pipeline falls within the Central Bushveld Group 3 (Endangered) wetland vegetation type, while the eastern portion of the sewer pipeline falls within the Central Bushveld group 2 (Vulnerable) wetland vegetation type.

The proposed sewer pipeline will directly traverse an unnamed tributary of the Apies River, and therefore, the perceived impact significance of the construction of the proposed sewer pipeline is deemed to be of Medium risk significance

IHI Riparian PES Category: D (Largely to Seriously modified)

VEGRAI Category: D

Alterations to the riparian zone of this tributary is mainly due to ongoing disposal of household and building rubble within the non-marginal zone of the tributary. Additionally, this clearing of the non-marginal zone, and therefore removal the protective buffer strip has increased the probability of impacts occurring on this tributary. These disturbances have also increased the proliferation of alien vegetation in this area, with specific mention of the non-marginal zone. Excavated trenches to drain runoff from informal roads is present along the entire length of the tributary.

Habitat and biota

This tributary boasts a large woody component within the marginal zone of the tributary. These are mostly indigenous tree species (i.e. *Acacia karoo*). However, the non-marginal zone is considered to be highly disturbed with a variety of alien invasive species present along the entire extent of the tributary,

especially where disruptions (such as excavated trenches, infrastructure) have occurred.

The most eastern end of the sewer pipeline would be routed approximately 60m upstream of the Apies River. Even though no direct impacts are expected to occur on this section of the river related to the construction phase of the proposed sewer pipeline, edge effects from such activities may occur.

Was a specialist consulted to assist with completing this section

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

If yes complete specialist details

Name of the specialist:	C. du Preez & S. Van Staden		
Qualification(s) of the specialist:	S. Van Staden (Pr. Sci. Nat)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	christel@sasenvgroup.co.za stephen@sasenvironmental.co.za	Fax:	086 724 3132

Are any further specialist studies recommended by the specialist?

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

If YES, specify:

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

YES	NO
-----	----

If YES list the specialist reports attached below

Signature of specialist:

See attached report

 Date:

October 2017

Name of the specialist:	H. De Beer & E. Van Der Westhuizen		
Qualification(s) of the specialist:	E. van der Westhuizen (SACNASP REG.NO: 100008/15)		
Postal address:	P.O. Box 751779, Garden View		
Postal code:	2047		
Telephone:	011 616 7893	Cell:	-
E-mail:	emile@sasenvironmental.co.za	Fax:	086 724 3132

Are any further specialist studies recommended by the specialist?

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

If YES, specify:

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

YES	NO
-----	----

If YES list the specialist reports attached below

Signature of specialist:

See attached report

 Date:

October 2017

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

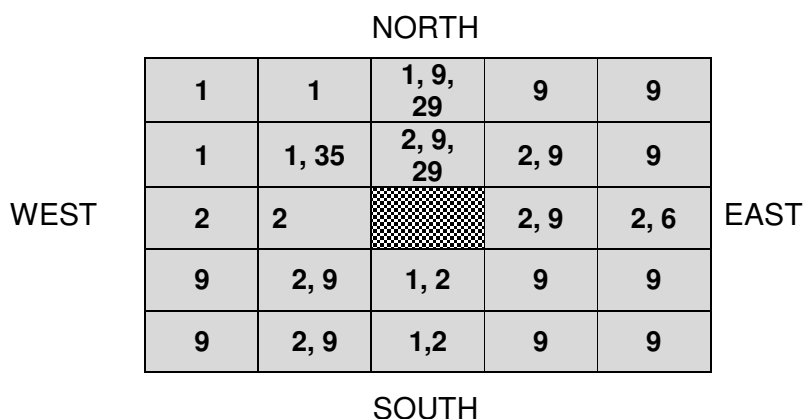
8. LAND USE CHARACTER OF SURROUNDING AREA

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):	35. Substation			

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



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

- **Freshwater Resource Ecological Assessment**
- **Terrestrial Ecological Habitat Integrity Investigation**

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.

Hammanskraal falls within Region 2 of the City of Tshwane Metropolitan Municipality.

The northern areas of Region 2 include Hammanskraal, Kudube, Stinkwater, Suurman and Babelegi and are located on the northern periphery of the CoT. The area, although urban in character is not integrated with the larger urban environment of the metropolitan area.

There are 18 000 informal units in the region located in the Temba/Hammanskraal area.

The population is extremely reliant on bus and taxi transport from and to the Hammanskraal and Temba areas due to there being no rail service serving the area.

According to the Regional Spatial Framework for Hammanskraal and the Northern Cross Border Area of the CoT (2005) there are major backlogs being experienced with regards to services

The development of the Jubilee Mall in the Hammanskraal/ Temba district of about 52 000 m² provided the area with much needed retail facilities.

The areas in the far north such as Hammanskraal/ Temba are not expected to see massive housing developments. The existing development is expected to be formalized, if not included into formal townships. The focus will be on the New Eersterust and Hammanskraal West Extensions areas

(Source: Tshwane Draft RSDF, 2017)

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 specialist report has not been conducted.

Will any building or structure older than 60 years be affected in any way?

YES	NO
-----	----

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
-----	----

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

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.

Comments from the City of Tshwane are awaited.

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):

Transnet Pipelines

Not Affected

Transnet Freight Rail

Kindly advise if there are any railway lines in close proximity to the proposed project. There is a railway line marked on the map, but will like to get clarity on how far it is from the proposed project.

Dark Fibre Africa

Indicated that the area for application falls under City of Tshwane Municipality. Please apply via City of Tshwane.

MTN

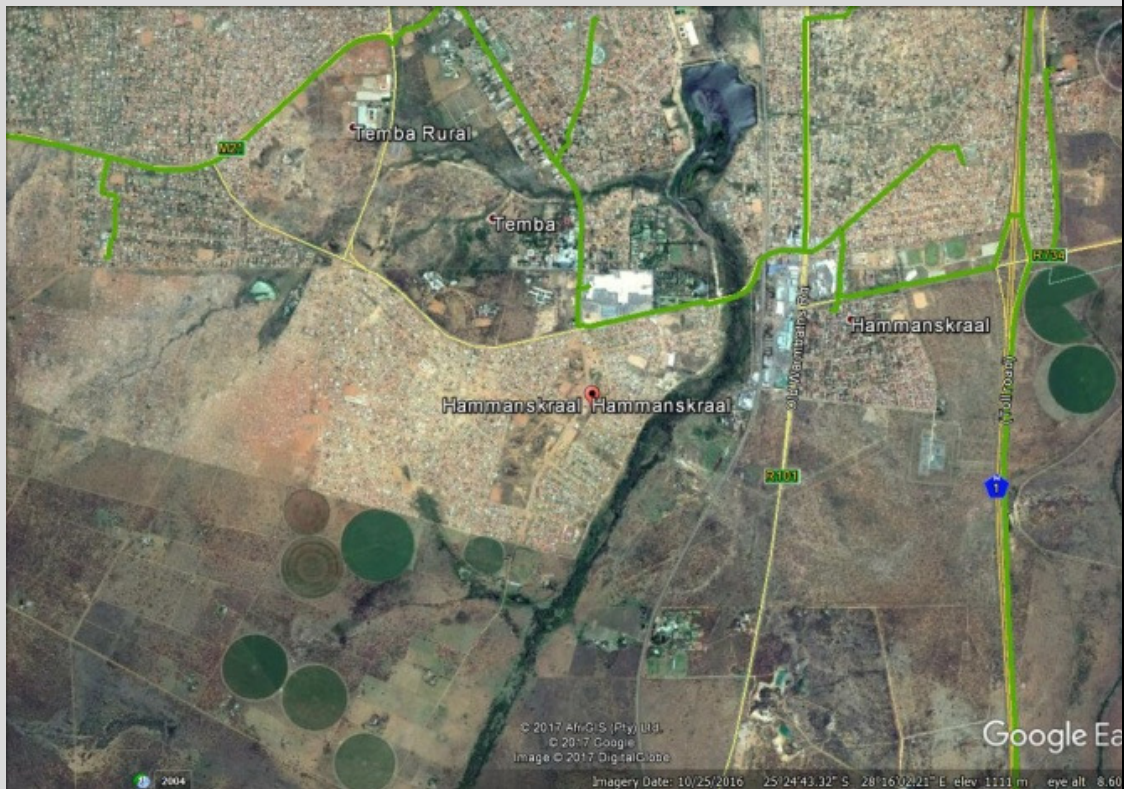
Wayleave Applications to construct main building and installation of wet services (water, sewer and storm water) approval: Hammanskraal, Gauteng

Refer to the application dated 17 Jun 2017 and in this regard advise that:

- 1. The proposed construction affects and is in close proximity to the following of MTN's services:
 - a. Telecommunication cables on the indicated route map, the exact positions cannot be guaranteed.**
 - b. Telecommunication fibre cables at 1metre depths.****
- 2. This letter will be valid for a period not exceeding 6 months from the date indicated above.**
- 3. Should a period of 6 months expire, without any construction taking place, a new**

- request will have to be submitted.
4. The applicant must contact Danie Marais tel/mobile number 082 978 0125 at least 5 working days, prior to commencement of work.
 5. Should the applicant require that services be indicated on site, Danie Marais must be contacted directly on tel/mobile number 082 978 0125
 6. Should the applicant find it necessary to have MTN services shifted or deviated, a written request, including design drawings, showing the proposed reallocation must be submitted for approval in advance of any work being undertaken. All costs for the relocation shall be for your (the applicants) account. Such request must be submitted to this office, giving a minimum of 3 months notification.
 7. Any damage to MTN infrastructure will be for the applicants account. Should any such damage occur, please contact the following number 083 182.

The map below was received from MTN with their comments



SASOL

Sasol Pipeline Operations is affected by the proposed work.

Please take note that the following steps need to be followed for the official wayleave.

1. Contact Sasol Satellite Operations wayleave office via telephone to set up a kick off meeting or a pre-signature meeting 3 days prior to commencement of work. Sasol Satellite Operations will not accept calendar meetings as this is causing major problems when dealing with service providers who do not have the correct information on their requests. Sasol Satellite Operations will then indicate the gas pipeline and issue conditions to be complied with.
2. At the second meeting Sasol Satellite Operations will then issue the official wayleave if all the conditions are met. If any work starts on or close to our gas pipeline without the official wayleave, legal action will be taken against the perpetrators.

3. Sasol Satellite Operation would appreciate it if the executor of the job is the one in the pre-signature meeting.

Damage to the pipeline may result in the following:

- 1. Fatality, even multiple fatalities**
- 2. Loss of livestock and environmental impact**
- 3. Damage to property**
- 4. Cost of loss of production or financial loss could be as high as 1 Billion Rand**

Sasol Pipeline Operations Contact Information:

Rachael Mphofu	079 505 4588	011 865 8774	Rachel.mphofu@sasol.com
Sandra Reyneke	011 865 8549	(f) 011 865 8591	Sandra.reyneke@sasol.com
Sasol Gas Customer Care	0800 212 260		Gascustomer@sasol.com

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
- Appendix 8 –Comments from I&APs on amendments to the BA Report
- Appendix 9 – Copy of the register of I&APs

SECTION D: RESOURCE USE AND PROCESS DETAILS

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
± 500 m ³	

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

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

The waste will be used as backfill and the excess will be disposed of at a Registered Landfill Site

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

At a Registered Landfill Site

Will the activity produce solid waste during its operational phase?

YES	NO
m ³	

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

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

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)?

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:

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?

YES	NO
m ³	

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
-----	----

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

YES	NO
m ³	

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

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?

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

If yes, provide the particulars of the facility:

Facility name:			
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
m ³	

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.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
YES	NO

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

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:

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

The following water related issues also form part of the project and an authorisation in terms of the National Water Act, 1998 (Act No 36 of 1998) will be applied for:

Section 21(c) Impeding or diverting the flow of water in a watercourse;

Section 21(i) Altering the bed, banks or characteristics of a watercourse (including stream crossings for services).

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

Municipal

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:

Not Applicable as the activity is not energy intensive.

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

None

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.

Issue	Name	Date
Would like to join the proposal from TGM Environmental Services. Would like to thank you for this opportunity you gave the community, it means a lot to us.	I.M. Leballo	23 June 2017
It will be of great pleasure to have this after a long time of going to the bushes when we want to release out of solid waste and drinking unhealthy water. We hope electricity will be in process also.	S. Matshabane	9 July 2017
Requested to be registered as an I&AP. Interested in becoming a sub contractor in maintenance purposes in maintenance management plans.	L. Nyembe	12 July 2017
Requested more information on the documents received and the form to be completed, referring to basic assessment process and water use licence application	K. Fianda	21 June 2017
Requested the following information on the documents received: 1. What does ORGANISATION on the form means. 2. What information is needed on the COMMENTS. 3. When is the Project expected to start.	P. Mashiyane	28 June 2017

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)

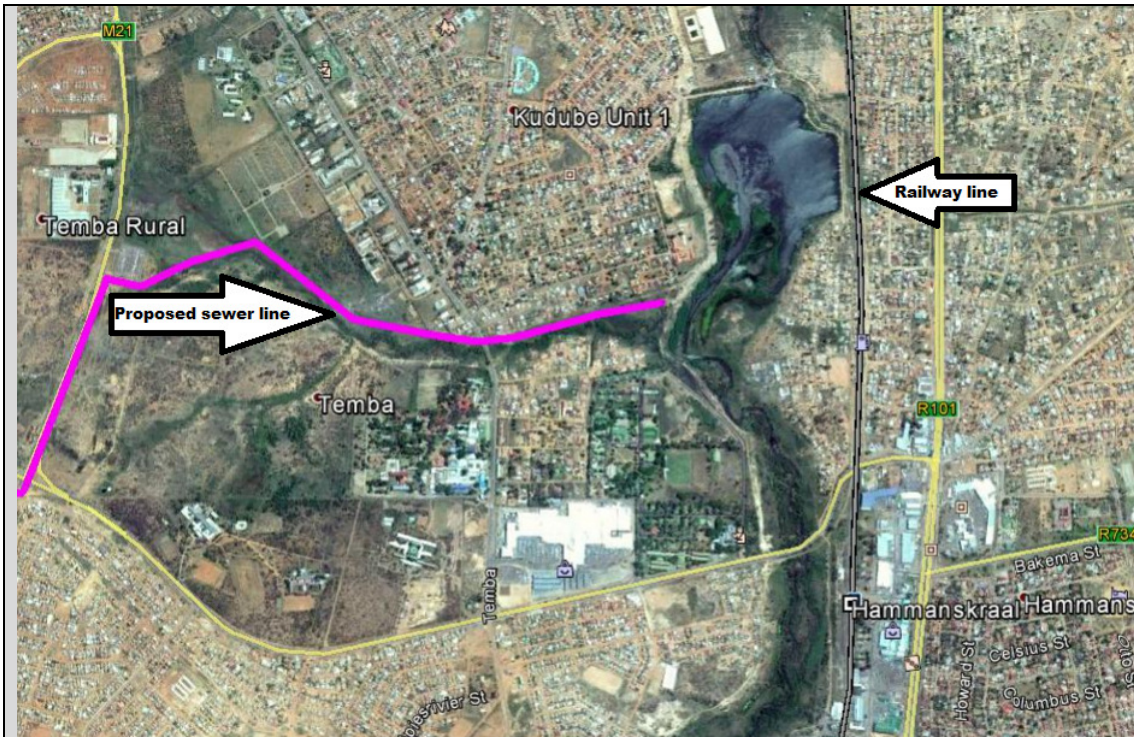
(A full response must be provided in the Comments and Response Report that must be attached to this report):

Transnet Pipelines

No response required

Transnet Freight Rail

The railway line as per the locality map is approximately 740 metres east of the proposed bulk sewer line where it will connect with the existing sewer line and approximately 3.2 km east of the proposed bulk water pipeline. Please note that the Apies River is situated between the location for the proposed bulk sewer line and the railway line as per the Google Earth image below. TGM is not aware of any other railway lines in close proximity to the proposed project site.



Dark Fibre Africa

Applying for wayleaves does not fall within the project scope of the EIA team. The necessary wayleaves will however be obtained before construction commence.

MTN

The conditions as stipulated by MTN will be adhered to.

SASOL

It is acknowledged that Sasol Pipeline Operations is affected by the proposed work.

The steps indicated will be followed for the official wayleave.

The possible results of damage to the pipeline is acknowledged and include in the EMPr.

I.M. Leballo & S. Matshabane

Support for the project is acknowledged.

L. Nyembe

Registered as an I&AP. The CoT has a tendering process which is outside the range of influence of the EIA team. Comments about the tendering process must be directed to the CoT directly. The tender will be advertised according to the CoT procurement procedures. Companies and individuals registered with CoT as Vendors can participate in the tender process.

K. Fianda

Responded by e-mail on 6 July 2017as follows:

The documents are to notify you of the intended project by City of Tshwane in Hammanskraal West Ext 10. The proposed project entails the provision of basic infrastructure (bulk water and sewer pipelines) to Hammanskraal West Extensions 4 & 10. The proposed project is in terms of the EIA Regulations of the NEMA Act (Act

No. 107 1998) in which Interested and Affected parties need to be notified. As an interested or affected party, you have the right to raise any issues in relation to the project. Your issues or comments should be done in writing on the form you received and returned to the mentioned address.

P. Mashiyane

Responded by e-mail on 6 July 2017as follows:

1. Organisation in this context can be any form of group, entity or affiliation that you are in and might want to represent in relation to the proposed activity. You do not have to be in an organisation to be affected or interested in the project, as an individual you can still comment.
2. As an interested or affected party, you have the right to raise any issues in relation to the project. Your issues or comments should be done in writing on the form you received and returned to the mentioned address on the “STAKEHOLDER COMMENTS” form.
3. Date of commencement of the project can not be confirmed at this stage, authorisation needs to be granted first by the Gauteng Department of Agriculture and Rural Development and you will be notified of such.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

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

Criteria used to determine the Consequence of an Impact		
Table 1: 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 2: Methods 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 3: 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 4: 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	&	Possible
Medium	Medium	&	Probable
	Medium	&	Definite
	High	&	Improbable
	High	&	Possible
High	High	&	Probable
	High	&	Definite
	Very high	&	Improbable
	Very high	&	Possible
Very High	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 5: 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	Low
	Medium

judgement and/or specialist knowledge	High
<p>The impact significance rating should be considered by GDARD in their decision-making process based on the implications of ratings ascribed below:</p> <ul style="list-style-type: none"> • 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

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
CONSTRUCTION PHASE								
1. ISSUE: AIR QUALITY								
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	Local (1)	Low (1)	Short term (1)	Very low (3)	Definite	Very low & definite = Very Low	-ve	high
2. ISSUE: TOPOGRAPHY								
2.1 Visual Impacts	Local (1)	Low (1)	Short term (1)	Very low (3)	Definite	Very low & definite = Very Low	-ve	high
2.2 Bulk earthworks: Deep cuttings, high embankments, disposal of spoil and excavations cause local changes to topography	Local (1)	Medium (2)	Short term (1)	Very low (4)	Definite	Very low & definite = Very Low	-ve	high
3. ISSUE: GEOLOGY AND SOILS								
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Regional (2)	Medium (2)	Short term (1)	Low (5)	Definite	Low & Definite = Low	-ve	high
3.2 Soil pollution	Regional (2)	Medium (2)	Short term (1)	Low (5)	Probable	Low & Probable = Low	-ve	high
4. ISSUE: FAUNA AND FLORA								
4.1 Degradation, destruction of habitats/	Regional (2)	Medium (2)	Short term (1)	Low (5)	Probable	Low & Probable = Low	-ve	high

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
ecosystem								
4.2 Impacts on fauna and flora	Regional (2)	Medium (2)	Medium term (2)	Medium (6)	Definite	Medium & Definite = Medium	-ve	high
4.3 Invasive Species	Regional (2)	Medium (2)	Short term (1)	Low (5)	Low & Definite =	Low & Definite = Low	-ve	high
5. ISSUE: HYDROLOGY								
5.1 Stormwater flow and drainage- Developments cause the modification of drainage patterns.	Regional (2)	Medium (2)	Short term (1)	Low (5)	Definite	Low & Definite = Low	-ve	high
5.2 Impact on water quality	Regional (2)	Medium (2)	Short term (1)	Low (5)	Definite	Low & Definite = Low	-ve	high
5.3 Impact on functioning of watercourses	Regional (2)	Medium (2)	Medium term (2)	Medium (6)	Definite	Medium & Definite = Medium	-ve	medium
SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT								
6. ISSUE: AESTHETICS, LANDSCAPE CHARACTER AND SENSE OF PLACE								
6.1 Noise/ vibration	Local (1)	Medium (2)	Short term (1)	Very low (4)	Definite	Very low & definite = Very Low	-ve	high
6.2 Visual impact	Local (1)	Medium (2)	Short term (1)	Very low (4)	Definite	Very low & definite = Very Low	-ve	high
7. ISSUE: SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT								
7.1 Safety and Security	Region (2)	Medium (2)	Short term (1)	Low (5)	Probable	Low & Probable = Low	-ve	high
7.2 Job opportunities and access to markets and commercial centres	Region (2)	High (3)	Short term (1)	Medium (6)	Probable	Medium & Probable = Medium	+ve	Medium
8. ISSUE: HISTORICAL ENVIRONMENT								
8.1 Destruction of cultural / heritage sites	None	None	None	Not significant (0)	Improbable	Not significant & improbable = insignificant	-ve	low
9. ISSUE: INFRASTRUCTURE AND SERVICES/WASTE								
9.1 Waste	Local (1)	Low (1)	Short term (1)	Very low (3)	Definite	Very low & Definite = Very Low	-ve	high
9.2 Pressure on existing infrastructure and services	Region (2)	Medium (2)	Short term (1)	Low (5)	Probable	Low & Probable = Low	-ve	high
10. ISSUE: INFRASTRUCTURE DESIGN								
10.1 Functional design and alignment of Bulk Sewer Pipeline	Region (2)	Low (1)	Short term (1)	Very low (4)	Probable	Very low & Probable = Very low	-ve	medium
OPERATIONAL PHASE								
11. ISSUE: OPERATION AND MAINTENANCE								
11.1 Operation and maintenance of the water pipeline	Region (2)	Low (1)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	high
11.2 Operation and maintenance of the sewer pipeline	Region (2)	Low (1)	Long term (3)	Medium (6)	Probable	Medium & Probable = Medium	-ve	high
11.3 Contribute to the provision	Region (2)	High (3)	Long term (3)	Very High (8)	Definite	Very High & Definite =	+ve	high

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
of quality basic services and infrastructure in the area						Very High		

Potential Impacts for the construction and operational phase

Alternative 1

The potential impacts for the construction phase and operational phase for Alternative 1 is similar to that of the proposal with the only exception being the pressure on existing infrastructure and services and the functional design and alignment of the Bulk Sewer Pipeline during the construction phase.

Potential Impact	Extent A	Intensity B	Duration C	Consequence A+B+C	Probability	Impact Significance	Status	Confidence
CONSTRUCTION PHASE								
9. ISSUE: INFRASTRUCTURE AND SERVICES/WASTE								
9.2 Pressure on existing infrastructure and services	Region (2)	High (3)	Short term (1)	Medium (6)	Probable	Medium & Probable = Medium	-ve	high
10. ISSUE: INFRASTRUCTURE DESIGN								
10.1 Functional design and alignment of Bulk Sewer Pipeline	Region (2)	High (3)	Short term (1)	Medium (6)	Probable	Medium & Probable = Medium	-ve	medium

Significance Rating for the construction and operational phase

Proposal

Potential Impacts	Significance rating of impacts	Proposed mitigation	Significance rating of impacts after mitigation
CONSTRUCTION PHASE			
1. ISSUE: AIR QUALITY			
1.1 Dust /Air pollution The generation of dust associated with construction activities & earthworks	Very Low	<ul style="list-style-type: none"> Dust generation should be kept to a minimum. Dust must be suppressed at 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 friable materials. No burning of refuse or vegetation is permitted. 	Very Low
2. ISSUE: TOPOGRAPHY			

2.1 Visual Impacts	Very Low	<ul style="list-style-type: none"> The site must be managed appropriately and all rubbish and rubble removed to a permitted landfill site. Excess soil and bedrock should be disposed of at an appropriate facility. A certificate of disposal must be obtained for any waste that is disposed of. Waste must not remain on site for more than 2 weeks. Refuse bins must be provided by the Contractor for rubbish to be used by staff. Excess concrete must be disposed of correctly and at an appropriate facility. No waste may be placed in any excavations on site. The construction camp must be located as far from other properties as possible. The construction footprint must 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. 	Very Low
2.2 Bulk earthworks	Very Low	<ul style="list-style-type: none"> Avoid development on excessively steep slopes. Avoid cutting steep embankments Provide the necessary erosion protection measures. 	Very Low
3. ISSUE: GEOLOGY AND SOILS			
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Low	<ul style="list-style-type: none"> Appropriate erosion and stormwater 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. 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. All excavations and foundations must be inspected regularly. 	Low
3.2 Soil Pollution	Low	<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 substances Remediate polluted soil. 	Very Low
4. ISSUE: FAUNA AND FLORA			
4.1 Degradation, destruction of habitats/ ecosystem	Low	<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. 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 activity whatsoever, such as temporary housing, temporary ablutions, storing of equipment or any other use of the buffer/flood zone, may be permitted during the construction phase. The demarcated buffer/flood zone must be fenced during the construction phase to prevent any misinterpretation or disturbance of this no-go zone. Alien and invasive plants must be removed. 	Low
4.2 Impacts on fauna and flora	Medium	<ul style="list-style-type: none"> The Transformed, Transformed Bushveld habitat units and Watercourses contain floral Species of Conservation Concern (SCC) in the form of <i>Sclerocarya birrea</i> subsp. <i>Caffra</i> (Maroela), which is protected in terms of the 	Low

		<p>National Forest Act (NFA) of 1998.</p> <ul style="list-style-type: none"> Permits from Department of Agriculture, Forestry and Fisheries (DAFF) should be obtained to remove, cut or destroy these tree species. The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase. The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution. Disturbance to birds, animals and reptiles and their habitats should be prevented at all times. 	
4.3 Invasive species	Low	<ul style="list-style-type: none"> During the floral assessment, dominant alien and invasive floral species were identified. Alien species located within the proposed bulk sewer and potable water pipelines must be removed according to the National Environmental Management: Biodiversity Act (Act 10 of 2004): Alien and Invasive Species Regulations, GN R586 of 2016 during construction activities and at least five years after construction activities or as stipulated within the Alien and Invasive Plant Control Plan. It is recommended that the construction footprint, as far as possible be kept free from alien and invasive vegetation. 	Low
5. ISSUE: HYDROLOGY			
5.1 Stormwater flow and drainage	Low	<ul style="list-style-type: none"> Special care must be taken during construction to ensure sediment rich storm water does not leave the site. 	Low
5.2 Impacts on water quality	Low	<ul style="list-style-type: none"> Locate construction camp, refueling depots, sanitation facilities and concrete batching plant 150m away from drainage area. Utilize proper waste management practices. Ensure handling, transport and disposal of hazardous substances are adequately controlled and managed. Provide containment areas for potential pollutants at construction camps, refueling depot and concrete batching plants. 	Low
5.3 Impacts on functioning of watercourses	Medium	<ul style="list-style-type: none"> Construction should preferably commence during the dry months. Removed soil and stockpiling of soil must occur outside the extent of the watercourse to prevent siltation and increased runoff during construction. This includes the buffer zones and 1:100-year flood lines. Proper toilet facilities must be located outside the sensitive areas: the impact of human waste on the system is immense. Chemical toilets must be provided, which should always be well serviced, spaced as per occupational health and safety laws, and placed outside the buffer and 1:100-year flood lines. Spill kits must be stored on site: In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked and all personnel should be educated to deal with the spill. Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. No plant machinery may be stored or left near the aquatic areas, when not in use. Any species of fauna encountered during the construction phase should be moved to a safe location where no harm can be bestowed on the species. Any new erosion gullies must be remediated immediately. Access routes should be demarcated and located properly so that no damage to the system can occur. These roads must be adhered to at all times. A large turning place must be provided for larger trucks and machinery. No grading of temporary access roads is allowed as this will create dust and water runoff problems. Increased runoff due to removal of vegetation and increased soil compaction must be managed to ensure the prevention of siltation and the maximum stream bank stability. Areas disturbed by the construction activities must be re-vegetated as soon as possible. Sufficient erosion protection must be in place downstream of the canal. 	Low

		<ul style="list-style-type: none"> • Sediment traps may be necessary downstream until construction is completed and vegetation has established. • Ensure that sufficient energy breakers and erosion protection are present downstream of the canal to prevent erosion of the downstream system. • Monitoring and rehabilitation Plan should be implemented. 	
SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT			
6. ISSUE: AESTHETICS, LANDSCAPE CHARACTER AND SENSE OF PLACE			
6.1 Noise/ vibration	Very Low	<ul style="list-style-type: none"> • 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. 	Very Low
6.2 Visual impact	Very Low	<ul style="list-style-type: none"> • No significant impact. 	Very Low
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 1993) and the National Building Regulations • 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 	Low

		<p>times.</p> <ul style="list-style-type: none"> 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. 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. 	
7.2 Economic opportunities	Positive - Medium	<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. 	Positive – Medium
8. ISSUE: HISTORICAL ENVIRONMENT			
8.1 Destruction of cultural / heritage sites	Insignificant	<ul style="list-style-type: none"> Ensure that construction staff members are aware that heritage resources could be unearthed and the scientific importance of such finds. Ensure that heritage objects are not to be moved or destroyed without the necessary permits from the South African Heritage Resources Agency (SAHRA) in place. 	Insignificant
9. ISSUE: INFRASTRUCTURE AND SERVICES/WASTE			
9.1 Waste	Very Low	<ul style="list-style-type: none"> Adequate number of waste disposal receptacles is to be positioned at strategic locations within the development. No burning of waste. Waste will be collected and removed off-site to a registered waste site. 	Very Low
9.2 Pressure on existing infrastructure and services	Low	<ul style="list-style-type: none"> Integrity of existing services to be ensured. 	Low
10. ISSUE: INFRASTRUCTURE DESIGN			
10.1 Functional design and alignment of Bulk Sewer Pipe	Very Low	<ul style="list-style-type: none"> Adherence to cogent, well-conceived and ecologically sensitive designs and construction methods, and the mitigation measures provided as well as general good construction practice, is essential. 	Very Low
OPERATIONAL PHASE			
11.1 Operation and maintenance of the water pipeline	Medium	<ul style="list-style-type: none"> Potential failure of infrastructure, possible leaks from pipeline into the freshwater resources, causing incision and alteration of the hydroperiod of the freshwater resources. Indiscriminate movement of vehicles and vegetation trampling within the freshwater resources during maintenance activities. Repair of the pipeline in the event of leaks detected. 	Medium
11.2 Operation and maintenance of the sewer pipeline	Medium	<ul style="list-style-type: none"> Potential failure of infrastructure, resulting in blockages or leakages. Vehicular access to the sewer pipeline resulting in: <ul style="list-style-type: none"> Soil compaction Vegetation degradation Soil and stormwater contamination from oils and hydrocarbons Contamination of the freshwater resources with additional sewage effluent resulting in: <ul style="list-style-type: none"> Increased concentration of salts, nitrate and toxic ammonia concentrations, as well as counts of <i>Escheria coli</i>; and 	Medium

		<ul style="list-style-type: none"> - Potential eutrophication of the system, including anoxic conditions, leading to biodiversity simplification and the excess production of hydrogen sulphide gas as well as increased alien and invasive species encroachment. • Repair of the sewer pipeline in the event of leaks detected. 	
11.3 Contribute to the provision of quality basic services and infrastructure in the area	Positive – Very High	<ul style="list-style-type: none"> • Provision of water and sewer services to the community that currently have no services. • Improved business opportunities resulting from the improved services in the area. • Job opportunities. 	Positive – Very High

Significance Rating for the construction and operational phase

Alternative 1

Potential Impacts	Significance rating of impacts	Proposed mitigation	Significance rating of impacts after mitigation
CONSTRUCTION PHASE			
9. ISSUE: INFRASTRUCTURE AND SERVICES/WASTE			
9.2 Pressure on existing infrastructure and services	Medium	<ul style="list-style-type: none"> • The alignment for this Alternative runs parallel to the unnamed road towards Temba. There is however an electrical servitude on the Eastern side of the road and for portions of that section the space between the electrical servitude and the road is not sufficient to accommodate the bulk sewer line. 	Medium
10. ISSUE: INFRASTRUCTURE DESIGN			
10.1 Functional design and alignment of Bulk Sewer Pipe	Medium	<ul style="list-style-type: none"> • The alignment for this Alternative runs parallel to the unnamed road towards Temba. There is however an electrical servitude on the Eastern side of the road and for portions of that section the space between the electrical servitude and the road is not sufficient to accommodate the bulk sewer line. 	Medium

No Go

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
None				

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

- **Detail Design Report**
- **Freshwater Resource Ecological Assessment**
- **Terrestrial Ecological Habitat Integrity Investigation**

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.

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.

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
No decommissioning is envisaged.				

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
No decommissioning is envisaged.				

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.

<p>No decommissioning is envisaged.</p> <p>Rehabilitation according to the rehabilitation plan should be implemented during and after construction.</p> <p>Alien species located within the proposed bulk sewer and potable water pipelines must be removed according to the National Environmental Management: Biodiversity Act (Act 10 of 2004): Alien and Invasive Species Regulations, GN R586 of 2016 during construction activities and at least five years after construction activities or as stipulated within the Alien and Invasive Plant Control Plan.</p> <p>Costs involved will be determined as part of the tendering process.</p>

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:

<p>Surface Water Pollution</p> <ul style="list-style-type: none"> • Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate surface water bodies. <p>Increased run off of water</p> <ul style="list-style-type: none"> • Stormwater run off has the potential to erode the topsoil and result in sedimentation of water bodies if not controlled. <p>Ground Water Pollution</p>

- 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.
- Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate the soil and groundwater.
- Cement mixing and the storage of fuel must be conducted so as to prevent contamination of the soil and groundwater.

Basic services and infrastructure

- The townships of Hammanskraal West Ext 10, Hammanskraal West Ext 4, Inderminne and others currently have no bulk sewer services that can drain the proposed sewer networks that will be constructed in these areas.
- The activity will contribute to the provision of quality basic services and infrastructure in the area.

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 construction of the bulk water and sewer pipelines will have a short term impact ranging from very low to low during the construction phase, and medium during the operational phase, but will result in a long term improvement in the system during the operational phase if the correct mitigation measures are implemented during the construction phase.

Based on the terrestrial impact assessment of potential impacts on floral and faunal SCC within the study area, it is evident that both impacts are medium-high to medium-low prior to mitigation and low should mitigation measures be put in place.

Following the assessment of the freshwater resources, the DWS risk assessment matrix of 2016 was applied in order to ascertain the significance of possible impacts, which may occur as a result of the proposed development. The results of this assessment show that, assuming mitigation measures are strictly enforced; impact significance is of Low and Medium levels during both construction and operational phases.

Please see below a summary of the identified impacts and their pre-mitigation and post-mitigation impact significance rating scores.

Potential Impacts	Significance rating of impacts	Significance rating of impacts after mitigation
CONSTRUCTION PHASE		
1.1 Dust /Air pollution The generation of dust associated with construction activities & earthworks	Very Low	Very Low
2.1 Visual Impacts	Very Low	Very Low
2.2 Bulk earthworks	Very Low	Very Low
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Low	Low

3.2 Soil Pollution	Low	Very Low
4.1 Degradation, destruction of habitats/ ecosystem	Low	Low
4.2 Impacts on fauna and flora	Medium	Low
4.3 Invasive species	Low	Low
5.1 Stormwater flow and drainage	Low	Low
5.2 Impacts on water quality	Low	Low
5.3 Impacts on functioning of watercourses	Medium	Low
6.1 Noise/ vibration	Very Low	Very Low
6.2 Visual impact	Very Low	Very Low
7.1 Safety and Security	Low	Low
7.2 Economic opportunities	Positive – Medium	Positive – Medium
8.1 Destruction of cultural / heritage sites	Insignificant	Insignificant
9.1 Waste	Very Low	Very Low
9.2 Pressure on existing infrastructure and services	Low	Low
10.1 Functional design and alignment of Bulk Sewer Pipe	Very Low	Very Low
OPERATIONAL PHASE		
11.1 Operation and maintenance of the water pipeline	Medium	Medium
11.2 Operation and maintenance of the sewer pipeline	Medium	Medium
11.3 Contribute to the provision of quality basic services and infrastructure in the area	Positive – Very High	Positive – Very High

Alternative 1

The environmental impact statement for Alternative 1 is similar to that of the proposal except for the pressure on existing infrastructure and services and the functional design and alignment of the Bulk Sewer Pipeline during the construction phase.

Please see below a summary of the identified impacts and their pre-mitigation and post-mitigation impact significance rating scores.

Potential Impacts	Significance rating of impacts	Significance rating of impacts after mitigation
CONSTRUCTION PHASE		
9.2 Pressure on existing infrastructure and services	Medium	Medium
10.1 Functional design and alignment of Bulk Sewer Pipe	Medium	Medium

Alternative 2

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No-go (compulsory)

The “No-go” alternative refers to the alternative of not embarking on the proposed project at all and this option would not experience any impacts during the construction or the operational phase.

The townships of Hammanskraal West Ext 10, Hammanskraal West Ext 4, Inderminne and others currently have no bulk sewer services that can drain the proposed sewer networks that will be constructed in these areas. Furthermore, the bulk water supply to the area is ineffective to supply the proposed water networks that will be constructed in the area.

This option will therefore not assist in the provision of water and sewer services to the community that currently have no services.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

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

For alternative 1:

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.

The proposed bulk water and sewer pipelines will provide much needed water and sewer services to the community that currently have no services. The project will also improved business opportunities resulting from the improved services in the area and create job opportunities.

Overall, the construction of the bulk water and sewer pipelines will have a short term impact ranging from very low to low during the construction phase, and medium during the operational phase, but will result in a long term improvement in the system during the operational phase if the correct mitigation measures are implemented during the construction phase.

Based on the terrestrial impact assessment of potential impacts on floral and faunal SCC within the study area, it is the opinion of the ecologists that, from a terrestrial ecological point of view, the proposed development be considered favorably provided that the recommended mitigation measures for the identified impacts are adhered to.

Based on the findings of the freshwater resource assessment and the results of the risk assessment, it is the opinion of the ecologist that the proposed development may pose a direct risk to the freshwater resources, with specific mention of the unnamed tributary of the Apies River. Adherence to cogent, well-conceived and ecologically sensitive designs and construction methods, and the mitigation measures provided in this report as well as general good construction practice, is essential if the significance of perceived impacts is to be reduced to acceptable levels. It is the opinion of the specialist therefore, that the proposed sewer and water pipelines, from a freshwater resource perspective, be considered favourably, with the proviso that strict adherence to mitigation measures is enforced to ensure that the ecological integrity of the freshwater environment is not further compromised.

The proposal as the chosen alternative will contribute to the provision of quality basic services and infrastructure in the area.

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, 2011

Gauteng Province adopted the Gauteng Spatial Development Framework (GSDF, 2011) as the core policy framework intended to guide decisions relating to the location and nature of physical development in the Province. The GSDF seeks to

achieve the following:

- **Creation of a functionally integrated natural open space system and protection of the rural parts of the province for agricultural, recreational (walking and cycling), biodiversity and aquifer management purposes;**
- **The containment of urban sprawl by way of growth management that seeks to advance compaction, residential densification, and in-fill development, and mixed land uses within the existing urban fabric which will promote walking and cycling;**
- **The social and economic integration of disadvantaged communities into the urban system, particularly those on the urban periphery;**
- **The establishment of a hierarchy of nodes coupled with the improvement of linkages and connectivity between these nodes and areas of economic opportunity;**
- **Land use-public transport integration through nodal and corridor development;**
- **The promotion of viable public transport systems and reduction of reliance on private mobility with strong emphasis on densification along the priority public transport routes, especially rail and BRT routes which form the basis of the IRPTN movement system;**
- **Public transport routes become the priority areas for densification and infill development; and**
- **The urban system's existing and proposed road network is used to reinforce and shape the urban form as a growth management tool.**

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:

- **If feasible, construction must be scheduled for the drier winter period in order to minimise the risk of sediment-laden runoff reaching the freshwater resources as a result of the construction activities;**
- **Should it be necessary to clear any areas of vegetation, these areas, including contractor laydown areas, must remain as small as possible, in order to reduce the risk of further proliferation of alien vegetation, and in order to retain a level of protection to the freshwater resources during construction (e.g. sediment trapping, slowing of stormwater runoff etc.);**
- **Contractor laydown areas and all non-essential activities are to remain outside of the delineated freshwater resources and the allocated setback area, and as much as feasible no natural/indigenous riparian vegetation is to be cleared;**
- **It is highly recommended that an alien vegetation management plan be compiled during the planning phase and implemented concurrently with the commencement of construction;**
- **All exposed soils must be protected for the duration of the construction**

phase with a suitable geotextile (e.g. Geojute or hessian sheeting) in order to prevent erosion and sedimentation of the river. During trenching, soils should not be stockpiled within close proximity to the river or the dewatered section, but should rather be outside of the temporary zone boundaries in order to prevent sedimentation of the river, and stockpiles may not exceed 2m in height;

- Any remaining soils following the completion of construction activities are to be levelled and re-seeded with indigenous flora species to minimise the risk of further sedimentation of the freshwater resources, and to aid in the natural reclamation process;
- All manholes located within the 1:100 year floodline must be constructed in such a way as to elevate the manhole cover above the 1:100 year flood level. This can be done by extending the collar of the manhole above the ground level and then building up a mound of appropriate soil around the manhole which is then sloped as gently as possible back to natural ground level;
- It is recommended that the managing authority test the integrity of the sewer pipeline at least once every five years or more often should there be any sign or reports of leaks; and
- Should a blockage occur within the sewer pipeline, all possible steps are to be taken to prevent the pollution of the freshwater system during repair, including the placement of sheeting around the manhole used for access as well as containment barrels for any effluent withdrawn.

9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

The townships of Hammanskraal West Ext 10, Hammanskraal West Ext 4, Inderminne and others currently have no bulk sewer services that can drain the proposed sewer networks that will be constructed in these areas.

Bulk water supply to the area is ineffective to supply the proposed water networks that will be constructed in the area.

The project will therefore provide water and sewer services to the community that currently have no services.

10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED (consider when the activity 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 EMPr 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.