

Basic Assessment Report



**BASIC ASSESSMENT FOR ENVIRONMENTAL
AUTHORISATION FOR THE DEVELOPMENT OF A
PROPOSED BUS AND TAXI HOLDING AREA;
INCLUDING A FILLING STATION AND
ASSOCIATED INFRASTRUCTURE ON ERVEN,
3781, 3780, 710, 602 AND 600, MAFIKENG,
NORTH WEST PROVINCE**

MAHIKENG LOCAL MUNICIPALITY~

Mahikeng, North-West Province

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Report details

DEDECT reference number:	NWP/EIA/85/2022
Document purpose	<p>This Basic Assessment (BA) Report forms part of a series of reports and information sources provided during the BAR Process for the proposed Bus and Taxi Holding Area and its associated infrastructure in Mahikeng, North West Province. In accordance with the 2014 NEMA EIA Regulations (as amended), the purpose of the BA Report is to:</p> <ul style="list-style-type: none"> • Present the details of and need for the proposed project; • Describe the affected environment, including the planning context, at a sufficient level of detail to facilitate informed decision-making; • Provide an overview of the BA Process being followed, including public consultation; • Assess the predicted positive and negative impacts of the project on the environment; • Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project; • Provide an Environmental Management Programme (EMPr) for the project's design, construction and operational phases. <p>The BA Report is being made available to all stakeholders for a 30-day review period. All comments on the BA Report (submitted within the 30-day review period) will be considered in the preparation of the finalised BA Report. This BA Report will then be submitted to the North West Department of Economic Development, Environment, Conservation and Tourism per Regulation 19 (1) of the 2017 NEMA EIA Regulations, for decision-making regarding Regulation 20 of the 2017 NEMA EIA Regulations (as amended).</p>
Project title	Basic Assessment for Environmental Authorisation for the Development of a Proposed Bus And Taxi Holding Area; Including a Filling Station and Associated Infrastructure on Erven, 3781, 3780, 710, 602 and 600, Mahikeng, North West Province
Prepared by	Environmental Management Group (Pty) Ltd
Lead author	CW Vermeulen EAPASA: 2019/1521;















Applicant	Mahikeng Local Municipality
Report Status	Basic Assessment Report
Submission Date	17 March 2023
Development type	Bus and Taxi Holding Area
Associated infrastructure	Filling Station, Car Wash Area, Tyre and Fitment Centre, Clinic, Spares and Fitment Centre, Restaurant, Taxi Association Office Buildings, Standard Taxi Bays (584), 22 Seater Bus Bay (32), Taxi Office Bays (19), Car Wash Bays (14), Cleaning Bays (16), Filling Station Parking Bays (20), Tyre/ Spares and Fitment Centre's Parking Bays (13)
Broad-scale locality	Mahikeng, North-West Province
Fine-scale locality	Erven, 3781, 3780, 710, 602 And 600, Mahikeng, North West Province
Site area	Mahikeng CBD, Mahikeng

Executive summary






Background and Project description:

JM Professional Services CC appointed Environmental Management Group (Pty) Ltd to apply for Environmental Authorisation on behalf of the Mahikeng Local Municipality, for a proposed taxi and bus holding area with associated infrastructure development. The proposed development forms part of a larger project known as the Mahikeng Intermodal Facility, on erven, 3781, 3780, 710, 602 and 600, Mahikeng CBD, Registration Division Mahikeng, North West Province. The proposed development is located South of the Mahikeng Cemetery (North), between the Railroad (West), Carrington Street (East) and North Road (South). The proposed development's study area (area to be transformed) consists of 5 erven with a combined size of approximately 3.53 ha. The proposed development, therefore, requires prior environmental authorization through a Basic Assessment process in terms of the Amended 2014 NEMA EIA Regulations.

Mahikeng Local Municipality (the applicant), along with JM Professional Services CC (the project managers - a development company specializing in the development of strategically located land), has earmarked the site, as described above, for a bus and taxi holding area development comprising of the following facilities:

-  Filling Station
-  Car Wash Area
-  Tyre and Fitment Centre
-  Clinic
-  Spares and Fitment Centre
-  Restaurant
-  Taxi Association Office Buildings
-  Standard Taxi Bays (584)
-  22-Seater Bus Bay (32)
-  Taxi Office Bays (19)
-  Car Wash Bays (14)
-  Cleaning Bays (16)
-  Filling Station Parking Bays (20)
-  Tyre/ Spares and Fitment Centre's Parking Bays (13)

The study area was regarded as the ideal site for the proposed development, and the main reasons for this site selection are:

-  The accessibility of the site;
-  The visibility of the site;
-  The locality of the site;
-  The availability of services and infrastructure;
-  The fact that the proposed new holding area will service and compliment the proposed new taxi rank as part of the intermodal facility.

The proposed development, which forms part of the intermodal facility, will generate rates and taxes and contribute significantly to social and economic upliftment in the city and surrounding

area. The long-term strategy is creating a local and regional node to promote sustainable development.

Co-ordinates:	Latitude (S):	Longitude (E):
Corner 1	25°51'29.93"S	25°38'11.25"E
Corner 2	25°51'27.60"S	25°38'16.23"E
Corner 3	25°51'32.63"S	25°38'19.21"E
Corner 4	25°51'33.74"S	25°38'17.45"E
Corner 5	25°51'36.24"S	25°38'19.03"E
Corner 6	25°51'37.06"S	25°38'17.74"E
Corner 7	25°51'35.59"S	25°38'16.65"E
Corner 8	25°51'36.35"S	25°38'15.14"E

This report deals with the proposed development of a bus and taxi holding area and its associated infrastructure, as listed above, in Mahikeng CBD, North West Province. Take note that no alternative sites were investigated since the availability of large enough open areas within the CBD is very limited. Any other site locality will not make economic sense, because the success of the project depends on the movement of people to and from the CBD.

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Glossary of terms and acronyms






BA	Basic Assessment
BAR	Basic Assessment Report
CBD	Central business district
DM	District Municipality
DEA	Department of Environmental Affairs
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
Environmental impact	Any environmental change, whether adverse or beneficial, wholly or partially resulting from development and or the operation thereof.
GNR	Government Notice Regulation
I&AP	Interested and affected party
IDP	Integrated Development Plan
LSM	Living Standards Measure
MLM	Mahikeng Local Municipality
Mitigate	Activities designed to lessen/compensate for unavoidable environmental impacts.
NEMA	National Environmental Management Act No. 107 of 1998
NEM:BA	National Environmental Management: Biodiversity Act No. 10 of 2004
NEM:WA	National Environmental Management: Waste Act No. 59 of 2008
NFA	National Forest Act No. 84 of 1998
NWA	National Water Act No. 36 of 1998
PSDF	Provincial Spatial Development Framework
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework

1. Introduction

1.1. Document purpose:

JM Professional Services CC appointed Environmental Management Group (Pty) Ltd to apply for Environmental Authorisation on behalf of the Mahikeng Local Municipality, for a proposed taxi and bus holding area development. This proposed development forms part of a larger development project known as the Mahikeng Intermodal Facility, located on erven, 3781, 3780, 710, 602 and 600, Mahikeng CBD, Registration Division Mahikeng, North West Province. The proposed development is located South of the Mahikeng Cemetery (North), the Railroad (West), Carrington Street (East) and North Road (South). The proposed development's study area (area to be transformed) consists of 5 erven with a combined size of approximately 3.53 ha. The proposed development, therefore, requires prior environmental authorization through a Basic Assessment process in terms of the Amended 2014 NEMA EIA Regulations.

This Basic Assessment (BA) Report forms part of a series of reports and information sources provided during the BA Process for the proposed Bus and Taxi Holding area and its associated infrastructure in Mahikeng CBD, North-West Province. In accordance with the 2014 NEMA EIA Regulations (as amended), the purpose of the BA Report is to:

-  determine the policy and legislative context applicable to the proposed activity and how the activity complies with and responds thereto;
-  identify the alternatives considered, including the activity, location, and technology alternatives;
-  describe the need and desirability of the proposed alternatives;
-  through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts, which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine—
 - the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - the degree to which these impacts—
 - can be reversed;
 - may cause irreplaceable loss of resources; and
 - can be avoided, managed or mitigated; and
-  through a ranking of the site sensitivities and possible impacts, the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - identify and motivate a preferred site, activity and technology alternative;

- identify suitable measures to avoid, manage or mitigate identified impacts; and
- identify residual risks that need to be managed and monitored.

The BA Report is available to all stakeholders for a 30-day review period. All comments on the BA Report (submitted within the 30-day review period) will be considered in the preparation of the BA Report. Environmental Management Group (Pty) Ltd. will then submit the BA Report to the DEDECT in accordance with Regulation 19 (1) of the 2014 NEMA EIA Regulations for decision-making in terms of Regulation 20 of the 2014 NEMA EIA Regulations (as amended).

1.2. The Environmental Assessment Practitioner:

According to Appendix 1, Section 3 (1), of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include



“(a) details of—

- (i). the EAP who prepared the report; and
- (ii). the expertise of the EAP, including a curriculum vitae.”

Environmental Management Group (PTY) Ltd. (EMG) is an active company working in conjunction with other private companies, government departments, municipalities and parastatals to promote sustainable development and sound environmental management principles. EMG was appointed by the applicant to facilitate the environmental authorisation process for the proposed Bus and Taxi Holding Area and its Associated Infrastructure. The lead environmental assessment practitioner (EAP) for the proposed development is Mr. CW Vermeulen.

A detailed *curriculum vitae* (CV) of the lead EAP is presented in **Appendix I**. Refer to the below summary for a brief overview of qualifications, registrations and associations held by the lead EAP.















Table 1: Summary of associations, registrations and qualifications held by the lead EAP.

Lead EAP name	Mr. CW Vermeulen
Contact information	 +27 51 412 6350/ 082 824 9308  cwv@envmgrp.com
Company	Environmental Management Group (Pty) Ltd.
Role(s)	Director, and Senior Environmental Assessment Practitioner
Qualifications	BSc Environmental and Biological Sciences
Professional registrations	EAPASA: 2019/1521;

1.3. The team of experts:

The compilation of this BAR required the expertise and knowledge of various specialists in the fields of social sciences, geohydrology, terrestrial ecology, aquatic ecology anthropology and palaeontology. Experts in these fields were appointed for the compilation of specialist assessment reports and reported on the *in-situ* condition of the receiving environment and the anticipated impacts associated with the proposed development. Specialists were commissioned to undertake the relevant assessments to identify and assess impacts and propose appropriate mitigation and management measures for the identified impacts. The specialist assessments, that were commissioned include the following:

Table 2: Summary of relevant qualifications and registrations held by the team of experts















Specialist member	Type of Assessments	Qualifications and registrations
Mr. Lloyd Rossouw	Phase one Heritage Impact Assessment	 B.A. (Hons.) Archaeology  M.Sc. Quaternary Vertebrate Palaeontology (cum laude)  Ph.D. Plant Sciences, Dept. of Plant Science  Member of Association for South African Professional Archaeologists (ASAPA)  Member of Palaeontological Society of Southern Africa (PSSA)
Mr Darius van Rensburg	Ecological and Wetland Assessments	 M.Sc. Vegetation Ecology  BSc. Hons Botany  BSc. Botany and Zoology  Pr.Sci.Nat. 400284/13
Mr Morne van Wyk	Geohydrological Assessment	 B.Sc. Hons Geology  M.Sc. Hydrogeology
Dr Dirk A Prinsloo and Dirk Nico Prinsloo	Urban Economic Impact Assessment	 D.Litt et Phil. Urban Geography  B.Com Risk Management  B.Com Honours Risk Management

2. Project introduction

2.1. Project Description:

JM Professional Services CC appointed Environmental Management Group (Pty) Ltd to apply for Environmental Authorisation on behalf of the Mahikeng Local Municipality, for a proposed taxi and bus holding area development which forms part of a larger development project known as the Mahikeng Intermodal Facility, on erven, 3781, 3780, 710, 602 and 600, Mahikeng CBD, Registration Division Mahikeng, North West Province. Mahikeng is located 25.4 km South of the Botswana/South Africa border, approximately 262 km from and almost directly west of Pretoria. Within Mahikeng, the proposed development is located South of the Mahikeng Cemetery (North), the Railroad (West), Carrington Street (East) and North Road (South). The study area for the proposed development, the area to be transformed, consist of 5 erven with a combined size of approximately 3.53 ha. The proposed development therefore requires prior environmental authorization through a Basic Assessment process in terms of the Amended 2014 NEMA EIA Regulations.

Mahikeng Local Municipality (the applicant) along with JM Professional Services CC (the project managers - a development company that specializes in the development of strategically located land) have earmarked the site as described above, for a bus and taxi holding area development comprising of the following land-uses:

-  Filling Station
-  Car Wash Area
-  Tyre and Fitment Centre
-  Clinic
-  Spares and Fitment Centre
-  Restaurant
-  Taxi Association Office Buildings
-  Standard Taxi Bays (584)
-  22 Seater Bus Bay (32)
-  Taxi Office Bays (19)
-  Car Wash Bays (14)
-  Cleaning Bays (16)
-  Filling Station Parking Bays (20)
-  Tyre/ Spares and Fitment Centre's Parking Bays (13)






This report deals with the proposed development of a bus and taxi holding area and its associated infrastructure as listed above, in the Mahikeng CBD, North West Province. Take note: No alternative sites were investigated since the availability of a directly accessible, large enough undeveloped, open area is very limited. Furthermore, as the proposed development is dependent on providing a service of transportation to and from the CBD, the accessibility of the development needs to be direct. Thus, any

other alternative site locality cannot be justified for the proposed development to meet economic demand and supply.

2.2. Project locality:

The proposed taxi and bus holding area and its associated infrastructure development to be established on erven, 3781, 3780, 710, 602 and 600 Mahikeng CBD, Registration Division Mahikeng, North West Province, forms part of a larger development project known as the Mahikeng Intermodal Facility. The proposed taxi and bus holding area and its associated infrastructure is wedged between Carrington Street to the east and the railway to the west, South of the Mafikeng cemetery. The study area for the proposed development, the area to be transformed, consist of 5 erven with a combined size of approximately 3.53 ha.

This location was regarded as the ideal site for the proposed development and the main reasons for this site selection are:

-  The accessibility of the site;
-  The visibility of the site;
-  The locality of the site;
-  The availability of services and infrastructure;
-  The fact that the proposed new holding area will service and compliment the proposed new taxi rank as part of the intermodal facility.

The proposed development, which forms part of the intermodal facility will not only generate rates and taxes, but will also contribute significantly to social and economic upliftment in the city and surrounding area. The long-term strategy is to create a local and regional node that will promote sustainable development. Furthermore, the local authority is in full support of the proposed developments location.

Take note that no alternative sites were investigated since the availability of large enough open, undeveloped areas within the CBD is very limited. Any other site locality will not make economic sense, because the success of the project depends on the movement of people to and from the CBD.



Figure 1 Locality Map of Proposed Taxi and Bus holding area in the Mahikeng CBD

The table below indicates the GPS coordinates of the four outlying corners of the proposed development.

Table 3: Coordinates of the corners of the proposed development

Co-ordinates:	Latitude (S):	Longitude (E):
Corner 1	25°51'29.93"S	25°38'11.25"E
Corner 2	25°51'27.60"S	25°38'16.23"E
Corner 3	25°51'32.63"S	25°38'19.21"E
Corner 4	25°51'33.74"S	25°38'17.45"E
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Corner 6	25°51'37.06"S	25°38'17.74"E
Corner 7	25°51'35.59"S	25°38'16.65"E
Corner 8	25°51'36.35"S	25°38'15.14"E

3. Legislative context

3.1. Introduction

According to Appendix 1 Section 3 (1), of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include “(e) a description of the policy and legislative context within which the development is proposed including—

- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and
- (ii) (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;”

The proposed development is subject to various legislative requisites in relationship with the South African environmental legislation. This section provides a brief overview of relevant legislation and their applicability to the proposed development. The proposed development's construction and operation must adhere to all applicable legal requirements pertaining to environmental management. The following acts and policies and their relevance to the proposed development are briefly summarised:

-  The Constitution of South Africa Act, 1996 (Act No. 108 of 1996);
-  National Environmental management: Air Quality Act, 39 (Act 39 of 2004);
-  National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended
-  National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);
-  The National Water Act, 1998 (Act No. 36 of 1998);
-  The White Paper on Integrated Pollution and Waste Management for South Africa;
-  Environmental Conservation Act, (Act No .73 of 1989);
-  Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);
-  The National Heritage Resources Act (Act 25 of 1999);
-  The National Forest Act (Act No. 84 of 1998):
-  The North West Biodiversity Management Act (Act No. 4 of 2016);
-  National Environmental Management Act (Act No. 107 of 1998); and
-  Environmental Impact Assessment Regulations, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

3.2. The Constitution of South Africa Act, 1996 (Act No.108 of 1996):

The Constitution is the supreme law of the Republic, and all law and conduct must be consistent with the Constitution. The Bill of Rights emphasises several provisions relevant to securing the protection of the environment. Section 24 states that “Everyone has the right –

- a) *To an environment that is not harmful to their health or well-being; and*
- b) *To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
 - i). *prevent pollution and ecological degradation;*
 - ii). *promote conservation; and*
 - iii). *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”*

The Constitution, therefore, compels the government to give effect to the people's environmental rights and places the government under a legal duty to act as a responsible custodian of the country's natural environment. The Constitution compels the government to pass legislation which protects the environment, prevents pollution and ecological degradation, promotes conservation, and secures sustainable development.

The proponent must ensure that the proposed development does not contravene the Constitution by ensuring that no pollution or ecological degradation results from the activities undertaken and by undertaking the development in an ecologically sustainable manner.



Note: It is however important to note that though an activity may be allowed in terms of an Act of Parliament, or a permit issued under a statute, it may still be declared unlawful if it is harmful to human health or well-being.

Relevance to the proposed development:

The proponent must ensure that the proposed development's construction and operation does not contravene the Constitution. The proponent should comply with the Constitution by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices.

3.3. National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004):

The National Environmental Management: Air Quality Act 39 of 2004 provides for the setting of national norms and standards for regulating air quality monitoring, management and control and describes specific air quality measures to protect the environment and human health or well-being by:

-  Preventing pollution and ecological degradation; and
-  Promoting sustainable development through reasonable resource use.








The National Environmental management: Air Quality Act also includes reference to the control of offensive odours whereby reasonable steps to prevent the emission of any offensive odours caused by activities on a premises are required. Also relevant is the establishment of national ambient dust fall out levels that may be relevant to the construction and operation of the township.

Relevance to the proposed development:

The proposed development does not trigger registration or licensing in terms of this Act, however during the construction phase, generation of dust and noise could become a factor to surrounding land users. However, it remains the proponent's responsibility to remain within the acceptable limits as stipulated in the NEM:QA (Act No. 39 of 2004)

3.4. National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended:

The National Environmental Management: Waste Act (NEM:WA) aims to reform the law regulating waste management to protect health and the environment. This is achieved by:

-  Providing reasonable measures for the prevention of pollution, ecological degradation and, securing ecologically sustainable development;
-  providing for the national norms and standards for regulating the management of waste by all spheres of government;
-  providing for specific waste management measures;
-  providing for the licensing and control of waste management activities;
-  providing for the remediation of contaminated land;
-  providing for the national waste information system; and
-  providing for compliance and enforcement thereof.

The NEM:WA indicates that certain waste management activities must be licensed, and according to Section 44 of the Act, the licensing procedure must be integrated with an environmental impact assessment process per the EIA Regulations promulgated in terms of the NEMA. Government Notice 921, published in Government Gazette No. 37083, on 29 November 2013, lists the waste management activities that require licensing. A distinction is made between Category A waste management






activities, which require a Basic Assessment, and Category B waste management activities, which require the S&Elr process to be followed.

Relevance to the proposed development:

The construction and operation of the proposed development will not trigger any of the activities listed within the National Environmental Management: Waste Act, 2008 as the generated waste will be discharged into the municipal waste system. However, all construction and operation activities which generate waste must be managed in accordance with NEM:WA (Act No. 59 of 2008) and any regulations and standards which fall under the Act, specifically that of NEM:WA National Norms and Standards for the remediation of contaminated land and soil quality in the Republic of South Africa (2013), NEM:WA Waste Tyre Regulations, 2017 and NEM:WA Draft Health Care Risk Waste Management Regulations, 2012.

3.5. National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004):

National Environmental Management Biodiversity Act, (NEM:BA) provides for the conservation and management of South Africa's biodiversity. It has been developed in alignment with NEMA for the conservation of species and ecosystems that warrant national protection, sustainable use of indigenous biological resources and fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. By recognising that biodiversity conservation must also occur outside of protected areas, NEM:BA introduces tools including:

-  Development of a National Biodiversity Framework (NBF)
-  Development and publishing of bioregional plans to map and identify Critical Biodiversity Areas (CBAs); and provide guidelines for land-use planning and decision-making in these areas.
-  Development and publishing of Biodiversity Management Plans (BMP) for an ecosystem, an indigenous species, or a migratory species.
-  Publishing of threatened ecosystems and species in the Government Gazette, and the requirement for permits for carrying out a restricted activity involving a threatened species.
-  Prevention of the spread, and eradication of, invasive alien species.

3.5.1 Threatened or protected ecosystems and species:

NEM:BA states that biodiversity loss through habitat loss, degradation or fragmentation must be avoided, minimised, or remedied. The loss of biodiversity includes the loss of threatened or protected species and the loss of localised endemics. Chapter 4 of the NEM:BA deals with threatened or protected ecosystems and species, and its purpose is "to—

- a) *provide for the protection of ecosystems that are threatened or in need of protection to ensure the maintenance of their ecological integrity;*

- b) provide for the protection of species that are threatened or in need of protection to ensure their survival in the wild;
- c) give effect to the Republic's obligations under international agreements regulating international trade in specimens of endangered species; and
- d) ensure that the utilisation of biodiversity is managed in an ecologically sustainable way."

3.5 2 Bioregional spatial planning:

CBA Maps are provided with formal legal status through NEM:BA, which introduced several new legislative tools to assist with conserving and managing South Africa's biodiversity. One of these is the declaration of "bioregions" and the publication of bioregional plans. Guidelines for the development of bioregional plans were developed by SANBI at DFFE's (then DEA) request and were published in the Government Gazette in 2009 as the "Guideline regarding the determination of bioregions and the preparation and publication of bioregional plans", referred to for short as the Guideline for Bioregional Plans (DEAT, 2009).

According to the Guideline for Bioregional Plans, the purpose of a bioregional plan is to provide a map of CBAs and ESAs with accompanying land-use guidelines, to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact on biodiversity. A CBA Map is thus the core component of a bioregional plan. See below a summary of conceptual framework for CBA maps.

Table 4: Conceptual framework for CBA maps.











Map category	Landscape-level purpose	Broad management objective
Protected areas	Formal long-term protection for important biodiversity and landscape features. Together with CBAs, ensures that a viable representative sample of all ecosystem types and species can persist.	Must stay in largely natural ecological condition. Details determined by the management plan that is required for each protected area.
CBA: Critical Biodiversity Areas	Together with protected areas, ensures that a viable representative sample of all ecosystem types and species can persist.	Must stay in largely natural ecological condition.
ESA: Ecological Support Areas	Ensures the long-term ecological functioning of the landscape as a whole.	Must retain ecological processes, which often requires at least semi-natural ecological condition.
ONA: Other Natural Areas	Allows for a range of other land uses, including intensive land uses.	Is determined by other spatial planning tools (e.g. SDFs).
NNR: Areas with No Natural Habitat Remaining	Areas already severely or irreversibly modified by intensive land uses.	Determined by other spatial planning tools (e.g. SDFs).

Relevance to the proposed development:

The site in question is listed as a Terrestrial Critical Biodiversity 2 (CBA 2) and Aquatic Ecological Support Area 1 (ESA 1). The reasoning for the site being listed as a CBA 2, is because it is located within 5 km of the Mahikeng Nature Reserve to the South-East. However, since the site is almost completely transformed and situated within the city centre, this classification is deemed to be poorly justified. The proposed development should not have any impact on the nearby situated Mahikeng Nature Reserve. The reasoning for the site being listed as ESA 1 is because it forms part of the catchment of the Molopo River, a National Freshwater Ecosystem Priority Area (NFEPA): Fish system. Impacts that may therefore affect runoff and storm water on the site would therefore impact the Molopo River downstream. This will require adequate mitigation on the site to prevent any downstream deterioration of surface and groundwater.

3.6. The National Water Act, 1998 (Act No. 36 of 1998):

The National Water Act (NWA) administered by DWS aims to manage and protect the national water act resources to achieve sustainable use of water for the benefit of all water users. The purpose is to achieve sustainable use of water for the benefit of all water users. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, and managed in ways that consider:

-  Promoting equitable access to water;
-  Redressing the results of past racial discrimination;
-  Promoting the efficient, sustainable, and beneficial use of water in the public interest;
-  Facilitating social and economic development;
-  Providing for the growing demand water use;
-  Protecting aquatic and associated ecosystems their biological diversity;
-  Reducing and preventing pollution and degradation of water resources;
-  Meeting international obligations;
-  Promoting dam safety; and
-  Managing floods and drought.

Section 21 of the NWA sets out water uses that may require registration or licencing. In terms of the NWA, water uses include any activity involving the following:

- a) Taking water from a water resource.
- b) Storing water.
- c) Impeding or diverting the flow of water in a watercourse.
- d) Engaging in a stream flow reduction activity contemplated in section 36.
- e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1).
- f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.

- g) Disposing of waste in a manner which may detrimentally impact on a water resource.
- h) Disposing in any manner of water which contains waste from or which has been heated in, any industrial or power generation process.
- i) Altering the bed, banks, course or characteristics of a watercourse.
- j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.
- k) Using water for recreational purposes.

Relevance to the proposed development:





The proposed development is likely to have an impact on the artificial storm water channel on the site due to the increase in petrochemical runoff generated by high volume traffic. To mitigate the impact, a comprehensive storm water management plan needs to be designed and implemented to ensure runoff is properly managed and does not negatively affect the water quality. A storm water channel cover and surface area lining is also recommended to prevent further deterioration of the water quality. An oil separation system may also be considered. The risk of impact on the storm water channel is considered low and it is recommended that a Section 21 c & I General Authorisation (GA) be obtained from the Department of Water and Sanitation (DWS) for the development.

Refer to appendix G for the Ecological and Wetland Assessment and Appendix L for the c & I WULA

3.7. The White Paper on Integrated Pollution and Waste Management for South Africa

Integrated pollution and waste management is a holistic and integrated system and process of management aimed at pollution prevention and minimisation of source, managing the impact of pollution and waste of the receiving environment and remediation damaged environments.







The White Paper on Integrated Pollution and Waste management for South Africa represent a paradigm shift from dealing with waste only after it is generated (i.e., "end of pipe towards):

-  Pollution prevention;
-  Waste minimisation;
-  Cross media integration;
-  Institution integrated both horizontal and vertical, of department and spheres of government; and
-  Involvement of all sectors of society in pollution and waste management.

The government believes that pollution prevention is one of the most effective means of protecting South Africa people and environment. Pollution prevention eliminates costly and unnecessary waste and promotes sustainable development. It aims to reduce risks to human health and environment by trying to eliminate the causes rather than treating the symptoms of pollution.

This Integrated Pollution and Waste Management for South Africa apply to all government institutions, society at large and to all activities that impact on pollution and waste management. One of the fundamental approaches of this policy is to prevent pollution, minimise waste and to control and remediate impacts. The management of waste will be implemented in a holistic and integrated manner, and will extend over the entire waste cycle, from “cradle to grave” including the generation, storage, collection, transportation, treatment, and final disposal of waste.

The government aims to:

-  Encourage the prevention and minimisation of waste generation and thus pollution at source;
-  Encourage the management and minimization of the impact of unavoidable waste from its generation to its final disposal;
-  Ensure the integrity and sustained “fitness for use” of all environmental media, i.e., air, water, and land;
-  Ensure that any pollution of the environment is remediated by holding the responsible parties accountable;
-  Ensure environmental justice by integrating environmental considerations with the social, political and development needs and rights of all sectors, communities, and individuals; and
-  Prosecute non-compliance with authorizations and legislation.

Relevance to the proposed development:

The proponent must ensure that the proposed development's construction and operation does not contravene the White Paper on Integrated Pollution and Waste Management of South Africa. The proponent should comply with this White Paper by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices.

3.8. Environmental Conservation Act, 1989 (Act No.73 of 1989)

In terms of section 20 (1) of the Environmental Conservation Act, 1989, (Act 73 of 1989), waste can only be disposed of at a facility that has a permit issued by the Minister of Water Affairs and Forestry. The facility must be sited, designed, operated, and monitored strictly in accordance with the permit conditions. These conditions will include the requirements, standards and procedures set out in the DWS waste management series.

It should be noted that section 20 (1) of the Environmental Conservation Act, 1989 has been amended in terms of the issuing of waste disposal permits and exemptions is now the responsibility of the minister of Environmental Affairs.

Section 24 of the Act allows the Minister to make regulation with respect to several waste management issues and include the following regulations:

- 💧 Disposal site application;
- 💧 Directions for control and management of general and small waste disposal sites;
- 💧 Noise control regulations; and plastic bag Regulations; and
- 💧 The waste will thus be subject to a permit issued under section 20 of the ECA.

Relevance to the proposed development:

The proponent must ensure that the proposed development's construction and operation does not contravene the Environmental Conservation Act. The proponent should comply with this Act by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices.

3.9. Occupational Health and Safety Act, 1993 (Act No. 85 of 1993):

The Occupational Health and Safety Act 85 of 1993 is South Africa's principal legislation concerning health and safety of employees. It also aims to protect persons who are not at work against hazard to health and safety arising out of or in connection with the activities of persons at work. The Act places the responsibility on the employer to ensure a safe and healthy working environment and to cause every employee to be made conversant with health and safety requirements relevant to their work. At the same time the Act places the responsibility on the employee to follow its employer's health and safety procedures and instructions. Several Regulations have been promulgated under the Act that is relevant to development including the following:

- 💧 General Administrative Regulations, 1994;
- 💧 Asbestos Regulations, 2001;
- 💧 Lead Regulations, 2003;
- 💧 Regulations for Hazardous Chemical Substances, 1995;
- 💧 Hazardous Biological Agents of 2001;
- 💧 General Safety Regulations, 1986;
- 💧 Environmental regulations for workplaces (Department of Labour, 1994); and
- 💧 Construction Regulations, 2003.

Relevance to the proposed development:

All construction, operational and all waste management activities need to be carried out in accordance with the requirements of the OHS Act and must include the following activities:

- 💧 Waste Management Practices must be safe and without risk;
- 💧 Risk Assessments conducted should include waste related activities;
- 💧 Waste management training should be provided to employees and contractors;
- 💧 Written work instructions should be provided where necessary; and
- 💧 Relevant personal protective equipment and respiratory protective equipment must be provided as last resort after all mitigatory measures have been reviewed.

3.10. The National Heritage Resources Act, 1999 (Act 25 of 1999):

The National Heritage Resources Act (Act 25 of 1999) (NHRA) introduces an integrated and interactive system for managing national heritage resources. The NHRA also includes landscapes and natural features of cultural significance as heritage resources.

Section 38 of the NHRA indicates that *"any person who intends to undertake a development categorised as-*

- a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;*
- b) the construction of a bridge or similar structure exceeding 50 m in length;*
- c) any development or other activity which will change the character of the site –
 - i). exceeding 5000 m² in extent, or*
 - ii). involving three or more 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 resources authority;**
- d) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- 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."*

Relevance to the proposed development:

It is a legal requirement of this Act that a Heritage Impact Assessment be conducted.

Refer to Appendix G for the complete Heritage Impact Assessment Report.

3.11. The National Forest Act, 1998 (Act No.84 of 1998):

The National Forests Act (NFA) was passed to protect and conserve trees growing in South Africa. The purpose of the NFA is to preserve trees and forests and to promote the sustainable management and development of forests for the benefit of all South Africans. Government Gazette 47927 (Notice No. 2984), published on 27 January 2023, lists nationally protected trees, which under the Act are protected against specific activities. The effect of declaration is that no person may (a) cut, disturb, damage or destroy; or (b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, except under a license granted by the Minister; or in terms of an exemption published by the Minister in the Gazette.

Relevance to the proposed development:

According to the Ecological Assessment conducted (refer to Appendix G) no protected flora listed under the National Forest Act's annual list of all protected tree species were identified. Thus, no licence is required in terms of The National Forest Act.

3.12. The North West Biodiversity Management Act, 2016 (Act No.4 of 2016):

The North West Biodiversity Management Act (Act No. 4 of 2016) as amended on January 2017, aims to provide for the management and conservation of the North West Province's biophysical environment and protected areas within the framework of the National Environmental Management Act, 1998 (Act No. 107 of 1998); to provide for the protection of species and ecological-systems that warrant provincial protection; to provide for the sustainable use of indigenous biological resources; and to provide for matter connected therewith.

Relevance to the proposed development:

Provincially protected fauna and flora listed under the North West Biodiversity Management Act were absent from the proposed development site. Thus, no permits are required as per the North West Biodiversity Management Act (Act No.4 of 2016)

3.13. National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended:

The National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998, as amended) provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state, and to provide for matters connected therewith.

Integrated Environmental Management (IEM) is a philosophy, which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development. In terms of the 2014 Environmental Impact Assessment (EIA) Regulations of the National Environment Management Act, 1998 (Act No. 107 of 1998, as amended) published 4 December 2014 (and updated on 7 April 2017), a Basic Assessment Report (BAR) is required for activities listed in Notices R327 and R324, and a Scoping and Environmental Impact Assessment is required for activities listed in Notice R325.

The following activities have been identified which have been triggered by the proposed development:

Listed activity nr.	Listed activity description	Relevance to the project
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Listing Notice 1 (GN R 327, 07 April 2017)

Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic meters or more but not exceeding 500 cubic meters.	As part of the development a filling station is proposed of which the storage capacity might be more than 80 cubic meters.
Activity 19	The infilling or depositing of any material of more than 10 cubic meters 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;	Construction will overlap with an existing storm water channel.
Activity 27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	The proposed development will entail the removal of approximately 3.53 hectares of indigenous vegetation classified as having low sensitivity.

Listing Notice 3 (GN R 324, 07 April 2017)

Activity 12 (h) (iv)	h) The clearance of an area of 300 square metres or more of indigenous vegetation; iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority	The proposed development will clear an area of 35 300 square metres within an identified critical biodiversity area 2 (CBA2).
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4. Public participation process

According to Section 19, of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include “(1) *Where basic assessment must be applied to an application, the applicant must, within 90 days of receipt of the application by the competent authority, submit to the competent authority—*

- a. *basic assessment report, inclusive of specialist reports, an EMPr and where applicable a closure plan, which have been **subjected to a public participation** process of at least **30 days** and which reflects the incorporation of comments received, including any comments of the competent authority; or*
- b. *a notification in writing that the basic assessment report, inclusive of specialist reports, an EMPr ; (and where applicable, a closure plan, will be submitted within 140 days of receipt of the application by the competent authority, as significant changes have been made or significant new information has been added to the basic assessment report or EMPr or, where applicable, a closure plan, which changes or information was not contained in the reports or plans consulted on during the initial public participation process contemplated in sub regulation (1)(a) and that the revised reports or ;(EMPr or, where applicable, a closure plan will be subjected to **another public participation process** of at least **30 days**.*

Refer to Appendix H for the full participation report.






4.1. Objectives of the public participation process:

Public Participation Process (PPP) is integral to the application process. It provides people with the opportunity to raise their issues and concerns about the proposed development. The public participation process to which this BA process is subjected must “*give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments.*” In addition, the public participation process “*must provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application.*” Public participation must include “*consultation with—*

- a) *the competent authority.*
- b) *every State department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation.*
- c) *all organs of state which have jurisdiction in respect of the activity to which the application relates; and*
- d) *all potential stakeholders, landowners, land users, where relevant, registered interested and affected parties.”*

In terms of the NEMA, public participation process provides people who may be affected by the proposed development with an opportunity to comment and raise concerns about the project, or to make suggestions that may result in enhanced benefits for the project. Comments and issues raised during the PPP will be captured, evaluated, and included in a comments and responses register. Note that this is an ongoing process. The issues will be addressed and included in the final version of the report, submitted to Department of Economic Development, Environment, Conservation and Tourism (DEDECT).




Table 5: Timeframes of the BAR process

Pre-Application	Decision of scope of work	
	Stakeholders identification and analysis	
	Stakeholders engagement planning	
	Inclusion of the stakeholders engagement process into application forms	
Submission of BA report to competent authorities		
Basic Assessment	Availability of Basic Assessment reports and Management plan (BA/EMPr) for public comment	30 Day for public to comment
	 Notification to stakeholders	
	 Adverts	
	 Site notices available in public places	
	 BA/EMPr available in public places	
	 Meetings and telephone consultations	
	Update comments and response report	
	Update BA/EMPr	
Decision Phase	Inform the stakeholders on record of decision process	107 Days
	Notification to stakeholders, and place on website	
Appeals	Notification of appeal(s)	20 Days
	Undertake mediation process	
	Notification of result of appeal	

4.2. Pre application public participation:

The involvement of Interest and Affected Parties is vital in environmental assessment projects. The announcement of the BA process and consequently the invitation of

Interested and/or Affected Parties (I&APs) to participate was facilitated by the following methods:

-  Site notice boards;
-  Newspaper advertisements; and
-  The distribution of the Draft Basic Assessment Report

4.3. Identification of stakeholders:

During the project's inception phase, I&APs and other key stakeholders were identified for the proposed development. This process included identifying landowners, land occupants, farms, associations, ward councillors and relevant governmental officials. Engagements with I&AP's and other stakeholders is an ongoing process and will continue into the BA process.

4.4. Notification of the BA process:

The public participation process was initiated by placing site notices and distributing the Draft Basic Assessment Report to pre-identified I&APs and stakeholders.

Site notices:

Notice boards was placed where it is accessible by the public, at the site and surrounding boundary. The site notice boards illustrated key details pertaining to the development. The site notices clearly illustrated steps for potential I&APs to register and contact EMG.

Distribution of Draft Basic Assessment Report:

The purpose of the Draft Basic Assessment Report is to ensure that all relevant information and process be being followed are made available to a wide range of stakeholders. Registered I&AP.

Advert:

The Environmental Impact Assessment Regulations of 2014 stipulates that notices informing the public of the proposed development should be placed on site and the project advertised in a local newspaper. All stakeholders and I&APs were notified of the availability of the draft reports via newspaper adverts. The published advert illustrated key information pertaining to the development and the steps for potential I&APs to lodge any comments they might have.

4.5. Public participation information included in the BA report:

The Public Participation Process requires that the following information be included as part of the Public Participation Section of the BA report:

- (i). The steps undertaken in accordance with the Plan of Study For BA,
- (ii). A list of persons, organisations and government organs that were registered as interested and affected parties

- (iii). A summary of comments received from, and a summary of issues raised by the interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments.
- (iv). Copies of any representations, objections and comments received from the registered interested and affected parties.

Mitigation measures and guidelines listed in the BA report are summarised in a user-friendly document named the Environmental Management Plan (EMP). The compilation of an EMP is a requirement of the BA Process (Section 32 and 34 of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)).

4.6. Public participation summary:

The public participation process for the proposed development commenced on 20th October 2022 and is currently ongoing. An additional public participation process was conducted as requested by the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT). The table below presents a summary of steps already taken regarding the PPP.

Table 6: Public participation process timeframe

Phase	Requirement	Date
Inception Phase	Site notice	16 July 2021 and 06 Dec 2022
	BID	16 July 2021 and 06 Dec 2022
	Placement of advert in local newspaper	16 July 2021
Additional PPP on request of DEDECT	Site notice	16 July 2021 and 06 Dec 2022
	Notification of availability of Draft BAR to I&AP's and Stakeholders	28 March 2023
	Placement advert in local newspaper.	28 April 2023

5. Project motivation




According to Appendix 1, Section 3 (1), of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include

“(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.”

5.1. The need for the proposed development:

The Mahikeng Local Municipality prepared a IDP for the 2021/2022 financial year. The vision and mission of the local municipality is set out on page 28 to 40 of the said document. The vision of the local municipality is as follows: “To be a City that will create and promote an enabling environment for the private and public sector investment in building rural economy of the municipality in the context of the Villages, Townships and Small towns through National Development Plan.

The municipality had decided on the following mission statement: To foster local democracy through regular public participation and transparency for service delivery





-  To Provide and maintain infrastructure through Villages, Townships and Small Towns.
-  To Reconstruct and develop Villages, Townships and Small Towns through the municipality’s Integrated Development Plan.
-  To accelerate the concept of Rebranding, Repositioning and Renewal of the City in collaboration with social partners.

As part of the municipalities’ alignment of strategic goals and objectives, specifically regarding public safety, it is mentioned that the Rehabilitation of the Bradford Park Taxi rank is seen as a challenge that needs urgent rectification. The proposed taxi and bus holding area and its associated infrastructure is part of the larger proposed intermodal facility, which addresses the challenge as mentioned in the draft IDP document. The local authority fully supports development on the study area and requested that the appointed project team prioritise the project, because the local authority planning and implementation projects are subject to strict budgets and timeframes, which are linked to such budgets.

Based on the above, it is clear that the proposed taxi and bus holding area is in line with the Mahikeng IDP. The proposed development will also have a regional function and will only strengthen the Mahikeng CBD and its surroundings.

Furthermore, the National Land Transport Act and its regulations require the development of integrated transport plans and infrastructure, considering the need and desirability of a bus and taxi holding area in the Mahikeng central business district. The purpose of such an area would be to provide a designated and regulated space for the loading and unloading of passengers, as well as to reduce congestion and improve road safety.

A comprehensive Urban Economic Impact & Development Potential Assessment, considering the following factors was conducted by factors such as:

-  Transport demand: The level of transport demand in the area, including the number of passengers using buses and taxis and the routes they travel on, to help determine the size and location of the holding area.
-  Current infrastructure: The current transport infrastructure in the area, including existing bus stops, taxi ranks, and other related facilities, was considered to ensure that the proposed holding area is well integrated into the existing system.
-  Community impact: The impact of the proposed holding area on the local community was also considered, including any potential disruption to local businesses and residents.
-  Road safety: The design of the holding area was assessed to ensure that it does not pose a threat to road safety, both for passengers and other road users.

Based on the conclusion of this assessment, the construction of a bus and taxi holding area and its associated infrastructure in the Mahikeng central business district was deemed to be necessary and desirable. Ultimately, the goal of the assessment was to ensure that the proposed holding area is in line with the local transport system's overall goals and supports the area's sustainable development.

5.2. Desirability in the context of relevant policy:

Any project's need and desirability is an essential element of the BA process. The guidelines on need and desirability published by the DFFE (formerly known as DEA) in GN 326 (April 2017) indicated that while addressing the growth of the national economy through the implementation of various national policies and strategies, it remains crucial that these policies should take cognisance of strategic concerns such as climate change, food security, and the status of South Africa's ecosystem services. The DFFE guideline further emphasises that at the project level, the need and desirability of development should consider the content of regional and local plans, frameworks, and strategies.

Table 7: Need, desirability and benefits of the proposed township site.

NEED:			
1.	Was the relevant provincial planning department involved in the application?	YES	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES	NO
DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	NO

3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	NO
4.	Will the proposed land use / development impact on the sense of place?	YES	NO
5.	Will the proposed land use / development set a precedent?	YES	NO
6.	Will any person's rights be affected by the proposed land use / development?	YES	NO
7.	Will the proposed land use / development compromise the "urban edge"?	YES	NO

BENEFITS:

1.	Will the land use / development have any benefits for society in general?	YES	NO
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2.	<p>Explain:</p> <p>The proposed bus and taxi holding area and its associated infrastructure in Mahikeng, which includes a filling station, car wash area, tire and fitment centre, clinic, spares and fitment centre, restaurant, taxi association office buildings, and the associated parking bays, would bring several benefits to the city. The filling station, for instance, would provide a convenient and accessible fuel source for buses, taxis, and other vehicles, helping reduce fuel-related costs for transportation companies and improve their operational efficiency. The development of the filling station will relieve possibly under-capacitated filling stations and decongest their associated roads. This decongestion will benefit the community by eliminating excessive waiting times and hindered access. The car wash area would also provide a convenient location for vehicles to be cleaned, which could help to keep them in good condition and reduce maintenance costs. The tire and fitment centre and spares and fitment centre would provide much-needed services and repairs for vehicles by improving their reliability and ensuring they are in good working order. Improving reliability will undoubtedly benefit the community by ensuring their safety (in terms of unnecessary vehicular failure) and ensuring their time isn't wasted in such cases. By ensuring vehicle up-keep, the increased emissions and other environmental contaminants that could threaten the environment will be reasonably maintained. The clinic will provide accessible and affordable healthcare services to the drivers and the community, improving their overall health and wellbeing. The restaurant and taxi association office buildings could create jobs and economic opportunities in the area, helping to support local businesses and improve the local economy. The restaurant and taxi association office buildings would provide much-needed amenities and resources for drivers, helping to keep them well-fed, rested, and informed. Additionally, the restaurant will attract clientele and improve commuters' travel experience and wellbeing. The parking bays will reduce emissions by providing areas where drivers can easily access and conveniently park their vehicles. Additionally, the accessible parking bays would reduce the risk of damage or theft of standing vehicles, as the concentration of vehicles would lower the probability of accidents and opportunistic theft.</p> <p>Furthermore, the conveniently located parking bays will allow drivers easier access to any required services. The proposed development's location allows</p>
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	for interconnectivity between different modes of transportation. This interconnectivity may allow for better service deliveries, reduced travel time or hold untapped economic potential. Overall, the infrastructure development could help boost the efficiency, reliability, and safety of transportation in the city, which could positively impact the local economy and the quality of life for residents.			
3.	Will the land use / development have any benefits for the local communities where it will be located?	<table border="1"> <tr> <td data-bbox="1185 389 1313 477">YES</td> <td data-bbox="1313 389 1398 477">NO</td> </tr> </table>	YES	NO
YES	NO			
4.	<p>Explain:</p> <p>The proposed development of the bus and taxi holding area and its associated infrastructure will bring various benefits to the local community in Mahikeng, specifically in the following circumstances.</p> <p>Improved transportation options: The bus and taxi holding area will provide a centralized location for transportation, making it easier and more time efficient for people to access public transportation services, improving connectivity and mobility within the city. Furthermore, the proposed development will allow for better transportation management within the city.</p> <p>Access to services: The associated infrastructure, such as a filling station, car wash area, tire and fitment centre, clinic, spare parts centre, restaurant, and taxi association office buildings, will provide easily accessible and readily available essential services to the local community. The filling station, car wash area, and tyre and spare parts fitment centre will provide directly accessible, much-needed vehicle servicing to local drivers. Alternative options for health care services will be provided by the clinic. Food services are an important part of a person’s daily life and will be accessible through the restaurant. The taxi association office will provide much-needed transportation management services for the city. Furthermore, the location of the proposed development allows commuters to choose the mode of transportation which best suits their needs.</p> <p>Improved quality of life: By having access to essential services and improved transportation options, the local community, especially the working-class people of Mahikeng, can experience a higher quality of life and improved transportation experience. Better managed transportation within the city will be achieved, which will benefit the local community by improving vehicle efficiency, reliability and access and ensuring driver wellbeing. By improving driver wellbeing, vehicle reliability, and transportation management services, the local commuting community will experience a higher quality of service delivery and peace of mind.</p> <p>Economic opportunities: The presence of these facilities could also generate employment and business opportunities for the local community, providing a boost to the local economy. For example, the restaurant, clinic, spare parts centre and tyre fitment centre may provide jobs and skills to a number of local community members and entrepreneurs while simultaneously attracting local and regional clientele. Furthermore, the locality of the proposed development allows for alternative economic opportunities associated with different modes of transportation.</p>			

<p>Interconnectivity: The proposed development's location makes it easier for commuters to connect between different modes of transportation, such as buses, taxi's and trains. This interconnectivity is crucial in reducing travel times and improving accessibility.</p>

<p>Overall, it is clear that the proposed development has the potential to bring positive outcomes for the local community in Mahikeng</p>
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6. Alternatives

According to Appendix 1, Section 3 (1), of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include:

“(g) a motivation for the preferred site, activity and technology alternative;

(h) a full description of the process followed to reach the proposed preferred alternative within the site, including:

(i) details of the development footprint alternatives considered;

(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and

(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity.”

The 2014 NEMA EIA Regulations (as amended in 2017) defines alternatives as “different means of meeting the general purpose and requirements of the activity, which may include alternatives to the—

(a) property on which or location where the activity is proposed to be undertaken;

(b) type of activity to be undertaken;

(c) design or layout of the activity;

(d) technology to be used in the activity; or

(e) operational aspects of the activity;

and includes the option of not implementing the activity, “No-go”.

The alternatives considered for this application are discussed below. These alternatives were evaluated on their developmental constraints, socio-economic and environmental impacts. This evaluation process was utilised to ultimately support the preferred alternative presented in this document. It is, however, important to note that the regulation and guidelines specifically state that only 'feasible' and 'reasonable' alternatives should be explored. It also recognises that considering alternatives is an iterative feedback process between the developer and EAP, which in some instances culminates in a single preferred project proposal.

6.1. Site locality alternative:

In terms of the NEMA EIA Regulations, the applicant is required to demonstrate that feasible and reasonable alternatives have been investigated in sufficient detail for environmental authorization.

The long-term strategy is to create a local and regional node that will promote sustainable development. With this in mind, no alternative sites were investigated since the availability of large enough open, undeveloped areas within the CBD is very limited. Any other site locality will not make economic sense, because the success of the project depends on the movement of people to and from the CBD.

The location of the proposed development in the central business district of Mahikeng is ideal due to several key factors. First, the central location provides easy, direct access for both public transportation users and private vehicle owners, making it convenient for the local community to utilize the facilities.

Second, the central business district typically has a higher density of potential customers and business partners, providing a more stable and profitable environment for the proposed development. Additionally, the central business district is typically well-developed with infrastructure such as roads, water and electricity, making it easier to implement the proposed development.

Third, the availability of undeveloped land, which is large enough and still meets accessibility requirements, is limited within the central business district. Thus, the proposed site location of the proposed development is ideal.

Forth, the local authority is in full support of the location of the proposed development.

Finally, situating the development in the central business district also has the potential to revitalize the area and spur further economic growth. The presence of the new facilities could attract additional businesses and customers, leading to a positive feedback loop of economic development.

For these reasons, alternative locations outside the central business district would not be as suitable for the proposed development. The combination of accessibility, existing infrastructure, and potential for economic growth make the central business district of Mahikeng the ideal location for the proposed development.

6.2. Activity Alternative:

No activity alternatives were assessed since the proposed development of the bus and taxi holding area and its associated infrastructure forms part of the larger intermodal facility development and the upgrading of the existing Bradford taxi rank. Considering the strategic and logistical advantages, it does not make sense to assess other activity alternatives. The central business district location provides a central hub for transportation, making it easier for passengers to connect between different modes of transportation, such as buses, taxis, and trains. This interconnectivity is crucial in reducing travel times and improving accessibility, especially for the working-class people of Mahikeng. Additionally, the proximity to the existing taxi rank allows for seamless integration with the current transportation network, reducing the need for additional infrastructure and investments. The proposed development also has the potential to generate employment and business opportunities, providing a boost to the local economy. These factors combined make it clear that the proposed development

in the central business district of Mahikeng is the only suitable alternative for the bus and taxi holding area and its associated infrastructure.

6.3. Technology alternative:

When considering possible technology alternatives for the proposed bus and taxi holding area and its associated infrastructure in Mahikeng, it is important to keep in mind the available funds of the local municipality. Energy-efficient options that make sense for the local context should be considered only after the final designs of the proposed development have been completed. Some possible options could include the use of renewable energy sources, such as solar panels, to power the filling station, car wash area, tire and fitment centre, clinic, spare parts centre, restaurant, and taxi association office buildings. Energy-efficient lighting, such as LED lights, could also be used to reduce energy consumption. Additionally, energy-efficient HVAC systems could be installed to regulate the temperature and improve indoor air quality in the facilities. The use of these technologies could not only reduce energy costs, but also have a positive impact on the environment.

6.4. No-go Alternative:

The no-go alternative assumes that the proposed project will not go ahead, i.e. it is the option of not constructing the proposed development. This alternative would result in no environmental impacts on the site or the surrounding local area. It provides the baseline against which other alternatives were compared. The following implications will occur if the "no go" alternative is implemented:

If the "no-go" alternative is implemented, meaning the proposed bus and taxi holding area and its associated infrastructure will not be constructed, there may be several implications for the local community in Mahikeng. Some possible implications could include:

Limited transportation options: Without the proposed development, there may be limited transportation options available for the local community, particularly for working-class people who rely on taxis and buses as their main mode of transportation.

Lack of employment and business opportunities: The absence of the proposed development could also mean a lack of employment and business opportunities for the local community.

No improvement in quality of life: The proposed development was intended to improve the quality of life for the local community, particularly the working-class people of Mahikeng. If the "no-go" alternative is implemented, these improvements may not occur. Without the proposed development, the community may continue to experience poor transportation services with long waiting periods and/or delayed traffic experiences.

It's important to consider these implications before deciding to implement the "no-go" alternative. As such, the no-go alternative is not recommended in this instance.

7. The *in-situ* environment

7.1. Physical Characteristics:

7.1.1. Climatic profile

Mahikeng is 1 290 m above sea level. However, the proposed development area is roughly 1 276 m above sea level. Mahikeng's climate is a local steppe climate. During the year, there is little rainfall, with an annual rainfall is 571 mm (Climate data.org). The temperature of Mahikeng averages 18.5 °C. The Koppen Climate Classification subtype for this climate is "Bsh". (Mid-Latitude Steppe and Desert Climate). (Weatherbase.com) (Figure 2). The vegetation type in which Mahikeng occurs is the Klerksdorp Thornveld vegetation type. This vegetation type is associated with mean annual precipitation of 533 mm and mean annual temperatures of 16.8°C (Mucina and Rutherford, 2006).



Figure 2 Figure showing the locality of the site and its Koppen Geiger classification zone

Precipitation is the lowest in July, with an average of 3 mm. Most of the precipitation here falls in February, averaging 96 mm. At an average temperature of 23.1 °C, January is the hottest month of the year. July is the coldest month, with temperatures averaging 11.2 °C. (Figure 3)

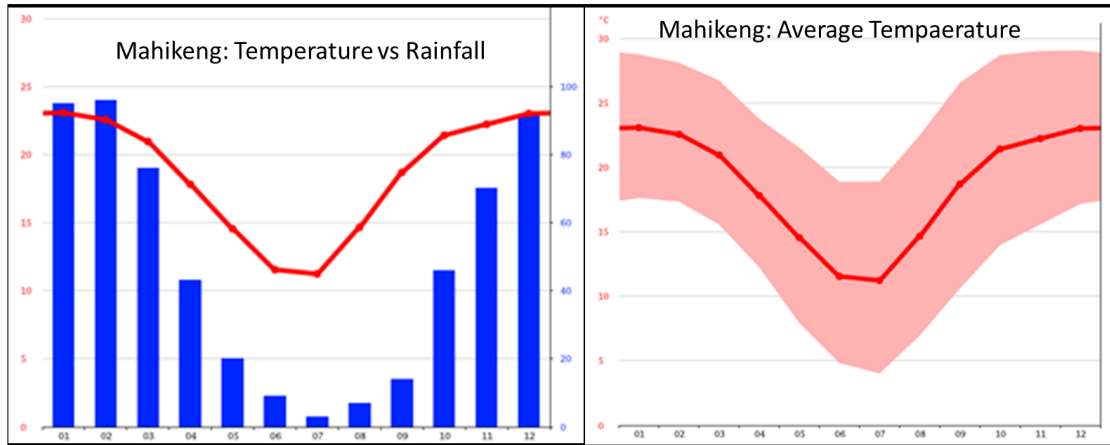


Figure 3 Mahikeng monthly weather data.

7.1.2. Geology

Regional geology

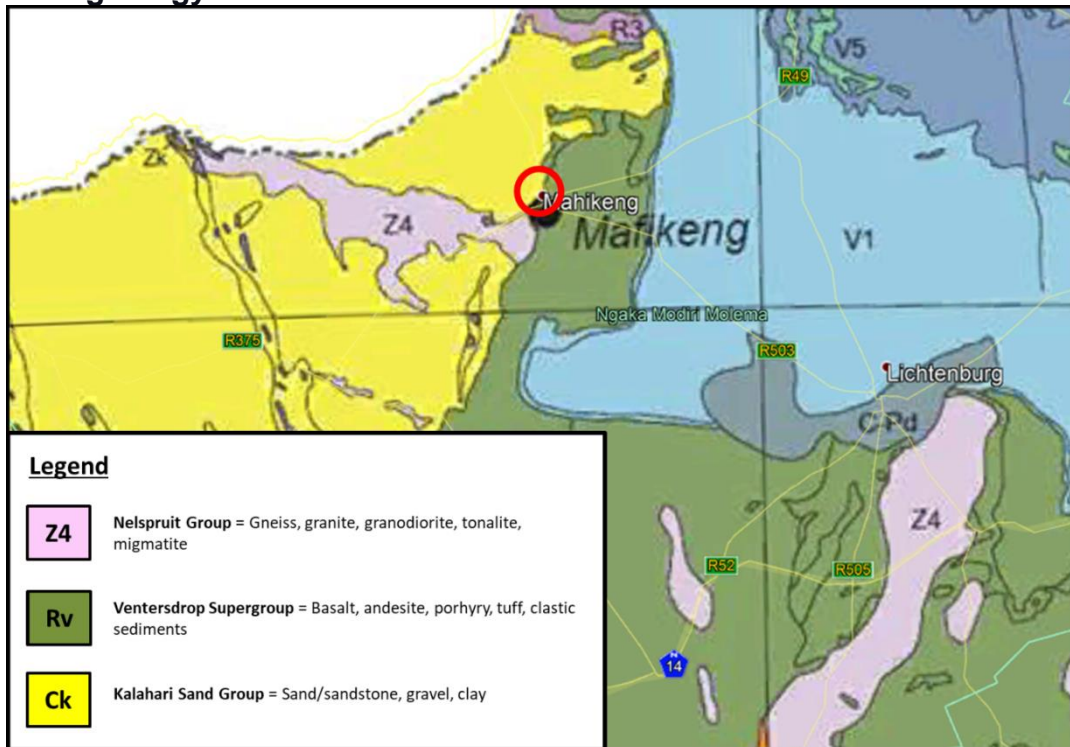


Figure 4 Regional Geology of Mafikeng

According to the geological map in Figure 4, the expected geology for the area surrounding Mafikeng consists of volcanic rocks of the Ventersdorp Supergroup, Nelspruit Group belonging to the Barberton Supergroup and covered by Kalahari Sands Group. Both the Ventersdorp Supergroup and the Nelspruit Group were volcanically deposited between 3100 and 2650 Ma ago. “The Kraaipan greenstone belts, consisting of metamorphosed mafic volcanic rocks and interlayered metasediments (mainly banded iron formations, jaspilites and ferruginous cherts), occur poorly exposed beneath cover sequences comprising mainly Neoproterozoic Ventersdorp Supergroup volcanic rocks and a blanket of Tertiary-Recent Kalahari sediments” (C.R. Anhaeusser, F. Walraven, 1999). “The older rocks, especially the

Swazian migmatites and gneisses, as well as the Giyani, Pietersburg and Gravelotte greenstone belts underwent several periods of deformation during which they were intensely folded and metamorphosed. The younger intrusive granites were less deformed. Two prominent directions of shear fracture are developed in the Nelspruit area the oldest strikes north-northeast; the second and younger trends north-northwest. The latter developed after the intrusion of the pre-Godwan diabase”(J.R Vegter, 2003).

Local geology

Nelspruit Group (3100 Ma ago)

Goudplaats and Makhutswi gneisses

“Goudplaats and Makhutswi Gneisses underlie most of the area between the Soutpansberg in the north and latitude 24°45' south. They consist of medium to fine-grained grey biotite bearing rocks of tonalitic composition. The Goudplaats Gneiss is strongly foliated and characterized by alternating bands of leucocratic and melanocratic material. In places it grades into migmatite. The gneiss occurring south of the Murchison Range has been termed the Makhutswi Gneiss. It is very similar to the Goudplaats Gneiss. The relationship of the Goudplaats and Makhutswi Gneiss to the greenstone belts is uncertain. The older view was that both Gneisses probably formed a basement to the Bandelierkop Complex and to the Pietersburg, Giyani and Gravelotte Groups. On the 1997 1:1 000 000 geological map and the stratigraphic table published by the Council for Geoscience in 1998 the greenstone belts occupy the bottom of the table i.e. they are assumed to be older than the Gneisses. A broad zone of leucocratic biotite granite (Rbg) extends from Tzaneen towards the Giyani Greenstone Belt. It is thought to have formed through complete anatexis of the Goudplaats Gneiss” (J.R Vegter, Oct 2003).

Southern Swazian intrusives

“On the Pilgrim’s Rest sheet, in the vicinity of Klaserie, an unnamed (informally called Orpen) variable suite of migmatite and gneiss (ZB) more or less intervenes between the Makhutswi Gneiss to the north and the Nelspruit Suite to the south. It consists predominantly of lightgrey medium-grained biotite-rich gneiss with coarse-grained quartz-feldspar leucosomes. Amphibolite dykes and xenoliths and inter-layered amphibolite are present in the migmatite and gneiss terrain. The greater part of the area south of latitude 24° 45' is underlain by medium- to coarse-grained biotite granite, porphyritic granite and potassic gneiss and migmatite grouped together as the Nelspruit Suite (Zne). In many places a coarse-grained pegmatite is present. The Hebron Granodiorite, occurs as isolated bodies within the Nelspruit Suite. Bodies of tonalitic biotite-trondhjemite granite and gneiss (ZC) border on the Barberton Mountain Land (Region 45). Divergent opinions exist about which is the older: the meta-volcanic and sedimentary rocks of the Barberton Sequence or the tonalitic granite gneiss and migmatite” (J.R Vegter, Oct 2003).

Ventersdorp Supergroup (3100 – 2650 Ma ago)

The Ventersdorp Supergroup is one of the least deformed late Archaean-early Proterozoic lowgrade metamorphosed supracrustal sequences in the world and can serve as a model for tectonic, geochemical and volcanological evolution. The development of the Ventersdorp Supergroup on the Kaapvaal Craton was initiated by the outflow of lava of komatiitic affinity during an epoch of crustal extension. The Ventersdorp sequence comprises three groups namely the Klipriviersberg Group at the base followed by the Platberg Group and Pniel Sequence. The Klipriviersberg Group consists of mafic volcanics whilst the Platberg Group is composed of sediments deposited in grabens followed by a bimodal volcanic suite with intermixed sediments and tuff towards the top. The presence of stromatolitic cherty limestone and mature sedimentary material indicates an abatement in tectonic activity towards the end of Platberg times. The uppermost Pniel Sequence overlies the Platberg Group with a marked unconformity and consists of an arenaceous unit, followed by a mafic to



intermediate volcanic sequence. (W.A.Van der WesthuizenH.De BruijnP.G.Meintjes, 1991)

Kalahari Sands Group (65 – 1.8 ma ago)

The basal unit of the Kalahari Group consists of gravels deposited by the Cretaceous rivers as well as on scree slopes. As down-warp of the basin continued, so more gravels were deposited as well as the sand and -iifiner sediment carried by the rivers. Thick clay beds accumulated in the lakes that formed by the back-tilted rivers, with sandstone being deposited in braided streams interfingering with the clays and covering them in some areas as the shallow lakes filled up with sediment. The calcretes in the Kalahari Gemsbok Park and towards the east along the Molopo River form prominent cliffs between the aeolian sands of the Gordonia formation and the underlying Eden Formation sandstones. As these calcretes appear to occupy a fixed stratigraphic position in the area they were proposed as the Mokalanen Formation by M.A. Thomas (1981). The formation name has not yet been accepted by SACS, and the problems associated with assigning a fixed stratigraphic position to calcretes is discussed at the end of this chapter (I.G Haddon 2005)

On-site Geology

It was confirmed during the site visit that the site contains 3 main types of rock. Figure 5 indicates the 3 types of rocks found and are as follows:

- 🔥 Ventersdorp Lava: Characterised by the greenish colouration and amygdoidal inclusions (“lava bubbles”).
- 🔥 Hydrothermal Quartz: This type of quartz indicates that volcanic activities and super-heated fluids moved along fractures and crack and then solidified.
- 🔥 Chert: This black chert found on site is also a form of quartz and is directly linked to the volcanic activity of the Ventersdorp volcanic activities.

It can be said with a fair amount of certainty that the underlying geology consists of Green Ventersdorp lavas, which is hard, impermeable and resistant in nature.

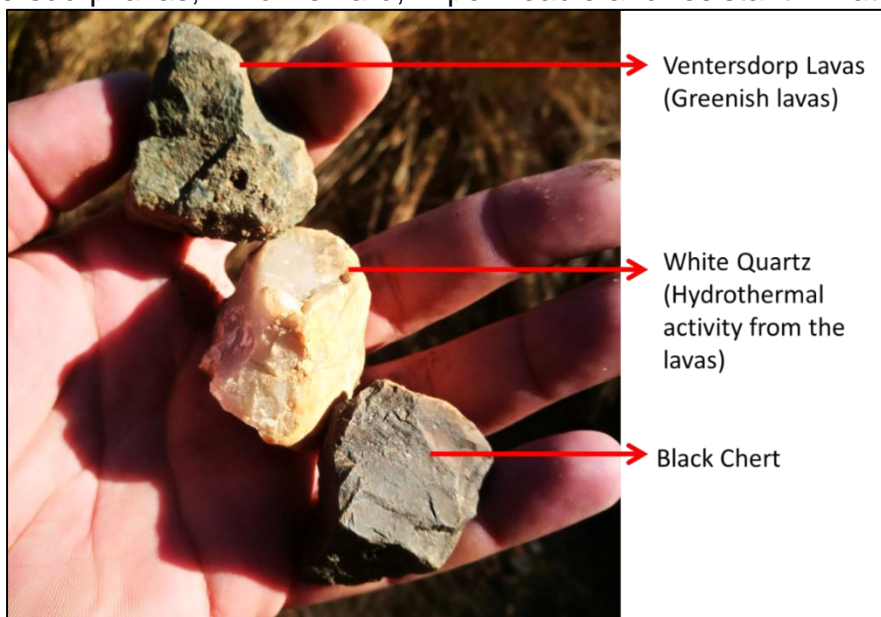


Figure 5 Rock types on site

7.2. Biological Characteristics

7.2.1. Ecological:

7.2.1.1. Regional vegetation:

The proposed development site is mapped in the Klerksdorp Thornveld vegetation type (SANBI,2006-2018;Mucina and Rutherford, 2006). According to Mucina & Rutherford (2006) the regional vegetation consists of Klerksdorp Thornveld (Gh 13) which is characterised by plains with clumps trees amidst an arid grass layer. The vegetation type is currently listed as being of Least Concern (LC) according to the National List of Threatened Ecosystems (Notice 1477 of 2009) (National Environmental Management Biodiversity Act, 2004). It is currently affected by extensive transformation for agriculture and urban development but not to the extent that it is regarded as a Threatened Ecosystem. (Figure 6).

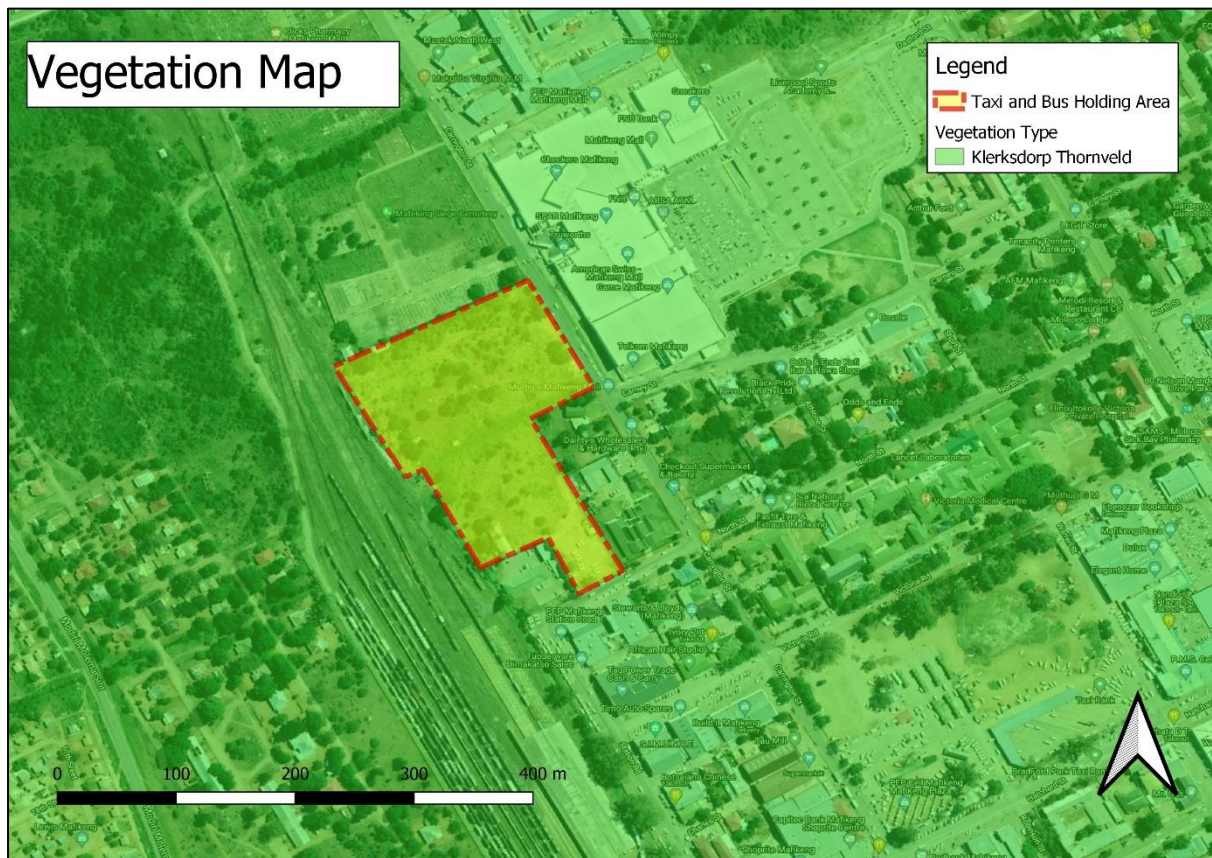


Figure 6: Broad scaled vegetation type map indicating the proposed bus and taxi holding area with regional vegetation type.

7.2.1.2. Biological perspective:

The majority of the site has been transformed from the natural condition by several impacts. Large amounts of rubble, debris and waste are being and have been (historically) discarded within the proposed development area. Furthermore, the

topography and overall vegetation composition of the site have been severely modified. Thus, the ecological condition of the site is considered to be poor.

The proposed development area is located within a terrestrial CBA 2 and an aquatic ESA 1 zones. Typically, the placement of a site in these bioregional classifications would promote a conservative approach to land use change. However, in this case, the site's poor ecological condition does not reflect the fair characteristics associated with terrestrial CBA 2 and aquatic ESA 1 classifications.

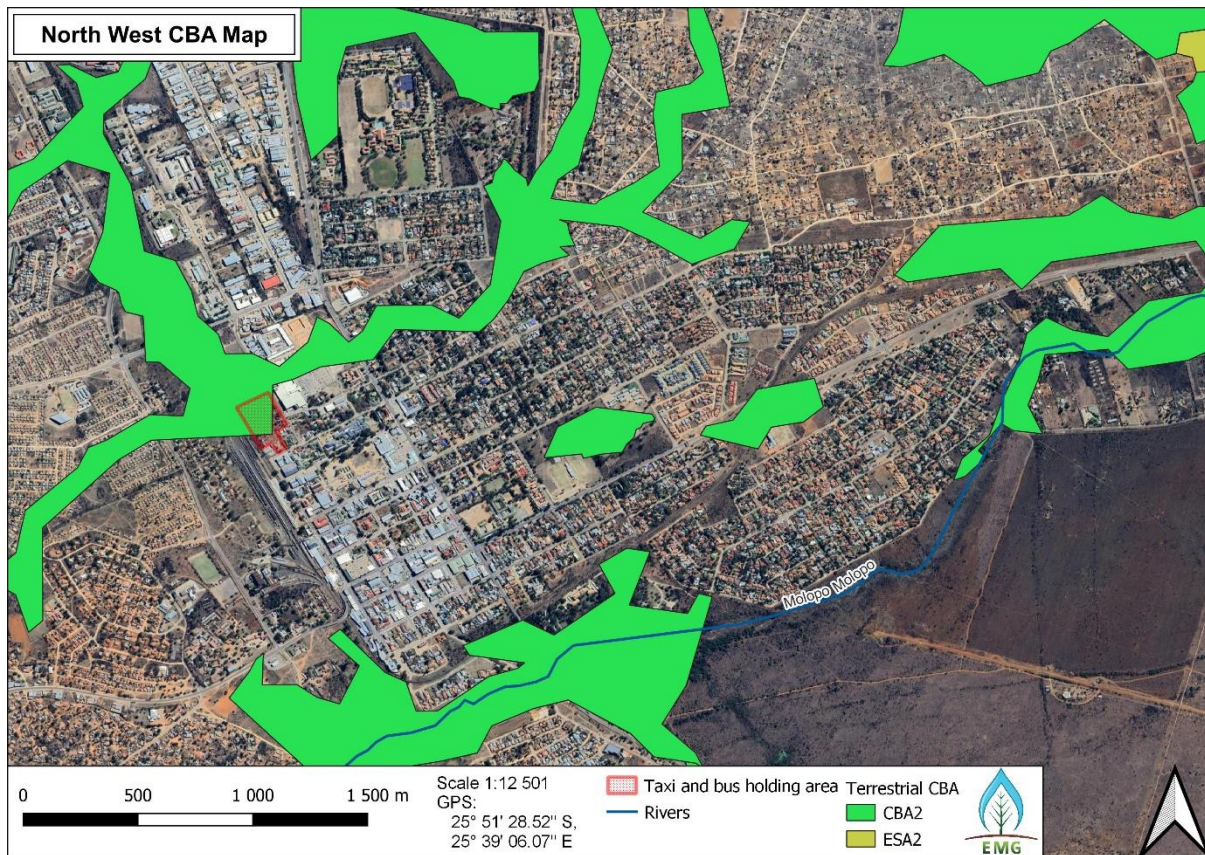


Figure 7 Bioregional planning map consisting of CBA data for the North West Province.

7.2.1.3. On-site vegetation

The site still contains dense stands of the grasses *Cenchrus ciliaris* and *Heteropogon contortus*. These are semi-climax species which are considered to be remnants of the remaining natural vegetation type on the site. However, an abundance of other pioneer grass species also indicates degradation of this grass layer. These include *Cynodon dactylon*, *Melinis repens*, *Urochloa panicoides*, *Eragrostis echinochloidea*, *Enneapogon cenchroides*, *Hyparrhenia tamba* and *Eragrostis lehmanniana*. This species assemblage is a clear indication of a degraded natural grass layer. In addition, the shade-loving grass, *Setaria verticillata* occurs underneath some of the trees on the site and the moisture-loving grass, *Panicum coloratum*, is present in depressions where moisture may collect. The tree layer contains scattered specimens of the indigenous *Vachellia karroo*, *Ziziphus mucronata* and *Vachellia tortillis* var. *heteracantha*. These are also considered remnants of the natural vegetation type. A single small specimen of *Vachellia sieberana* var. *woodii* was also noted near the roadway but is considered planted since this species does not naturally occur in this region and is considered highly unlikely to be a natural range extension. Underneath some of the trees, the climber, *Pergularia daemia*, was also noted, an indigenous species, also considered a remnant of the natural vegetation. The above description is, however, the full extent to which natural vegetation still remains on the site, with the remaining proportion consisting only of exotic weeds and invasive plant species. Exotic weeds are prominent and dominate significant portions of the site. These include *Sphaeralcea bonariensis*, *Bidens pillosa*, *Flaveria bidentis*, *Amaranthus hybridis*, *Datura stramonium*, *Sonchus oleraceus* and *Euhorbia heterophylla*. The invasive climber *Ipomoea purpurea* is also abundant in the undergrowth and in shrubs. The shrub and tree layer also contains an abundance of invasive species, of which a few are also regarded as serious invaders. These include *Tipuana tipu*, *Parkinsonia aculeata*, *Caesalpinia gilliesii*, *Robinia pseudoacacia*, *Prosopis glandulosa*, *Morus alba*, *Melia azedarach* and *Schinus molle*. The artificial storm water channel on the site is also dominated by the highly invasive Spanish Reed, *Arundo donax*, to the exclusion of all other vegetation for which this invasive plant is known. The above should clearly indicate the abundance of exotic and invasive plants which cause extensive degradation and contributes to the largely transformed condition of the site. The site also does not contain any protected, rare or endangered species and given the severe degradation of the site, it is highly unlikely that any such species would still remain.

From the description of the vegetation on the site, it is clearly transformed from its natural condition, degraded and does not contain any elements of conservation significance. The species diversity is notably low without any protected, rare or endangered species. It is also considered highly unlikely that any such species would occur here. The site is, therefore, of relatively low conservation value and suitable for the proposed development while not resulting in any large impacts.

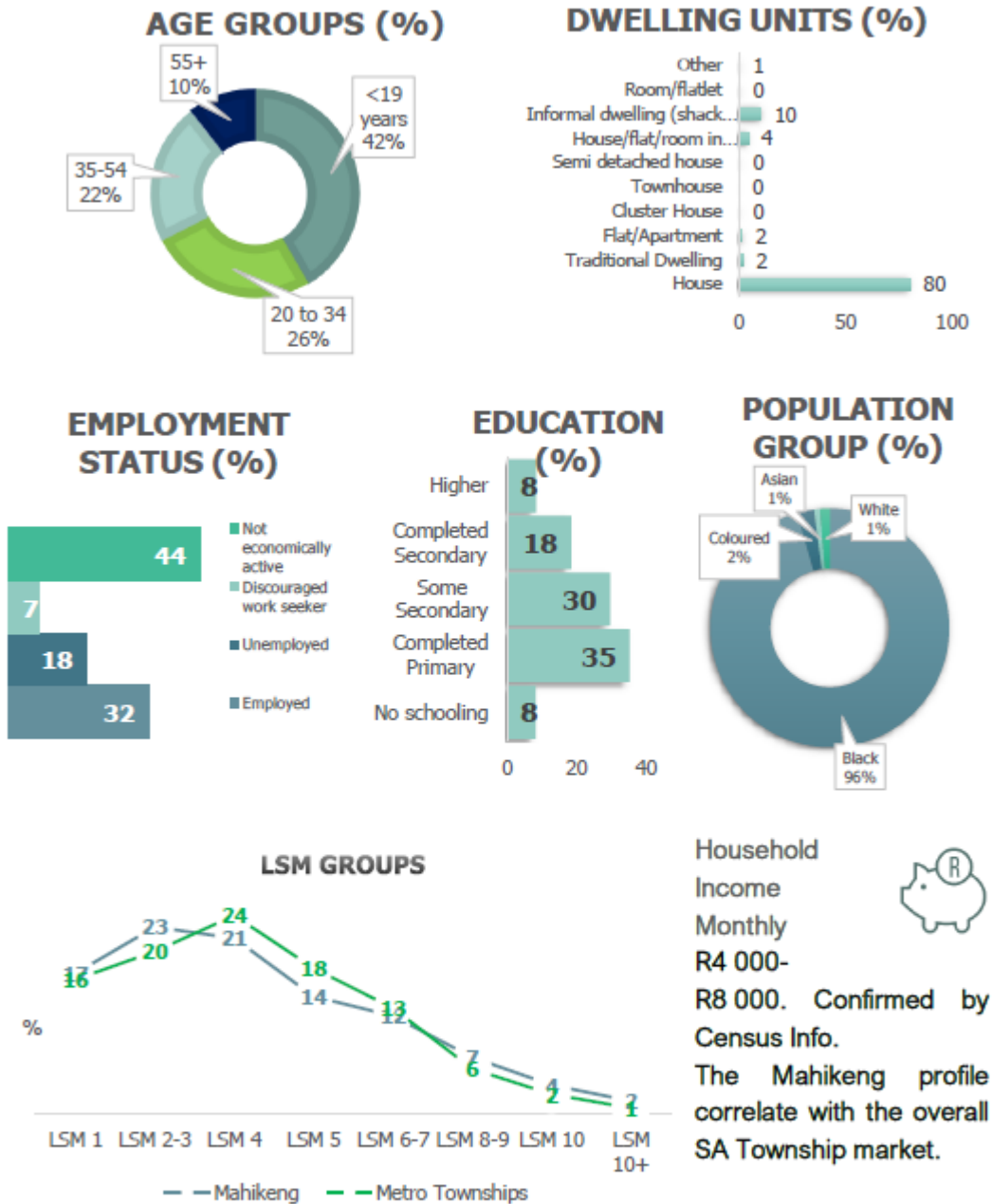
As indicated, the natural vegetation on the site has been largely transformed from the natural condition. Furthermore, the natural vegetation type which originally occurred

on the site, Klerksdorp Thornveld (Gh 13), is only represented by remnant patches and is also not regarded as a Threatened Ecosystem, which therefore does not contribute to its conservation value. However, the North West Biodiversity Sector Plan (NW BSP – 2015) considers the site to form part of a Terrestrial Critical Biodiversity Area 2 (CBA 2) as it is located close to the Mahikeng Nature Reserve. The site is, however, isolated by dense urban development and will in no way be able to affect the integrity of this conservation area. The site being regarded as a CBA 2 will not contribute significantly towards its conservation value. In terms of the aquatic component, the site is regarded as an Ecological Support Area 1 (ESA 1) as it forms part of the catchment of the Molopo River, a National Freshwater Ecosystem Priority Area (NFEPA): Fish system. Impacts that may therefore affect runoff and storm water on the site would therefore impact the Molopo River downstream. The preservation of the artificial storm water channel on the site is therefore of importance and would therefore have to be accommodated within the development. (Refer to Appendix G for the full report).

7.3. Socio-Economic Characteristics:

The Mahikeng & Mmabotho forms part of the Mafikeng Local Municipality and the Ngaka Modiri Molema District in North West. The market is growing at ±2% per annum. There are currently ±350 000 people and ±100 000 households in the area. This will increase to 110 000 to 112 000 households within the next 5 to 8 years.

The following is a summary of the profile of the Impact Area:



*LSM = Living Standard Measurement – a South African classification used countrywide. The income per LSM category reflects the monthly household income.

LSM 1-4	<R5 000	LSM 6	R7 000	R10 000	LSM 8	R15 000	R25 000	LSM 10	R35 000	R60 000
LSM 5	R5 000	R7 000	LSM 7	R10 000	R15 000	LSM 9	R25 000	R35 000	LSM 10+	>R60 000

This section of the report focuses on the socio-economic characteristics of Mahikeng, with a specific emphasis on the section of the population that relies on public transportation, such as taxis and buses. The purpose of this analysis is to shed light on the demographic makeup of the target audience for the proposed development. By understanding the socio-economic status and transportation habits of the residents in Mahikeng, this section aims to provide insights into the needs and potential demand for the development. This is crucial to ensure that the proposed development meets the needs of the community and aligns with their preferences and habits.

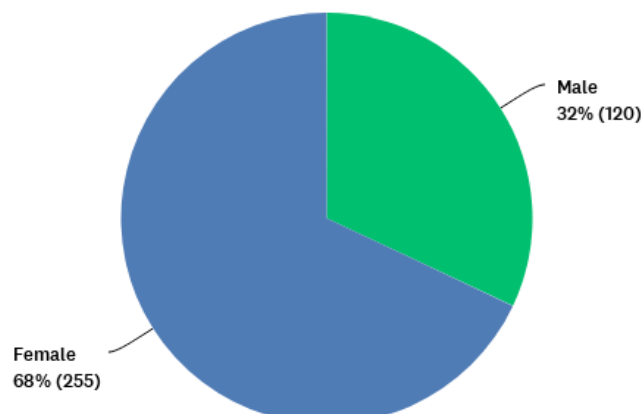
The community of Mahikeng utilizes public transportation to mostly acquire daily essentials, pay accounts, collect pension/sassa income grant payments and go to work. As such, the taxi industry has become an important part of Mahikeng society, where it is estimated to dominate over other modes of transport for the next 15 to 20 years.

Most (67%) commuters leave home between 6 and 9 am and return home from the CBD between 3 and 6 pm. The median time spent travelling to the CBD is 22-25 minutes. An average waiting time of 20 minutes is experienced for the return trip. Thus, by providing an area which allows for better management, the proposed development will likely improve the typical waiting time the commuters experience. By providing a space for empty taxi's to park during off-peak times (9 am -3 pm), the proposed development will remove the unnecessary component of traffic delays and blockages associated with standing taxi's within the CBD.

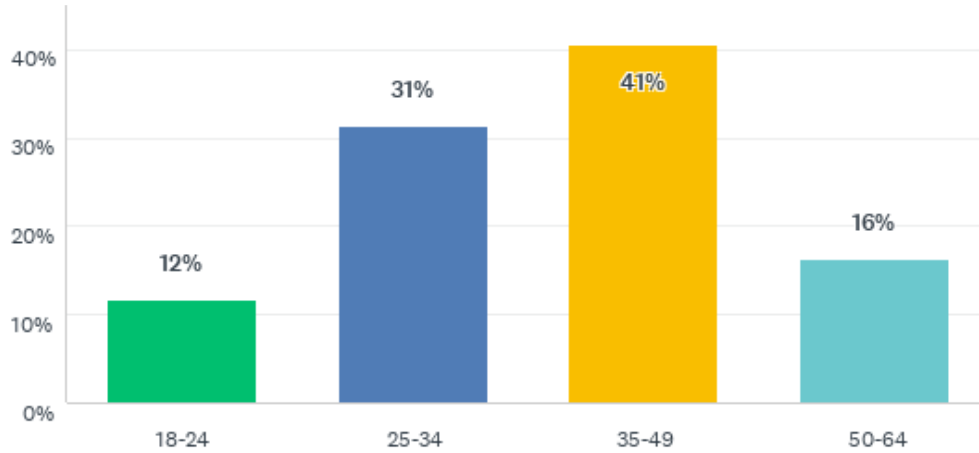
The commuter profile of the Mahikeng community is characterised by the following:

- 💧 The majority of the taxi commuters are female (68%);
- 💧 Average age of 35 years;
- 💧 Household size is 4.5, which is larger than the South African average of 3.6 people per household;
- 💧 90% of all households have at least one earner or more earners per household;
- 💧 70% of all households are in the full nest life cycle stage-mainly families with school-going children.

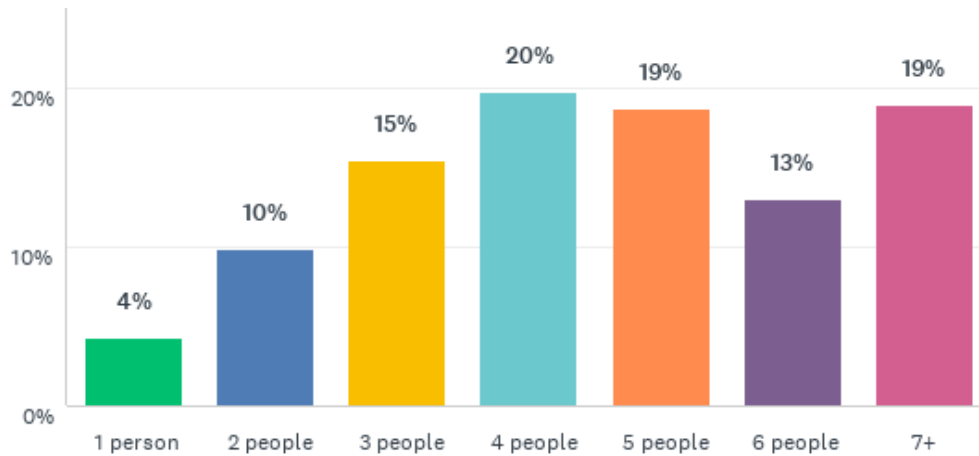
Gender Profile



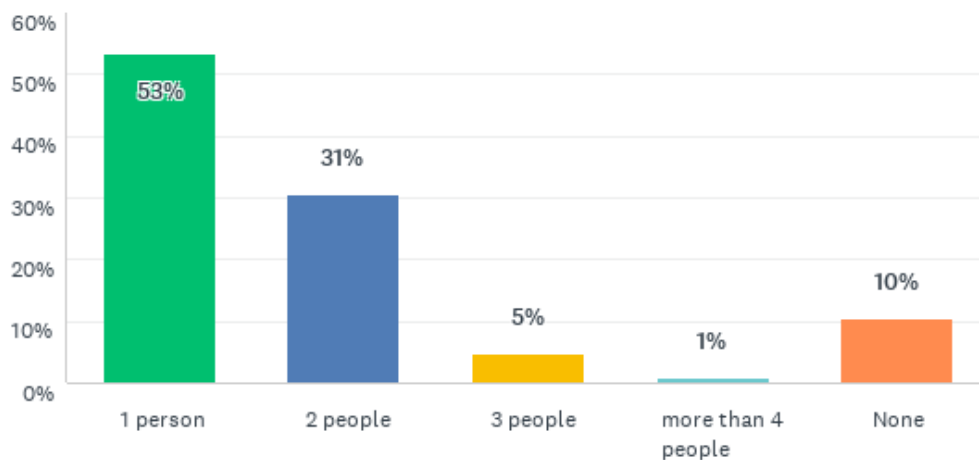
Average age of the commuters (43 years)



Number of people living per household (Average of 4.5)

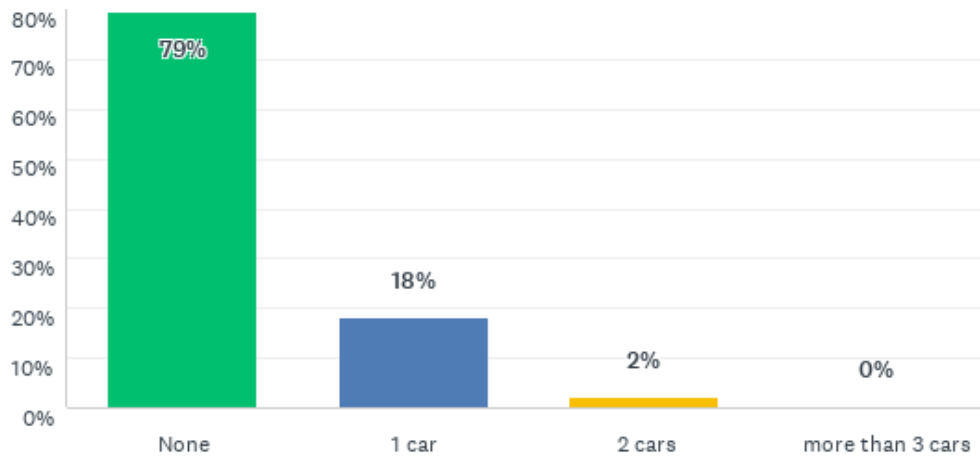


Number of earners (Average 1.8)



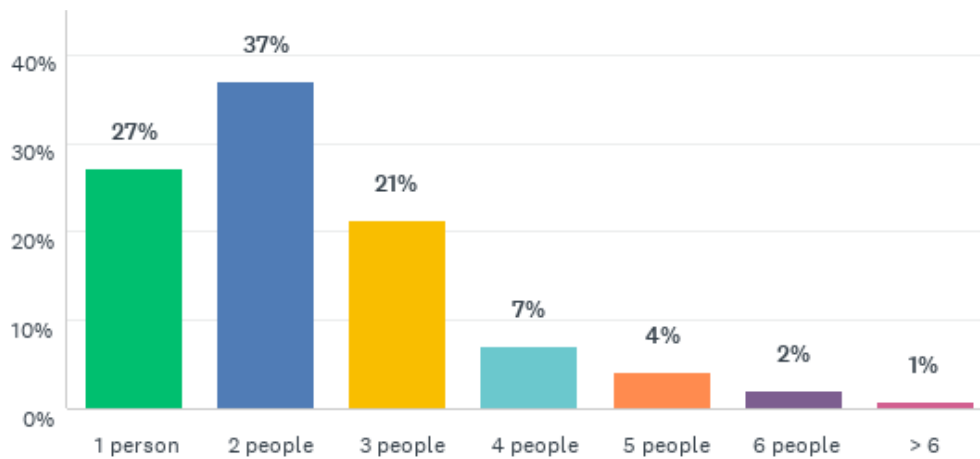
It is very important to note that 79% of all respondents do not own a car. This corresponds with similar market research where $\pm 20\%$ of households in rural and smaller township areas own a car.

Cars per household

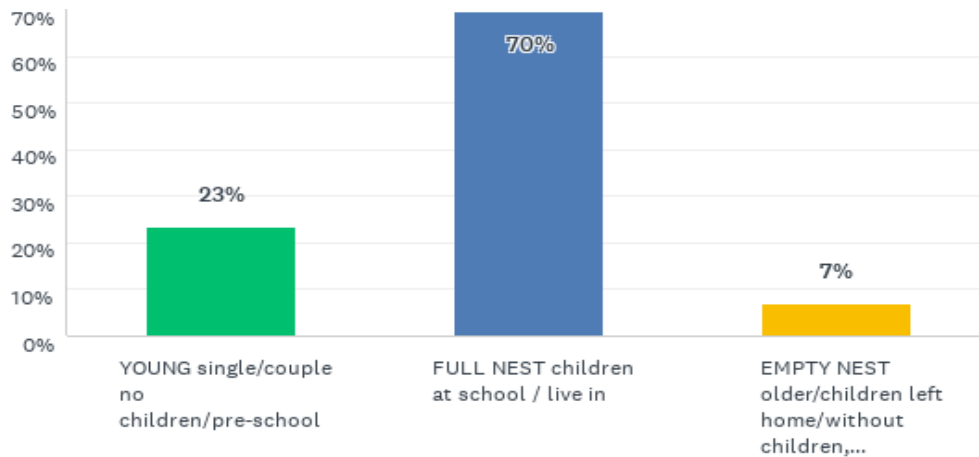


At least 2.3 people in each household make use of taxi transport. This clearly indicates the high dependency on taxis. There is, however, no scholar transport provided at the moment.

Number of people making use of taxi transport per household

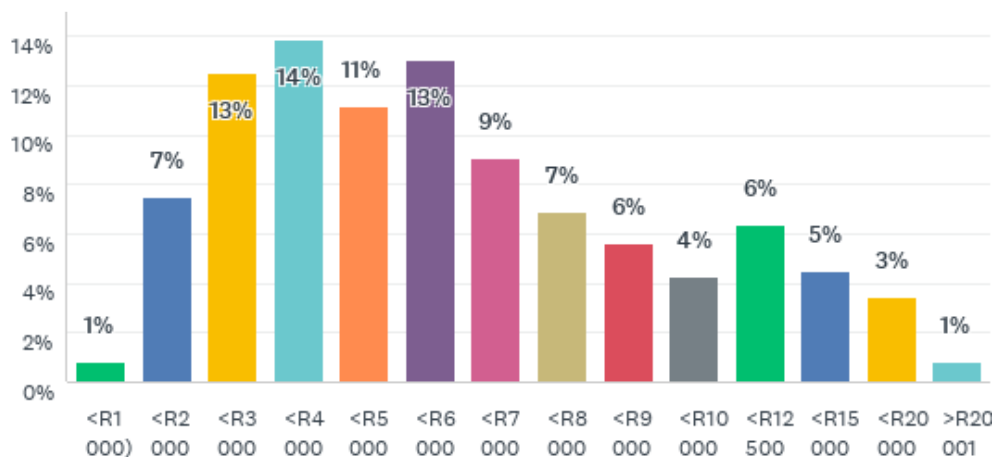


Life cycle of these households

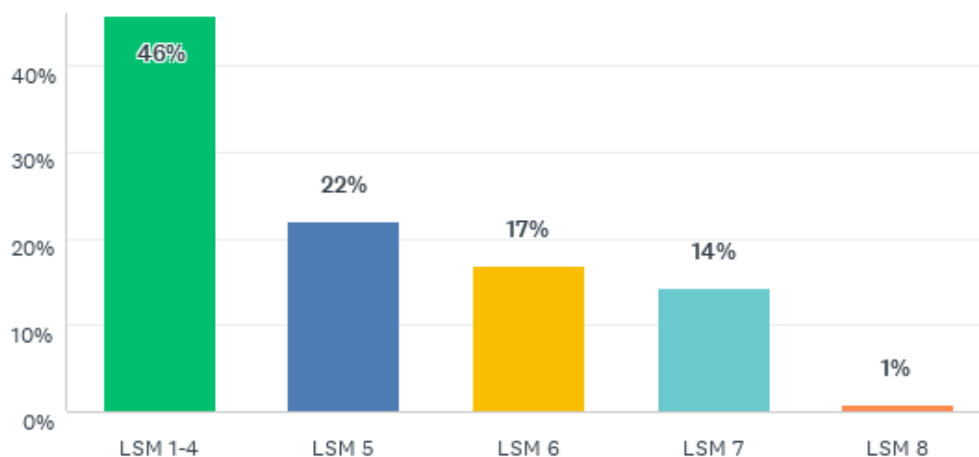


The average household income is between R5 000 and R7 000 per month. This correlates with similar studies elsewhere. Their income (for 80%) was negatively influenced by Covid-19. Almost 60% are in LSM 2-5. Only 1% of the total sample was disabled.

The total monthly household income

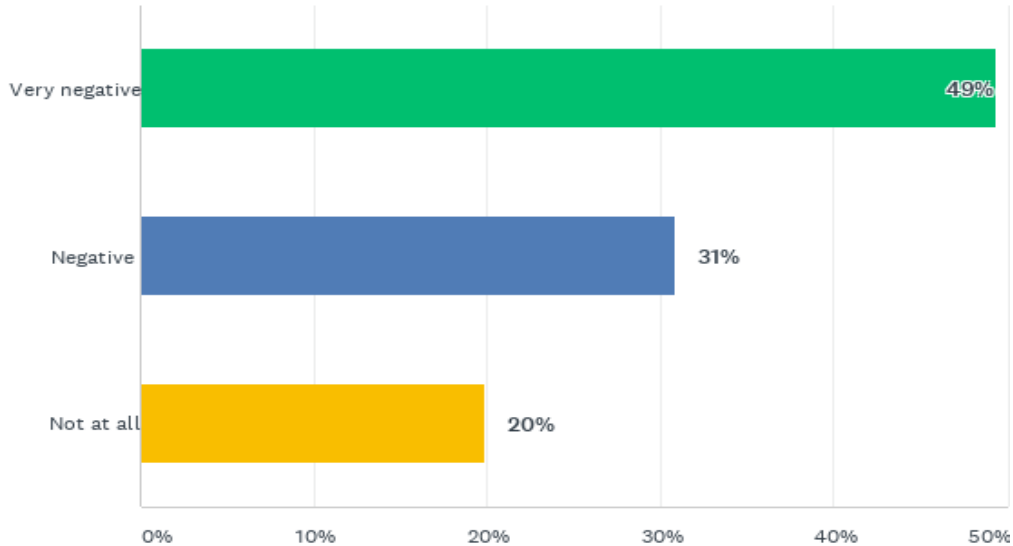


Monthly household income according to LSM categories

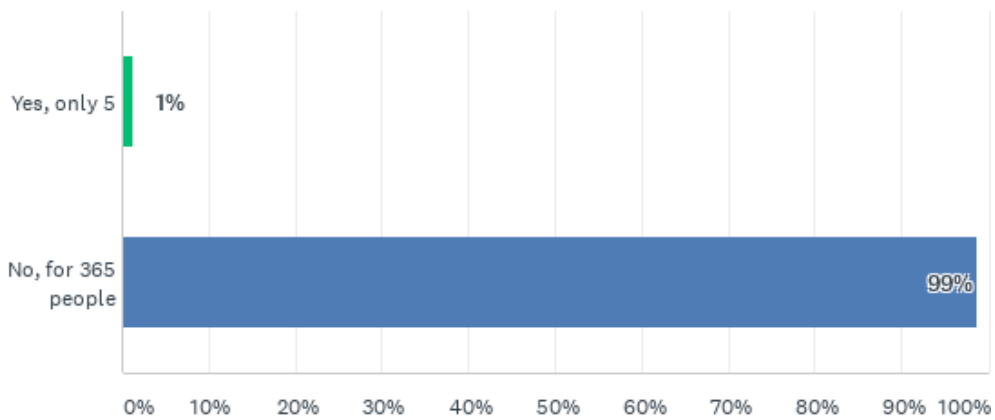


LSM 1-4	<R5 000	LSM 6	R 7 000	R 10 000	LSM 8	R 20 000	R 30 000	LSM 10	R 40 000	R 75 000
LSM 5	R 5 000	R 7 000	LSM 7	R 10 000	R 20 000	LSM 9	R 30 000	R 40 000	LSM 10+	>R75 000

The extent to which households' incomes were influenced by Covid-19



Persons with disabilities



The taxi commuters are mainly female, 36 years old, in the full nest life cycle stage, earning between R 5 000 and R 7 000 per month. The majority are in LSM 2-5, and only 20% have cars.

Considering the above statistics, it is clear that the proposed development holds great potential given the growing market, increasing population, and high demand for public transportation. The findings from this section of the report highlight the significant reliance on taxis for transportation and the need for scholar transport in the area. The demographic information about the commuter profile, including the majority of commuters being female, having larger households, and being in the full nest life cycle stage, further emphasizes the need for the proposed development. With an average

household income of between R5,000 and R7,000 per month and a high percentage of households negatively impacted by Covid-19, this section of the population would greatly benefit from the proposed development. Overall, the proposed development aligns with the needs and preferences of the residents in Mahikeng and Mmabotho, making it a valuable and necessary investment in the area. (Refer to Appendix G, Urban Studies for more detailed information).

8. Specialist Investigations

8.1. Introduction:

The compilation of this document may require niche-specific expertise, specifically in terrestrial and aquatic ecology, palaeontology, anthropology, and geohydrology. Experts in these fields were appointed to compile specialist assessments and reported on the *in-situ* condition of the receiving environment and the anticipated impacts associated with the proposed development. This section will outline the assessment methodology and findings of the various specialist studies conducted (for more detailed information, refer to Appendix G).

8.2. Methods:

8.2.1. Phase One Heritage Impact Assessment

The heritage significance of the affected area was evaluated on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) digital camera and camera drone were used for recording purposes. Maps and aerial photographs (incl. Google Earth) were consulted and integrated with data acquired during the on-site inspection. Site significance classification prescribed by SAHRA was used to indicate overall significance and mitigation procedures where relevant (Table 8).





Table 8 Archaeological field rating categories as prescribed by SAHRA

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (part of the site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
General Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

8.2.2. Ecological and Wetland Assessment




A site visit was conducted on 26 May 2021. The entire footprint of the proposed development site was surveyed over the period of one day. The site survey was conducted during late autumn after sufficient rain and allowed for accurate species identification and an active hydrological regime.

Scope and method




-  Evaluate the present state of the vegetation and ecological functioning of the area proposed for the taxi and bus holding area and associated infrastructure development.
-  To identify possible negative impacts that could be caused by the proposed clearing of vegetation and establishment of a taxi and bus holding area and associated infrastructure development.
-  Identify and delineate wetland and riparian areas associated with the artificial storm water system situated on the site.
-  Determine the Present Ecological State (PES) and Ecological Importance & Sensitivity (EIS) for the storm water system in the study area.

Vegetation

Aspects of the vegetation that was assessed include:



-  The vegetation types of the region with their relevance to the proposed site.
-  The overall status of the vegetation on site.
-  Species composition with the emphasis on dominant-, rare- and endangered species.

The amount of disturbance present on the site was assessed according to:

-  The amount of grazing impacts.
-  Disturbance caused by human impacts.
-  Other disturbances.



Fauna

Aspects of the fauna that was assessed include:

-  A basic survey of the fauna occurring in the region using visual observations of species as well as evidence of their occurrence in the region (burrows, excavations, animal tracks, etc.).
-  The overall condition of the habitat.

Wetlands and watercourses

Aspects of the wetlands assessed include:

-  Identification and delineation of watercourses including rivers, streams, pans and wetlands.
-  Describe the condition and status of watercourses and their importance relative to the larger system.

- 💧 Conduct habitat integrity assessment of perennial systems to inform the condition and status of watercourses.

8.2.3. Geohydrological Assessment

The scope of work included a preliminary Geohydrological assessment. At this stage of the project (design and planning phase), only a basic Geohydrological assessment can be conducted. Once boreholes have been drilled and water samples are taken, a more detailed analysis of the Geohydrological environment can be made. The Geohydrological assessment aims to:

- 💧 Assess the surface through a site visit.
- 💧 Determine hydrological factors such as slope, environmental conditions and geology.
- 💧 Initial site assessment about current site factors, potential risks and site suitability for the proposed development.
- 💧 Development of a site-specific Risk Assessment Matrix highlighting current and potential risks to the Geohydrological environment.

Note that the developer indicated that boreholes will be drilled before construction activities commence as a prerequisite for erecting a filling station. The geohydrological report recommended possible localities on the property which are most suitable for the establishment of a filling station along with a wash bay and the precautionary/mitigating measures in terms of the Geohydrological environment.

8.3. Summary of findings

8.3.1. Phase One Heritage Impact Assessment

Due to the proposed development's location within the CBD, the terrain is moderately to severely degraded and underlain by Ventersdorp Supergroup volcanics and associated conglomerates (Rm), capped by residual soils with a sandy parent material (Qs, Kalahari Group). The surrounding veld was surveyed on foot and no evidence was found of intact or capped Quaternary fossil remains, Stone Age archaeological material, Iron Age structures, rock engravings, marked graves, or buildings with historical significance older than 60 years. The proposed development will primarily impact palaeontologically insignificant volcanic rocks (Kameeldoorns Formation) and geologically recent Quaternary deposits, with little impact on potential in situ palaeontological or archaeological material. The large cemetery located next to the site will not be impacted by the proposed development. The study area is rated Generally Protected C and has low significance. (Refer to Appendix G).

8.3.2. Ecological and Wetland Assessment

The site is transformed from its natural condition and degraded, lacking elements of high conservation value. The site contains exotic vegetation, an artificial storm water channel, and scattered remnants of structures and buildings. The vegetation type is not considered a Threatened Ecosystem and is of Least Concern according to the National List of Threatened Ecosystems. The site is considered a terrestrial Critical Biodiversity Area 2 but does not significantly contribute to its conservation value due to being isolated by urban development and its current poor ecological condition. The site is also listed as an Aquatic Ecological Support Area 1 and is part of the catchment of the Molopo River, a National Freshwater Ecosystem Priority Area. The vegetation structure on the site is dominated by exotic species and herbaceous weeds, and the site is further degraded by large volumes of rubble and refuse. The species diversity is low, and no protected or endangered species are present. Species composition does not resemble that of the broadscale vegetation type in which the site is located. The proposed development site is of low conservation value and suitable for the proposed development without causing significant impacts.

The proposed site is unlikely to contain any species of conservation concern as the urban surroundings, high levels of disturbance, and human activity will discourage most mammals from inhabiting the area. The soil samples along the storm water channel indicate wetland conditions, but this is an artificial manifestation caused by the storm water system and not a natural wetland system. The wetland conditions will not contribute to the conservation value of the site. (Refer to Appendix G).

8.3.3. Geohydrological Assessment

The site is highly degraded and it was confirmed during the site visit that the whole area was used to dump rubble. The centre of the site contains a large open storm water drain which contains water that seems to be highly polluted, potentially with a form of sewage and hydrocarbon substances. Only the south section of the site is currently used as a taxi stand/ holding area. Three main types of rock were found within the study area, namely the Ventersdorp Lava, Hydrothermal Quartz and Chert. For this environment, an aquifer will be found on contact between the lavas (impermeable) and water-bearing geology (permeable / semi-permeable).

The Geohydrological desktop study and site visit revealed that although the aquifer is rated to be of MEDIUM to HIGH sensitivity, the actual site conditions revealed a highly degraded site, including it being used as a rubble dump site and a contaminated storm water drain running through the middle of the proposed site. From a developing standpoint and the proposed erection of a filling station and wash bay, this site would be preferable as the area's ground water will likely be polluted with the same contaminants. However, the proposed development will prevent further deterioration of the ground water resources with hydrocarbons (petrochemical substances) and soaps when mitigation measures stated in the Geohydrological Investigation, Impact Assessment and Environmental Management Programme (Appendix G Geohydrological Investigation Chapter 8; J and K) are implemented.

There are no environmental objections to develop a bus and taxi holding area with associated infrastructure on this site, as long as the project adheres to the mitigation measures recommended in the Geohydrological study (See appendix G) and not contributing to the already contaminated aquifer.

9. Impact Assessment and Mitigations

According to Appendix 1, Section 3 (1), of the 2014 EIA Regulations (as amended in 2017), a Basic Assessment Report must include

“(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including:

- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and*
- (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;*

The impacts arising from the proposed development’s design, construction, operation, and decommissioning phases have been assessed. A summary of the findings is presented in this chapter. Refer to Appendix J for an in-depth methodology, rationale, impacts and mitigations description.

9.1. Design and planning phase:

Activities associated with the design and pre-construction phase are primarily restricted to planning and design around the proposed development. As such, this phase relies largely upon on-site inspections and desktop assessments. Therefore, the impacts limited to this phase are considered insignificant.

9.2. Construction phase:

The construction phase of any proposed development can have a significant impact on the environment. The process of building can cause habitat loss, soil erosion, loss of wildlife, and interrupt ecological processes. Any construction has the potential to unearth historically significant artefacts or features. Construction activities can also result in the release of greenhouse gases, air pollution, surface and ground water pollution, and noise pollution. In addition, the use of heavy machinery and large amounts of resources like water, energy, and raw materials can strain the local ecosystem. Additionally, the local ecosystem can be negatively influenced by waste generated during construction. Furthermore, the transportation of materials and waste generated during the construction process can also have a negative impact on the surrounding area. It is crucial for developers to take these impacts into consideration and implement measures to minimize them. This may include using sustainable materials, implementing waste management plans, and reducing energy use during the construction phase. As such, the impact assessment contained within this report diligently assessed all relevant and possible environmental impacts which may be generated due to the construction of the proposed bus and taxi holding area and its associated infrastructure.

9.3. Operational phase:

The proposed bus and taxi holding area and its associated infrastructure are expected to have several positive impacts on the environment. During its operational phase, the holding area is designed to increase efficiency in transportation and reduce emissions from idling vehicles. The infrastructure associated with the holding area is also planned to be energy-efficient, utilizing sustainable energy sources and minimizing energy waste. While there may be some negative impacts, such as increased noise and air pollution in the immediate vicinity, the overall aim of the project is to have a net positive impact on the environment by reducing emissions, conserving energy and promoting sustainable transportation.

9.4. Decommissioning phase:

It is unlikely that the proposed development and its associated infrastructure will be decommissioned as it is envisaged to continue for the foreseeable future. In the unlikely event of decommissioning, the potential impacts may include environmental, economic, and social factors. The environmental impacts may involve the proper disposal of any hazardous materials used in the construction and operation of the facilities, as well as the management of any remaining waste or pollution. The economic impacts may involve costs associated with the closure and clean-up of the facilities, as well as any potential loss of jobs or reduction in local economic activity. The social impacts may include changes to local transportation patterns, as well as any potential effects on local communities and their sense of place.

9.5. Summary of impacts:

The table below summarises the assessed impacts and their significance pre-and post-mitigation. Refer to the complete environmental impact assessment (Appendix J) for more details.

Table 9: Environmental impact assessment summary

Impact type	Phase	Status	Significance pre mitigation	Significance post mitigation
Aspect: Ecological impacts				
Clearance of vegetation	Construction	Negative	Low-Medium	Low
<i>The physical or indirect loss of vegetation due to the proposed development</i>	Operation	Negative	Low	Low
Permanent loss of animal life	Construction	Negative	Low-medium	Low
<i>The loss of faunal diversity due to the proposed development</i>	Operation	Negative	No impact	No impact
Aspect: Heritage impacts				
The loss of artefacts and fossils	Construction	Negative	Low-medium	Low
<i>Destruction of any archaeological artefacts or fossils.</i>	Operation	Negative	No impact	No impact
The loss of historical features	Construction	Negative	Low	Low
<i>The destruction of historical buildings or features.</i>	Operation	Negative	No impact	No impact
Aspect: Water resource impacts				
Ground water quality	Construction	Negative	Medium	Low-medium
<i>The pollution of ground water resources</i>	Operation	Negative	Medium	Low-medium
Ground water quantity	Construction	Negative	No impact	No impact
<i>Abstraction activities drying up the aquifer.</i>	Operation	Negative	Medium	Low
Storm water runoff	Construction	Negative	Low-medium	Low
<i>Contaminated runoff from a site or a lack of proper flow</i>	Operation	Negative	Low-medium	Low

<i>could either contaminate an area or cause flood damage.</i>				
Aspect: Aesthetics				
Environmental aesthetics	Construction	Negative	Low-medium	Low
<i>The development has the ability to affect the natural surroundings to such an extent that the area as a whole takes on a new characteristic.</i>	Operation	Negative	Medium	Low-medium
Aspect: Air quality and noise				
Air quality	Construction	Negative	Medium	Low
<i>Additional air pollution introduced due to the mobilisation of vehicles and land clearance.</i>	Operation	Positive	Medium	Low
Noise and vibrations	Construction	Negative	Low-medium	Low
<i>Sound pollution through the operations of vehicles and equipment.</i>	Operation	Negative	Medium	Low-medium

9.6. No go alternative

The "no-go" alternative assumes that the proposed bus and taxi holding area and its associated infrastructure project will not be carried out, meaning that there will be no construction of the proposed development. This alternative would not result in any environmental impacts on the site or the surrounding local area, serving as a baseline for comparison with other alternatives.

If the "no-go" alternative is implemented, the following implications will occur:

- No benefits will be derived from the implementation of an additional land-use.
- No alien invasive vegetation will be removed, which may lead to the domination of the area and the loss of indigenous vegetation.
- Socio-economic benefits such as job creation, skills development, and local economic growth will be lost.
- Loss of investment: investors who have invested in the project will lose their investment, which can negatively impact their financial stability.

- Reduced economic growth: the construction and development of the holding area and infrastructure can contribute to economic growth through job creation and revenue generation. Without the project, the economy will miss these benefits.
- Increased housing shortage: without the new holding area, the already high demand for public transportation in the area will not be met, leading to inconvenience for commuters.
- Increased traffic congestion: without the new holding area, bus and taxi traffic will continue to add to the existing traffic congestion in the area.

On the other hand, the following benefits may occur if the "no-go" alternative is implemented:

- No indigenous vegetation will be removed or disturbed.
- No changes or alterations will occur to the existing landscape.
- No additional waste will end up in landfill sites.
- No additional traffic or noise pollution will occur in the area.

Considering the proposed development site's current degraded condition and the potential socio-economic benefits derived from the proposed development's construction and operation, **the no-go alternative is not the preferred alternative.** It is the EAP's opinion that the proposed development be favourably considered provided the adherence to mitigation measures listed in this report.

10. Project Summary and Recommended Mitigation

The proposed development is a bus and taxi holding area and associated infrastructure project. An Environmental Assessment Practitioner (EAP) has been commissioned to conduct an assessment of the potential impacts of the proposed development.

The EAP has identified several potential impacts of the proposed development, including ecological impacts such as the clearance of vegetation and permanent loss of animal life, heritage impacts such as the loss of artefacts and fossils and historical features, water resource impacts such as contamination of ground water and storm water runoff, aesthetic impacts, and air quality and noise impacts.

The EAP has assessed the significance of these impacts both before and after mitigation measures have been put in place, and has found that most impacts will be low to low-medium in significance after mitigation. The EAP has recommended that the proposed development proceed, provided adherence to the mitigation measures listed in the impact assessment report and the environmental management programme.

The no-go alternative, in which the proposed development is not carried out, has also been assessed. This alternative would result in no environmental impacts, but would also result in a loss of socio-economic benefits such as job creation and local economic growth, and would not meet the high demand for public transportation in the area.

In conclusion, the proposed development of the bus and taxi holding area and associated infrastructure is likely to result in some negative impacts, but these will be mitigated to low to low-medium significance through the implementation of the recommended mitigation measures. The no-go alternative is not preferred, as the proposed development is expected to bring socio-economic benefits to the area.

EAP's Recommendation

Based on the contents of this report, the proposed development is expected to have both positive and negative impacts on the environment and local community. However, the implementation of the recommended mitigation measures, regular monitoring and reporting, stakeholder engagement, and the adoption of sustainable practices and technologies can help to reduce the negative impacts and enhance the positive impacts of the project.

It is the EAP's opinion that the proposed development should be favourably considered, provided the mitigation measures outlined in this report are implemented and adhered to during both the construction and operation phases of the project.

11. Appendices

Appendix A: Maps

Appendix B: Photographic records

Appendix C: Project Layout

Appendix D: Title deeds

Appendix E: Screening Report

Appendix F: Specialist declarations

Appendix G: Specialist studies

Appendix H: Public Participation Report

Appendix I: Details of EAP

Appendix J: Impact Assessment Report

Appendix K: EMPr

Appendix L: Additional Information