BASIC ASSESSMENT REPORT FOR THE PROPOSED MIXED USE TOWNSHIP DEVELOPMENT ON ERVEN 1 AND 2, SITUATED ON A PORTION OF THE REMAINING EXTENT OF THE FARM WATERKLOOF 378-JR, AND ASSOCIATED UPGRADE OF SOLOMON MAHLANGU DRIVE, CITY OF TSHWANE, GAUTENG PROVINCE

GAUT: 002/16-17/E0221

30 November 2016

APPLICANT: Atterbury Property Fund Managers (Pty) Ltd

Compiled by:

INTERDESIGN LANDSCAPE ARCHITECTS (PTY) LTD (ILA)

P.O. Box 74648, Lynnwood Ridge, 0040
410 Pauline Spruijt Street, Garsfontein, Pretoria
Tel: +27 12 348 1922
Fax: +27 12 348 7154
Web: www.ilaweb.co.za

Contact persons:

Mr. Mazolo Dube

Mrs. Shalini Chetty

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

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

Kindly note that:

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

DEPARTMENTAL DETAILS

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

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

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

(For official use only)

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

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

Final BAR to be submitted following 30 days review period.

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

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

Not applicable, as no mining related activities are involved as part of this application.

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

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? Refer to **Appendix E8** for a list of the state departments and their contact details. **YES**

If no, state reasons for not attaching the list.

N/A – List attached.

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

If no, why?

A copy of this draft BAR has been delivered to all the State Departments for their review or comments within 30 days from the date of acceptance.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Proposed mixed use township development on erven 1 and 2, situated on a Portion of the Remaining Extent of the Farm Waterkloof 378-JR, and associated upgrade of Solomon Mahlangu Drive, City of Tshwane, Gauteng Province

Select the appropriate box

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

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

YES	

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

Water Use Authorisation in terms of Section 21 (c) and (i) of the National Water Act, 1998 (Act No.36 of 1998) – Department of Water and Sanitation

If yes, have you applied for the authorisation(s)?
If yes, have you received approval(s)? (attach in appropriate appendix)

	NO
YES	NO

2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended	Department of Environmental Affairs (DEA) & Gauteng Department of Agriculture & Rural Development (GDARD)	27 November 1998
National Environmental Management: Waste Act, 2008 (Act No.59 of 2008), as amended	DEA & GDARD	01 July 2009
National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004)	DEA & GDARD	01 September 2004
National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)	DEA & GDARD	11 September 2005
National Water Act, 1998 (Act No. 36 of 1998, as amended)	Department of Water and Sanitation (DWS)	20 August 1998
Conservation of Agricultural Resources Act (Act 43 of 1983) as amended	Department of Agriculture, Forestry & Fisheries (DAFF)	21 April 1983
Minerals and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002)	DEA & GDARD	01 May 2004
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	South African Heritage Resources Agency (SAHRA) & Provincial Heritage Resources Authority – Gauteng (PHRAG)	01 April 2000
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), as amended	National & provincial Department of Labour	01 January 1994

Hazardous Substances Act 1973 (Act 15 of 1973), as amended	National & Gauteng Department of Health	24 December 1976
National Land Transport Act, 2009 (Act No.5 of 2009)	National Department of Transport and Gauteng Department of Roads & Transport (GDRT)	08 December 2009
Spatial Planning and Land Use Management Act, 2013 (Act No.16 of 2013)	Department of Rural Development and Land Reform & City of Tshwane Town Planning Department	01 July 2015
Civil Aviation Act, 2009 (Act No.13 of 2009), as amended	South African Civil Aviation Authority	31 March 2010
Gauteng Transport Infrastructure Act, No.8 of 2001, as amended	GDRT	31 January 2003
Gauteng Provincial Environmental Management Framework	Provincial	22 May 2015
Gauteng Conservation Plan Version 3.3	Provincial	0ctober 2011
Gauteng Province Spatial Development Framework, 2011	Gauteng Department of Economic Development (GDED)	February 2011
Gauteng 25 year Integrated Transport Master Plan, 2013	GDRT	November 2013
Gauteng 5-year Transport Implementation Plan, 2012	GDRT	November 2013
City of Tshwane Spatial Development Framework, 2013 (CoTM-SDF)	City of Tshwane Metropolitan Municipality (CoT)	27 March 2014
City of Tshwane Integrated Development Plan 2011-2016, 2015/16 Review	CoT	28 May 2015
City of Tshwane Draft Comprehensive Integrated Transport Plan	CoT	31 March 2015
City of Tshwane Open Space Framework	CoT	December 2005

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

Legislation, policy of guideline	Description of compliance
National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended	The proposed mixed use township development is a listed activity requiring environmental authorisation in terms of the Environmental Impact Assessment Regulations, 2014 promulgated under sections 24 and 44 of the National Environmental Management Act, 1998 (Act No.107 of 1998). The applicable activities are in terms of Listing Notice 1 (GN R. 983) and Listing Notice 3 (GN R.985) of 2014, which require a Basic Assessment application process.
National Environmental Management: Waste Act, 2008 (Act No.59 of 2008), as amended	The Act seeks to protect health, well-being and the environment by providing reasonable measures for *et al*: - Minimising the consumption of natural resources; - Avoiding and minimising the generation of waste; - Reducing, re-using, recycling and recovering waste; and - Treating and safely disposing of waste as a last resort. These measures are necessary for securing ecologically sustainable development while promoting justifiable economic and social development. Section 16 of the Act requires a "holder" of waste to take all reasonable measures to manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour, or visual impact. The applicant has a responsibility of ensuring all the different

	type of waste streams generated during the construction and operational phases of the development are managed in an ecologically and socio-economically sustainable manner.
National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004)	The total extent of the development site is undeveloped with patches of indigenous vegetation. The type of indigenous or natural vegetation on site is classified by Mucina & Rutherford (2006) as Carletonville Dolomite Grassland, and Gauteng Shale Mountain Bushveld on a small section of the site. Both of these vegetation types occur within the Witwatersberg Pretoria Mountain Bushveld ecosystem, which is listed as a threatened ecosystem in terms of section 52(1)(a) of the National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004).
National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)	Dust and noise emissions during construction are the two major non-point or diffuse sources of air pollution associated with the proposed development. However, the emission levels are expected to be low and not above the regulated limits.
National Water Act, 1998 (Act No. 36 of 1998, as amended)	The proposed development involves the construction of a culvert crossing for an access road, which crosses an existing stream on the property. A Water Use Authorisation in terms of Section 21(c) and (i) of the National Water Act is required for the proposed culvert crossing. A risk assessment in terms of the General Authorisation Notice 509 of 2016 will be conducted to determine if a Water Use Licence application is required or not. The development site is affected by the 1:50 and 1:100 year floodlines (Apies River) and the maximum levels of these floodlines are indicated on the layout plan as required in terms of Section 144 of the National Water Act.
Conservation of Agricultural Resources Act (Act 43 of 1983) as amended	The control or removal of alien and invasive vegetation on the development site involves methods listed in terms of the Conservation of Agricultural Resources Act.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The proposed township development exceeds 10 000m^2 in extent and involves the construction of internal roads and other related services infrastructure listed under Section 38(1) of the NHRA. An investigation into any potential heritage resources within the development site has been conducted by a qualified heritage specialist and the findings included in this report.
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), as amended	If the development is authorised, the appointed contractor for the construction phase of the development will be required to comply with all applicable sections of the OHSA, mainly the Construction Regulations, 2014 promulgated in terms of Section 43 of the OHSA.
Hazardous Substances Act 1973 (Act 15 of 1973), as amended	Any hazardous substances to be used during construction are to be acquired, transported, handled, stored, and disposed as required in terms of the HSA
Spatial Planning and Land Use Management Act, 2013 (Act No.16 of 2013)	The SPLUMA seeks to provide a streamlined and integrated process to township planning and development. Section 21 (j) of SPLUMA requires municipal SDFs to include a strategic assessment of the environmental pressures and opportunities within the municipal areas, including the spatial location of environmental sensitivities, high potential agricultural land etc.
Civil Aviation Act, 2009 (Act No.13 of 2009), as amended	The proposed development site is located east of the Waterkloof Airforce Base, approximately 1km east of the

	secondary runway (falls within the 8km regulated zone). Therefore, the buildings and structures associated with the development are defined and regulated in terms of the Civil Aviation Regulations (2011) as obstacles with a potential hazard to aircraft moving in the navigable air space, or to affect the performance of the radio navigation or instrument loading systems. The Waterkloof Airbase is registered as a key stakeholder in this application, and will be provided the opportunity to comment on all reports made available to registered interested and affected parties for review. Formal engagements between the applicant and Waterkloof Airbase management will be held during the review period of this BAR.
Gauteng Transport Infrastructure Act, No.8 of 2001, as amended	The proposed development involves the upgrade of Solomon Mahlangu Drive proclaimed as a provincial road in terms of Section 11 of the GTIA. Formal engagements between the applicant's traffic engineers and the Gauteng Department of Roads and Transport on the proposed upgrades are ongoing. The design and upgrade of the road will be done according to the GDRT and CoTM requirements.
South African National Roads Agency Limited and National Roads Act, 1998	The proposed upgrade of Solomon Mahlangu Drive involves doubling of the lanes from the N1 overpass bridge to the R21 interchange. The N1 and R21 are both national roads in terms of Section 40 of the Act. Formal engagements between the applicant's traffic engineers and the South African National Roads Agency Limited on the proposed upgrades are ongoing. The design drawings for the proposed upgrades will have to be approved by SANRAL.
Gauteng Provincial Environmental Management Framework, 2015	The development site is located in *Environmental Management Zone 1: Urban development zone*. This zone, according to the EMF, is to promote development infill, densification and concentration of urban development within the urban development zones as defined in the Gauteng Spatial Development Framework (GSDF), in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas. The southern boundary of the development site is affected by a 30m wetland buffer and 1:100 year floodline, which is zoned as a *High Control Zone (EMZ 2)* in the EMF. These areas are considered sensitive and of conservation priority. This area, which forms part of the future proposed township development, has already been incorporated in the township layout as a private open space. The proposed development is therefore in line with the Gauteng EMF.
Gauteng Conservation Plan Version 3.3, 2011	According to the C-Plan map attached in **Appendix A4,** the entire proposed development site is situated in a Critical Biodiversity Area (CBA1) and threatened ecosystem (Witwatersberg Pretoria Mountain Bushveld). These areas are considered important in terms of the bioregional plan and should be maintained in a natural or near natural state to meet targets for biodiversity pattern or ecological processes. In terms of development in these areas, formal conservation protection where possible or appropriate zoning to avoid net loss of habitat is

	recommended.
Gauteng Province Spatial Development Framework, 2011	Due to the strategic location of the development site between the N1, R21, and Solomon Mahlangu Drive, it falls within an area defined in the GP-SDF as an "urban node" and "urban corridor". According to the GP-SDF, an urban node is characterised by good accessibility, particularly with regard to differing modes of public transport (rail, bus and combi-taxi) and supporting secondary road access (usually in the form of a grid-network). This is where public and private investment tends to concentrate, yielding mixed land-use activities (for example office, retail, residential and entertainment) with supporting social amenities and public facilities. It is complex in nature, with multi-ownership, mixed development density and higher use intensity. A node includes an integrated open space and a pedestrian orientated environment with supporting public spaces. The urban corridor is structured on a series of multi stranded movement systems with supporting infrastructure services and social facilities. The movement systems typically consist of public transport, transport stations, main roads, and several transverse streets. An activity spine develops with a linear mixed-use element of urban structure containing an intense concentration of facilities such as retail, office, entertainment, work, service, commercial and industrial, community facilities and residential development, which are all focused along a major transportation route. The spine is traffic orientated (seam), accessed through public and private transport.
Gauteng 25 year Integrated Transport Master Plan, 2013	The main access for the proposed township development will be from Solomon Mahlangu Drive (K69), which is identified in the ITMP-25 as part of the planned Rapid Road Transit (BRT) network. The implementation of the BRT system on this network is part of the national strategy to improve the overall public transport network. This network primarily fulfils a local mobility function with integration possibilities to adjacent systems. The proposed upgrade of Solomon Mahlangu drive as part of the overall development will be done in line with the GDRT and CoTM requirements. The main emphasis of ITMP-25 is on improving the public transport network as the basis of the movement system in the province, and urban corridors, activity spines and public transport routes creating the framework for future processes of densification and intensification, including Transit Oriented Development (TOD) comprising mixed uses around road and rail based public transport facilities.
Gauteng 5-year Transport Implementation Plan, 2012	Solomon Mahlangu Drive ((K69) is identified in the TIMP-5 as one of the City of Tshwane's Strategic Road Network (Class 2). The proposed dualisation of the road is also listed as one of the capital projects earmarked by the CoTM aimed at improving the capacity of existing major roads. The TIMP-5 recognises the vital role of transport in urban consolidation and provides a framework for restructuring the Gauteng transport network as a sustainable movement solution with less reliance on private mobility in favour of safe, environmentally friendly, and affordable

	public transport and non-motorised transport.
City of Tshwane Spatial Development Framework, 2013 (CoTM-SDF)	The proposed development is in line with the spatial planning of the area earmarked for Mixed Uses. The development site is situated along the N1 and R21 development corridor, in an area with opportunity for mixed uses, complementary to the existing Aerosat and the approved Centurion Aviation Village (CAV).
City of Tshwane Integrated Development Plan 2011-2016, 2015/16 Review	The proposed development will contribute to the CoTM's 2055 vision of a resilient and resource-efficient city by ensuring proper planning aimed at promoting green infrastructure, energy and water efficiency, and non-motorised transport.
City of Tshwane Draft Comprehensive Integrated Transport Plan	The proposed dualisation of Solomon Mahlangu Drive between Waterkloof High School and the R21 interchange, as part of the proposed township development, is also listed as a strategic road priority project for the CoTM in their ITP.
City of Tshwane Open Space Framework	The development site falls in Region 5 and is affected by the following typologies: ❖ Brown way - Highways (R21 & N1) and Main Roads (Solomon Mahlangu Drive); ❖ Blue way – Watercourses (Apies River); ❖ Blue Node – water body (N1/R21 Quarry, situated downstream outside the property boundary); and ❖ Red Node – N1/R21 Intersection. Brown Way Open spaces along activity streets and linkages will be incorporated as linear open spaces to be landscaped based on the approved Landscape Plan. Blue Way The area within the 1:100 year floodline or 32m from either side of the centreline of the Apies River, whichever is greater, will be retained as Private Open Space and Public Open Space respectively as indicated in the layout plan attached as **Appendix A2.** Blue Node The quarry dam on the southern corner of the property falls outside the development site boundary within an existing private residential estate. No stormwater attenuation is planned as part of the development's storm water management plan. Red Node The N1/R21 intersection falls outside the scope of the proposed development and will thus not be affected.

3. ALTERNATIVES

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

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

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

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

No alternatives assessed – refer to the motivation below.

Provide a description of the alternatives considered

No.	**Alternative type**, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	**Description**
1	Proposal	The Applicant, Atterbury Property Fund Managers (Pty) Ltd, proposes to establish a mixed use development on erven 1 and 2 situated on a Portion of the Remaining Extent of the Farm Waterkloof 378-JR. The farm portion to be developed by the Applicant in phases, of which this application forms phase 1, measures approximately 70.8711 Hectares. The total site, is currently zoned Agricultural. The proposed township development on erven 1 and 2 (Phase 1) occupies approximately 20.3144 Ha in total extent, and is bounded to the east by the Phase 2 portion of the property and the N1 Highway, Pierre van Ryneveld Avenue (M28) to the west, Solomon Mahlangu Drive (M10) to the north, and Bayside Road and Leisure Bay Residential Estate to the south. Refer to **Appendix A1** for the locality map. The proposed mixed use development will be implemented in two phases, starting with the first phase, which has existing development rights comprising a retail shopping centre, residential, and offices. This application for environmental authorisation of which this Basic Assessment Report forms part thereof, is only for the first phase of the development. The second phases of the township development will only be considered for implementation once the development rights have been secured, and a new application process for environmental authorisation will be undertaken at that particular stage prior to development. The first phase of the proposed mixed use development entails the following land-uses on each erf: 1. Erf 1 - Community shopping Centre including offices (9,0761 Ha); and - Residential (9.4083 Ha). 2. Erf 2 - Public Open Space (0, 6855 Ha). Refer to the layout plan indicating the above land uses attached as **Appendix A2.** The total development footprint excluding internal roads is 18.4844 Ha, out of a total extent of 20, 3414 Ha. Discussions with the CoT Planning Department confirm the City's support for this application and further applications were invited, to increase the development rights on the property. The development site has approved township rights dating back approximately 20 years comprising of shops (23000m^2), offices (4000m^2) and a public garage or filling station (500m^2). The applicant, however, does not intend at this stage going ahead with the public garage or filling station development rights and will at a later stage apply for environmental authorization for the public garage/filling station. <u>Access</u> The site is enclosed by the N1 Highway, R21 Highway, Van Ryneveld Avenue and Solomon Mahlangu Drive hence, access is currently only possible from Van Ryneveld Avenue. However, the Gauteng Department of Roads and Transport

		basic planning design of Solomon Mahlangu Drive (K69) allows for the addition of a southern approach to the intersection of Solomon Mahlangu (K69) Drive and Koedoesnek Avenue. As a result of the above, two access points are proposed. 1. The first proposed access point is to be located in Van Ryneveld Avenue south of the intersection of Solomon Mahlangu Drive and Van Ryneveld Avenue in line with the draft approved General Plan for the township. A traffic signal is proposed at the intersection of Van Ryneveld Avenue and the access road which will comprise one inbound and one outbound lane. The preferred location of this access is approximately 275 meters north of the intersection of Van Ryneveld Avenue and Bayside Road as indicated in the layout attached in **Appendix D1.** 2. The second proposed access point is to be situated in a proposed extension of Koedoesnek to Bayside Road (to be known as Andalucia Avenue) and consist of one inbound and one outbound lane. A traffic circle is proposed at the intersection of Andalucia Avenue and the access. The preferred location of this access is approximately 300 meters south of the intersection of Koedoesnek Avenue and Solomon Mahlangu Drive. The proposed new access road (Class 4 public road), with a possibility of this becoming a Class 3 road in future, is a very important link aimed to serve the proposed development from the east. This link would have a potential to formally and ideally "unlock" the adjacent land (by providing access). Access to the proposed development will be planned and provided in accordance with the requirements and appropriate design standards of Class 4 (possibly a future Class 3) road. The layout plan attached as **Appendix D2** is a schematic representation of the location of the proposed access points as well as the planned access road to be built as part of the development. If the need arises, it is possible to extend this access road to Bayside Road in future as per the approved draft general plan. The following requirements for Andalucia Avenue need to be met in accordance with the TRH26 (The South African Classification and Access Management Manual – Version 1 dated August 2012); - Recommended minimum road reserve width of 16-25m. - Design Speeds of 50-60 km/h - Minimum intersection spacing of 150 meters. - Formal accommodation of pedestrians' movement at the signalised intersections to improve pedestrians' safety. - Provision of sufficient street lighting to promote and support road safety. Results of the capacity analysis indicated that the following intersections will require signalisation and/or necessary upgrading to mitigate project impacts and/or accommodate the total future traffic demand during the peak periods;

		• Solomon Mahlangu Drive / Koedoesnek Street • Solomon Mahlangu Drive / Van Ryneveld Avenue • Van Ryneveld Avenue / Bayside Road For further details on the proposed upgrades refer to the preliminary Traffic Impact Report attached as **Appendix I1.** **Engineering Services** A baseline services report for the proposed township, attached as **Appendix I2,** proposes the following in terms of sewerage services and water supply. 1. Sewerage - there is an existing 300dia outfall sewer pipe available on the lower laying area of the proposed development. New upgrades on the existing infrastructure will be required. The upgrades on the existing council infrastructure will be limited to the amount equal or less than the bulk contributions. A new sewer connection will also be required from the existing 300dia outfall pipe to the proposed development. This cost will be for the developer. 2. Water supply - there is an existing 700dia bulk water pipe available in the lower laying area of the proposed development as well as an existing 225dia available in Cliff street North of the proposed development. City of Tshwane will have to confirm the connection position and as well as sufficient capacities. New upgrades on the existing infrastructure will be required. The upgrades on the existing council infrastructure will be limited to the amount equal or less than the bulk contributions. The new water connection will be required from either the existing 700dia bulk pipe or the 225dia network pipe. This cost will be for the developer. For further details on the above proposed engineering services refer to the Baseline Report attached as **Appendix I2,** **Stormwater Management** Transition channels (Transition channels 1&2) to be constructed on both sides of the road crossings to minimise concentration of flows on floodplains and help in erosion control. • Transition Channel 1 should be at least 15m. • Transition Channel 2 should be at least 10m.

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

No suitable alternatives were considered for evaluation in relevant sections of this Basic Assessment report, mainly for the following reasons.

1. The development site has approved township rights dating back approximately 20 years comprising of shops (23000m^2), offices (4000m^2) and a public garage or filling station (500m^2). No environmental authorisation was required for the development of these approved township rights at that stage. The applicant, as the new landowner, intends developing the township as per the approved and or amended township rights. The township layout is currently in the preliminary design phase, and all ecologically sensitive areas within the 1:100 Year Floodline or 32m from either side of the centreline of the Apies River have been demarcated and incorporated as open space areas in the layout plan.
2. The proposed development is compatible with the spatial planning of the area both from a provincial and municipal level. The development site is within an urban development zone in terms of the Gauteng Environmental Management Framework 2015, and along an “urban

corridor" or "urban node" in terms of the Gauteng Province Spatial Development Framework, 2011. According to the City of Tshwane Regional SDF (Region 4) 2013, the development site falls inside an area demarcated for a mixed use type of development. This compatibility in land use from a spatial planning perspective confirms the proposed development is the best suitable type of land use in the area.

3. There is a market driven demand for the proposed mixed use type of development in the area due to its strategic location between the N1, R21, and Solomon Mahlangu Drive. Furthermore, the development site is surrounded by residential developments to the north, east, and south, making it more attractive for a shopping centre type of development. It is therefore the most suitable type of land use from a socio-economic perspective.
4. The configuration of the layout ultimately has no effect on the existing biophysical environment as the ecologically sensitive areas have been delineated and incorporated as public and private open spaces.
5. Details on the type of infrastructure or buildings proposed as part of the township development cannot be determined at this stage, but the applicant is committed to environmentally sustainable infrastructure through energy and water efficient buildings.

4. PHYSICAL SIZE OF THE ACTIVITY

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

1. Township Development

	Size of the activity:
Proposed activity ***(Total environmental (landscaping, parking, roads etc.) and the building footprint)***	19.6559 ha
Alternatives:	
Alternative 1 (if any)	
Alternative 2 (if any)	
	Ha/ m^2

or, for linear activities:

2. Associated upgrade of Solomon Mahlangu Drive and Van Ryneveld Avenue

	Length of the activity:
Proposed upgrade of Solomon Mahlangu Drive	±2.5 km
Proposed upgrade of Van Ryneveld Avenue	±0.40 km
Alternatives:	
Alternative 1 (if any)	
Alternative 2 (if any)	
	m/km

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

	Size of the site/servitude:
Proposed activity	20.3414 Ha
Proposed upgrade of Solomon Mahlangu Drive	64 m
Proposed upgrade of Van Ryneveld Avenue	32 m
Alternatives:	
Alternative 1 (if any)	
Alternative 2 (if any)	
	Ha/m^2

5. SITE ACCESS

Proposal

Does ready access to the site exist, or is access directly from an existing road?	**YES**
If NO, what is the distance over which a new access road will be built	m

Describe the type of access road planned:

The site is enclosed by the N1 Highway, R21 Highway, Van Ryneveld Avenue and Solomon Mahlangu Drive hence, access is currently only possible from Van Ryneveld Avenue.

However, the Gauteng Department of Roads and Transport basic planning of Solomon Mahlangu Drive (K69) allows for the addition of a southern approach to the intersection of Solomon Mahlangu (K69) Drive and Koedoesnek Avenue.

As a result of the above, two access points are proposed.

1. The first proposed access point is to be located in Van Ryneveld Avenue south of the intersection of Solomon Mahlangu Drive and Van Ryneveld Avenue in line with the draft

approved General Plan for the township. A traffic signal is proposed at the intersection of Van Ryneveld Avenue and the access road which will comprise one inbound and one outbound lane. The preferred location of this access is approximately 275 meters north of the intersection of Van Ryneveld Avenue and Bayside Road as indicated in the layout attached in **Appendix D1.**

2. The second proposed access point is to be situated in a proposed extension of Koedoesnek to Bayside Road (to be known as Andalucia Avenue) and consist of one inbound and one outbound lane. A traffic circle is proposed at the intersection of Andalucia Avenue and the access. The preferred location of this access is approximately 300 meters south of the intersection of Koedoesnek Avenue and Solomon Mahlangu Drive.

   The proposed new access road (Class 4 public road), with a possibility of this becoming a Class 3 road in future, is a very important link aimed to serve the proposed development from the east. This link would have a potential to formally and ideally "unlock" the adjacent land (by providing access).

   Access to the proposed development will be planned and provided in accordance with the requirements and appropriate design standards of Class 4 (possibly a future Class 3) roads. The layout plan attached as **Appendix D2** is a schematic representation of the location of the proposed access points as well as the planned access road to be built as part of the development. If the need arises, it is possible to extend this access road to Bayside Road in future as per the approved draft general plan.

   The following requirements for Andalucia Avenue need to be met in accordance with the TRH26 (The South African Classification and Access Management Manual – Version 1 dated August 2012);
   - Recommended minimum road reserve width of 16-25m.
   - Design Speeds of 50-60 km/h
   - Minimum intersection spacing of 150 meters.
   - Formal accommodation of pedestrians' movement at the signalised intersections to improve pedestrians' safety.
   - Provision of sufficient street lighting to promote and support road safety.

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

Alternative 1

Does ready access to the site exist, or is access directly from an existing road?	YES	NO
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

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

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?	YES	NO
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

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

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

Section A 6-8 has been duplicated ____ Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN

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

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);

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

Refer to **Appendix A2** for the layout plan, and **Appendix D1** and **D2** for the route plan of the proposed road upgrades.

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

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

Refer to **Appendix A1** for the Locality Map.

7. SITE PHOTOGRAPHS

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

8. FACILITY ILLUSTRATION

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

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

Instructions for completion of Section B for linear activities

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

Section B has been duplicated for sections of the route | **"insert No. of duplicates"** | times

Instructions for completion of Section B for location/route alternatives

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

Section B has been duplicated for location/route alternatives | **"insert No. of duplicates"** | times | (complete only when appropriate)

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

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

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

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

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

The environmental baseline conditions are basically the same for both the township development site and route upgrades.

1. PROPERTY DESCRIPTION

Property description: (Including Physical Address and Farm name, portion etc.)	Erf 1 and Erf 2 situated on a Portion of the Remaining Extent of the Farm Waterkloof 378-JR, south east of Pretoria between the R21 and N1 highway.

2. ACTIVITY POSITION

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

Alternative:	**Latitude (S):**	**Longitude (E):**
	25° 49‘ 06.80“	28° 14‘ 38.18“

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
• Starting point of the activity	°	°
• Middle point of the activity	°	°
• End point of the activity	°	°

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix. Refer to Appendix D3 for the coordinates taken after every 250m for the proposed road upgrades of Solomon Mahlangu Drive and Van Ryneveld Street.

Addendum of route alternatives attached | ✓

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	0	J	R	0	0	0	0	0	0	0	0	0	3	7	8	0	0	0	0	0

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

4. LOCATION IN LANDSCAPE

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

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

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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

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

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

Latitude (S):	**Longitude (E):**
°	°

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

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

Latitude (S):	**Longitude (E):**
°	°

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

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

Latitude (S):	**Longitude (E):**
°	°

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

6. AGRICULTURE

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

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

7. GROUNDCOVER

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

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

Natural veld - good condition % = 10	Natural veld with scattered aliens % =10	Natural veld with heavy alien infestation % =65	Veld dominated by alien species % =15	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % =

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

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

NO

If YES, specify and explain:

N/A

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

NO

If YES, specify and explain:

N/A

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

YES

If YES, specify and explain:

1. Ecologically sensitive wetland units

The findings of the Flora and Fauna Report by Exigo, attached hereto as **Appendix G3,** confirm the vegetation associated with the wetlands and water courses that forms part of the floodline area in the south of the development site has a high sensitivity with a high conservation priority. The wetland is located inside the urban edge and a 32 meter buffer zone should be implemented, with no development allowed within the buffer zone.

A large section of the riparian woodland next to the water courses has been invaded by various aliens such as *Melia azedarach* and *Cestrum laevigatum*. Although alien species have invaded large section of the riparian woodland it still plays an essential role in the functioning of the ecosystem.

Other wetland types identified on the development site can be classified, according to the Wetland Delineation and Assessment Report (**Appendix G4**), as valley bottom wetlands (unchannelled) and artificial depressions (man-made dams).

The valley bottom unchannelled wetland was identified south of the development site, and water generally moves through the wetland in the form of diffuse surface flow and/or interflow (with some temporary containment of water in depressional areas), but the outflow can be in the form of diffuse or concentrated surface flow. In terms of plant species composition the wetland represents moist grassland dominated by grasses such as *Setaria sphacelata, Sorghum bicolor and Sporobolus africanus,* although sedges also occur in the HGM. Many of the usual weeds were recorded together with *Eucalyptus camaldulensis* (Red river gum), *Xanthium strumarium* (Large cocklebur) *Datura stramonium* and *Flaveria bidentis*.

The artificial depressions (man-made dams) identified on site represent man-made features and dams in the valley bottom wetland, particularly in the area adjacent to the border fence to the west of the site where water collect in a depression. These depressions areas are considered as artificial wetlands. The vegetation associated with depressions is mostly sedges and bulrushes depending on the depth of the water and the substrate. Species such as *Persicaria serullata, Typha capensis, Schoenoplectus corymbosus, Ludwigia stolonifer* and *Phragmites australis* mostly grow along the shallow edges of dams in the project area on a muddy substrate.

The Present Ecological Status (PES) and Ecological Importance & Sensitivity (EIS) of both wetland units are classified as 'Moderately Modified' (Class C) and 'Low' respectively due to impacting activities which have altered the expected floristic composition. These activities include canalisation, alien infestation, impoundments (dams) and road crossings. The Low

EIS is due to impoundments, stands of alien invasive species, sedimentation and overgrazing that modified the area. Both wetlands are therefore rated as not ecologically important and sensitive at any scale. They play an insignificant role in moderating the quantity and quality of water that feeds the larger rivers of the area. Furthermore, the biodiversity of these wetlands are ubiquitous and not sensitive to flow and habitat modifications.

2. Ecologically sensitive vegetation units

The following vegetation units of medium to high sensitivity were identified on the development site.

I. Rocky grassland

This vegetation unit forms part of two rocky grassland variations, namely an open grassveld outcrop type (*Loudetia simplex – Xerophyta retinervis* grassveld outcrop) in the central section of the study area characterised by medium sized rocks; and outcrops with gravelly soils in the northeastern section of the study area (*Themeda triandra* rocky grassland). The herbaceous layer is well developed and dominated mostly by grass species, while the succulent species *Aloe davyana var. greatheadi* is also characteristic species in the herbaceous layer.

Although this habitat type can be described as rocky outcrops, the slopes do not exceed 5 degrees and are therefore not classified as ridges according to the GDARD guidelines (GDARD, 2012).

The main factors which contributed to the *Loudetia simplex – Xerophyta retinervis* grassveld outcrop area being classified as a Medium-High sensitivity were the rockiness, steep slopes, plant species composition, pristine state of the vegetation, microhabitats and potential red data flora that could occur in the area. The *Themeda triandra* rocky grassland was classified as having a Medium Sensitivity. Although rocky outcrops are often habitats for red data and endemic species, while also supporting a unique floral and faunal species composition, no red data species were observed during the survey of the vegetation unit.

II. Acacia caffra rocky woodland

This mixed broadleaf woodland type occurs on the ridge in the western section of the site. The substrate is shallow, rocky soils derived from Quartsite. The woody layer forms dense woodland dominated by *Acacia caffra* and *Combretum molle*, although alien species invasion was also observed in most of the vegetation unit.

The herbaceous layer is predominantly medium tall grassland and the density is directly related to the amount of soil present on the surface and therefore seldom dense.

The main factors which contributed to the area being classified as Medium-High were the rockiness, steep slopes, plant species composition, slightly degraded state of the vegetation and microhabitats that utilize this area as habitat. Although rocky outcrops are often habitats for red data and endemic species, while also supporting a unique floral and faunal species composition, no red data species were observed during the survey of the vegetation unit.

Refer to **Appendix A3** for the ecological sensitivity map of the development site.

Was a specialist consulted to assist with completing this section				**YES**
If yes complete specialist details				
Name of the specialist:	Dr Buks Henning			
Qualification(s) of the specialist:	Ph.D Plant Ecology, MSc Soil Science			
Postal address:	Postnet Suite 74, Private Bag X07, Arcadia			
Postal code:	0007			
Telephone:	012 751 2160	Cell:	082 939 7067	
E-mail:	buks@exigo3.com	Fax:	086 607 2406	
Are any further specialist studies recommended by the specialist?				**NO**
If YES, specify:				
If YES, is such a report(s) attached?				**NO**
If YES list the specialist reports attached below				

Signature of specialist:		Date:	15 November 2016

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

8. LAND USE CHARACTER OF SURROUNDING AREA

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

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

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

NORTH

8	**8**	**8**	**8**	**8**
1	**1**	**1**	**1**	**1**
34, 7	**1, 5**		**1**	**1**
1, 25	**1,5,2**	**1, 2**	**1**	**1, 9**
1, 25	**1, 25**	**1, 25**	**1,9**	**1, 9**

WEST EAST

SOUTH

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

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

Have specialist reports been attached	**NO**
If yes indicate the type of reports below	
N/A	

9. SOCIO-ECONOMIC CONTEXT

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

The development site is considered as prime land for a mixed use type of development due to its strategic location to the N1 and R21 highways, with Solomon Mahlangu Drive at its northern border, which provides easy access to Johannesburg, Pretoria, Pretoria East and OR Tambo International Airport. It is predominantly surrounded by low residential areas to the north (Waterkloof Ridge), east (Elarduspark), and south (Leisure Bay Estate). Waterkloof Ridge is located north of the development site across Solomon Mahlangu Drive and comprises of spacious free standing houses with large ornamental gardens, which makes it one of the highly sought after and up market residential areas in Pretoria. Some of the existing houses along Cliff Avenue have been converted into offices. The Waterkloof Lifestyle Centre is less than a km north east of the development site and comprises of retail shops and restaurants. Elarduspark is located east of the development site across the N1 Highway and is home to the city's medium expensive real estate. Leisure Bay Estate to the south of the development site is a high market residential estate in a security complex bordering a dam. The above surrounding upmarket residential estates places the proposed development site in a market for high-end residential development mixed with retail, office, and commercial uses.

The Waterkloof Airbase is located further south west of the development site across the R21. The secondary runway of the airbase is approximately 1 km south west of the development site, and any proposed buildings and structures associated with the development falls (within the 8km regulated zone) are defined and regulated in terms of the Civil Aviation Regulations (2011) as obstacles with a potential hazard to aircraft moving in the navigable air space, or to affect the performance of the radio navigation or instrument loading systems. The Waterkloof Airbase has been registered as a key stakeholder for this project, and will be provided with all the necessary information about the proposed development for their comments. Formal engagements between the applicant and Waterkloof Airbase management will be held when necessary.

A number of informal traders selling craftware are located along Solomon Mahlangu Drive within the road reserve on the northern boundary of the development site. These traders will be affected by the proposed road upgrade of Solomon Mahlangu Drive and the township development in general. A number of informal settlements also exist in the vacant piece of land between the R21 and Bayside Road, south of the development site. These informal settlers currently access services bordering Solomon Mahlangu Drive through the development site, and are currently linked to crimes of theft and burglary within the surrounding residential areas. The applicant is currently working with the Community Watchdog Forum in the area in trying to find an amicable solution to the security threat posed by informal settlers.

10. CULTURAL/HISTORICAL FEATURES

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

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50m in length;
(c) any development or other activity which will change the character of a site-
(i) exceeding 5 000 m2 in extent; or
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
(d) the re-zoning of a site exceeding 10 000 m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

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

If YES, explain:

According to the findings of a Heritage Report by Neels Kruger of Exigo Sustainability, attached hereto as **Appendix G6**, the project area represents important European settlement developments in the old Zuid-Afrikaanse Republiek and even though the area has been altered extensively by recent and historical activities largely sterilising the area of heritage remains, a number of sites of heritage potential were noted.

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

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

The remains of two clay brick structures and associated ash middens occur in a central part of the development site, in close proximity of each other. At the sites, clay brick foundations and scattered stones and bricks cover a surface area of approximately 10m x 15m. In addition, two ash middens containing material culture such as glass, metal, porcelain and enamel indicate a Historical Period context for the two sites where these structures possibly acted as farm-labourer's quarters. The general preservation of the sites, structures and the integrity of middens are poor due to site disturbances and natural site degradation over time. Dwellings or buildings are not clearly visible on late-20th century aerial photography of the area and it is not indicated on 1:50 000 maps. This supports the interpretation that the sites date to the Historical Period. The sites, which are of medium to low heritage significance due to their poor preservation, occur within the proposed project footprint and unmitigated impact on the sites is expected to be direct.

However, the occurrences might potentially inform on architectural, settlement and social developments on the historical Waterkloof property. It is primarily recommended that the sites be avoided and that a 50m conservation buffer around the structures be implemented. Should impact on the sites by development prove inevitable they should be adequately documented by means of further Phase 2 Specialist Analysis (mapped, photographed and documented, described and contextualised by means of a desktop study, possible site sampling subject to the necessary excavation permits) and the necessary destruction permits should be obtained from the relevant Heritage Resources Authorities

It is cautioned, since the sites were probably used dwellings, the probability of informal burials occurring in association with the sites are high. In the event of the detection of any unmarked grave, SAHRA should be contacted immediately, so that such a find can be investigated and mitigation measures recommended.

Will any building or structure older than 60 years be affected in any way?	**YES**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	**YES**

If yes, please attached the comments from SAHRA in the appropriate Appendix

The comments from SAHRA will be attached in the final BAR upon receipt.

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

2. LOCAL AUTHORITY PARTICIPATION

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

Was the draft report submitted to the local authority for comment? **YES** [redacted]

If yes, has any comments been received from the local authority? [redacted] **NO**

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

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

Not yet received, as this Basic Assessment Report is currently a draft version under review by the local authority and registered I&APs.

3. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders? [redacted] **NO**

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

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

Consultations between the applicant and Transnet about the possible relocation of a fuel pipeline within the road reserve of Solomon Mahlangu Drive are still ongoing. Any comments received will be incorporated in the final BAR.

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

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

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

5. APPENDICES FOR PUBLIC PARTICIPATION

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

Appendix 1 – Proof of site notice

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

Appendix 3 – Proof of newspaper advertisements

Appendix 4 –Communications to and from interested and affected parties

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

Appendix 6 - Comments and Responses Report

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

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&APs

SECTION D: RESOURCE USE AND PROCESS DETAILS

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

Instructions for completion of Section D for alternatives

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

Section D has been duplicated for alternatives | **"insert No. of duplicates"** | times | (complete only when appropriate)

Section D Alternative No. | "insert alternative number" | (complete only when appropriate for above)

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

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

If yes, what estimated quantity will be produced per month? ±100 m^3

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

The management of waste during construction will be based on the waste hierarchy approach of reduce, reuse, recycle, and disposal as the last option. This approach to waste management has been incorporated as a condition in the EMPr attached as **Appendix H.** Construction rubble will be reused as backfill or aggregate material on the construction site where practical. Excess rubble that cannot be reused as backfill or aggregate material on the construction site will be transported to a recycling facility or if non-recyclable, disposed at the nearest registered land fill facility.

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

Non reusable or recyclable construction solid waste will be disposed at the nearest registered landfill facility. All hazardous solid waste generated during construction will be handled, transported, and disposed of by a registered waste service provider contracted to manage hazardous waste.

Will the activity produce solid waste during its operational phase? **YES**

If yes, what estimated quantity will be produced per month? ±15`m^3

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

Normal domestic and office type of waste will be produced. A waste hierarchy approach of reduce, reuse, recycle, with disposal as the last option, will be implemented in the management of waste specific to each type of development. A waste recycling programme will be adopted to minimise the amount of waste disposed thereby reducing the pressure on municipal waste services and landfill sites.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity? **NO**

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

The proposed township development is currently in the preliminary design phase and confirmation on the amount of waste to be generated and the local municipality's capacity to handle or dispose the waste thereof, will be determined during the detailed design phase.

Non-recyclable solid waste will be disposed of in the normal municipal waste disposal system.

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

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? **NO**

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

Is the activity that is being applied for a solid waste handling or treatment facility? **NO**

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

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

As indicated above, a waste hierarchy approach of reduce, reuse, recycle, with disposal as the last option, will be implemented where practical in the management of all solid waste streams generated during the construction and operational phases of the development. A waste recycling programme will be implemented during the operational phase to minimise the amount of waste disposed thereby reducing the pressure on municipal waste services and landfill sites.

Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? **NO**

If yes, what estimated quantity will be produced per month? m^3

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)? YES / NO

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO**

If yes, what estimated quantity will be produced per month? m^3

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

N/A

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

Will the activity produce effluent that will be treated and/or disposed of at another facility? **NO**

If yes, provide the particulars of the facility:

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

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

N/A

Liquid effluent (domestic sewage)

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

If yes, what estimated quantity will be produced per month? 6,660m^3

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)? **NO**

Will the activity produce any effluent that will be treated and/or disposed of on site? **NO**

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

N/A

Emissions into the atmosphere

Will the activity release emissions into the atmosphere? **YES**

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

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

If no, describe the emissions in terms of type and concentration:

The proposed development will generate dust and noise emissions during the construction phase. Regulations for the control of dust are prescribed in the National Dust Regulations, 2013 published in GN R.827 in terms of Section 53(o), read with section 32 of the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004). However, the dust emissions to be generated during the construction phase are expected to be minimal and within the acceptable dust fall rates as prescribed in the regulations. Noise emissions in the City of Tshwane are regulated in terms of the Gauteng Noise Regulations published in General Notice 5479 of 20 August 1999. The noise levels are however expected to be minimal during the construction phase, and any reports of disturbing noise from construction related activities shall be investigated and appropriate measures taken to minimise the noise level. Measures to minimise dust and noise emissions during construction have been

incorporated into the EMPr attached as **Appendix H.**

2. WATER USE

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

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

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

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs? **YES**

If yes, list the permits required

General Authorisation or Water Use Licence in terms of Section 21 (c) & (i) of the National Water Act, 1998 (Act No. 36 of 1998. A GA OR WUL will be applicable depending on the findings of a risk assessment conducted in terms of Government Notice 509 published in Government Gazette No.40229 of 26 August 2016.

If yes, have you applied for the water use permit(s)? **NO**

If yes, have you received approval(s)? (attached in appropriate appendix)	YES	NO

3. POWER SUPPLY

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

According to the Electrical services confirmation letter attached as **Appendix I3**, the proposed township is situated within the licenced electricity supply area of the City of Tshwane, and more specifically within the supply area of the existing Wingate primary 132/11kV substation. There is at least 20,000Kva spare capacity at Wingate primary substation.

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

A medium-voltage (11kV) satellite substation building, with indoor 11kV circuit breakers, is required to be established for the proposed development. The existing medium-voltage cables that were installed to the substation at the water pump station are to be extended to the satellite substation building, as part of the servicing of the township.

4. ENERGY EFFICIENCY

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

Energy efficiency measures and green design standards will be integrated in the building plans where practical during the final design phase. These measures include but not limited to efficient water heating systems, ventilation systems, lights (CFLs, LEDs) etc. The incorporation of green spaces as part of the township development plays an essential role in absorbing carbon emissions and in the circulation of clean air around the buildings.

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

The need for alternative energy sources will be taken into consideration during the planning phase. Alternative energy sources such as solar water heaters are recommended where possible.

SECTION E: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

1. Mr Peter Teurlings 06/09/2016
   a) Section 2(4)(r) of NEMA requires that "Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure." The proposed development is situated on a wetland which falls into this category.
   b) Town planning and land capability impacts in relation to the City of Tshwane Metropolitan Municipality Regional Spatial Development Plan of 2013, the Gauteng Environmental Management Framework of 2014, and the local Integrated Development Plan.
   c) Traffic impacts, including impacts on existing road pavements surrounding the proposed developments, over a period of time, including peak hour traffic and weekend traffic.
   d) Impacts on air quality and human health as a result of emissions from vehicles on the adjacent land owners, taking into account inversion layers.
   e) Impacts on the surface water resources within a 5km radius of the site, inclusive of any wetlands and perched aquifers as per the DWA's guidelines of 2006, and cumulative impacts on downstream users (including the aquatic environment).
   f) Impact on groundwater resources within a 5km radius of the site and borehole yields as a result of the proposed project.
   g) Impacts of chemical blasting on the surface and groundwater in the catchment.
   h) Impact of the current and future droughts and climate change on the construction and operation of the proposed development.
   i) Impact on the ecology (i.e. mammals, reptiles, avifauna, invertebrates, amphibians, limnology and aquatic fauna, indigenous, aquatic and alien invasive vegetation), and on the biodiversity of the area during both winter and summer seasons.
   j) Visual impacts associated with the proposed project during construction and operation and associated impacts on adjacent land owners.
   k) Noise impacts on adjacent land owners, taking various wind directions and strengths into account and relating to:
      - trucks transporting construction materials and fuel during the construction phase,
      - trucks transporting goods to the proposed mixed use development during the operational phase,
      - private vehicles during construction and operation,
      - general construction noise of cranes, batching plants and other equipment.
   l) Impact of founding conditions on the proposed development.
   m) Impact on the heritage and heritage landscape surrounding the development.
   n) Social impacts such as:
      - The loss of sense of place of the adjacent land owners;
      - Potential deterioration of roads as a result of overloading of construction and delivery trucks;
      - Presence of a construction camp where labourers could be accommodated;
      - Preferential procurement on the population living in the area and the delivery of locally produced goods;
      - Integrating HIV and gender-related issues into the EIA process;
      - Labour and employment;
      - Extent of in-migration;
      - Potential loss of livelihoods;
      - Potential health and safety issues for nearby communities as a result of the construction labour force;
      - Potential health and safety issues for nearby communities as a result of

increased traffic;
- Changes in criminal activity;
- Increased risk of fire;
- Prevention of illegal littering and waste disposal; and
- Spin-offs from related local procurement.

o) Contamination of the site from previous misuse of the property by the land owner and unknown or illegal users or occupiers of the land;
p) Lack of maintenance by the current land owner regarding the removal of alien and invasive plants as per the requirements of the National Environmental Management: Biodiversity Act (Act 10 of 2004);
q) An independent engineering report should be compiled to show how the proposed development will link to storm water, sewer, water supply, electricity, and telecommunications
r) Confirmation by the relevant City of Tshwane Metropolitan Municipality Department that a specific landfill site, in close proximity to the development, has sufficient air capacity to receive waste generated by the construction phase and during operations of the proposed development.
s) At the heart of a mixed use development issue (which will probably include housing density) lies a balancing between local government town planning discretions and national government environmental discretions. The National Environmental Management Act (Act 107 of 1998, NEMA) requires environmental authorisation for activities that may adversely affect the environment, and authorises national and provincial authorities to grant or refuse such authorisation. These powers exist alongside the planning powers of municipalities. The local government considers the need and desirability of the development from the perspective of town planning, and the environmental authority considers whether the development is environmentally justifiable. A proposed development may fail from either perspective.

2. Lt Col Tommy J Arpin SAAF Waterkloof Airbase 23/09/2016
a) Proposed development encroaching on flight safety zones of AFB Waterkloof's secondary runway.
b) ICAO Regulations to be adhered to re high buildings, structures, masts etc.
c) Noise impact on proposed development due to flying activities.
d) Possible impact on Aircraft Navigation Systems.

3. Matthew Edward Buttle 26/09/2016
a) Limitation on Building Structure Height – A reasonable limitation on the height of building structures must be enforced. No high rise buildings are present within any of the surrounding areas and the development of such would dramatically change the landscape unfavourably. A sensible limitation within the norm of the surrounding areas title deeds should be maintained. Building over 14m from ground level will be deemed to be undesirable.
b) Management of Commercial and Residential waste must be maintained in such a manner that waste dump and collection sights are not visible from either of the above mentioned residential areas.
c) Billboard Advertising – Billboard and advertising on building sides should be restricted to commercial entities located within the development. Apart from being an eyesore to surrounding residents, billboards play a major factor in the transmission of noise pollution from main roads, commercial operations and the N1 highway. The current billboard construction (from containers) on the north eastern corner of the property (along the N1 north) is totally unacceptable and the proposed development should avoid any similar advertising boards.
d) Roads and Traffic Management will need to be addressed on both the M10 (Solomon Mahlangu Drive) as well Pierre Van Ryneveld Avenue. The following statements are applicable.
   - The two roads mentioned provide the only routes from Waterkloof Ridge around the Waterkloof AFB and are therefore deemed to be main arterial routes for commuters from the residential north and eastern suburbs to Centurion industrial and business districts.
   - The Solomon Mahlangu Drive currently present 2 lanes travelling east past the proposed development sight and only 1 lane travelling west. Significant traffic

congestion in the morning peak hours in the single lane direction is steadily increasing with a bottleneck existing at the N1 bridge where two lanes and the slip road from Boeing Avenue north merge into 1. The temporary provision of a pedestrian walkway, due to the demolition of the condemned pedestrian bridge north of Solomon Mahlangu sees traffic congested travelling east in the evening.

- Pierre Van Ryneveld Road is a single carriage road in both directions. This road is significantly congested in the northerly direction during afternoon peak hours from Solomon Mahlangu intersection right back to the traffic lights at the Aerosud facility. The proposed development with dramatically increase the traffic on this road along with the proposed Centurion Aviation Village.
- Both roads require widening along with a widening of the Solomon Mahlangu bridge over the N1. Significant thought and design must be given to additional traffic management measures (turning circles, traffic lights, etc.) to minimise delays cause by additional traffic into and from the proposed development.
- Road upgrades must take priority on the development schedule and significant upgrades should be completed prior to the commencement of construction within the development in order to account for the addition traffic of construction vehicles etc.

e) The proposed development falls within a natural waterway and vlei. Development will significantly impact this natural area; however management of the impact is essential.
f) Farming activities still occur downstream of the development and as such, water must be diverted around the development and back onto its original course.
g) Wildlife in the vlei is primarily restricted to birds. Conservation of these animals, either in conserving a portion of their habitat or relocation must be considered.
h) Water requirements by the development must be considered, the surrounding areas reservoirs are already constrained by the local residential development. Infrastructure must be assessed to determine adequacy and an infrastructure development plan where short falls are identified.

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

1. Responses to issues raised by Mr Peter Teurlings

a) The proposed development site is indeed traversed by a watercourse already under stress or pressure from development upstream. The Present Ecological Status (PES) and Ecological Importance & Sensitivity (EIS) of both wetland units identified on the development site are classified as 'Moderately Modified' (Class C) and 'Low' respectively due to activities upstream such as canalisation, alien infestation, impoundments (dams) and road crossings. Refer to the Wetland Report attached as **Appendix G4** for further details.
b) Refer to section 2 of above for a description on the applicable legislation, policies and/or guidelines.
c) All the possible impacts on the surrounding road network leading to the development site have been taken into consideration by the traffic specialists hence the proposed upgrades to Solomon Mahlangu Drive and Pierre Van Ryneveld Avenue. Refer to **Appendix I1** for the Traffic Impact Report. The applicant is also working closely with all three spheres of road authorities, City of Tshwane, Gauteng Department of Roads and Transport and SANRAL to find the best solution for the background problems already in existence on the road network, and in mitigating the development's impact on the network.
d) The proposed road upgrades will include dedicated pedestrian and cycling lanes to promote the use of non-motorised transport. Although it is acknowledged the proposed development will increase traffic on the existing road network in the area, the same cannot be attributed to vehicle gas emissions as the source is non-point and diffuse in urban areas.
e) The proposed development will incorporate the watercourse and its 32m wetland buffer including the 1 in 100 year floodline, whichever is greater, as a private open space. This will enhance greater protection of the wetland ecosystem and improve its currently deteriorating ecological habitat and integrity.
f) No impact to the quantity and quality of existing groundwater resources underlying the development site is expected to occur as a result of the proposed development. Should

the abstraction of groundwater resources be required at any stage of the development, the necessary hydrological investigations will be conducted prior to drilling as required by the relevant authorities.

g) Any required blasting during construction will be properly planned taking into consideration the findings and recommendations of the Geotechincal Report (**Appendix G1**). Refer to the EMPr for the recommended mitigation measures for blasting activities.

h) The buildings and structures for the proposed development will be designed in line with applicable green standards focused on resource efficiency and optimisation. Water scarcity is acknowledged as one of the biggest risk to any development in South Africa and the proposed development is no exception. Water efficient technologies and strategies will therefore be taken into consideration in the building plans. Open spaces are a central part of the proposed development as the vegetation in these open spaces not only acts as filter for carbon emissions but also helps in regulating the surrounding high temperature conditions during the hot summer months.

i) Refer to the Ecological Report attached as **Appendix G3**.

j) The construction site will be barricaded with an inert fence to prevent any possible intrusive visual impacts during construction. The architectural design of the buildings and structures will incorporate the surrounding natural elements such as topography and climate in order to ensure the overall development is aesthetically pleasing.

k) Measures for minimising noise emissions during construction have been included in the EMPr attached as **Appendix H.**

l) Refer to the Geotechnical Report for the founding conditions, attached as **Appendix G1.**

m) Refer to Section 10 above and **Appendix G6** for the findings of the Heritage Report.

n) There is no loss of sense of place for the surrounding landowners as the development site is located within the urban edge and predominantly surrounded by residential estates.
   - Construction vehicles are required to follow designated routes during construction and any deterioration of these routes linked to construction vehicles will be assessed and repaired by the main construction contractor.
   - The position of the construction camp will be determined by the Resident Engineer in consultation with the ECO. However, no construction workers will be staying on site.
   - Issues with regard to preferential procurement are beyond the scope of this application
   - Integration of HIV and gender-related issues is normally applicable to large scale projects with a large labour force. It is therefore not applicable to this project.
   - Potential health and safety issues during construction are addressed in the EMPr.
   - Criminal activity in the area is expected to drop as a result of the proposed development.
   - Risk of fire and waste management related issues during construction are dealt with in the EMPr.

o) Contamination of the site through illegal dumping by the public cannot be attributed to misuse of the land by the previous landowner. Illegal dumping on open spaces is a common and widely known problem in urban areas. All the illegally dumped waste material on site will be removed and disposed at a registered landfill facility.

p) The land is already earmarked for development and it would be a wasteful expense at this stage for the new landowner to control alien and invasive weeds on the property.

q) Refer to the engineering and electrical services reports attached as **Appendix I2** and **Appendix I3** respectively.

r) Confirmation on services including waste disposal is expected from the relevant departments of the CoT following the review period of this draft Basic Assessment Report.

s) It all depends with the nature, type, and extent of the development in relation to planning policies, services, and environmental factors.

2. Responses to issues raised by Lt Col Tommy J Arpin SAAF Waterkloof Airbase

a) It is acknowledged the proposed development site is situated within the regulated 8 meter radius from the Waterkloof Airbase and any buildings or structures thereof are defined in terms of Civil Aviation Regulations (2011) as obstacles with a potential hazard to aircraft moving in the navigable air space, or to affect the performance of the radio navigation or instrument loading systems. Architectural drawings and plans of the

proposed buildings or structures will be submitted for comments or approval.

b) Noted. This will be taken into consideration in the design of the buildings and structures.
c) The possible impact of noise from low flying aeroplanes during descent or take-off will be taken into consideration in the design of the buildings or structures.
d) A detailed layout plan indicating all the proposed infrastructure and services will be submitted for review to confirm if any of the proposed structures interferes with Aircraft Navigation Systems.

3. Responses to issues raised by Mr Matthew Edward Buttle

a) Details on the design or height of the buildings are not yet available at this stage. However, the decision making powers pertaining to these matters do not lie within the scope of this application and will be determined by the relevant authority.
b) Waste transfer facilities will be established where required within the development footprint. These facilities will be properly designed taking into consideration issues such as access, hygiene, and visibility.
c) Noted, however, the billboard on the north eastern corner of the property was erected prior to Atterbury Property Fund Managers taking ownership of the property. The due processes are however being followed by the new land owner and will in conjunction with the relevant authorities and their requirements in terms of the erection of the billboard, be made fully compliant. This structure will not be permanent and future billboards and signage will fully comply with the local authority's bylaws.
d) The traffic issues highlighted currently exist and should not be attributed to the proposed development. However, the proposed road upgrades of Solomon Mahlangu Drive and Pierre Van Ryneveld Avenue will help alleviate the traffic issues. Refer to **Appendix D** and **Appendix I1** for the preliminary designs and Traffic Report respectively.
e) The proposed Phase 1 Township development site boundary falls outside the watercourse, but is affected by the 30 m wetland buffer, which extends slightly inwards from the southern boundary. This area within the wetland buffer will be incorporated as a private open space to be managed in future phases of the development.
f) There is no impeding structure to the natural flow of the watercourse within the property boundary or development site.
g) The riparian zone and wetland buffer will not be affected by the proposed Phase 1 Township development, except for the road crossing through the wetland. The design, construction, and management of this road crossing will be done according to the Water Use Authorisation conditions or DWS requirements.
h) According to the engineering services report attached as **Appendix I2**, there is adequate municipal water supply for the proposed township development subject to confirmation by the City of Tshwane Water and Sanitation department.

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

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

The Significance Assessment Methodology used is in accordance to the DEAT (2006) Guideline Document 5 (Assessment of Impacts). The mentioned document states that the significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature, duration, intensity, extent and probability of identified impacts. Furthermore the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows:

SIGNIFICANCE

Significance is the product of ***probability*** and ***severity***.

PROBABILITY (P)

Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- ***Improbable*** - Low possibility of impact to occur due to design or history. ***Rating: 2***
- ***Probable*** - Distinct possibility that impact will occur. ***Rating: 3***
- ***Highly probable*** - Most likely that impact will occur. ***Rating: 4***
- ***Definite*** - Impact will occur regardless of any prevention measures. ***Rating: 5***

SEVERITY RATING (SR)

The *severity rating* is calculated from the *factors* allocated to *intensity* and *duration*. Intensity and duration factors are awarded to each impact, as described below.

INTENSITY FACTOR (I)

The *intensity factor* is awarded to each impact according to the following method:

- *Low intensity* - nature and/or man made functions not affected (minor process damage or human/ wildlife injury could occur. *Factor 1*
- *Medium intensity* - environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). *Factor 2*
- *High intensity*- environment affected to the extent that natural and/or human-made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). *Factor 4*

DURATION (D)

Duration is assessed and a *factor* awarded in accordance with the following:

- *Short term* - ≤1 to 5 years. *Factor 2*
- *Medium term* - 5 to 15 years. *Factor 3*
- *Long term*- impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention. *Factor 4*
- *Permanent*- mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient. *Factor 4*

SEVERITY FACTOR (SF)

The *severity rating* is obtained from calculating a *severity factor*, and comparing the severity factor to the rating in the table below. For example:

The Severity factor = *Intensity factor X Duration factor*
= *2 x 3*
= *6*

A severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per *Table 1*.

TABLE 1: SEVERITY RATINGS

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no significant impact	

SIGNIFICANCE RATING

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating. The significance rating should influence the development project as described below:

- *Low significance (calculated Significance Rating 4 to 6)*

- *Positive* and *negative impacts* of low significance should have no significant influence on the proposed development project.

- *Medium significance (calculated Significance Rating ≥ 7 to 12)*

- *Positive impact:*

Should weigh towards a decision to continue

- *Negative impact:*

Should be mitigated before project can be approved.

- *High significance (calculated Significance Rating ≥ 13 to 18)*

- *Positive impact:*

Should weigh towards a decision to continue, should be enhanced in final design.

- *Negative impact:*

Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least a low significance rating.

- *Very High significance (calculated Significance Rating ≥ 19 to 25)*

- *Positive impact:*

Continue

- *Negative impact:*

If mitigation cannot be implemented effectively, proposal should be terminated.

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

Proposal

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
CONSTRUCTION PHASE				
Loss of threatened, near-threatened and endemic taxa: The anticipated loss of some of the natural habitats that support endemic species will result in the local displacement of endemic listed flora;	**Negative**	• Ecologically sensitive vegetation units identified in the Biodiversity Impact Assessment Report by Exigo Sustainability (**Appendix G3**) should be preserved where possible as open space areas within the township layout. Should this not be possible, appropriate measures must be implemented during construction to minimise disturbance of these vegetation units located outside the development footprint. • The removal of plant species should only occur on the footprint area of the development and not over the larger area. • Conduct flora species search and rescue efforts before ground clearing begins in order to reduce negative impacts on species of concern. • Remove and relocate any plants of botanical or ecological significance as indicated by the ecologist or Environmental Control Officer (ECO); • Vegetation to be removed as it becomes necessary. • Clearly demarcate the entire development footprint prior to initial site clearance and prevent construction personnel from leaving the demarcated area. • Monitoring should be implemented during the construction phase of the development to ensure that minimal impact is caused to the flora of the area. • The ECO should advise the construction team in all relevant matters to ensure minimum destruction and damage to the environment. The ECO should enforce any measures that he/she deem necessary. Regular environmental training should be provided to construction workers to ensure the protection of the habitat, fauna and flora and their sensitivity to conservation.	**12 Medium**	**15 High**
Potential soil erosion and subsequent sedimentation of the wetland down gradient during and after site clearance	**Negative**	• Identify and demarcate the extent of the site and associated Works Areas as indicated on the approved Site Development Plan using danger tape with steel droppers. Site clearance and construction activities must be limited to within the demarcated area. • The wetland buffer towards the southern boundary of the development site must be demarcated and pegged by a wetland specialist prior to any site establishment. • Contracts with contractors to include penalties related to	**8 Medium**	**15 High**

		environmental damage outside the demarcated works area caused by such contractors.
		- If possible, construction should be scheduled during the dry season to reduce any chances of possible run-off and erosion of exposed soil during construction.
		- Co-ordinate Works to limit unnecessarily prolonged exposure of stripped areas and stockpiles. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction/ earthworks in that area.
		- Strip and stockpile herbaceous vegetation, overlying grass and other fine organic matter along with the topsoil.
		- Existing indigenous trees must be retained wherever possible and incorporated as part of the new development site landscape.
		- Felling or removal of trees should be done mechanically wherever possible.
		- During felling and the clearing of woody vegetation, appropriate measures should be taken to avoid the removal of and / or damage to the lower strata of vegetation, the basal grass cover and topsoil layer wherever possible. The top 20 cm of soil must be stripped as fertile top soil and stockpiled aside at specifically designated areas to be used in the restoration of the site in the final phase of construction.
		- Where embankments higher than 1,200mm are created, these should be contoured to approximate the natural form of the landscape.
		- Access roads for earthmoving equipment and delivery of construction material must be clearly designated.
		- The use of machinery in ecologically sensitive areas such as wetlands must be limited Have both temporary (during construction) and permanent erosion control plans.
		- Temporary soil erosion control plans should include:
		  ▪ Short term seeding or mulching of exposed soil areas (particularly on slopes)
		  ▪ Limitations on access for heavy machinery and the storage of materials to avoid soil compaction.
		  ▪ Permanent erosion control plans should focus on the establishment of stable native vegetation communities as far as possible.		

Potential wetland disturbance and functional loss	**Negative**	- The watercourse draining south of the development site is classified as ecologically sensitive and no construction activities or development should occur within 32 meters from the edge of the temporary wetland zone or 1 in 100 year floodline, whichever is greater. - The wetland buffer must be clearly demarcated prior	**6 Low**	**15 High**

		construction, and all construction vehicles and machinery must access the construction site via the designated access routes.
		- Temporary wetland crossings, approved by a suitably qualified engineer, must be structurally stable and non-erosive.
		- Permanent wetland crossings must be designed by a suitably qualified engineer and authorised by the Department of Water and Sanitation prior construction.
		- Appropriate measures must be incorporated in the design of the wetland crossings to ensure they:
		  ▪ are structurally stable;
		  ▪ do not induce sedimentation, erosion or flooding;
		  ▪ do not cause a detrimental change in the quantity, velocity, pattern, timing, water level and assurance of flow in a watercourse;
		  ▪ do not cause a detrimental change in the quality of water in the watercourse;
		  ▪ do not cause a detrimental change in the stability or geomorphological structure of the watercourse; and
		  ▪ does not create nuisance condition, or health or safety hazards.
		- During construction of the wetland crossings the contractor must ensure
		  ▪ impeding or diverting the flow or altering the bed, banks, course or characteristics of a watercourse do not detrimentally affect other water users, property, health and safety of the general public, or the resource quality;
		  ▪ the existing hydraulic, hydrologic, geomorphic and ecological functions of the watercourse in the vicinity of the structure are maintained or improved upon;
		  ▪ adequate erosion control measures are implemented at and near all alterations, including at existing structures or activities with particular attention to erosion control at steep slopes and drainage lines
		- All material excavated from the bed or banks of the watercourse must be stored at a clearly demarcated location until the works have been completed, upon which the excavated material must be backfilled to the locations from where it was taken (i.e. material taken from the bed must be returned to the bed, and material taken from the banks must be returned to the banks).		

Soil compaction and increased risk of sediment transport and erosion	**Negative**	- Temporary stormwater control measures should be implemented during construction to minimise erosion by run-off. Install temporary drains and minimize concentrated water flows. Control storm water velocity where necessary with temporary energy dissipater structures. Divert run-off around	**6 Low**	**8 Medium**

		trench excavations or disturbed areas.
		- The use of construction vehicles and machinery during the construction of wetland crossings should be restricted as much as possible to outside the wetland buffer.
		- Re-vegetate or stabilise all disturbed areas as soon as possible. Indigenous trees can be planted in the buffer zone of the proposed development to enhance the aesthetic value of the site and stabilize soil conditions.
		- Locate stockpiles away from concentrated flows and divert run-off around them.
		- The following sediment control devices are suggested:
		  ▪ Sediment filters: use materials such as fine mesh or geofabric to filter run-off prior to discharge.
		  ▪ Sediment traps: temporary sedimentation basins.
		- Drop inlet filters: e.g. hay bales and silt fences, which prevent sediment entry into the drainage system.
		- Protect sloping areas and wetland banks that are susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and Work Areas.
		- Gravel roads must be well drained in order to limit soil erosion and the side drains must be protected from erosion.		

Potential mobilisation of dolomitic overburden and risk of sinkhole formation	**Negative**	The following findings were made in the Geotechnical Investigation Report for feasibility purposes conducted and compiled by Verdicon Consulting Engineers **(Appendix G1).** - Mobilisation is defined as the movement of the dolomitic overburden by subsurface erosion. Mobilisation and mobilising agents comprise ingress water, ground vibrations and significant changes to the groundwater level. - Dry to moist conditions were encountered throughout most of the profile with moist to wet conditions encountered at depth. The site is, therefore, unlikely to be affected by a dewatering scenario as the water table appears to lie at depth. - There are no significant instances of earthquakes or other seismic activity in the area, which implies that ground vibrations are not a likely mobilising agent. - The likely mobilising agent would be water ingress which can be caused by the concentration of surface water as well as water ingress from leaking services in the future. It is, however, considered that that the soft rock syenite, soft rock shale and soft rock dolerite in the overburden will provide substantial protection against water ingress, thereby protecting the underlying wad layers from erosion. - Due to the thickness of the blanketing layer, the maximum potential development space has been assessed as small to	**12 Medium**	**15 High**

		medium. However, much of the blanketing layer comprises competent very soft to soft rock shale, chert, dolomite, and syenite which is expected to mitigate the potential for sinkhole formation. All boreholes are therefore classified as having a low to medium inherent susceptibility for the development of small sized sinkholes and a low to medium inherent susceptibility for subsidence development. - Should the Dolomite Area Designation be considered as a D2, then conventional foundations are appropriate with strict water precautions being required along with a long term monitoring programme. However, should the Dolomite Area Designation be considered as a D3, then additional founding precautions will need to be employed. - All structural foundations must be designed and constructed according to the Geotechnical specifications listed under Sections 8 and 9 of the Geotechnical Investigation Report by Verdicon Consulting Engineers. - The recommendations from the Council of Geoscience must also be taken into consideration in the design of structural foundations.		
Potential increase or spread in alien and invasive plants	**Negative**	- All classified Invader Species in terms of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) to be identified, and controlled or eradicated as prescribed in the Alien and Invasive Control Plan (AICP) contained in the EMPr. The control of these species should even begin prior to the construction phase considering that small populations of these species were observed during the field surveys. - Institute strict control over materials brought onto site, which should be inspected for seeds of noxious plants and steps taken to eradicate these before transport to the site. Routinely fumigate or spray all materials with appropriate low-residual herbicides prior to transport to or in a quarantine area on site. The contractor is responsible for the control of weeds and invader plants within the construction site for the duration of the construction phase. Alien invasive tree species listed by the CARA regulations should be eradicated; - Reinstate disturbed areas as quickly as possible to reduce the area where invasive species would be at a strong advantage and most easily able to establish; - Prohibit the use of fill materials from areas with known invasive vegetation problems. The spread of invasive non-native plants should be avoided by keeping vehicles and equipment clean and reseeding disturbed areas with native plants; - Institute a monitoring programme to detect alien invasive species early, before they become established and, in the case	**8 Medium**	**15 High**

		of weeds, before the release of seeds. Once detected, an eradication/control programme should be implemented to ensure that the species' do not spread to surrounding natural ecosystems - Cleared weeds/exotic invader species must be discarded at garden waste disposal facilities.		
Potential traffic disruption and damage to existing external roads	**Negative**	- The control of traffic during road upgrades of Solomon Mahlangu Drive and Pierre Van Ryneveld should be implemented according to a Traffic Control Management Plan to be appended by the Contractor in the EMPr. - The TCMP must include measures for ensuring the safe flow of traffic without compromising the safety of all road users. - Details on the project, engineers, and contractor, including the completion dates should be displayed at a visible location. - Applicable traffic warning and regulatory signage should be erected at visible locations along the route upgrade. - The main contractor must ensure all construction vehicles accessing the site only utilise the designated route and authorised roads. - Vehicles may not leave the designated roads and tracks and turnaround points will be limited to specific sites. - The main contractor must maintain all access routes and roads adequately in order to minimise erosion and undue surface damage. Repair rutting and potholing and maintain storm water control mechanisms. - Enforce speed limits at all times on all external access roads. Unless otherwise specified, the speed limit on construction roads is 50km/h. - Allow for safe pedestrian and cycling access and crossing where necessary. - Ensure adequate and appropriate warning signage for construction vehicles turning at the main entrance. - Traffic controllers must be positioned at strategic points along the access road to ensure minimum disruption of traffic by construction vehicles.	**6 Low**	**8 Medium**
Noise and dust pollution during construction activities	**Negative**	- Noise should be kept minimal at all times during construction. The use of heavy machinery with high noise frequency or vibration should be limited as much as possible. No use of machinery, apparatus, engine, or tool which may unreasonably disturb or interfere with the amenity of the surrounding neighbourhood shall be allowed: ▪ on a public holiday or Sunday before 06:00 or ▪ before 06:00 or after 17:00 on any Saturday; and ▪ before 06:00 or after 18:00 on any day other than those days mentioned above	**6 Low**	**8 Medium**

		• A programme should be developed prior to construction for drilling and blasting operations. The programme should be communicated to all surrounding residents within a minimum distance of 500 m radius from the blasting or drilling area. All drilling blasting operations must follow the programme and should be restricted to working hours only. • The Waterkloof Airbase should be provided the opportunity to comment or review the drilling or blasting programme. • The main contractor must ensure all noise emitting operations on the construction comply with the Gauteng Noise Control Regulations published in the Provincial Notice, 5479 of 1999. • Dust emissions must be kept low at all times during construction, and dust suppression measures such as water spraying should be implemented regularly on areas of the construction site associated with high dust emissions. • The dust fall rates from blasting operations should be kept within acceptable dust fall rates limit (<600 mg/m^2/day, 30-days average) published in the National Dust Control Regulations, 2013. • Unless otherwise specified, construction works to be limited to Monday to Friday between 06:00 – 18:00 and on Saturdays between 07:00 – 15:00. No construction work to be undertaken on Sundays and Public Holidays in order to minimise the disturbance caused by noise emanating from the construction site. • Construction vehicles carrying mud on its tyres should be cleaned prior exit to prevent mud deposition along tarred access roads leading to the construction site. • Dispersive material in trucks should be dampened or covered; • Access by heavy machinery where there no access roads exist should be restricted as much as possible.		
Potential obstruction of flight zone by high cranes and buildings **Potential interference of Air Navigation Systems by the operation of construction equipment or machinery**	**Negative**	• The management at Waterkloof Airbase must be notified at least 30 days prior to commencing with any construction activities. The notice must include details of the main contractor and Environmental Control Officer. • All construction activities must comply with the requirements of the Waterkloof Airbase. • The height of cranes should be limited to the required height restrictions as specified or recommended by the Waterkloof Airbase. • Final detailed designs of the proposed buildings and structures must be submitted to the Waterkloof Airbase for their comments or approval prior to commencing with any construction activities.	**6 Low**	**8 Medium**
Improper waste management	**Negative**	• No construction waste must be dumped in surrounding areas,	**8 Medium**	**15 High**

during construction		and all waste illegally dumped on site must be removed and disposed at a registered landfill site. - All building waste generated during construction must be managed in terms of the Gauteng Building and Demolition Waste Guidelines, 2009 which prescribe a waste hierarchy approach to waste management.. - A suitable flat area must be designated for the temporary storage of all waste material from the construction site. Appropriate measures should be taken to divert stormwater away from the waste storage area. - None re-usable/recyclable building rubble and solid material must be disposed at a registered waste facility. - The contractor must ensure all waste disposal certificates are kept on file for record purposes and as proof should these be required. - Littering is strictly prohibited and appropriate receptacles should be made available within the construction site. - Domestic waste generated on site during construction to be collected in waste skips. Waste skips containing food waste must be covered. - Adequate on-site chemical sanitation systems (one toilet for every 8 workers) must be provided within walking distance to all construction workers. Strict penalties in re-numeration must be applied for workers that use other surrounding open areas for this purpose. - Solid construction waste not posing a pollution hazard should be used on site as backfill or aggregate material as much as possible. Should no backfilling material be required, this waste should either be taken to a recycling facility or disposed at a registered landfill facility. - The burning of litter or waste on site is highly prohibited. - Litter patrols must take place once a week to ensure the site as well as the property is kept free of litter. - Waste shall be separated into recyclable and non-recyclable waste. Bins shall be clearly marked for ease of separation. - The contractor must adhere to all the relevant laws and regulations applicable to the disposal of construction waste and rubble. - The contractor shall provide sufficient closed containers on site, as well as waste skips, which must be placed in the crew camp, to handle the amount of litter, wastes, and builder's wastes generated on site. - Containers shall be emptied once weekly by a licensed waste contractor and disposed of at a registered landfill site. No solid waste or any materials used may be disposed of on site.		

		➢ No rubble or discarded building material should remain in a non-designated within the construction site for more than one week. ➢ An area must be designated for mixing of concrete, and must take place on an impervious surface such as concrete slab, metal, or plastic sheeting which is provided with cut-off drains or berms to contain any contaminated run-off. ➢ Contain water and slurry from cement and concrete mixing operations as well as from batching area wash bays. Direct such waste water into a settlement pond or sludge dam for later disposal. ➢ Liquid waste consists mainly of used oil, contaminated fuel, and lubricants, as well as waste paint etc. Liquid wastes must be collected in original containers and stored inside a surfaced or bunded storage area. The bunded surface area volume should be equal to 110% of the total volume of liquid stored. ➢ All hazardous solid and liquid waste to be disposed of at a class H:H registered landfill site only. ➢ All concrete that is spilled outside these areas must be promptly removed by the Contractor and taken to an approved dumpsite. ➢ After all the concrete mixing is complete all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. ➢ No concrete residue is to be washed off into rivers, streams, or wetlands.		
Safety hazard to informal traders	**Negative**	➢ Informal traders operating within the road reserve should be notified about the proposed road upgrade and associated safety risks.	**6 Low**	**8 Medium**
Job creation and business opportunities for local businesses in the construction sector	**Positive**	➢ Direct and indirect jobs and business opportunities will be created during the construction phase. Businesses in the material supply chain will also benefit. ➢ Establish a local SMME recruitment preference policy; ➢ Implement a monitoring system to ensure that the project honours the local SMME preference policy; and ➢ Ensure that the Labour Relations Amendment Act, 2002 (Act 12 of 2002) as well as the necessary policies and procedures are taken into consideration to ensure the correct procurement procedures. ➢ As far as reasonably possible people from nearby communities especially with disadvantaged backgrounds must be employed by the principal construction contractor and sub-contractors. ➢ This should be included as a contractual obligation in the main contractor's appointment. ➢ Develop labour community agreement with targets and	**15 High**	**10 Medium**

		employment to be included in the developer's procurement policy if any.		
Skills transfer	**Positive**	✚ It is recommended the contractor employs semi-skilled labour from the nearby townships and training should be provided to facilitate skills transfer.	**8 Medium**	**6 Low**
OPERATIONAL PHASE				
Potential alien infestation and degradation of the public and private open space areas if not properly maintained	**Negative**	✚ The Developer must embark in conjunction with estate managers on a systematic long term management programme to restore the disturbed areas within the open space. All disturbed areas must be re-vegetated with an indigenous seed mix in consultation with an indigenous plant expert ensuring that during restoration only indigenous plants are used in restoring the area. ✚ Landscape designs in open space areas must incorporate indigenous plant species endemic to the area, particularly of ecologically sensitive vegetation units in the area. ✚ An alien and invasive plant control plan must be developed and implemented by the estate or property managers.	**6 Low**	**12 Medium**
Potential visual impact	**Negative**	✚ The architectural design of the buildings and structures should take into consideration the surrounding natural and urban elements including site topography. ✚ The Landscape Design should blend with the architectural design of the buildings and structures. ✚ The use of earth-toned paints and finishes are encouraged ✚ Consider selecting finishes with a low level of reflectivity ✚ The lighting specifications should be designed to minimise the potential impacts of glare and sky glo. ✚ Confine light output within property boundaries through using specifically designed luminaires such as full cut-off luminaires to minimise upward spread of light. ✚ Tilt spotlight luminaires to direct the light to the intended spot, instead of allowing it to light areas outside its purpose. ✚ Existing vegetation must be retained as much as possible and restotarionn must entail the introduction of new species that are endemic to the area. ✚ Disturbed areas must be reinstated immediately after construction. ✚ Attractive views from public viewing areas e.g. at the entrance must be created.	**6 Low**	**6 Low**
Potential subsidence of structures or buildings founded on areas underlain by dolomite	**Negative**	✚ A Geotechnical specialist must be appointed to regularly inspect the structural integrity of foundations of buildings and structures built on dolomite. ✚ The frequency of inspections required must be recommended by Verdicon Engineers or the Council of Geoscience. ✚ Water supply or sewer pipelines on dolomite areas should be	**6 Low**	**10 Medium**

		inspected for possible leakages. - Stormwater drains on dolomite areas must be regularly inspected for blockages and structural integrity.		
Potential cracks on buildings caused by noise or vibration from aeroplanes taking-off or landing on the secondary landing strip at Waterkloof Airbase	**Negative**	- A structural engineer must be consulted during the design phase on the possible implications of the noise or vibration related impacts on the structural material of the buildings. The structural engineer must propose appropriate recommendation measures based on his or her findings. - All buildings and structures must be regularly inspected for structural integrity.	**6 Low**	**6 Low** 2

NO GO

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Further degradation of the site through alien infestation and illegal dumping	**Negative**	- Fence the entire property with a suitable palisade fence material not prone to theft or vandalism and erect warning signs prohibiting illegal dumping around the perimeter of the fence. - The landowner should appoint a suitably qualified specialist to compile and implement a site specific Alien and Inavsive species control plan. - Implement a strict monitoring programme to detect alien invasive species early, before they become established and, in the case of weeds, before the release of seeds. Once detected, an eradication/control programme should be implemented to ensure that the species' do not spread to surrounding natural ecosystems.	**Medium**	**High**
Further sedimentation and degradation of the watercourse	**Negative**	- All alien and invasive plants/trees/weeds within the riparian zone must be completely eradicated. - All degraded areas within the riparian zone should be reinstated and managed to prevent any further erosion or ecological degradation.	**Low**	**High**
Continued rise in criminal activities	**Negative**	- Once the property has been properly fenced, a security company should be appointed to conduct regular patrols of the site. - The landowner should work in collaboration with the Community watchdog forum and law enforcement agencies in controlling or eradicating criminal activities in the area	**Low**	**High**

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

Technical & Services

1. Geotechnical Site Investigation by Verdicon Consulting Engineers (Pty) Ltd (**Appendix G1**)
2. Floodline Delineation & Stormwater Plan by SRK Consulting (South Africa) (Pty) Ltd (**Appendix G2)**
3. Traffic Impact Study by EDS Engineering Design Services (Pty) Ltd (**Appendix I1**)
4. Engineering Services (Water & Sanitation) by DG Consulting Engineers (Pty) Ltd (**Appendix I2**)
5. Electrical Services confirmation by Geopower (Pty) Ltd (**Appendix I3**)

Ecological

1. Biodiversity Impact Assessment by Exigo Sustainability (Pty) Ltd **(Appendix G3)**
2. Wetland Delineation & Functional Assessment by Exigo Sustainability (Pty) Ltd **(Appendix G4**)
3. Soils, Land use, Agricultural Potential, and Land Capability Exigo Sustainability (Pty) Ltd (**Appendix G5)**

Heritage

Phase 1 Heritage Study by Exigo Sustainability (Pty) Ltd (**Appendix G6**)

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

The township and road layout plans attached as **Appendix A2** and **Appendix D** respectively are both still in the preliminary design phase and should not be considered as final. However, all the necessary information has been taken into consideration in the assessment of impacts associated with the proposed development irrespective of any changes in the layout.

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

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

Proposal

Potential impacts:	**Significance rating of impacts(positive or negative):**	**Proposed mitigation:**	**Significance rating of impacts after mitigation:**	**Risk of the impact and mitigation not being implemented**
Dust and noise pollution from demolition works	**Negative**	Noise should be kept minimal at all times during demolition. The use of heavy machinery with high noise frequency or vibration should be limited as much as possible. No use of machinery, apparatus, engine, or tool which may unreasonably disturb or interfere with the amenity of the surrounding neighbourhood shall be allowed: ▪ on a public holiday or Sunday before 06:00 or ▪ before 06:00 or after 17:00 on any Saturday; and ▪ before 06:00 or after 18:00 on any day other than those days mentioned above	**4 Low** P – 2 I – 2, D – 2, SF – 4 SR – 2	**15 High** P – 5 I – 2, D – 4, SF – 8 SR – 3

		▪ Appropriate dust suppression measures such as water spraying should be used to minimise dust emissions during the demolition process.		
Improper disposal or management of waste from the demolition or dismantling process	**Negative**	▪ All the waste streams requiring reduction, reuse, recycling, and disposal must be identified prior to the commencement of any decommissioning activities. The components and quantities of the waste streams must be projected and categorized based on the appropriate waste minimization measure. The primary objective is to identify materials that can be salvaged for possible reuse or recycling instead of disposal. ▪ Facilities for the temporary storage of waste prior to reuse, recycling, and disposal must be properly designated. Design measures to divert storm water off the waste facilities must be incorporated. ▪ The property managers must ensure registered waste services providers are contracted for the disposal of none reusable or recyclable waste generated on site. They must be appointed prior to demolition. ▪ A waste record keeping structure should be formulated prior to any construction activities commencing on site.	**8 Medium** P – 4 I – 2, D – 2, SF – 4 SR – 2	**15 High** P – 5 I – 2, D – 4, SF – 8 SR – 3
Potential subsidence of structures or buildings founded on areas underlain by dolomite during demolition	**Negative**	▪ A Geotechnical specialist must be consulted prior to demolition of foundations or structures on dolomite areas. ▪ Appropriate engineering control measures as recommended by the Geotechnical specialist or suitably qualified engineer should be	**12 Medium** P – 4 I – 4, D – 2, SF – 8 SR – 2	**15 High** P – 5 I – 2, D – 4, SF – 8 SR – 3

		implemented during the demolition of foundations or structures on dolomite areas.		

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

Geotechnical Site Investigation by Verdicon Consulting Engineers (Pty) Ltd **(Appendix G1)**

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

N/A

4. CUMULATIVE IMPACTS

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

- ***Disturbance in ecological processes and functioning, loss of habitat and therefore the loss of biodiversity and disturbance to migration routes of animals***

Loss of threatened, "near-threatened" and conservation important taxa: The anticipated loss of the natural woodland will result in the local displacement of some fauna species. In some cases isolated populations of threatened fauna might be removed from the area, **although no such populations or knowledge thereof was found in the study area.** This impact could also take place because of hunting and snaring of animals in surrounding vacant natural areas.

Changes in the community structure: It is expected that the faunal species composition will shift, due to an anticipated loss in habitat surface area. In addition, it is predicted that more generalist species (and a loss of functional guilds) will dominate the study area. Attempts to rehabilitate will attract taxa with unspecialised and generalist life-histories. It is predicted that such taxa will persist for many years before conditions become suitable for succession to progress.

The construction of buildings, fences and roads will inevitably result in natural movement patterns being disrupted and, to a varying degree depending on how different species react to these barriers will result in the fragmentation of natural populations. The development will have a large, significant impact in fragmenting the habitats on the property.

- ***Destruction or loss of riparian floral diversity or riparian communities***

Construction of the crossing will have a cumulative impact on the watercourse and riparian areas, whether it be through direct or indirect impacts. Clearance of vegetation would be necessary at major crossings or even through sections of smaller tributaries where backfilling will be necessary. Loss of the riparian habitat will also result in displacement of the invertebrates, birds and small mammals dependant on the wetland vegetation for feeding, shelter and breeding purposes. All functions associated with the wetlands and the surrounding landscape will be compromised. However, the contractor will be required to compile a Construction Method Statement for approval by the Environmental Control Officer (ECO) prior construction of the wetland crossing.

- ***Loss of in-stream habitat due to changes in channel structure and condition***

Certain natural and anthropogenic activities, e.g. floods, development activities and placing bridge structures in a river bed, may cause damage to the structure of banks or river beds, and therefore the channel in which the water flows. The physical channel structure forms the template for instream habitat, and is essential for maintaining habitat quality. Any changes in channel condition and structure could have a cumulative effect, and, may result in a shift in population structure and possibly biotic diversity at a site. This impact would be limited to the wetland crossing.

- ***Soil compaction and increased risk of sediment transport and erosion***

The use of heavy machinery during the construction process will result in the compaction of soil, resulting in decreased infiltration of rain water and increased surface run-off volumes and velocities leading to a greater erosion risk. The hardened surfaces of the paved road and

compacted soils of the proposed road development area will also lead to an increase in surface run-off during storm events which will likely be discharged via stormwater outlet points, concentrating flows leaving the paved areas. This can lead to erosion and channel incision in the water courses and change the in-stream habitat. This could result in higher velocity flows with greater erosive energy which can result in channel incision and gully erosion downstream within the channel riparian zones.

Hard engineered surfaces also reduce the amount of permeable surfaces for water to penetrate the soils and maintain the local groundwater systems.

- *Spread and establishment of alien invasive species*

Construction activities carry by far the greatest risk of alien invasive species being imported to the site, and the high levels of habitat disturbance also provide the greatest opportunities for such species to establish themselves, since most indigenous species are less tolerant of disturbance. The biggest risk is that seeds of noxious plants may be carried onto the site along with materials that have been stockpiled elsewhere at already invaded sites.

Continued movement of personnel and vehicles on and off the site, as well as occasional delivery of materials required for maintenance, will result in a risk of importation of alien species throughout the life of the project.

Furthermore, the spread of the alien invasive species through the area will be accelerated when seeds are carried by storm water into the drainage channels and riparian zones on the site that will cause environmental degradation and indigenous species to be displaced.

- *Potential increase in noise levels*

Although the proposed upgrades of Solomon Mahlangu Drive and Pierre van Ryneveld Avenue will be able to accommodate additional traffic from the township development, the increase in traffic is expected to result in an upward shift in ambient noise level in the area, which if added with the surrounding background noise of traffic from the N1, will have a cumulative impact to residents along Solomon Mahlangu Drive in Waterkloof Ridge. However, the proposed upgrade of Solomon Mahlangu Drive includes a traffic light controlled intersection where it meets Koedoesnek Avenue and the proposed access to the development site (Andalucia Avenue) thereby reducing traffic speed and noise levels.

5. ENVIRONMENTAL IMPACT STATEMENT

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

Proposal

The proposed development will consequently result in the irreversible loss of ecologically sensitive vegetation units, Rocky Grassland and Acacia caffra rocky woodland, identified in the Ecological Report (Appendix G3). However, the ecological integrity of these vegetation units is already under pressure from alien infestation and anthropogenic activities with signs of degradation detected. It is recommended if possible a portion or part of the sensitive vegetation units are retained and incorporated in the township layout as part of the open space system. Should this not be possible, pockets or strands of the natural vegetation including indigenous trees should be retained wherever possible during construction as part of the landscape of the development in order to ensure some of the species are preserved.

A key and positive aspect of the proposed development is the protection of the highly sensitive watercourse and its 32 m riparian zone buffer as a private open space system. Furthermore, the total extent of Erf 2 including its wetland buffer has been incorporated in the township layout as a public open space. The preservation of the riparian zone including its 1 in 100 year floodline will restore the ecological integrity and function of the stream which is currently degraded and under pressure from human induced impacts. The sustainable preservation of these open systems through ecological management will contribute to the development's ecological infrastructure and natural capital from which flows a range of

goods and services that benefit people. According to the SANBI Biodiversity mainstreaming toolbox for land-use, this provides a foundation for:

- Economic growth and the creation of jobs in biodiversity management, restoration and maintenance of ecological infrastructure;
- Social development through the delivery of services that support the poorest members of society and aid in poverty alleviation; and
- Human wellbeing including helping us cope with climate-related hazards and disaster risk reduction.

The potential risk of subsidence and sinkhole formation for buildings, structures, or infrastructure founded on areas underlain by dolomite are minimal and can be effectively mitigated, according to the findings of the Geotechnical Investigation Report (**Appendix G1**).

From a socio-economic perspective, the proposed upgrade of Solomon Mahlangu Drive as part of the township development will temporarily displace informal traders who are currently reliant on income derived from the sale of craft to passing motorists along the road. The legality of these informal traders is currently unknown, but it is recommended engagements be held with the relevant authorities and representatives of the traders to determine the best way forward.

It can be concluded based on the above there are no environmental fatal flaws associated with the proposed construction, operation, and decommissioning of the mixed use development. The proposed development may proceed from an environmental perspective provided all the recommended mitigation measures in the EMPr are strictly adhered to in all the project phases.

No-go (compulsory)

There are no biophysical or socio-economic benefits associated with this option. The proposed development site is currently degraded and under- utilised, with heavy alien plant infestation. Although vegetation of conservation importance exists on site, it is under threat from alien infestation and subsequent colonisation if it remains undeveloped. Furthermore, illegal dumping will continue on the property unabated with increased pollution of the watercourse and subsequent degradation of the surrounding riparian ecosystem.

The ecosystem services benefits associated with the proposed protection, rehabilitation and maintenance of the watercourse and its riparian zone as a private open space system will not be realised under the no-go option. The same applies for socio- economic benefits such as job creation and local economic growth etc. Criminals will also continue to use the vacant land as a hide out for stolen goods in the surrounding residential areas.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

It can be summarised based on the above preceding sections that the proposed mixed use township development will have the following negative and positive environmental impacts during construction, operation, and decommissioning:

<u>Construction Phase</u>

- Loss of threatened, near-threatened and endemic taxa;
- Potential soil erosion and subsequent sedimentation of the wetland area down gradient during and after site clearance;
- Potential wetland disturbance and functional loss;
- Soil compaction and increased risk of sediment transport and erosion;
- Potential mobilisation of dolomitic overburden and risk of sinkhole formation
- Potential increase or spread in alien and invasive plants;
- Loss of current and potential agricultural land;
- Potential traffic disruption and damage to existing external roads;
- Noise and dust pollution generated during construction activities, which could be of nuisance to surrounding residents in the area;
- Improper handling or disposal of construction waste;
- Temporary displacement of informal traders along Solomon Mahlangu Drive;

- Further erosion and alien infestation if the site is not properly managed after construction; and
- Skills development and job opportunities.

Operational Phase

- Potential alien plant infestation and degradation of the public and private open space areas if not properly maintained;
- Potential visual impact;
- Potential subsidence of structures or buildings founded on areas underlain by dolomite;
- Potential cracks on buildings caused by noise or vibration from aeroplanes taking-off or landing on the secondary landing strip at Waterkloof Airbase.

Decommissioning Phase

- Dust and noise pollution from demolition works
- Improper disposal or management of waste from the demolition or dismantling process
- Improper storage of salvaged and demolished material;
- Potential subsidence of structures or buildings founded on areas underlain by dolomite during or after demolition;
- Illegal dumping or disposal of demolished material such as concrete rubble; and
- Soil erosion and alien infestation if the site is not properly managed.

None of the above identified adverse environmental impacts are considered a fatal flaw, and can be effectively mitigated or prevented where feasible provided all the recommended mitigation measures in the EMPr are strictly adhered to during the construction, operational, and decommissioning phases.

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

No alternatives have been assessed, as the proposed development is for approved township rights dating back approximately 20 years comprising of shops (23000m$^{2)}$), offices (4000m^2) and a public garage or filling station (500m^2). 4.The configuration of the layout ultimately has no effect on the existing biophysical environment as the ecologically sensitive areas have been delineated and incorporated as public and private open spaces.

7. SPATIAL DEVELOPMENT TOOLS

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

Gauteng Province Spatial Development Framework, 2011

Due to the strategic location of the development site between the N1, R21, and Solomon Mahlangu Drive, it falls within an area defined in the GP-SDF as an “urban node” and “urban corridor”. According to the GP-SDF, an urban node is characterised by good accessibility, particularly with regard to differing modes of public transport (rail, bus and combi-taxi) and supporting secondary road access (usually in the form of a grid-network). This is where public and private investment tends to concentrate, yielding mixed land-use activities (for example office, retail, residential and entertainment) with supporting social amenities and public facilities. It is complex in nature, with multi-ownership, mixed development density and higher use intensity. A node includes an integrated open space and a pedestrian orientated environment with supporting public spaces.

The urban corridor is structured on a series of multi stranded movement systems with supporting infrastructure services and social facilities. The movement systems typically consist of public transport, transport stations, main roads, and several transverse streets. An activity spine develops with a linear mixed-use element of urban structure containing an intense concentration of facilities such as retail, office, entertainment, work, service, commercial and industrial, community facilities and residential development, which are all focused along a major transportation route. The spine is traffic orientated (seam), accessed through public and private transport.

City of Tshwane Spatial Development Framework, 2013 (CoTM-SDF)

The proposed development is in line with the spatial planning of the area earmarked for Mixed Uses. The development site is situated along the N1 and R21 development corridor, in an area with opportunity for mixed uses, complementary to the existing Aerosat and the approved Centurion Aviation Village (CAV).

City of Tshwane Open Space Framework, 2005

The development site falls in Region 5 and is affected by the following typologies:

- Brown way - Highways (R21 & N1) and Main Roads (Solomon Mahlangu Drive);
- Blue way – Watercourses (Apies River);
- Blue Node – water body (N1/R21 Quarry, situated downstream outside the property boundary); and
- Red Node – N1/R21 Intersection.

Brown Way

Open spaces along activity streets and linkages will be incorporated as linear open spaces to be landscaped based on the approved Landscape Plan.

Blue Way

The area within the 1:100 year floodline or 32m from either side of the centreline of the Apies River, whichever is greater, will be retained as Private Open Space and Public Open Space respectively as indicated in the layout plan attached as **Appendix A2.**

Blue Node

The quarry dam on the southern corner of the property falls outside the development site boundary within an existing private residential estate. No stormwater attenuation is planned as part of the development's storm water management plan.

Red Node

The N1/R21 intersection falls outside the scope of the proposed development and will thus not be affected.

Gauteng Provincial Environmental Management Framework, 2015

The development site is located in *Environmental Management Zone 1: Urban development zone*. This zone, according to the EMF, is to promote development infill, densification and concentration of urban development within the urban development zones as defined in the Gauteng Spatial Development Framework (GSDF), in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.

The southern boundary of the development site is affected by a 32m wetland buffer and 1:100 year floodline, which is zoned as a *High Control Zone (EMZ 2)* in the EMF. These areas are considered sensitive and of conservation priority. This area, which forms part of the future proposed township development, has already been incorporated in the township layout as a private open space.

The proposed development is therefore in line with the Gauteng EMF.

8. RECOMMENDATION OF THE PRACTITIONER

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

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

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

It is recommended based on the findings of this report that the proposed mixed use township development on erven 1 and 2 of the Remaining Extent of the Farm Waterkloof 378-JR be authorised by the Department subject to the following conditions:

1. All the specialist findings and recommendations are taken into consideration and where possible implemented in the final township layout design.
2. The public open space area on Erf 2 and the 30 m wetland buffer or 1 in 100 year floodline (whichever is greater) on the southern boundary of the property on Erf 1 must be fenced off prior to construction commencing (including site clearing and pegging). All construction related impacts (including service roads, site camp, temporary ablution,

disturbance of natural habitat, storing of equipment/building materials/vehicles or any other activity) should be excluded from the open system.

3. Proposed buildings and structures or infrastructure founded on areas underlain by dolomite are appropriately designed according to site specific Geotechnical findings and recommendations.
4. A detailed Stormwater Management Plan compiled by a suitably qualified engineer is submitted to the City of Tshwane Stormwater division for approval prior to commencing with any construction activities.
5. A Water Use Authorisation is obtained from the Department of Water and Sanitation for any proposed wetland crossings or structures within the 1 in 100 year floodline of the watercourse.
6. The buildings and structures should be designed taking into consideration any applicable legislation for development near airports as required by the South African Civil Aviation Authority
7. The final township layout is designed based on sustainable development principles that promote the preservation of ecological infrastructure or natural capital through open space systems.
8. The buildings and structures should also be designed based on green building standards that promote optimal resource efficiency.
9. Heritage features or resources identified on the development site are properly documented and removed as recommended by the Heritage specialist.
10. All construction and operational activities are conducted in accordance to the EMPr conditions and any requirements made by the relevant authorities.
11. The 1 in 100 year floodline or 32m wetland buffer zone, whichever is greater, must be pegged and demarcated by the wetland specialist prior to the commencement of any construction activities.
12. Construction of the wetland crossing should ideally be scheduled during the dry season when the stream flow is at its lowest or completely dry.
13. Storm water during construction should be channelled down gradient towards the wetland buffer and dissipaters or siltation traps installed where necessary to prevent erosion and sedimentation.
14. An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate avoidance, reduction, recycling, re-use and disposal where appropriate. Uncontaminated boulders rubble generated during the construction can be re-used as backfilling material on site. The ELO must ensure that no refuse or builders rubble generated on the construction site is placed, dumped, or deposited on adjacent properties or public open space during or after construction.

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

There is a market driven demand for the proposed mixed use type of development in the area due to its strategic location between the N1, R21, and Solomon Mahlangu Drive. Furthermore, the development site is surrounded by residential developments to the north, east, and south, making it more attractive for a shopping centre type of development, which is part of Phase 1 of the township development with future phases planned for residential and commercial development options The residential component is expected to constitute 50% of the future development rights. It is therefore the most suitable type of land use from a socio-economic perspective).

In addition, the proposed development is compatible with the spatial planning of the area both from a provincial and municipal level. The development site is within an urban development zone in terms of the Gauteng Environmental Management Framework 2015, and along an “urban corridor” or “urban node” in terms of the Gauteng Province Spatial Development Framework, 2011. According to the City of Tshwane Regional SDF (Region 4) 2013, the development site falls inside an area demarcated for a mixed use type of development. This compatibility in land use from a spatial planning perspective confirms the proposed development is the best suitable type of land use in the area.

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

Five years from the date of issue.

11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) (must include post construction monitoring requirements and when these will be concluded.)

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

EMPr attached	YES

SECTION F: APPENDIXES

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

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

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

Appendix A1: Locality Maps
Appendix A2: Township Layout Plan
Appendix A3: Ecological Sensitivity Layout Plan
Appendix A4: Gauteng C-Plan

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix D1: Schematic layout - Pierre van Ryneveld Access
Appendix D2: Schematic layout – Andalucia Avenue Access
Appendix D3: Geographical coordinates taken after every 250m for the route upgrades

Appendix E: Public participation information

Appendix E1 – Proof of site notice
Appendix E2 – Written notices issued as required in terms of the regulations
Appendix E3 – Proof of newspaper advertisements
Appendix E4 –Communications to and from interested and affected parties
Appendix E5 – Minutes of any public and/or stakeholder meetings
Appendix E6 - Comments and Responses Report
Appendix E7 –Comments from I&APs on Basic Assessment (BA) Report
Appendix E8 – Draft BAR distribution list to state departments
Appendix E9 – Interested and Affected Parties Database

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

Appendix G: Specialist reports

Appendix G1: Geotechnical Site Investigation
Appendix G2: Floodline Delineation & Stormwater Plan
Appendix G3: Biodiversity Impact Assessment
Appendix G4: Wetland Delineation & Functional Assessment
Appendix G5: Soils, Land use, Agricultural Potential, and Land Capability
Appendix G6: Heritage Study

Appendix H: EMPr

Appendix I: Other information

Appendix I1: Traffic Impact Study
Appendix I2: Engineering Services (Water & Sanitation)
Appendix I3: Electrical Services confirmation
Appendix I4: Regional SDF Map
Appendix I5: Environmental Management Framework Map

CHECKLIST

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

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