



MANGAUNG IPTN – ENVIRONMENTAL SCREENING REPORT

ENVIRONMENTAL SCREENING REPORT FOR THE CITY-WIDE NETWORK, CENTRAL BUSSINESS DISTRICT CORRIDOR AS PART OF THE INTEGRATED PUBLIC TRANSPORT NETWORK IN BLOEMFONTEIN, MANGAUNG METROPOLITAN MUNICIPALITY, FREE STATE PROVINCE



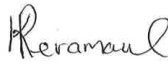
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GLOSSARY OF TERMS

Alien Invasive Species: Species of plants, animals or other organisms that are not indigenous to a region and which easily spread and destroy the indigenous plant species, taking over an area and causing biological and socio-economic harm .

Basic Assessment Process: An environmental assessment process that is undertaken in line with Listing Notices 1 and 3 the NEMA EIA Regulations with the aim of obtaining Environmental Authorisation

Competent Authority: An organ of state charged by the National Environmental Management Act (NEMA) with evaluating the environmental impact of an activity and, where appropriate, with granting or refusing an environmental authorisation in respect of that activity.

Critical Biodiversity Area: Areas that are deemed important to conserve ecosystems and species. For this reason, these areas require protection.

Cultural significance: means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development: means the building, erection, construction or establishment of a facility, structure or infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, but excludes any modification, alteration or expansion of such a facility, structure or infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint

Ecological Support Area: area that must retain its ecological processes in order to: meet biodiversity targets for ecological processes that have not been met in CBAs or protected areas; meet biodiversity targets for representation of ecosystem types or species of special concern when it is not possible to meet them in CBAs; support ecological functioning of a protected area or CBA (e.g. protected area buffers); or a combination of these.

Environmental Assessment Practitioner: individual responsible for the planning, management, coordination or review of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instruments introduced through regulations.

Environmental Authorisation: This is a decision by a Competent Authority to authorise a listed activity in terms of the National Environmental Management Act (NEMA). The authorisation means that a project, either in totality or partially, can commence subject to certain conditions. The Competent Authority has a right to refuse to grant authorisation for a project in totality or partially.

Environmental Impact Assessment Process: An environmental assessment process that is undertaken in line with Listing Notice 1, 2 & 3 the NEMA EIA Regulations with the aim of obtaining Environmental Authorisation

Environmental Management Programme: A programme with set objectives and timeframes that seek to achieve a required end state and describes how activities that have or could have an adverse impact on the environment will be mitigated, controlled and monitored.

Fatal Flaw: an environmental or social negative impact that is not possible to mitigate and significant enough to prevent the scheme from being able to be implemented.

Flora: plant life that occurs in a specific geographical region and/habitat

Fauna: animal life that occurs in a specific geographical region and/habitat

Heritage Resource: means any place or object of cultural significance

Indigenous Vegetation: plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

Interested and Affected Party: in relation to an application for Environmental Authorisation, this refers to an interested and affected party whose name is recorded in the register opened for that application in terms of regulation 42 of the NEMA EIA Regulations. This party will ideally be interested in the development but also affected by the proposed application and have a certain interest in the application.

Regulated area of a watercourse:

- The outer edge of the 1:100-year flood line and /or delineated riparian habitat whichever is the greatest measured from the middle of a river, spring, natural channel, lake or dam;
- In the absence of a determined 1:100-year flood line or riparian area, the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act);
- 500m radius from the delineated boundary of any wetland or pan.

Riparian Area: A Habitat that includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas

Screening: Screening determines whether or not a development proposal requires environmental assessment, and if so, what level of assessment is appropriate Screening is therefore a decision-making process that is initiated during the early stages of the development of a proposal.

Threatened or Protected Species: These refers to either plants or animals that are at a threat of Extinction or are protected due to their high conservation value or national importance.

Watercourse:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows; and
- (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks;

Wetland: land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

LIST OF ABBREVIATIONS/ACRONYMS

CBA	Critical Biodiversity Area
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
ESA	Ecological Support Areas
FSPHRA	Free State Provincial Heritage Resource Agency
GIS	Geographical Information Systems
G.N	Government Notice
IPTN	Integrated Public Transport System
MMM	Mangaung Metropolitan Municipality
NEMA	National Environmental Management Act (Act 107 of 1998)
NEM:BA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NMT	Non-Motorised Transport
SANBI	South African National Biodiversity Institute

EXECUTIVE SUMMARY

Over the recent years, there has been a great emphasis in reviving the public transportation system and the upgrading and development of supporting infrastructure by Mangaung Metropolitan Municipality (MMM). As a result, the City has been planning for the implementation of an Integrated Public Transport Network (IPTN) known as *Hauweng*, as part of the National Public Transport Strategy and Action Plan that was released by the National Department of Transport (NDoT) in 2007. The development of the Integrated Transport Networks (ITN) in metropolitan areas is a process driven at national level by the NDoT. The ITN is planned and implemented by metropolitan authorities under the direction and guidelines set by the NDoT and funded by National Treasury (NT). The main objectives of the *Hauweng* services will be to transform the City's current public transport system by providing a high-quality, safe, affordable and integrated public transport services to its communities. The project is to be implemented in a number of phases over the next decade.

Five (5) demand public transport corridors are currently being proposed as part of the network/system planning of *Hauweng*. These corridors were derived by obtaining regional and local travel patterns, existing public transport demand, as well as existing functional transport corridors (minibus taxi operational areas and subsidised bus operators). The proposed corridors for the *Hauweng* Services are as follows:

- Dr Belcher;
- Maphisa;
- **Central Business District (CBD);**
- Botshabelo; and
- Thaba Nchu.

GA Environment (Pty) Ltd, a member of the GladAfrica Group, has been appointed by GladAfrica Consulting Engineers on behalf of MMM to undertake an Environmental Screening for the CBD corridor. The purpose of this report is to present the results of the screening assessment for the proposed project. The report will present the following:

- Legislative framework governing the sites;
- The status quo of the environmental conditions of the site as well as applicable environmental studies, licences and permits; and
- Overall findings to indicate the sensitivity of the sites, potential fatal flaws, and issues that require the attention of the MMM.

The screening assessment revealed that the proposed Corridor will **not** trigger any listed activities as per the 2014 EIA Regulations (as amended) as majority of the proposed development falls within the Urban Edge of the MMM. The section of road that falls outside the urban edge will only require rehabilitation and will not require Environmental Authorisation from the Competent Authority.

Although the proposed construction of the road network within this Corridor is not a listed activity, it is the recommendation of the screening that an Environmental Management Plan be compiled to ensure mitigation of the potential environmental impacts that can occur during the construction phase of the project. The construction can also be monitored by an independent ECO from construction to decommissioning phases.

DESTEa has established an enquiry system where advice and guidance can be provided prior to a formal Environmental application process. A query will be lodged with DESTEa to confirm the EAPs findings. In addition, a Water Use Authorisation will be required for the proposed Corridor due to the rehabilitation of roads within a DWS regulated area. As this screening report was compiled in the initial stages of the project, it is important that project details be finalised as soon as possible to allow for the early undertaking of all relevant activities in order to ensure adherence to legislation and overall environmental protection whilst ensuring that the MMM meets their objectives in line with IPTN.

1. INTRODUCTION AND BACKGROUND

Mangaung Metropolitan Municipality (MMM) has proposed the implementation of an Integrated Public Transport Network (IPTN) known as *Hauweng*, as part of the National Public Transport Strategy and Action Plan released in 2007 by the National Department of Transport (NDoT) for its community. The strategy proposes the implementation of Integrated Rapid Public Transport Networks (IRPTN) in 12 (now 13) South African cities. Currently the cities which have successfully implemented this system are Cape Town (MyCiTi), Johannesburg (Rea Vaya) and Pretoria (A re Yeng). The reason is that such systems relieve inhabitants' reliance on private transportation, which in turn, reduce Greenhouse Gas (GHG) emissions and therefore the impact of the city on the environment. The MMM has decided to implement an IPTN with the assistance of the NDoT and to ensure that the system is as sustainable as possible.

There has been a great emphasis in reviving the public transportation system and the upgrading and development of supporting infrastructure by MMM. The implementation of *Hauweng* will enable service provision to numerous communities of the City. These services will transform the existing public transport system through the provision of an integrated, high-quality, safe and affordable public transport system. The primary aim of the *Hauweng* is to incrementally transform the existing public transport services to a multi-modal, integrated, high-quality, affordable, universally accessible, safe and reliable commuter service.

It is envisaged that the *Hauweng* will consist of an extensive network of bus and pedestrian walkways mainly concentrated within the City. According to the Draft City Wide Integrated Public Transport Plan (CWIPTP) 2019, the minimum requirements for an integrated public transport system are based on best practice and standards set by National Department of Transport for public transport systems in South Africa. The CWIPTP, 2019 makes reference to an IPTN that is based on demand corridors taking into account the existing public transport supply and land use. Five (5) demand public transport corridors are currently being proposed as part of the network/system planning of *Hauweng*. These corridors were derived by obtaining regional and local travel patterns, existing public transport demand, as well as existing functional transport corridors (minibus taxi operational areas and subsidised bus operators). The proposed corridors for the *Hauweng* Services are as follows:

- Dr Belcher;
- Maphisa;
- **Central Business District (CBD);**
- Botshabelo; and
- Thaba Nchu.

GA Environment (Pty) Ltd has been appointed by GladAfrica Consulting Engineers on behalf of MMM to undertake an Environmental Screening for the City-Wide Network (five corridors). This Screening report is applicable to the **CBD** Corridor. The purpose of this screening report is to document the findings of the site assessment and advise MMM on the applicable environmental legislative requirements that must be met prior to the commencement of any proposed activity. Environmental screening is a process whereby key environmental issues associated with a proposed development

are identified and form an integral part of prefeasibility investigations to allow adjustments to be made to the proposal prior to the submission of the final development plans. The identified issues provide the MMM with adequate time and opportunity to respond to the environmental implications arising from the proposed development. The screening process may include the need for further environmental assessments, if it is determined with certainty that the proposed activities will not require any Environmental Authorisations, Licences or Permits.

The findings contained in this report should not be regarded as indicative of a comprehensive environmental assessment as the assessment was undertaken in response to the requirements of MMM. The main objective of the screening exercise is to provide input in the plans for the City-Wide Network based on identified environmental constraints and opportunities. The methods to be employed for each task will be underpinned by the key environmental legislation that governs each process within the prescribed administrative timeframes.


1.1 Project Description

According to the CWIPTP, 2019 the CBD corridor will include the following infrastructure:

- Resurfacing and rehabilitation of certain sections of the road;
- Maintenance of certain sections of the road including stormwater infrastructure;
- Intersection Upgrades; and
- Non-Motorized Infrastructure.

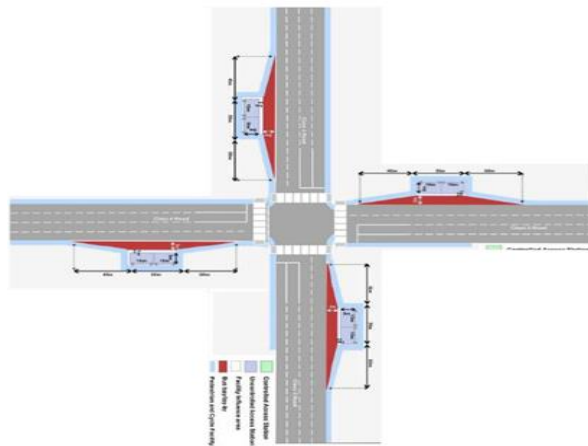
The corridor facilities as proposed in the CWIPTP, 2019 are provided in **Table 1**. It should be noted that the dimensions of the facility types were not made available to the Environmental Assessment Practitioner (EAP) during the finalization of this report. The transfer facilities selected for this Corridor is Hoffman Square and the intermodal facility, both facilities are situated within the CBD. Hoffman square is situated on St Andrew and Charlotte Maxeke Street and currently serves as an existing transfer point between bus and taxi services. The intermodal facility is situated on Harvey and Hanger Roads.

Table 1: Facility Type Description

Facility Type Description	Visual Illustration
1. Stops Incremental implementation	
2. Uncontrolled Access Stations Provided along all routes. The stops can have a shelter depending on the	

location along the route and space availability.	
3. Controlled Access Stations (stop with shelter) Will provide the following level of service: <ul style="list-style-type: none"> • Pedestrian waiting area; • Pedestrian walkways; • Staircase; • Station access points/gates 	
4. Transfers (Main) 5. The route design alternatives all require a transfer facility in the CBD of Bloemfontein, Botshabelo and Thaba Nchu. These facilities will be the main integration points between modes and services in the areas and to other areas. Long distance- and cross border public transport services will integrate with the local Corridors at these points.	<p>Transfer - Main</p>  <ul style="list-style-type: none"> • Feeder trunk service integration point • High capacity • Space available for transfer facility
6. Transfers High Capacity Provide transfer between routes in the network. The size is dependent on the number of feeder routes and vehicle fleet servicing the feeder routes.	<p>High Capacity Transfer</p>  <ul style="list-style-type: none"> 12 m vehicle Other vehicles, pick-up drop-off only, Kiss and Ride
7. Transfers low capacity Provide transfer opportunities to passengers within the system. These	

transfers are positioned where main corridors or routes intersect.



1.2 Assumptions, Gaps and Limitations

The assessment is based on information obtained from the CWIPTP, 2019 and a desktop assessment using the GIS data set for the MMM from the South African National Biodiversity Institute (SANBI). Ground truthing was not undertaken for this corridor and will be undertaken at a later stage once the project unfolds. However photographic evidence used for the compilation of the screening report for the Phase 1C Starter Service was used in this report.

No specialist field assessment or data collection was undertaken to verify the desktop observations. This report will therefore provide recommendations in terms of the required specialist assessment and further investigative studies that will be required before the construction.

1.3 Project Location

The MMM covers approximately 6863km², and comprises of three urban centres namely Bloemfontein, Botshabelo and Thaba Nchu. Due to the MMM being centrally located, most of the provincial and national road networks converge at the town resulting in a radial network (CWIPTP, 2019). The CBD Corridor is proposed around Central Business District of Bloemfontein. **Figure 1** shows the geographic extent of the corridor, which comprises of the proposed network.

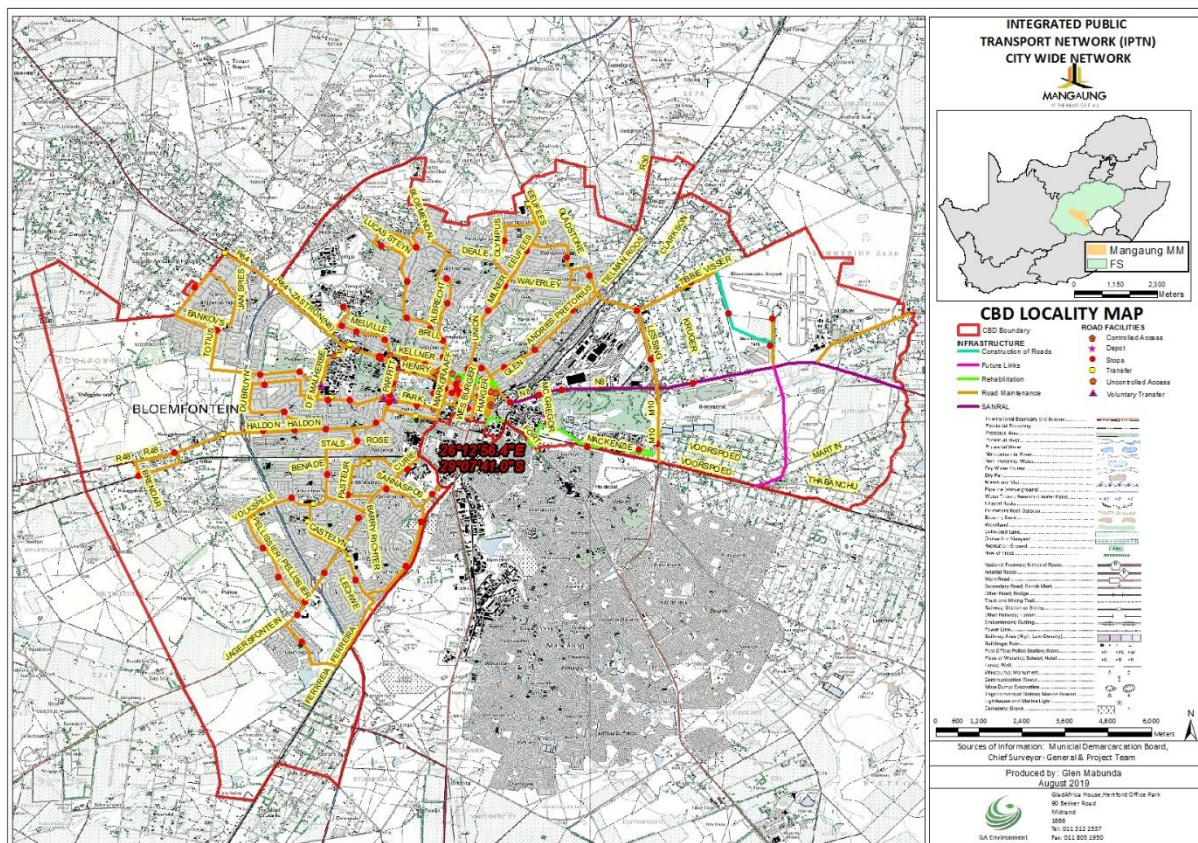


Figure 1: Locality Map showing the CBD Corridor

The network centre coordinates are 29°07'41.0"S, 20°12'56.4"E with the majority of the proposed study area situated within the urban edge of the metropolitan. A portion of the network towards the west of the Corridor at Quaggafontein is situated outside of the Urban Edge. The CBD Corridor is characterised with mixed land uses, which includes residential, commercial and industrial uses.

The N1 and N8 highway intersection is situated towards the east of the Corridor. The Bram Fischer International airport is situated north east in the corridor, with the Transnet rail network and rail yard situated towards the east. The eastern section is also characterised with the Oos Einde industrial area, and the Bloemspruit Wastewater Works which is situated on Mackenzie Street. The north of the corridor includes areas such as Bayswater and Heuwelsig. Along Aliwal Street (Northern section of the corridor) retail office developments and residential units occur. The eastern section of the corridor includes the University of Free State, and Langenhoven Park (residential suburb). Fauna and Pellissier suburbs are situated within the southern section of the corridor. The Loch Logan retail mall as well as several hotels, and guesthouses are situated within the central vicinity of the corridor.

2. SITE ENVIRONMENTAL CONDITIONS

This section provides an overview of the environmental setting and issues identified based on desktop assessment that was undertaken for the proposed corridor.

2.2 Site Sensitivity

The South African National Biodiversity Institute (SANBI) data was consulted in order to determine the location of areas of increased ecological or conservation importance and sensitivity within the vicinity of the study area. This was undertaken by an investigation of biodiversity priority areas which include Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs). According to the GIS data the proposed most of the study area is characterised as degraded. **(Figure 2).**

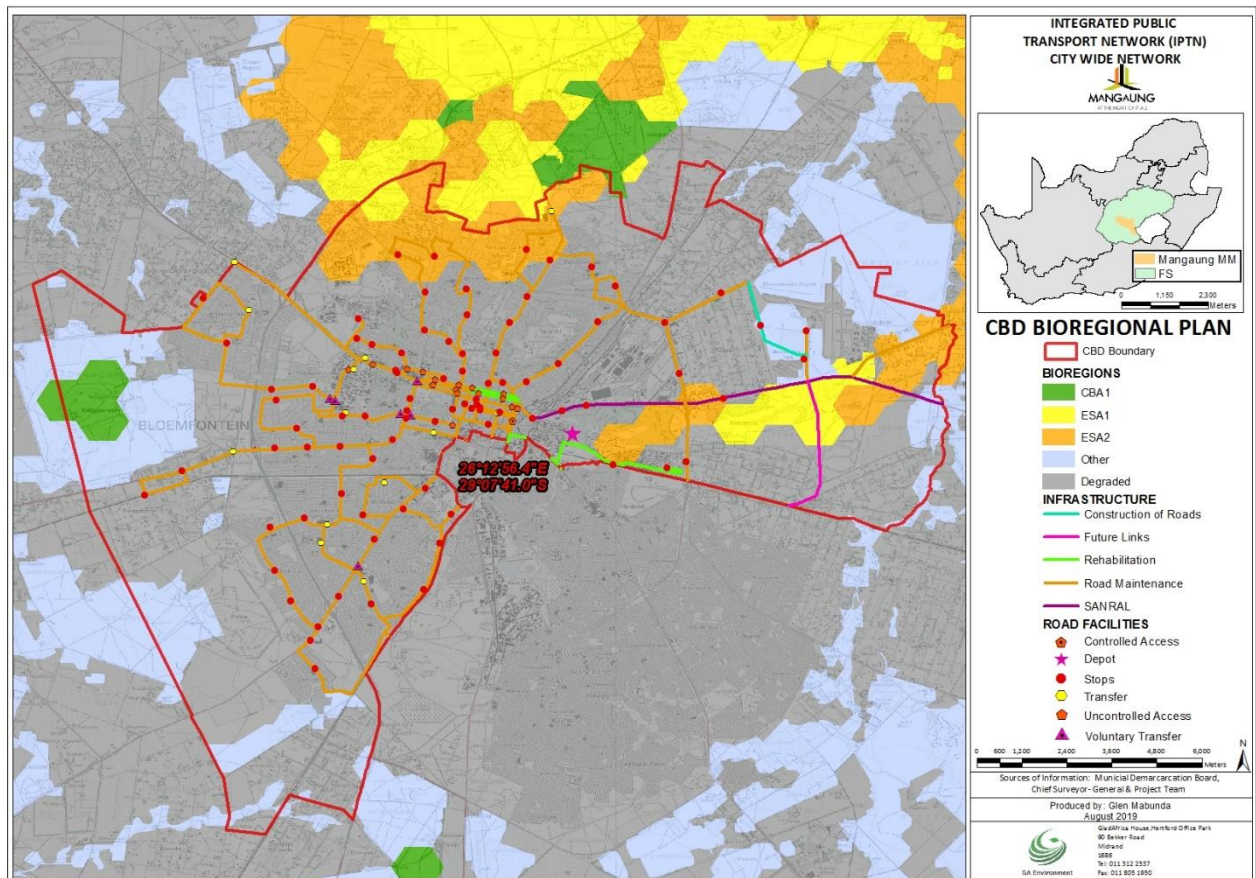


Figure 2: CBD Site Sensitivity

The northern and eastern section of the Corridor is situated within an ESA. The latter is due to the presence of the Bloemspruit. However, the road network situated within the ESA is existing and will require rehabilitation only, hence listed activities in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations will not be triggered. The applicability of the EIA regulations is further discussed in **Section 3.1**. Protected areas do fall within the proposed corridor. The Franklin, Karee and Kopano Nature reserves are situated towards the east of the Corridor. The Free State Botanical Gardens is also situated north of the Corridor **(Figure 3)**.

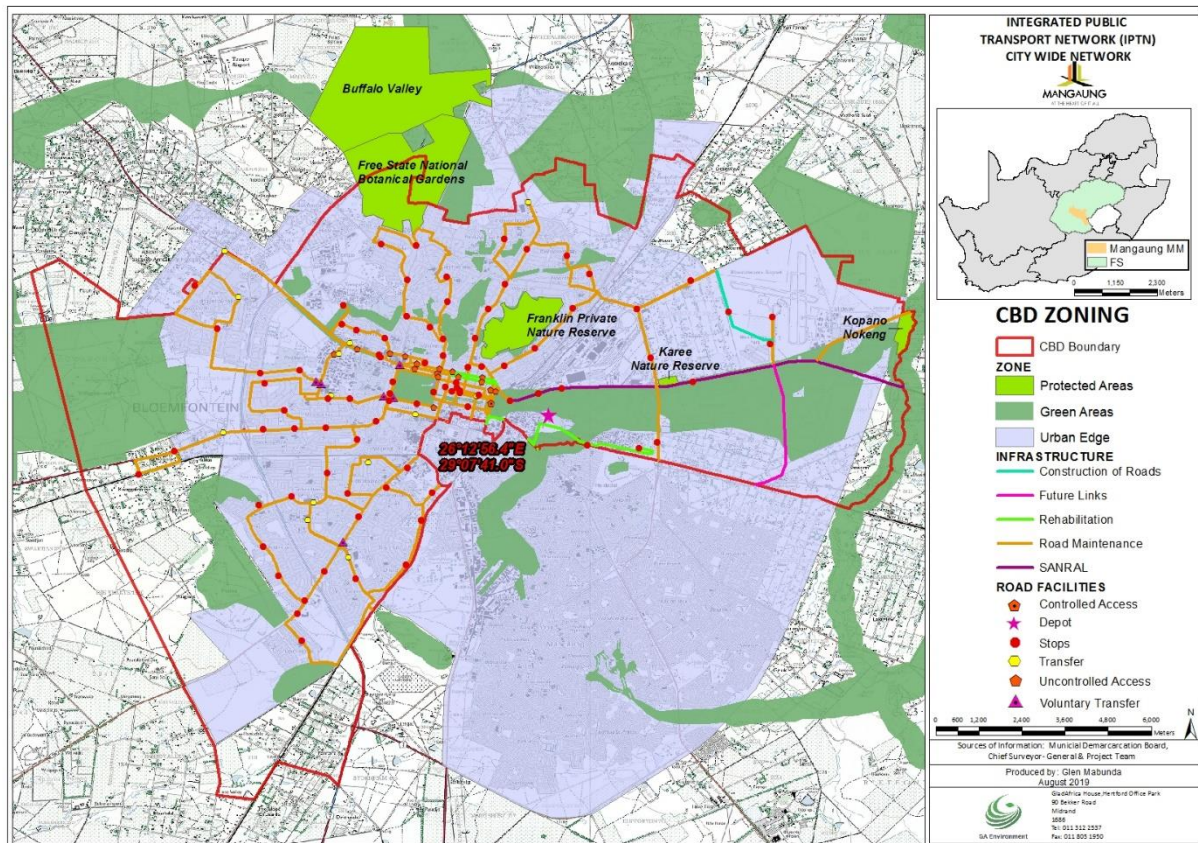


Figure 3: CBD Zoning

The proposed infrastructure that will be situated adjacent to these protected areas includes the rehabilitation of existing roads. Visual inspection of these roads is yet to be undertaken by the relevant Work Stream in order to determine the extent of work. The construction of one new road is proposed for the CBD corridor, based on the desktop assessment the proposed new road does not fall within any sensitive area.

2.3 Geology and Soils

A desktop-based assessment with the use of shapefiles from the National Department of Rural Development and Land Reform was undertaken. Most of the site is underlain by Mudstone, with a portion towards the north underlain by Dolerite, refer to **Figure 4**. No dolomitic conditions were identified based on the Desktop Assessment.

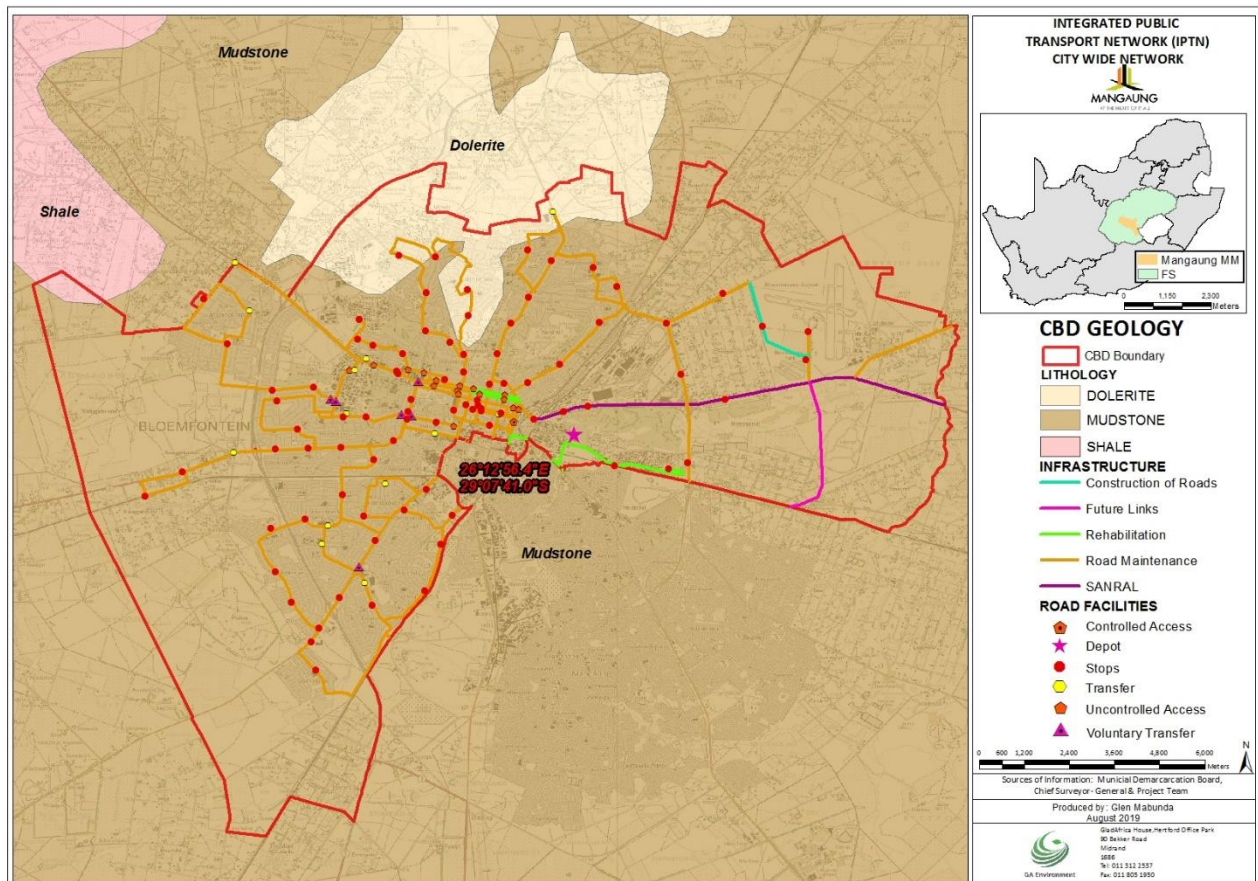


Figure 4: CBD Geology Map

The proposed project also includes the construction of roads. This will require knowledge on the geology of the site in order to determine the founding conditions and pavement designs. A Geotechnical Assessment will be required to be undertaken; however, this assessment does not fall within the scope of GA Environment.

2.4 Hydrological Conditions

The proposed corridor falls within the Quaternary Catchments C52F, C52G, C52H, and C52J within the Orange Water Management Area (WMA). According to the desktop assessment using the GIS data, impoundments, are situated within the corridor, the Dam van Trane is situated towards the south west (adjacent to the N8) with another impoundment towards the south of the Corridor (Geelhout Drive). A wetland is situated on Rudolf Greyling Avenue (south west of the Transnet yard) and another further east towards the airport. The proposed network (Rudolf Greyling Avenue) will traverse the Bloemspruit (**Figure 5**). The road network within the central section of the Corridor transverses an unknown stream. It is important to note that certain sections of this stream are canalised as shown in (**Figure 6**). In the upstream areas, the stream drains into an urban impoundment situated adjacent to the Loch Logan Mall (**Figure 7**).

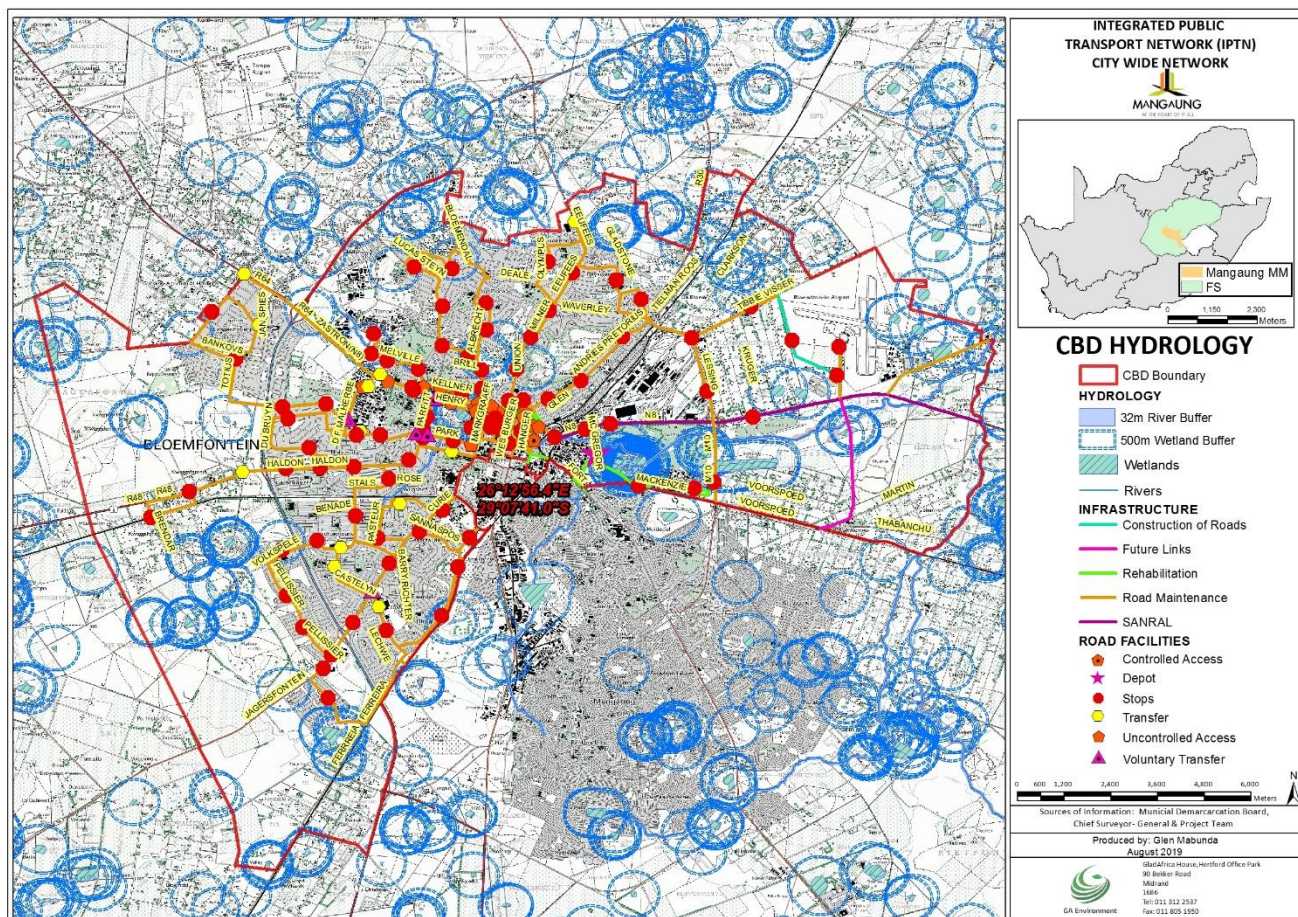


Figure 5: CBD Hydrology Map



Figure 6: A heavily impacted artificial canal that is crossed by Network (MMM, 2019)



Figure 7: The Urban impoundment at Loch Logan ((MMM, 2019)

The activities proposed within the DWS Regulated area includes rehabilitation of the road (e.g., maintenance activities), hence consultation with the DWS will be undertaken in order to determine the authorisation requirements.

The Department of Water and Sanitation's (DWS) regulated areas for watercourses are as follows:

- An outer edge of the 1:100-year flood line and /or delineated riparian habitat whichever is the greatest measured from the middle of a river, spring, natural channel, lake or dam; or
- In the absence of a determined 1:100-year flood line or riparian area, the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act); or
- 500m radius from the delineated boundary of any wetland or pan.

This means that the relevant Water Use Authorisation (WUA) must be acquired to permit the proposed development. Further to the above, it is important that the following water related studies be undertaken to aid the MMM with determining the suitability of the site for development:

- Wetland and riparian assessment and delineation;
- Floodline Assessment;
- Aquatic Assessment and;
- Stormwater Management Plan.

The legislation governing any activities within the watercourse is discussed in **Section 3.2** of this Screening Report.

2.5 Vegetation

According to the 2006 vegetation map produced by Mucina & Rutherford's (2006) three vegetation types exist within the Corridor. The eastern and western sections are characterised by the *Bloemfontein Dry Grassland* (Mapping Unit Gh 5) vegetation unit (**Figure 8**) which is considered Endangered. The central section of the Corridor is situated within the *Winburg Grassy Shrubland* (Mapping Unit Gh 7) which is considered Least threatened. The northern section of the Corridor is situated within the *Bloemfontein Karroid Shrubland* (Mapping Unit Gh 8) which is exposed to considerable urban developmental pressures, especially within the borders of the Mangaung Municipality.

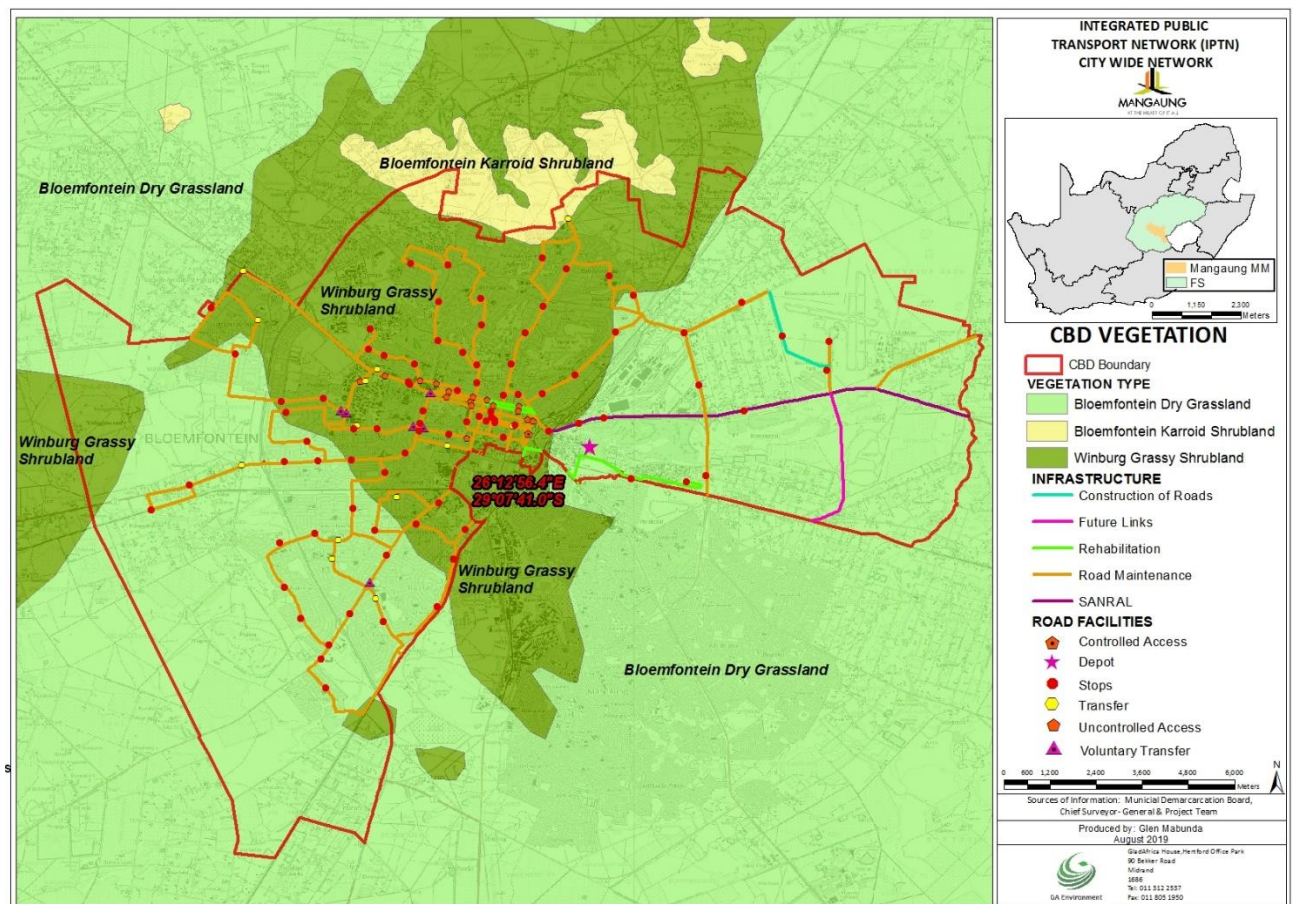


Figure 8: CBD Vegetation Map

At this early stage of the project it is unknown whether trees alongside the roads will be removed or retained. The MMM City parks Department will be involved should any of the trees be impacted by the proposed development. Should any permits be required before the removal of trees, such will be undertaken.

2.6 Cultural and Heritage

According to information obtained from the DEA Screening Tool (**Appendix A**) and as presented in **Figure 9**, most of the corridor is situated within an area of high paleontological sensitivity. Paleontological sites are protected according to Section 34 of the National Heritage Resources Act, 1999

(Act No. 25 of 1999) which is further discussed in Section 3.3. Based on the desktop GIS Desktop review that was undertaken, a **Paleontological Assessment** might be required for the project.

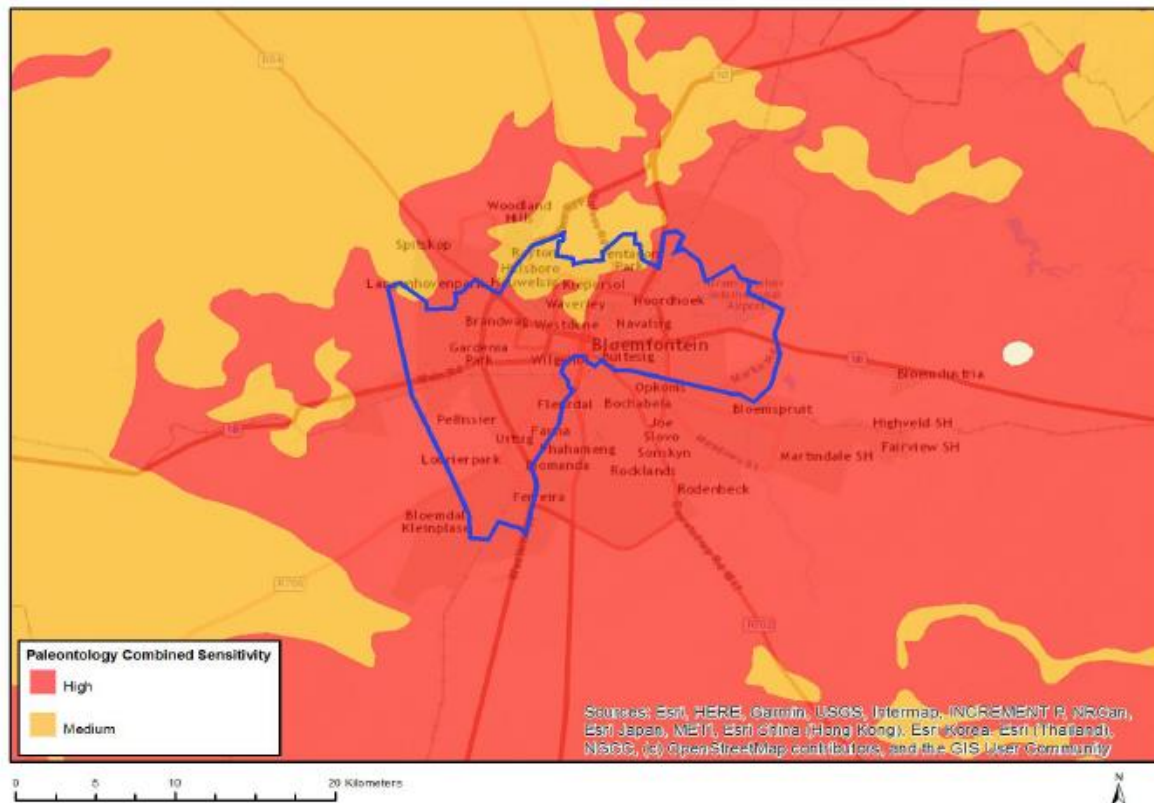


Figure 9: Paleontology Map (Source: DEA Screening Tool, 2009)

In addition to the above, it must be mentioned that the proposed activities might trigger the need for a **Heritage Impact Assessment**. This is based on Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) which pertains to Heritage Resources Management based on the undertaking of certain activities. As part of the proposed corridor, an activity within Section 38 might be triggered. This includes the construction of roads, laying of pipelines and other linear infrastructure over 300m in length. **Section 3.3** details the above-mentioned activities in line with the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

2.7 Stakeholder Engagement

Stakeholder consultation activities are typically undertaken to provide project stakeholders with an opportunity for early participation in the planning and development of a proposed project. Such participation can lead to improved decision-making by the proponent, while fostering good neighbour relationships with project stakeholders. It is of critical importance that adequate public participation is undertaken to avoid any project opposition.

Stakeholder consultation is managed by the Marketing and Stakeholder Engagement Work Stream, it is critical that the public is informed of the proposed activities through the relevant channels as approved by MMM.

A Social Impact Assessment (SIA) has been commissioned for the City-Wide IPTN. The SIA investigates the potential change in the activity, interaction and/or sentiment of the community, as it responds to the impacts resulting from the alteration in the surrounding environment.

Based on the observations and discussions with residents during the site visit, the following were identified as key stakeholders and authorities who must be notified of the project:

- Adjacent residents and businesses;
- Ward Councillor;
- Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEa);
- Department of Water and Sanitation (DWS);
- Free State Heritage Resources Agency (FSHRA); and
- MMM Roads and Stormwater Unit.

Any additional stakeholders and authorities will be identified in subsequent project stages

3. LEGISLATIVE REQUIREMENTS

3.1 NEMA EIA Regulations 2014 (as amended)

NEMA Environmental Impact Assessment (EIA) Regulations were promulgated in December 2014 (as amended) in terms of Section 24(5) and Section 44 of the National Environmental Management Act (NEMA), Act 107 of 1998 and consist of the following:

- Government Notice (G.N) 982 provides details on the processes and procedures to be followed when undertaking an Environmental Authorisation process;
- Listing Notice 1 (G.N 983) defines activities which will trigger the need for a Basic Assessment process;
- Listing Notice 2 (G.N 984) defines activities which trigger an Environmental Impact Assessment (EIA) process. If activities from both R983 and R984 are triggered, then an EIA process will be required.
- Listing Notice 3 (G.N 985) defines certain additional listed activities for which a Basic Assessment process would be required within identified geographical areas.

The above regulations were reviewed to determine whether the proposed project will trigger any of the above listed activities, and if so, what Environmental Authorisation Process would be required. The review revealed that no activities will be triggered as majority of the proposed development falls within the Urban Edge of the MMM. The section of road that falls outside the urban edge will only require rehabilitation and will not require Environmental Authorisation from the Competent Authority.

The above mentioned is dependent on the following:

- The finalising of project details by the relevant Work Streams; and
- Confirmation of the Listed Activities with the Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEa) to confirm the EAP's

findings about the required processes mainly in line with the site conditions which include a built-up area. DESTEA has established an enquiry system where advice and guidance can be provided prior to a formal Environmental application process.

3.2 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act No. 36 of 1998 (NWA) governs the management of water resources. It aims to ensure the sustainable use of water through the protection of the quality and quantity of water resources for the benefit of all water users. According to the Act, a person can only be entitled to use water if the use is permissible under the NWA. Section 21 of the NWA specifies the water uses, which require authorisation from the Department of Water and Sanitation (DWS) prior to the commencement of the activity. Based on desktop studies a list of regulated areas that could possibly be triggered by the development are presented as follows:

- The outer edge of the 1:100-year flood line and /or delineated riparian habitat whichever is the greatest measured from the middle of a river, spring, natural channel, lake or dam;
- In the absence of a determined 1:100-year flood line or riparian area, the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act); or
- 500m radius from the delineated boundary of any wetland or pan.

Any activity that occurs within a regulated area requires an application for a Water Use Authorisation (WUA) in the form of a Water Use License Application (WULA) or a General Authorisation (GA) with the DWS. Eleven (11) Water Uses are covered under Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) and are as follows:

(a) taking water from a water resource;

(b) storing water;

(c) impeding or diverting the flow of water in a watercourse;

(d) engaging in a stream flow reduction activity contemplated in section 36;

(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);

(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;

(g) disposing of waste in a manner which may detrimentally impact on a water resource;

(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;

(i) altering the bed, banks, course or characteristic of a watercourse;

(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and

(k) using water for recreational purposes.

As shown in **Section 2.4**, the proposed network (Rudolf Greyling Avenue) will traverse the Bloemspruit.

3.3 National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The objective of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is to introduce an integrated system for the management of national heritage resources. The Act defines a 'heritage resource' as any place or object of cultural significance (aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance). The identification, evaluation and assessment of any cultural heritage site, artefact or find in South Africa is required by this Act. This section of the report will present the heritage issues. In this section of the report and based on National Heritage Resources Act (1999), all mention of the 'Responsible Heritage Resources Authority' refers to the Free State Provincial Heritage Resources Agency (FSPHRA).

Section 2.6 presented the cultural and heritage matters applicable to the project. National Heritage Resources Act, 1999 (Act No. 25 of 1999) must be applied in the management of all heritage resources that could potentially occur within the CBD Corridor. With regards to the project, Section 35 and 36 of the Act are applicable and will be discussed

3.3.1 Activities governed by the National Heritage Resources Act, 1999 (Act No. 25 of 1999)

As presented in Section 2.6, the Rietfontein site occurs within a site with a high Palaeontological rating. Section 35 of the Act pertains to the protection of archaeological and palaeontological sites or material as well as meteorites. Section 35(4)(1)(a) states that

'No person may, without a permit issued by the responsible heritage resources authority—

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite.

Based on the above, a **Paleontology Impact Assessment** must be undertaken for the project.

With regards to the proposed activities, the relevant parts of Section 38, which pertains to Heritage Resources Management must be adhered to. Section 38(1) and indicated in maroon as follows:

'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 50 m 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,

Based on the above, a **Heritage Impact Assessment** must be undertaken for the project. FSPHRA as the relevant Heritage Resource Authority for the project must be notified of the project as early as possible in the initiation stage of the project.

3.4 Department of Environmental Affairs Screening Tool

According to Regulation 16(1)(v) of the NEMA EIA Regulations 2014, as amended, an Application for Environmental Authorisation must be accompanied by a 'the report generated by the national web based environmental screening tool, once this tool is operational.' The custodian of this report is the Department of Environmental Affairs (DEA). At the time of the compilation of this Screening Report, the tool was operational but not yet effected as this would take place on the 04th October 2019. Regardless of the status quo and while confirmation regarding the need for the undertaking of an application for Environmental Authorisation was still awaited, the EAP utilised a proactive approach to use this tool in the compilation of the Screening Report for the MMM IPTN CBD corridor. The results of the tool are indicated in the Report attached as Appendix A.

Page 24 of 32 of the Report indicates that certain Specialist assessments will be required for the undertaking of the proposed development and upgrades in the CBD Corridor. There is however an allowance of the EAP to motivate for the reasons for not including certain assessments in the assessment report. The following Specialist assessments have been identified as per the DEA Screening tool:

- Agricultural Impact Assessment;
- Landscape/Visual Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontology Impact Assessment;
- Terrestrial Biodiversity Impact Assessment;
- Aquatic Biodiversity Impact Assessment;
- Noise Impact Assessment;
- Traffic Impact Assessment;
- Geotechnical Assessment;
- Socio-Economic Assessment;
- Ambient Air Quality Impact Assessment.

The need for the above-mentioned studies will be discussed with the competent authority during the pre-application meeting.

4. CONCLUSION AND RECOMMENDATIONS

This Environmental Screening investigation was undertaken to determine if any legislative or other requirements must be met for the proposed CBD Corridor. This report is based on an assessment of information gathered during desktop studies.

The report presented the site conditions and also outlined all possible legislative requirements based on these site conditions as well as proposed activities. The legislative requirements discussed were in line with various pieces of legislation governing the protection of flora and fauna, water, heritage resources, etc. and outlined the need for authorisations, permits and licences where applicable as well as the authorities that will be involved in the granting of these.

The screening assessment revealed that the proposed Corridor will not trigger any listed activities as per the 2014 EIA Regulations (as amended). DESTEA has established an enquiry system where advice and guidance can be provided prior to a formal Environmental application process. A query will be lodged with DESTEA to confirm the EAPs findings. In addition, a Water Use Authorisation will also be required for the proposed Corridor due to the rehabilitation of roads within a DWS regulated area.

The report also outlined the need for various specialist studies that are recommended for the project. These were as follows:

- Wetland and riparian assessment and delineation;
- Aquatic Assessment;
- Stormwater Management Plan;
- Palaeontological Impact Assessment; and
- Heritage Impact Assessment.

The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the demolition/construction phase, illegal activities, delays caused by archaeological finds etc. are ultimately the responsibility of the applicant / developer as per Section 28 of NEMA, 1998 (as amended) which discusses 'Duty of Care and remediation of environmental change. Although the proposed construction of the road network within this Corridor is not a listed activity, it is the recommendation of the screening that an Environmental Management Plan be compiled to ensure mitigation of the potential environmental impacts that can occur during the construction phase of the project. The construction can also be monitored by an independent ECO from construction to decommissioning phases.

As this screening report was compiled in the initial stages of the project, it is important that project details be finalised as soon as possible to allow for the early undertaking of all relevant activities in order to ensure adherence to legislation and overall environmental protection whilst ensuring that the MMM meets their objectives in line with IPTN.

5. REFERENCES

Mucina, L, & Rutherford, M.C. (Eds.) 2006. *The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*. South African National Biodiversity Institute, Pretoria.

Manguang Metropolitan Municipality, 2019, Draft City Wide Integrated Public Transport Plan

Manguang Metropolitan Municipality, 2019, Environmental Screening for the Phase 1C Starter Service

APPENDIX A

DEA SCREENING TOOL

**SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION OR
FOR A PART TWO AMENDMENT OF AN ENVIRONMENTAL AUTHORISATION
AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE
ENVIRONMENTAL SENSITIVITY**

EIA Reference number: Not Applicable

Project name: MMM IPTN

Project title: Bloemfontein CBD

Date screening report generated: 28/08/2019 07:25:41

Applicant: Manguang Metropolitan Municipality

Compiler: Kirthi Peramaul

Compiler signature:

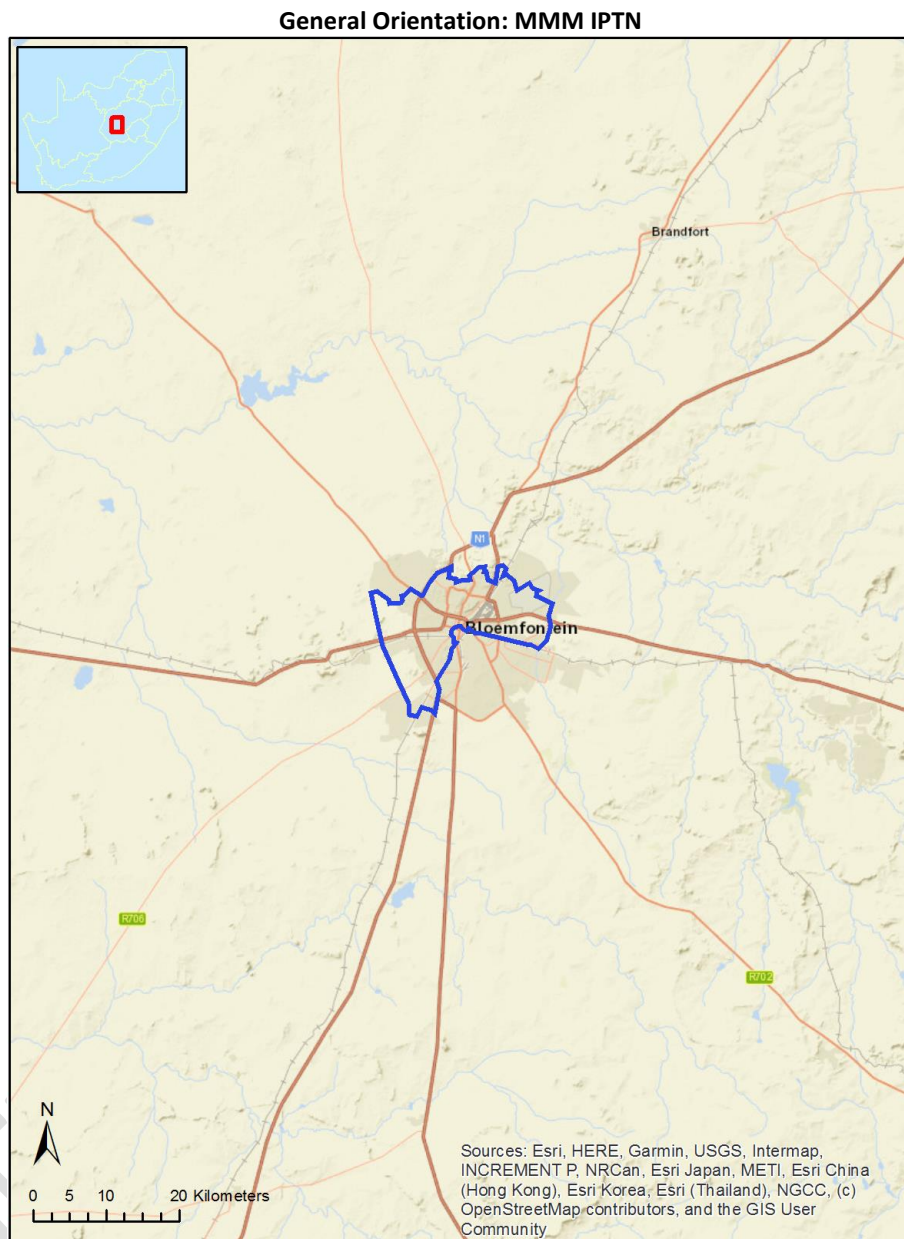
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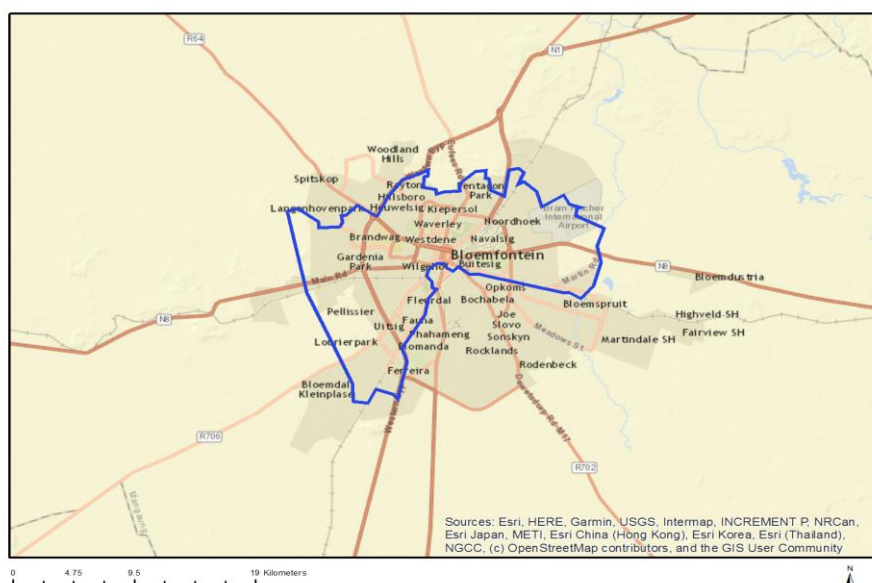
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/Erff Number	Portion	Latitude	Longitude
1	BLOEMFONTEIN	7988	00000	-29.08323	26.23792
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3	BLOEMFONTEIN	1796	00003	-29.09307	26.2319
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6	BLOEMFONTEIN	6104	00000	-29.09114	26.21546
7	BLOEMFONTEIN	5699	00001	-29.13267	26.18662
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16	BLOEMFONTEIN	1542	00000	-29.11169	26.2249
17	BLOEMFONTEIN	478	00001	-29.11057	26.2135
18	BLOEMFONTEIN	483	00000	-29.11137	26.2137
19	BLOEMFONTEIN	5451	00000	-29.12704	26.18806
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25	BLOEMFONTEIN	9217	00000	-29.14322	26.19091
26	BLOEMFONTEIN	1122	00001	-29.12152	26.22581
27	BLOEMFONTEIN	612	00000	-29.11292	26.21728
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190	BLOEMFONTEIN	9609	00000	-29.13811	26.19262
191	BLOEMFONTEIN	10754	00000	-29.14099	26.20329
192	BLOEMFONTEIN	16628	00000	-29.1499	26.17396
193	BLOEMFONTEIN	14698	00000	-29.14648	26.18466
194	BLOEMFONTEIN	15531	00000	-29.14963	26.17547
195	BLOEMFONTEIN	15329	00000	-29.15198	26.18017
196	BLOEMFONTEIN	14222	00000	-29.13996	26.17123
197	BLOEMFONTEIN	14243	00000	-29.13899	26.17443
198	BLOEMFONTEIN	17673	00000	-29.16819	26.18999
199	BLOEMFONTEIN	16484	00000	-29.08523	26.20064
200	BLOEMFONTEIN	15737	00000	-29.09379	26.22425
201	BLOEMFONTEIN	15850	00000	-29.16843	26.19624
202	BLOEMFONTEIN	22066	00001	-29.12213	26.23255
203	BLOEMFONTEIN	22096	00000	-29.12155	26.22545
204	BLOEMFONTEIN	20381	00000	-29.16506	26.17891
205	BLOEMFONTEIN	7933	00000	-29.08064	26.2361
206	BLOEMFONTEIN	8354	00000	-29.11781	26.17554
207	BLOEMFONTEIN	7014	00000	-29.12713	26.20098
208	BLOEMFONTEIN	11581	00000	-29.15203	26.20045
209	BLOEMFONTEIN	12514	00000	-29.09636	26.21263
210	BLOEMFONTEIN	11840	00000	-29.15753	26.20079

211	BLOEMFONTEIN	12055	00000	-29.15986	26.19763
212	BLOEMFONTEIN	9591	00000	-29.13574	26.19143
213	BLOEMFONTEIN	14346	00000	-29.14209	26.17496
214	BLOEMFONTEIN	17530	00000	-29.17409	26.19174
215	BLOEMFONTEIN	15094	00000	-29.10472	26.21958
216	BLOEMFONTEIN	14028	00000	-29.10228	26.20293
217	BLOEMFONTEIN	13113	00000	-29.10255	26.19211
218	BLOEMFONTEIN	19101	00000	-29.13204	26.25967
219	BLOEMFONTEIN	19843	00000	-29.11839	26.16523
220	BLOEMFONTEIN	17746	00000	-29.17315	26.18841
221	BLOEMFONTEIN	16375	00000	-29.07674	26.20065
222	BLOEMFONTEIN	16380	00000	-29.07734	26.19998
223	BLOEMFONTEIN	16827	00000	-29.08216	26.19659
224	BLOEMFONTEIN	22005	00000	-29.11785	26.22053
225	BLOEMFONTEIN	21707	00000	-29.0943	26.17101
226	BLOEMFONTEIN	22188	00000	-29.16606	26.19346
227	BLOEMFONTEIN	21937	00000	-29.10981	26.16607
228	BLOEMFONTEIN	20011	00000	-29.11572	26.16564
229	BLOEMFONTEIN	21228	00000	-29.16289	26.16933
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231	BLOEMFONTEIN	8417	00000	-29.12186	26.177
232	BLOEMFONTEIN	8466	00000	-29.1233	26.17577
233	BLOEMFONTEIN	12613	00000	-29.07905	26.20673
234	BLOEMFONTEIN	11608	00000	-29.15198	26.20118
235	BLOEMFONTEIN	11468	00000	-29.14977	26.20145
236	BLOEMFONTEIN	10511	00000	-29.14342	26.20008
237	BLOEMFONTEIN	9015	00000	-29.11995	26.18984
238	BLOEMFONTEIN	16595	00000	-29.13843	26.16879
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241	BLOEMFONTEIN	15343	00000	-29.15095	26.18439
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243	BLOEMFONTEIN	17711	00000	-29.17403	26.18865
244	BLOEMFONTEIN	18534	00000	-29.16076	26.18248
245	BLOEMFONTEIN	15601	00000	-29.15263	26.17742
246	BLOEMFONTEIN	19435	00000	-29.14868	26.16908
247	BLOEMFONTEIN	21938	00000	-29.10984	26.1664
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249	BLOEMFONTEIN	22205	00000	-29.16662	26.19332
250	BLOEMFONTEIN	20053	00000	-29.15659	26.17474
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252	BLOEMFONTEIN	19921	00000	-29.11577	26.16488
253	BLOEMFONTEIN	7039	00000	-29.13009	26.20166
254	BLOEMFONTEIN	7043	00000	-29.12868	26.20223
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256	BLOEMFONTEIN	11511	00000	-29.15293	26.19802
257	BLOEMFONTEIN	10935	00000	-29.14235	26.20206
258	BLOEMFONTEIN	10030	00000	-29.13131	26.17213
259	BLOEMFONTEIN	9537	00000	-29.13861	26.19164
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261	BLOEMFONTEIN	15178	00000	-29.12124	26.17731
262	BLOEMFONTEIN	14477	00000	-29.14157	26.17789
263	BLOEMFONTEIN	17472	00000	-29.17361	26.19187
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265	BLOEMFONTEIN	12368	00000	-29.09963	26.19148
266	BLOEMFONTEIN	20273	00000	-29.16249	26.1751
267	BLOEMFONTEIN	20303	00000	-29.15862	26.17624
268	BLOEMFONTEIN	17830	00000	-29.15863	26.18882
269	BLOEMFONTEIN	18347	00000	-29.15579	26.18526
270	BLOEMFONTEIN	16703	00000	-29.07352	26.2335

271	BLOEMFONTEIN	19457	00000	-29.14823	26.1688
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273	BLOEMFONTEIN	22983	00000	-29.18412	26.17443
274	BLOEMFONTEIN	21630	00000	-29.09486	26.17266
275	BLOEMFONTEIN	19990	00000	-29.11516	26.1682
276	BLOEMFONTEIN	19550	00001	-29.09008	26.23382
277	BLOEMFONTEIN	19554	00000	-29.10197	26.20226
278	BLOEMFONTEIN	25062	00000	-29.11691	26.21937
279	BLOEMFONTEIN	7485	00000	-29.08295	26.24116
280	BLOEMFONTEIN	11827	00000	-29.15705	26.2009
281	BLOEMFONTEIN	12152	00000	-29.1642	26.19995
282	BLOEMFONTEIN	10694	00000	-29.10883	26.23022
283	BLOEMFONTEIN	9566	00002	-29.14081	26.19213
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289	BLOEMFONTEIN	13656	00000	-29.13722	26.18256
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291	BLOEMFONTEIN	13523	00000	-29.13621	26.17955
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295	BLOEMFONTEIN	17153	00000	-29.17154	26.18554
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301	BLOEMFONTEIN	20528	00000	-29.14836	26.15941
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304	BLOEMFONTEIN	12247	00000	-29.1623	26.19729
305	BLOEMFONTEIN	9487	00000	-29.14198	26.19475
306	BLOEMFONTEIN	15835	00000	-29.1656	26.1979
307	BLOEMFONTEIN	15100	00012	-29.08416	26.24021
308	BLOEMFONTEIN	14408	00000	-29.13958	26.1773
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310	BLOEMFONTEIN	14102	00000	-29.13568	26.17284
311	BLOEMFONTEIN	18542	00000	-29.16064	26.18145
312	BLOEMFONTEIN	19856	00000	-29.12053	26.16499
313	BLOEMFONTEIN	18682	00000	-29.15822	26.18118
314	BLOEMFONTEIN	18686	00000	-29.13234	26.20613
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316	BLOEMFONTEIN	16040	00000	-29.14945	26.19405
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320	BLOEMFONTEIN	20992	00000	-29.15565	26.17195
321	BLOEMFONTEIN	20887	00000	-29.15291	26.16305
322	BLOEMFONTEIN	26482	00000	-29.10595	26.20799
323	BLOEMFONTEIN	5962	00000	-29.09716	26.21456
324	BLOEMFONTEIN	16250	00000	-29.07772	26.20385
325	BLOEMFONTEIN	15831	00000	-29.16518	26.1977
326	BLOEMFONTEIN	15410	00000	-29.14489	26.17612
327	BLOEMFONTEIN	15761	00012	-29.15697	26.19761
328	BLOEMFONTEIN	18917	00000	-29.13004	26.26074
329	BLOEMFONTEIN	17798	00000	-29.16312	26.1834
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331	BLOEMFONTEIN	18358	00000	-29.15966	26.18421
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333	BLOEMFONTEIN	18301	00000	-29.13097	26.16814
334	BLOEMFONTEIN	22696	00000	-29.17702	26.17616
335	BLOEMFONTEIN	22123	00000	-29.15764	26.19296
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337	BLOEMFONTEIN	22216	00000	-29.16368	26.19221
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343	BLOEMFONTEIN	11719	00000	-29.15435	26.20112
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345	BLOEMFONTEIN	19171	00000	-29.15161	26.16362
346	BLOEMFONTEIN	18246	00000	-29.13232	26.16795
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352	BLOEMFONTEIN	19661	00000	-29.11701	26.16351
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362	BLOEMFONTEIN	12552	00000	-29.09167	26.21334
363	BLOEMFONTEIN	10803	00000	-29.14771	26.20346
364	BLOEMFONTEIN	11264	00001	-29.11489	26.22138
365	BLOEMFONTEIN	10518	00000	-29.14331	26.1984
366	BLOEMFONTEIN	12416	00000	-29.09886	26.18859
367	BLOEMFONTEIN	10958	00000	-29.14285	26.20268
368	BLOEMFONTEIN	21141	00000	-29.16389	26.17007
369	BLOEMFONTEIN	17406	00000	-29.16725	26.1916
370	BLOEMFONTEIN	22540	00000	-29.17801	26.17325
371	BLOEMFONTEIN	21091	00000	-29.16213	26.1713
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380	BLOEMFONTEIN	15637	00000	-29.15256	26.17957
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382	BLOEMFONTEIN	15413	00000	-29.14559	26.17648
383	BLOEMFONTEIN	22417	00000	-29.18391	26.17928
384	BLOEMFONTEIN	19789	00000	-29.11397	26.17119
385	BLOEMFONTEIN	19813	00000	-29.11729	26.16849
386	BLOEMFONTEIN	20561	00000	-29.14851	26.1621
387	BLOEMFONTEIN	24933	00001	-29.12283	26.20838
388	BLOEMFONTEIN	2255	00012	-29.10016	26.24634
389	BLOEMFONTEIN	24740	00000	-29.12702	26.18378
390	LANGENHOVENPARK	804	00000	-29.10162	26.14563

391	BLOEMFONTEIN	5980	00000	-29.09428	26.21539
392	BLOEMFONTEIN	10915	00000	-29.14313	26.20502
393	BLOEMFONTEIN	13849	00000	-29.14239	26.18569
394	BLOEMFONTEIN	9527	00000	-29.14199	26.18979
395	BLOEMFONTEIN	11371	00000	-29.14092	26.20541
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402	BLOEMFONTEIN	13505	00000	-29.13438	26.17818
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417	BLOEMFONTEIN	15374	00000	-29.15181	26.18299
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429	LANGENHOVENPARK	391	00000	-29.09817	26.16322
430	BLOEMFONTEIN	11963	00000	-29.15952	26.20124
431	BLOEMFONTEIN	11933	00000	-29.15905	26.20135
432	BLOEMFONTEIN	9969	00000	-29.13001	26.17136
433	BLOEMFONTEIN	15591	00000	-29.15081	26.17801
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440	BLOEMFONTEIN	18066	00000	-29.1591	26.18685
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451	BLOEMFONTEIN	9085	00000	-29.12285	26.19355
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456	BLOEMFONTEIN	14049	00000	-29.09972	26.20161
457	BLOEMFONTEIN	256	00000	-29.07853	26.21854
458	BLOEMFONTEIN	19198	00000	-29.15051	26.1638
459	BLOEMFONTEIN	19204	00000	-29.14949	26.1638
460	BLOEMFONTEIN	18577	00000	-29.15957	26.17993
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465	BLOEMFONTEIN	16266	00000	-29.07948	26.2055
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467	BLOEMFONTEIN	22581	00000	-29.1787	26.16946
468	BLOEMFONTEIN	20362	00000	-29.16256	26.17725
469	BLOEMFONTEIN	20366	00000	-29.16251	26.17837
470	LANGENHOVENPARK	864	00000	-29.09986	26.14823
471	LANGENHOVENPARK	4	00001	-29.09626	26.14766
472	LANGENHOVENPARK	1395	00000	-29.09738	26.16479
473	HELICONHOOGTE	91	00000	-29.07891	26.22956
474	LANGENHOVENPARK	1219	00000	-29.10474	26.16065
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476	LANGENHOVENPARK	1164	00000	-29.10338	26.15349
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478	LANGENHOVENPARK	573	00000	-29.10551	26.15548
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480	LANGENHOVENPARK	497	00000	-29.10271	26.15791
481	LANGENHOVENPARK	601	00000	-29.10475	26.15689
482	LANGENHOVENPARK	1097	00000	-29.10502	26.14758
483	LANGENHOVENPARK	201	00000	-29.09068	26.15478
484	LANGENHOVENPARK	1203	00000	-29.09615	26.15669
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486	LANGENHOVENPARK	880	00000	-29.1004	26.1496
487	LANGENHOVENPARK	872	00000	-29.10006	26.14777
488	HILLSBORO	27	00000	-29.07262	26.21018
489	LANGENHOVENPARK	824	00000	-29.10177	26.14707
490	HILLSBORO	16	00000	-29.07143	26.2111
491	BLOEMFONTEIN	11	00000	-29.09425	26.14973
492	LANGENHOVENPARK	449	00000	-29.10151	26.15716
493	LANGENHOVENPARK	453	00000	-29.1017	26.15837
494	LANGENHOVENPARK	1006	00000	-29.10507	26.15375
495	LANGENHOVENPARK	1437	00000	-29.09563	26.16677
496	LANGENHOVENPARK	167	00000	-29.08958	26.15716
497	LANGENHOVENPARK	191	00000	-29.09159	26.15789
498	PENTAGON PARK	281	00000	-29.07708	26.22197
499	PENTAGON PARK	216	00000	-29.07828	26.22269
500	QUINDINA	10	00000	-29.08069	26.25451
501	PENTAGON PARK	173	00000	-29.07957	26.22706
502	PENTAGON PARK	241	00000	-29.07718	26.22098
503	PENTAGON PARK	58	00000	-29.07447	26.22763
504	PENTAGON PARK	73	00000	-29.07374	26.22688
505	PENTAGON PARK	266	00000	-29.0767	26.21974
506	LANGENHOVENPARK	84	00004	-29.09232	26.15177
507	BLOEMFONTEIN	19748	00000	-29.11207	26.17394
508	BLOEMFONTEIN	19771	00000	-29.11502	26.18023
509	LANGENHOVENPARK	294	00001	-29.09518	26.16035
510	BLOEMFONTEIN	1871	00001	-29.09576	26.22508

511	BLOEMFONTEIN	2305	00000	-29.09321	26.23837
512	BLOEMFONTEIN	2787	00001	-29.10052	26.22115
513	BLOEMFONTEIN	20385	00000	-29.16602	26.17863
514	BLOEMFONTEIN	8774	00000	-29.12529	26.18853
515	BLOEMFONTEIN	6100	00000	-29.09144	26.21586
516	BLOEMFONTEIN	1400	00000	-29.1219	26.2106
517	BLOEMFONTEIN	21007	00000	-29.15626	26.17024
518	LANGENHOVENPARK	172	00001	-29.08998	26.15682
519	BLOEMFONTEIN	12619	00004	-29.07878	26.20892
520	BLOEMFONTEIN	8206	00000	-29.12404	26.17417
521	BLOEMFONTEIN	3392	00000	-29.08263	26.23335
522	BLOEMFONTEIN	26462	00000	-29.09468	26.25078
523	BLOEMFONTEIN	17068	00000	-29.07512	26.20977
524	BLOEMFONTEIN	20928	00000	-29.15304	26.16737
525	BLOEMFONTEIN	649	00002	-29.11346	26.21973
526	BLOEMFONTEIN	6582	00000	-29.0808	26.21859
527	BLOEMFONTEIN	6266	00000	-29.08731	26.21448
528	BLOEMFONTEIN	19261	00000	-29.14654	26.17106
529	BLOEMFONTEIN	25065	00013	-29.08212	26.25144
530	BLOEMFONTEIN	19633	00000	-29.12385	26.16359
531	BLOEMFONTEIN	19625	00000	-29.08603	26.23851
532	BLOEMFONTEIN	15139	00000	-29.07765	26.2392
533	BLOEMFONTEIN	20627	00000	-29.14676	26.16606
534	BLOEMFONTEIN	24815	00000	-29.07718	26.19635
535	BLOEMFONTEIN	16554	00001	-29.08926	26.19979
536	BLOEMFONTEIN	19374	00000	-29.15419	26.17103
537	BLOEMFONTEIN	12652	00000	-29.12603	26.16645
538	BLOEMFONTEIN	16813	00000	-29.0853	26.1979
539	BLOEMFONTEIN	15932	00000	-29.09208	26.20783
540	BLOEMFONTEIN	19158	00000	-29.0799	26.2312
541	BLOEMFONTEIN	19294	00000	-29.15343	26.17418
542	BLOEMFONTEIN	19165	00000	-29.07847	26.2329
543	BLOEMFONTEIN	16329	00000	-29.0806	26.20683
544	BLOEMFONTEIN	16896	00000	-29.08031	26.19955
545	BLOEMFONTEIN	13957	00000	-29.07566	26.23607
546	BLOEMFONTEIN	20634	00000	-29.14786	26.16431
547	BLOEMFONTEIN	8699	00000	-29.1225	26.18547
548	BLOEMFONTEIN	29527	00000	-29.06985	26.2371
549	LANGENHOVENPARK	276	00005	-29.09267	26.16334
550	HEIDEDAL	23221	00000	-29.13223	26.27736
551	HEIDEDAL	23136	00000	-29.12924	26.27838
552	HEIDEDAL	23148	00000	-29.1296	26.2762
553	BLOEMFONTEIN	30159	00000	-29.09981	26.22103
554	BLOEMFONTEIN	5036	00000	-29.10565	26.21994
555	BLOEMFONTEIN	20290	00000	-29.1577	26.17574
556	BLOEMFONTEIN	3014	00001	-29.08417	26.23062
557	BLOEMFONTEIN	29547	00000	-29.07308	26.24109
558	SHELLYVALE	508	00047	-29.06663	26.20176
559	SHELLYVALE	508	00039	-29.06712	26.20181
560	SHELLYVALE	508	00027	-29.06676	26.20303
561	SHELLYVALE	508	00023	-29.0668	26.2034
562	SHELLYVALE	508	00012	-29.06507	26.20479
563	BLOEMFONTEIN	10842	00000	-29.14763	26.20212
564	BLOEMFONTEIN	2103	00001	-29.09482	26.22755
565	LANGENHOVENPARK	173	00000	-29.09029	26.15708
566	SHELLYVALE	515	00000	-29.06573	26.19886
567	BLOEMFONTEIN	22490	00000	-29.17833	26.17568
568	LANGENHOVENPARK	74	00000	-29.09362	26.15045
569	BLOEMFONTEIN	36630	00000	-29.11405	26.28789
570	HEIDEDAL	23265	00000	-29.12875	26.27613

571	HEIDEDAL	16667	00000	-29.13371	26.2619
572	BLOEMFONTEIN	9122	00000	-29.1178	26.17538
573	BLOEMFONTEIN	30188	00000	-29.06506	26.23601
574	BLOEMFONTEIN	12786	00000	-29.1154	26.18053
575	BLOEMFONTEIN	12861	00000	-29.11664	26.17381
576	BLOEMFONTEIN	11254	00000	-29.12646	26.20702
577	BLOEMFONTEIN	22069	00000	-29.12271	26.22399
578	BLOEMFONTEIN	7330	00001	-29.07618	26.24243
579	BLOEMFONTEIN	1949	00016	-29.11534	26.22803
580	BLOEMFONTEIN	1788	00011	-29.09246	26.23935
581	BLOEMFONTEIN	2255	00027	-29.10113	26.24487
582	BLOEMFONTEIN	21383	00001	-29.12564	26.16437
583	LANGENHOVENPARK	217	00000	-29.08766	26.15653
584	BLOEMFONTEIN	21384	00000	-29.12532	26.16427
585	BLOEMFONTEIN	1899	00003	-29.12358	26.2117
586	BLOEMFONTEIN	7238	00000	-29.07443	26.24275
587	SHELLYVALE	532	00000	-29.06428	26.20021
588	BLOEMFONTEIN	3213	00000	-29.11796	26.23834
589	BLOEMFONTEIN	29718	00000	-29.10828	26.15172
590	LANGENHOVENPARK	796	00000	-29.1034	26.14502
591	BLOEMFONTEIN	29827	00000	-29.11009	26.14556
592	LANGENHOVENPARK	558	00000	-29.10814	26.15675
593	BLOEMFONTEIN	29625	00000	-29.11083	26.16035
594	BLOEMFONTEIN	29682	00000	-29.10824	26.15505
595	BLOEMFONTEIN	29637	00000	-29.11104	26.15899
596	BLOEMFONTEIN	29849	00000	-29.11236	26.14424
597	BLOEMFONTEIN	29800	00000	-29.10785	26.14558
598	BLOEMFONTEIN	29952	00000	-29.11852	26.1549
599	BLOEMFONTEIN	29925	00000	-29.11194	26.15157
600	BLOEMFONTEIN	29696	00000	-29.10844	26.15459
601	BLOEMFONTEIN	29803	00000	-29.10801	26.14484
602	BLOEMFONTEIN	29761	00000	-29.111	26.15066
603	BLOEMFONTEIN	29754	00000	-29.11088	26.1484
604	BLOEMFONTEIN	29963	00000	-29.11225	26.1624
605	BLOEMFONTEIN	24830	00000	-29.11353	26.22896
606	BLOEMFONTEIN	30008	00000	-29.11368	26.16209
607	BLOEMFONTEIN	36174	00000	-29.11768	26.28337
608	BLOEMFONTEIN	36377	00000	-29.11847	26.28552
609	BLOEMFONTEIN	36341	00000	-29.11691	26.28485
610	BLOEMFONTEIN	36292	00000	-29.11572	26.28381
611	BLOEMFONTEIN	36267	00000	-29.11756	26.28413
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613	BLOEMFONTEIN	36222	00000	-29.11635	26.2829
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615	BLOEMFONTEIN	36154	00000	-29.11625	26.28253
616	BLOEMFONTEIN	1864	00000	-29.09419	26.22554
617	BLOEMFONTEIN	36438	00000	-29.11828	26.28432
618	BLOEMFONTEIN	16047	00000	-29.15174	26.19478
619	BLOEMFONTEIN	1676	00000	-29.11236	26.23388
620	BLOEMFONTEIN	29159	00000	-29.0744	26.20763
621	BLOEMFONTEIN	37118	00002	-29.09256	26.23299
622	BLOEMFONTEIN	8463	00000	-29.1233	26.17673
623	BLOEMFONTEIN	16302	00000	-29.08415	26.20498
624	BLOEMFONTEIN	13021	00004	-29.10607	26.19321
625	BLOEMFONTEIN	26408	00017	-29.11653	26.20443
626	BLOEMFONTEIN	36604	00000	-29.11444	26.28816
627	BLOEMFONTEIN	36676	00000	-29.11622	26.28757
628	BLOEMFONTEIN	1816	00001	-29.09328	26.22886
629	BLOEMFONTEIN	36513	00000	-29.11662	26.2857
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631	BLOEMFONTEIN	36576	00000	-29.11584	26.28638
632	BLOEMFONTEIN	37524	00000	-29.18709	26.17068
633	BLOEMFONTEIN	13962	00000	-29.07487	26.23636
634	BLOEMFONTEIN	37289	00000	-29.18237	26.166
635	BLOEMFONTEIN	37334	00000	-29.18369	26.16585
636	BLOEMFONTEIN	37279	00000	-29.18299	26.16464
637	BLOEMFONTEIN	37397	00000	-29.1836	26.17058
638	BLOEMFONTEIN	37363	00000	-29.18408	26.16618
639	BLOEMFONTEIN	37175	00000	-29.18073	26.16634
640	BLOEMFONTEIN	37414	00000	-29.18337	26.16985
641	BLOEMFONTEIN	37381	00000	-29.18248	26.1694
642	BLOEMFONTEIN	37443	00000	-29.18385	26.16952
643	BLOEMFONTEIN	37163	00000	-29.18078	26.1675
644	BLOEMFONTEIN	37159	00000	-29.18114	26.16779
645	BLOEMFONTEIN	37131	00000	-29.18097	26.1684
646	BLOEMFONTEIN	37265	00000	-29.18312	26.16525
647	BLOEMFONTEIN	3261	00001	-29.10978	26.21575
648	BLOEMFONTEIN	9481	00000	-29.14235	26.19349
649	BLOEMFONTEIN	8622	00000	-29.12411	26.1813
650	BLOEMFONTEIN	8188	00000	-29.12307	26.17259
651	BLOEMFONTEIN	6424	00000	-29.08172	26.20707
652	BLOEMFONTEIN	5346	00000	-29.128	26.1786
653	BLOEMFONTEIN	8470	00000	-29.11804	26.17896
654	BLOEMFONTEIN	11499	00000	-29.15143	26.19842
655	BLOEMFONTEIN	5534	00001	-29.12988	26.18668
656	BLOEMFONTEIN	6908	00000	-29.13062	26.18258
657	BLOEMFONTEIN	2346	00000	-29.12162	26.199
658	BLOEMFONTEIN	11784	00000	-29.1566	26.20196
659	BLOEMFONTEIN	12045	00000	-29.15857	26.19864
660	BLOEMFONTEIN	9926	00000	-29.11191	26.21634
661	BLOEMFONTEIN	16163	00000	-29.15415	26.19362
662	BLOEMFONTEIN	22902	00000	-29.18119	26.17455
663	BLOEMFONTEIN	13211	00000	-29.10574	26.19669
664	BLOEMFONTEIN	20133	00000	-29.17164	26.17641
665	BLOEMFONTEIN	11573	00000	-29.151	26.20135
666	BLOEMFONTEIN	12533	00000	-29.0913	26.21126
667	BLOEMFONTEIN	21174	00000	-29.16215	26.16997
668	BLOEMFONTEIN	21184	00000	-29.16121	26.169
669	BLOEMFONTEIN	18753	00000	-29.12782	26.25313
670	BLOEMFONTEIN	17318	00000	-29.16854	26.18715
671	BLOEMFONTEIN	17268	00000	-29.16868	26.18512
672	BLOEMFONTEIN	22337	00000	-29.17913	26.17824
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674	BLOEMFONTEIN	21769	00000	-29.09989	26.16705
675	BLOEMFONTEIN	15333	00000	-29.15082	26.18005
676	BLOEMFONTEIN	20255	00000	-29.16115	26.17287
677	BLOEMFONTEIN	19183	00000	-29.15189	26.16477
678	BLOEMFONTEIN	18195	00000	-29.12819	26.16677
679	BLOEMFONTEIN	18411	00000	-29.15434	26.17973
680	BLOEMFONTEIN	20127	00000	-29.16845	26.17779
681	BLOEMFONTEIN	26444	00000	-29.09525	26.24872
682	LANGENHOVENPARK	1313	00000	-29.10403	26.16404
683	LANGENHOVENPARK	1114	00000	-29.10518	26.14647
684	BLOEMFONTEIN	37280	00000	-29.18283	26.16456
685	BLOEMFONTEIN	37239	00000	-29.18381	26.16464
686	BLOEMFONTEIN	8130	00000	-29.12097	26.17134
687	BLOEMFONTEIN	861	00001	-29.11127	26.22233
688	BLOEMFONTEIN	8684	00000	-29.12583	26.17971
689	BLOEMFONTEIN	11891	00000	-29.15669	26.19941
690	BLOEMFONTEIN	5964	00000	-29.0969	26.21404

691	BLOEMFONTEIN	8715	00000	-29.12303	26.18304
692	BLOEMFONTEIN	12597	00000	-29.09656	26.21007
693	BLOEMFONTEIN	6869	00000	-29.08556	26.25689
694	BLOEMFONTEIN	5886	00000	-29.12926	26.20043
695	BLOEMFONTEIN	8301	00000	-29.12452	26.16993
696	BLOEMFONTEIN	12099	00000	-29.16179	26.20083
697	BLOEMFONTEIN	10515	00000	-29.14324	26.19914
698	BLOEMFONTEIN	17484	00000	-29.17508	26.18972
699	BLOEMFONTEIN	9489	00000	-29.14269	26.19433
700	BLOEMFONTEIN	12206	00000	-29.15812	26.19594
701	BLOEMFONTEIN	12925	00000	-29.10113	26.19095
702	BLOEMFONTEIN	13703	00000	-29.13539	26.18525
703	BLOEMFONTEIN	11821	00000	-29.15611	26.20036
704	BLOEMFONTEIN	12346	00000	-29.09963	26.19485
705	BLOEMFONTEIN	14905	00000	-29.15378	26.18421
706	BLOEMFONTEIN	14229	00000	-29.14021	26.17083
707	BLOEMFONTEIN	14741	00000	-29.14608	26.19024
708	BLOEMFONTEIN	14817	00000	-29.15055	26.18737
709	BLOEMFONTEIN	21994	00000	-29.11026	26.23491
710	BLOEMFONTEIN	14526	00000	-29.13878	26.18121
711	BLOEMFONTEIN	14511	00000	-29.13796	26.18258
712	BLOEMFONTEIN	17801	00000	-29.16245	26.18392
713	BLOEMFONTEIN	14587	00000	-29.14208	26.1831
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715	BLOEMFONTEIN	13098	00000	-29.10242	26.19281
716	BLOEMFONTEIN	20291	00000	-29.15781	26.17542
717	BLOEMFONTEIN	14619	00000	-29.1398	26.18307
718	BLOEMFONTEIN	17582	00000	-29.17117	26.18602
719	BLOEMFONTEIN	15070	00000	-29.13264	26.19493
720	BLOEMFONTEIN	17247	00000	-29.16818	26.19284
721	BLOEMFONTEIN	18350	00000	-29.15616	26.18601
722	BLOEMFONTEIN	16065	00000	-29.15481	26.19576
723	BLOEMFONTEIN	14720	00000	-29.14734	26.18836
724	BLOEMFONTEIN	17359	00000	-29.16594	26.18927
725	BLOEMFONTEIN	19028	00000	-29.1302	26.26504
726	BLOEMFONTEIN	17641	00000	-29.17216	26.18835
727	BLOEMFONTEIN	18426	00000	-29.15532	26.18322
728	BLOEMFONTEIN	18257	00000	-29.12905	26.16688
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730	BLOEMFONTEIN	21713	00000	-29.09425	26.17151
731	BLOEMFONTEIN	22898	00000	-29.18112	26.17318
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733	BLOEMFONTEIN	21467	00002	-29.11969	26.21864
734	BLOEMFONTEIN	21519	00003	-29.11158	26.16673
735	BLOEMFONTEIN	19415	00000	-29.15053	26.16652
736	BLOEMFONTEIN	22301	00000	-29.17455	26.17569
737	BLOEMFONTEIN	18280	00000	-29.12982	26.16782
738	BLOEMFONTEIN	15863	00000	-29.08409	26.24583
739	BLOEMFONTEIN	21862	00000	-29.10825	26.16757
740	BLOEMFONTEIN	19558	00000	-29.10252	26.20202
741	BLOEMFONTEIN	22091	00000	-29.1525	26.19489
742	BLOEMFONTEIN	22407	00000	-29.18504	26.1783
743	BLOEMFONTEIN	20457	00000	-29.16959	26.17523
744	BLOEMFONTEIN	20994	00000	-29.15547	26.17127
745	BLOEMFONTEIN	26361	00003	-29.11193	26.20629
746	BLOEMFONTEIN	25058	00002	-29.12423	26.19896
747	LANGENHOVENPARK	1062	00000	-29.1034	26.14919
748	LANGENHOVENPARK	965	00000	-29.10468	26.15456
749	LANGENHOVENPARK	209	00000	-29.08797	26.15814
750	LANGENHOVENPARK	894	00000	-29.10082	26.14936

751	LANGENHOVENPARK	674	00000	-29.09993	26.14968
752	BLOEMFONTEIN	2394	00000	-29.11396	26.20032
753	BLOEMFONTEIN	1766	00004	-29.09757	26.24603
754	BLOEMFONTEIN	1785	00005	-29.09285	26.24275
755	BLOEMFONTEIN	229	00000	-29.10672	26.21171
756	BLOEMFONTEIN	514	00000	-29.11401	26.2134
757	BLOEMFONTEIN	75	00000	-29.09362	26.1498
758	LANGENHOVENPARK	698	00002	-29.09891	26.15197
759	LANGENHOVENPARK	193	00000	-29.09215	26.15772
760	BLOEMFONTEIN	1697	00006	-29.10686	26.23632
761	BLOEMFONTEIN	2071	00000	-29.09925	26.22463
762	BLOEMFONTEIN	4141	00000	-29.08898	26.23921
763	BLOEMFONTEIN	2496	00000	-29.09761	26.20372
764	BLOEMFONTEIN	16414	00000	-29.07917	26.20203
765	BLOEMFONTEIN	194	00000	-29.108	26.21112
766	BLOEMFONTEIN	16950	00000	-29.08535	26.22869
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768	BLOEMFONTEIN	10235	00000	-29.13259	26.1811
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770	BLOEMFONTEIN	2466	00000	-29.11588	26.20026
771	BLOEMFONTEIN	3757	00000	-29.11892	26.19763
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773	BLOEMFONTEIN	3378	00000	-29.09299	26.25111
774	BLOEMFONTEIN	6234	00000	-29.08644	26.21697
775	BLOEMFONTEIN	6547	00000	-29.08377	26.21935
776	BLOEMFONTEIN	6074	00000	-29.09019	26.21817
777	BLOEMFONTEIN	6034	00000	-29.09383	26.2176
778	LANGENHOVENPARK	1032	00000	-29.10674	26.15414
779	LANGENHOVENPARK	1199	00000	-29.09746	26.15815
780	BLOEMFONTEIN	8638	00000	-29.12483	26.18337
781	BLOEMFONTEIN	9224	00000	-29.14356	26.19159
782	BLOEMFONTEIN	8905	00000	-29.12152	26.18484
783	BLOEMFONTEIN	8170	00000	-29.12297	26.1716
784	BLOEMFONTEIN	1964	00052	-29.12102	26.22818
785	BLOEMFONTEIN	9321	00000	-29.14441	26.19337
786	BLOEMFONTEIN	4049	00000	-29.09287	26.20614
787	BLOEMFONTEIN	8605	00000	-29.12422	26.17788
788	BLOEMFONTEIN	9288	00000	-29.14434	26.19172
789	BLOEMFONTEIN	5531	00001	-29.12959	26.18618
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791	BLOEMFONTEIN	19031	00000	-29.12935	26.26518
792	BLOEMFONTEIN	29588	00000	-29.10846	26.1562
793	BLOEMFONTEIN	3616	00000	-29.09123	26.24644
794	BLOEMFONTEIN	12556	00000	-29.09197	26.21202
795	LANGENHOVENPARK	294	00000	-29.09528	26.16007
796	BLOEMFONTEIN	6728	00002	-29.08208	26.21766
797	SHELLYVALE	508	00101	-29.06509	26.20295
798	BLOEMFONTEIN	15937	00000	-29.0961	26.20897
799	BLOEMFONTEIN	1817	00001	-29.09301	26.22778
800	LANGENHOVENPARK	7	00001	-29.09515	26.14851
801	LANGENHOVENPARK	1013	00000	-29.10543	26.15368
802	BLOEMFONTEIN	13916	00001	-29.07847	26.21046
803	BLOEMFONTEIN	18331	00000	-29.1126	26.2331
804	BLOEMFONTEIN	2696	00000	-29.10097	26.20827
805	BLOEMFONTEIN	1413	00001	-29.1209	26.20249
806	BLOEMFONTEIN	6837	00000	-29.12962	26.18274
807	BLOEMFONTEIN	4276	00000	-29.08847	26.24684
808	BLOEMFONTEIN	4191	00000	-29.08899	26.24469
809	BLOEMFONTEIN	10230	00000	-29.13269	26.18227
810	BLOEMFONTEIN	8842	00000	-29.12436	26.18704

811	BLOEMFONTEIN	7582	00000	-29.08726	26.22843
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813	BLOEMFONTEIN	6957	00000	-29.13116	26.19081
814	BLOEMFONTEIN	6053	00000	-29.09264	26.21784
815	BLOEMFONTEIN	13770	00000	-29.13788	26.18752
816	BLOEMFONTEIN	6913	00000	-29.13032	26.18068
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820	BLOEMFONTEIN	15676	00000	-29.15488	26.17717
821	BLOEMFONTEIN	20048	00000	-29.15732	26.17289
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823	BLOEMFONTEIN	13048	00000	-29.10112	26.18938
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825	BLOEMFONTEIN	8306	00000	-29.12541	26.16951
826	BLOEMFONTEIN	14213	00000	-29.13898	26.17126
827	BLOEMFONTEIN	13844	00000	-29.14138	26.18562
828	BLOEMFONTEIN	13392	00001	-29.10788	26.22858
829	BLOEMFONTEIN	18077	00000	-29.15959	26.18603
830	BLOEMFONTEIN	16263	00000	-29.0803	26.20594
831	BLOEMFONTEIN	22502	00000	-29.17974	26.1744
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833	BLOEMFONTEIN	22627	00000	-29.17832	26.17094
834	BLOEMFONTEIN	20607	00001	-29.14542	26.16391
835	BLOEMFONTEIN	20278	00000	-29.16118	26.17454
836	BLOEMFONTEIN	19463	00000	-29.14623	26.16952
837	BLOEMFONTEIN	17253	00000	-29.16749	26.19289
838	BLOEMFONTEIN	17177	00000	-29.17582	26.18796
839	LANGENHOVENPARK	393	00000	-29.09861	26.16315
840	BLOEMFONTEIN	814	00001	-29.1176	26.21997
841	BLOEMFONTEIN	26434	00000	-29.08832	26.23372
842	BLOEMFONTEIN	29784	00000	-29.11083	26.1473
843	LANGENHOVENPARK	144	00002	-29.08899	26.15368
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846	BLOEMFONTEIN	37387	00000	-29.18293	26.16981
847	BLOEMFONTEIN	15890	00000	-29.07961	26.20264
848	BLOEMFONTEIN	36187	00000	-29.11593	26.28334
849	BLOEMFONTEIN	10847	00000	-29.1468	26.2028
850	BLOEMFONTEIN	3228	00002	-29.11953	26.21287
851	BLOEMFONTEIN	1949	00004	-29.11506	26.22782
852	BLOEMFONTEIN	19308	00000	-29.15428	26.17358
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857	BLOEMFONTEIN	16255	00000	-29.07852	26.20546
858	SHELLYVALE	508	00073	-29.06458	26.20124
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867	BLOEMFONTEIN	2499	00000	-29.0981	26.20412
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869	BLOEMFONTEIN	26657	00004	-29.08198	26.22099
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871	BLOEMFONTEIN	2154	00000	-29.10605	26.24063
872	BLOEMFONTEIN	9363	00000	-29.13482	26.19632
873	BLOEMFONTEIN	1983	00002	-29.09664	26.22257
874	BLOEMFONTEIN	1800	00000	-29.09107	26.23105
875	LANGENHOVENPARK	32	00000	-29.0969	26.14979
876	BLOEMFONTEIN	1119	00001	-29.12141	26.22526
877	BLOEMFONTEIN	4239	00000	-29.08937	26.24526
878	HEIDEDAL	23220	00000	-29.13226	26.2775
879	BLOEMFONTEIN	1964	00124	-29.11182	26.23548
880	BLOEMFONTEIN	4288	00000	-29.08723	26.24863
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884	BLOEMFONTEIN	15890	00001	-29.07933	26.20264
885	BLOEMFONTEIN	14004	00000	-29.10531	26.2026
886	BLOEMFONTEIN	13215	00000	-29.10616	26.19783
887	BLOEMFONTEIN	1764	00001	-29.09456	26.24451
888	BLOEMFONTEIN	2786	00000	-29.09747	26.22817
889	LANGENHOVENPARK	500	00000	-29.10233	26.15946
890	BLOEMFONTEIN	21178	00000	-29.16255	26.16878
891	BLOEMFONTEIN	1039	00001	-29.11952	26.22408
892	BLOEMFONTEIN	3527	00000	-29.1267	26.20812
893	BLOEMFONTEIN	10492	00000	-29.14272	26.20108
894	BLOEMFONTEIN	18253	00000	-29.1291	26.16571
895	BLOEMFONTEIN	6685	00000	-29.07998	26.21164
896	BLOEMFONTEIN	9767	00000	-29.1343	26.19722
897	BLOEMFONTEIN	13648	00000	-29.13687	26.18049
898	BLOEMFONTEIN	2280	00000	-29.12356	26.22217
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907	BLOEMFONTEIN	19936	00000	-29.11486	26.16453
908	BLOEMFONTEIN	21534	00000	-29.10859	26.16462
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910	BLOEMFONTEIN	18049	00000	-29.1615	26.1852
911	BLOEMFONTEIN	20031	00000	-29.15667	26.17305
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913	BLOEMFONTEIN	12433	00000	-29.10076	26.19318
914	BLOEMFONTEIN	11720	00000	-29.15466	26.2031
915	BLOEMFONTEIN	14322	00000	-29.14271	26.17247
916	BLOEMFONTEIN	19569	00000	-29.10199	26.20133
917	BLOEMFONTEIN	4391	00000	-29.08888	26.25018
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919	LANGENHOVENPARK	100	00000	-29.09324	26.15328
920	BLOEMFONTEIN	8528	00000	-29.12101	26.18157
921	BLOEMFONTEIN	14223	00000	-29.14021	26.17123
922	BLOEMFONTEIN	20605	00000	-29.14469	26.16414
923	BLOEMFONTEIN	24765	00000	-29.11908	26.2217
924	BLOEMFONTEIN	11773	00000	-29.15269	26.19949
925	BLOEMFONTEIN	11954	00000	-29.16031	26.20265
926	LANGENHOVENPARK	1374	00000	-29.09844	26.16491
927	BLOEMFONTEIN	20652	00000	-29.14646	26.16585
928	BLOEMFONTEIN	12205	00000	-29.15836	26.19608
929	BLOEMFONTEIN	19221	00000	-29.14979	26.16528
930	LANGENHOVENPARK	1000	00000	-29.10478	26.1495

931	BLOEMFONTEIN	8927	00000	-29.11992	26.18799
932	BLOEMFONTEIN	15201	00000	-29.14547	26.18292
933	BLOEMFONTEIN	20200	00000	-29.16212	26.17433
934	BLOEMFONTEIN	13821	00000	-29.14012	26.18467
935	BLOEMFONTEIN	11741	00000	-29.15512	26.20307
936	BLOEMFONTEIN	18799	00000	-29.12742	26.25703
937	LANGENHOVENPARK	211	00000	-29.08825	26.15857
938	BLOEMFONTEIN	9501	00000	-29.14108	26.19036
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940	LANGENHOVENPARK	721	00000	-29.10124	26.15289
941	BLOEMFONTEIN	4536	00000	-29.08752	26.25359
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945	PENTAGON PARK	63	00000	-29.07551	26.22768
946	BLOEMFONTEIN	9777	00000	-29.13627	26.20058
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950	BLOEMFONTEIN	19998	00000	-29.11543	26.1677
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953	BLOEMFONTEIN	549	00001	-29.10879	26.21945
954	BLOEMFONTEIN	5947	00000	-29.09808	26.21479
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956	BLOEMFONTEIN	13491	00000	-29.13568	26.18311
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962	BLOEMFONTEIN	464	00006	-29.10394	26.24103
963	BLOEMFONTEIN	29680	00000	-29.10933	26.15633
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965	BLOEMFONTEIN	29854	00000	-29.11351	26.14432
966	BLOEMFONTEIN	29936	00000	-29.11692	26.15499
967	BLOEMFONTEIN	16351	00000	-29.08595	26.20311
968	SHELLYVALE	509	00000	-29.06666	26.20026
969	BLOEMFONTEIN	24797	00007	-29.11951	26.2133
970	BLOEMFONTEIN	1700	00004	-29.10525	26.23795
971	BLOEMFONTEIN	21988	00000	-29.15915	26.20462
972	BLOEMFONTEIN	6019	00000	-29.09769	26.21659
973	BLOEMFONTEIN	15435	00000	-29.14675	26.17886
974	BLOEMFONTEIN	2682	00000	-29.10275	26.21058
975	BLOEMFONTEIN	26682	00000	-29.12898	26.25726
976	BLOEMFONTEIN	9614	00000	-29.13726	26.19242
977	LANGENHOVENPARK	926	00000	-29.10228	26.15384
978	BLOEMFONTEIN	17437	00000	-29.17111	26.19279
979	BLOEMFONTEIN	21129	00000	-29.16474	26.16969
980	HEIDEDAL	16673	00000	-29.13409	26.2637
981	BLOEMFONTEIN	12832	00001	-29.11732	26.17669
982	BLOEMFONTEIN	10809	00000	-29.14286	26.20174
983	BLOEMFONTEIN	20295	00000	-29.15818	26.17432
984	BLOEMFONTEIN	768	00002	-29.117	26.21698
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987	BLOEMFONTEIN	1796	00005	-29.0923	26.23222
988	BLOEMFONTEIN	15279	00000	-29.14877	26.18368
989	BLOEMFONTEIN	26388	00000	-29.08643	26.19649
990	BLOEMFONTEIN	37183	00000	-29.18156	26.16629

991	LANGENHOVENPARK	58	00000	-29.09318	26.15125
992	BLOEMFONTEIN	5215	00009	-29.09562	26.20347
993	BLOEMFONTEIN	26361	00001	-29.11135	26.2044
994	BLOEMFONTEIN	1791	00005	-29.0918	26.23584
995	BLOEMFONTEIN	7395	00000	-29.08083	26.2452
996	BLOEMFONTEIN	7984	00000	-29.08313	26.23898
997	BLOEMFONTEIN	147	00001	-29.10831	26.20585
998	BLOEMFONTEIN	1805	00000	-29.09125	26.22996
999	BLOEMFONTEIN	2617	00000	-29.09942	26.20942
1000	BLOEMFONTEIN	242	00000	-29.10583	26.20744

Development footprint¹ details:

No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/1/1093	Solar PV	Approved	1
2	12/12/20/1972/1	Solar PV	Approved	26.4
3	12/12/20/1972	Solar PV	Approved	26.4
4	14/12/16/3/3/1/615	Solar PV	Approved	28
5	14/12/16/3/3/2/360	Solar PV	Approved	28
6	14/12/16/3/3/1/1092	Solar PV	Approved	1
7	12/12/20/1972/2	Solar PV	Approved	27.5
8	14/12/16/3/3/1/564	Solar PV	Approved	2.4

¹ "development footprint", means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

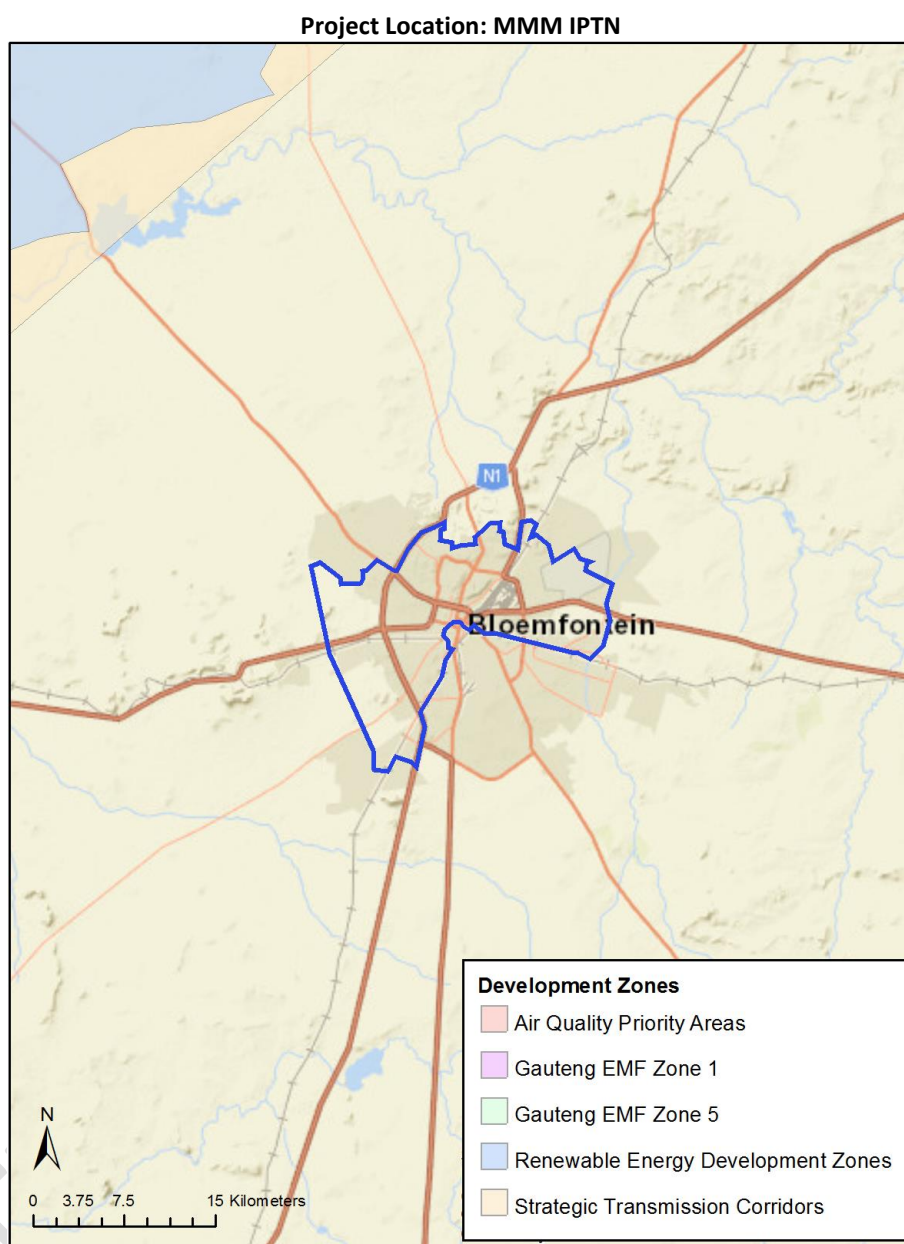
The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: Infrastructure | Transport Services | Roads | Public | Roads - Public.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

No intersection with any development zones found.

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme	X			
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme		X		

Civil Aviation Theme		X		
Paleontology Theme		X		
Defence Theme	X			
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

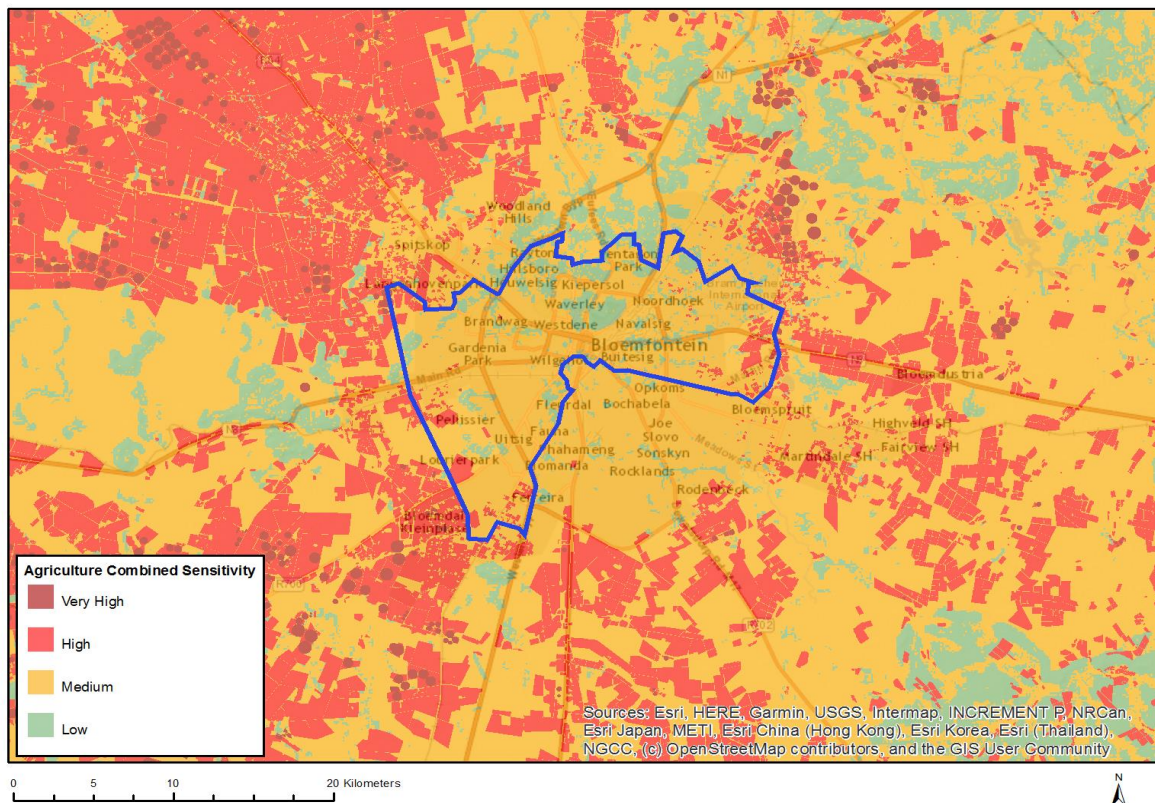
Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

N o	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/DraftAgricultureProtocol.pdf
2	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
3	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
4	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
5	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
6	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
7	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
8	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
9	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
10	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf
11	Ambient Air Quality Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Assessment/General/Appendix6.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

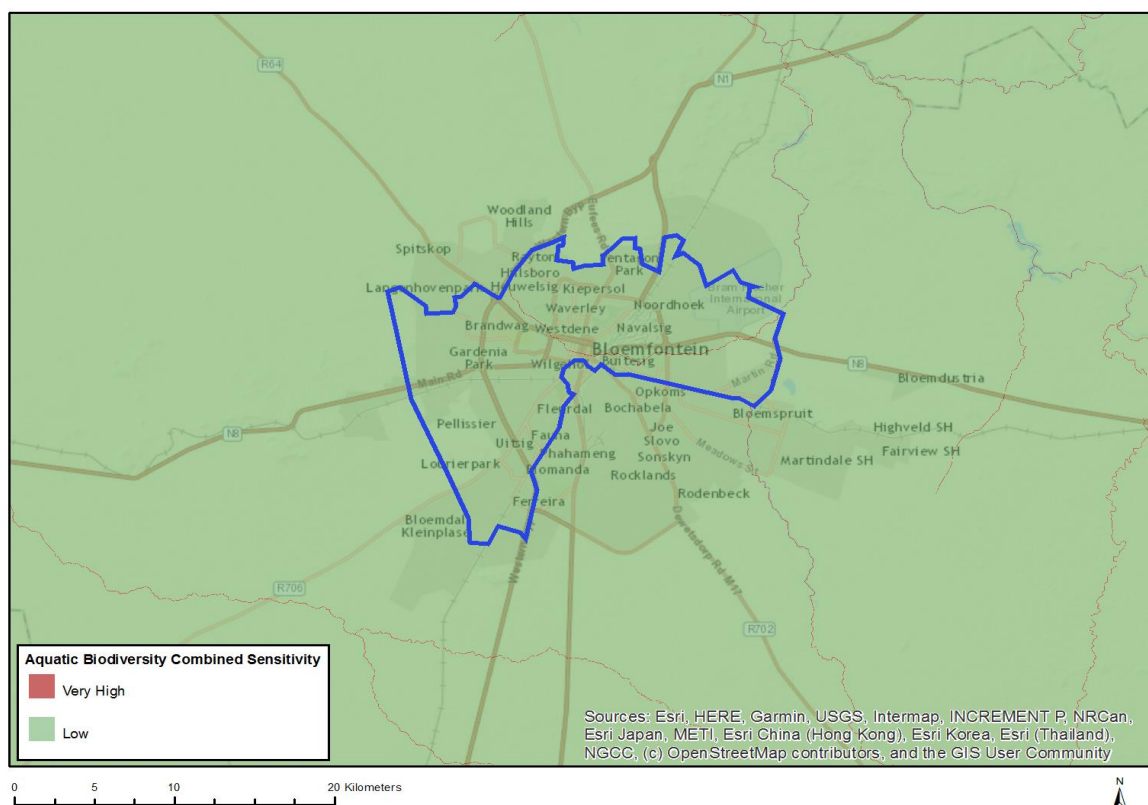


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Small Holdings;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Small Holdings;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
High	Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Pivot Irrigation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Pivot Irrigation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

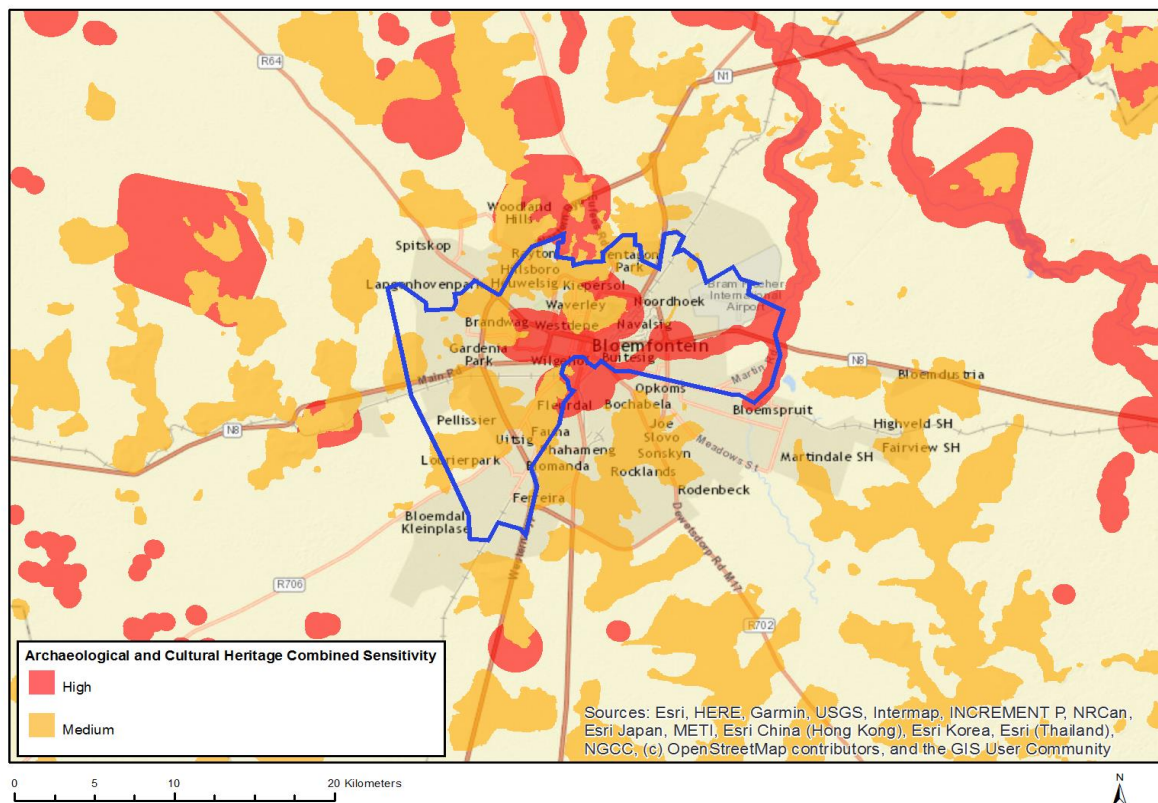


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity Areas
Very High	CBA,River,Bloemspruit
Very High	CBA,River,Renosterspruit

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

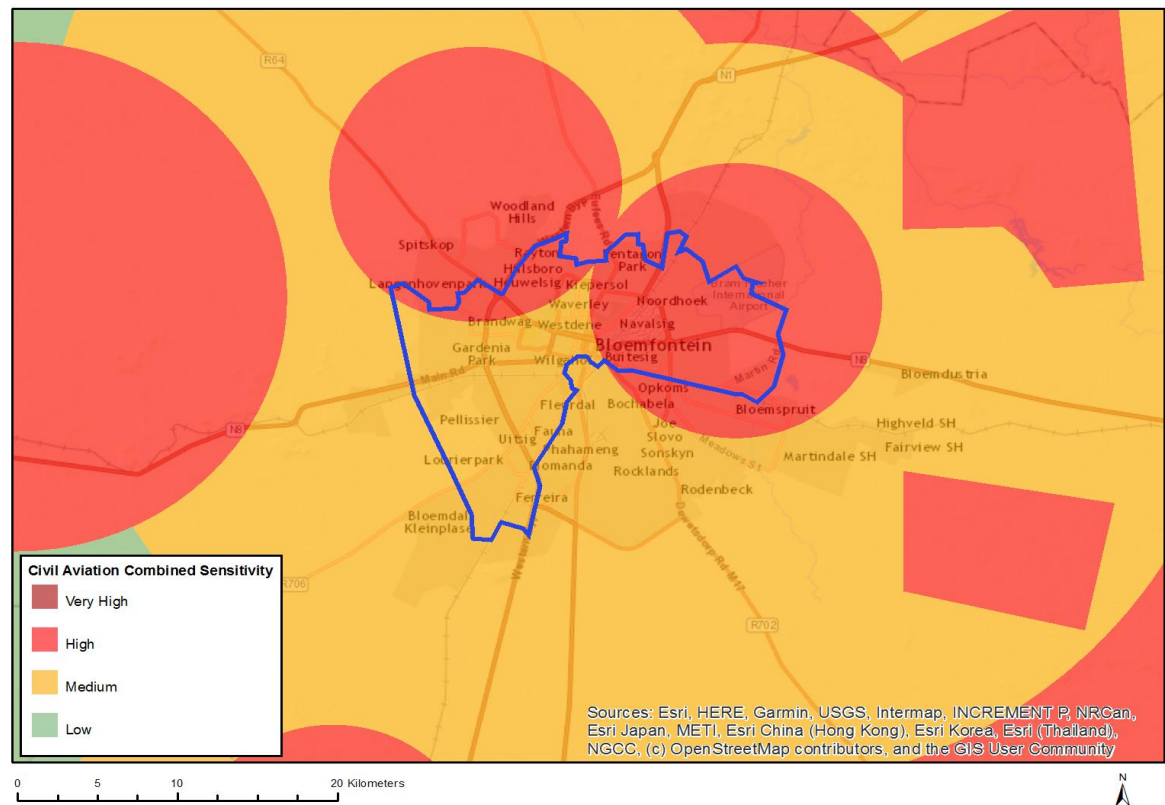


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 500 m of an important river
High	Within 500 m of a heritage site
High	Within protected area
High	Within 1 km of a protected area
High	Within 500 m of a provincial heritage site
Medium	Mountain or ridge

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

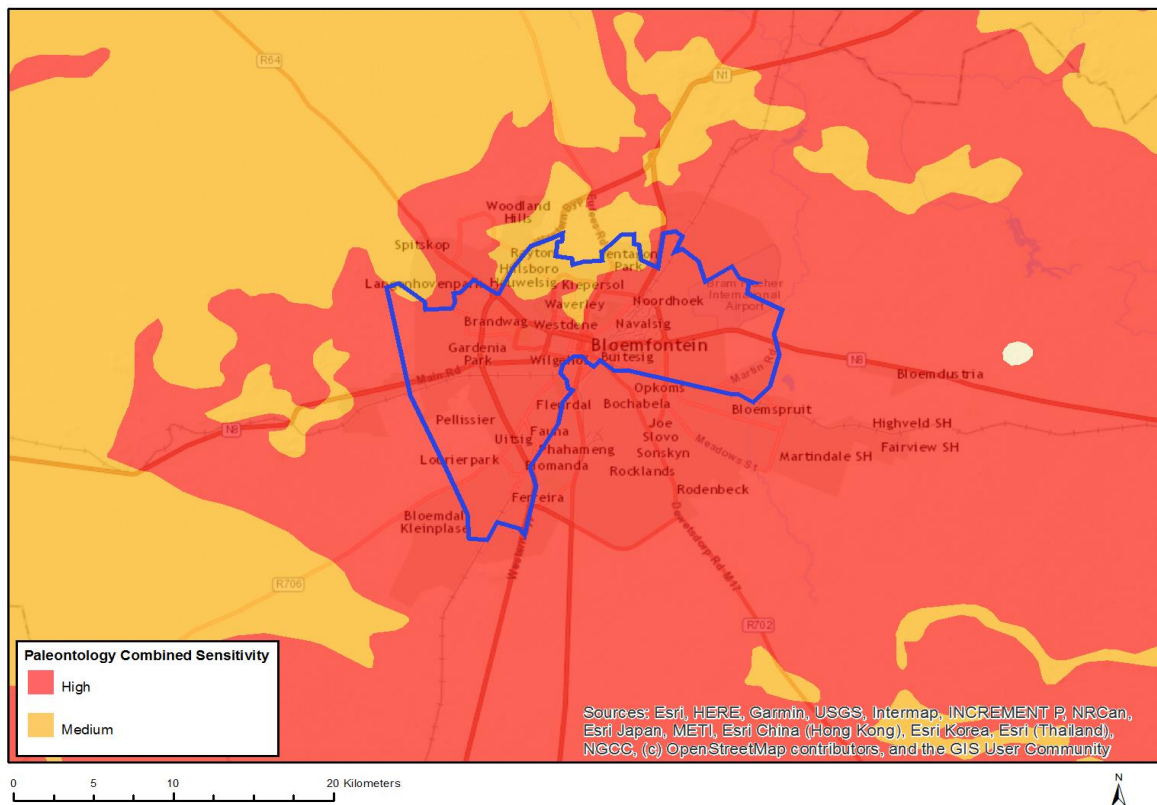


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 15 km of a civil aviation radar
High	Within 8 km of other civil aviation aerodrome
Medium	Within 5 km of an air traffic control or navigation site
Medium	Between 15 and 35 km from a civil aviation radar
Medium	Between 8 and 15 km of other civil aviation aerodrome

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

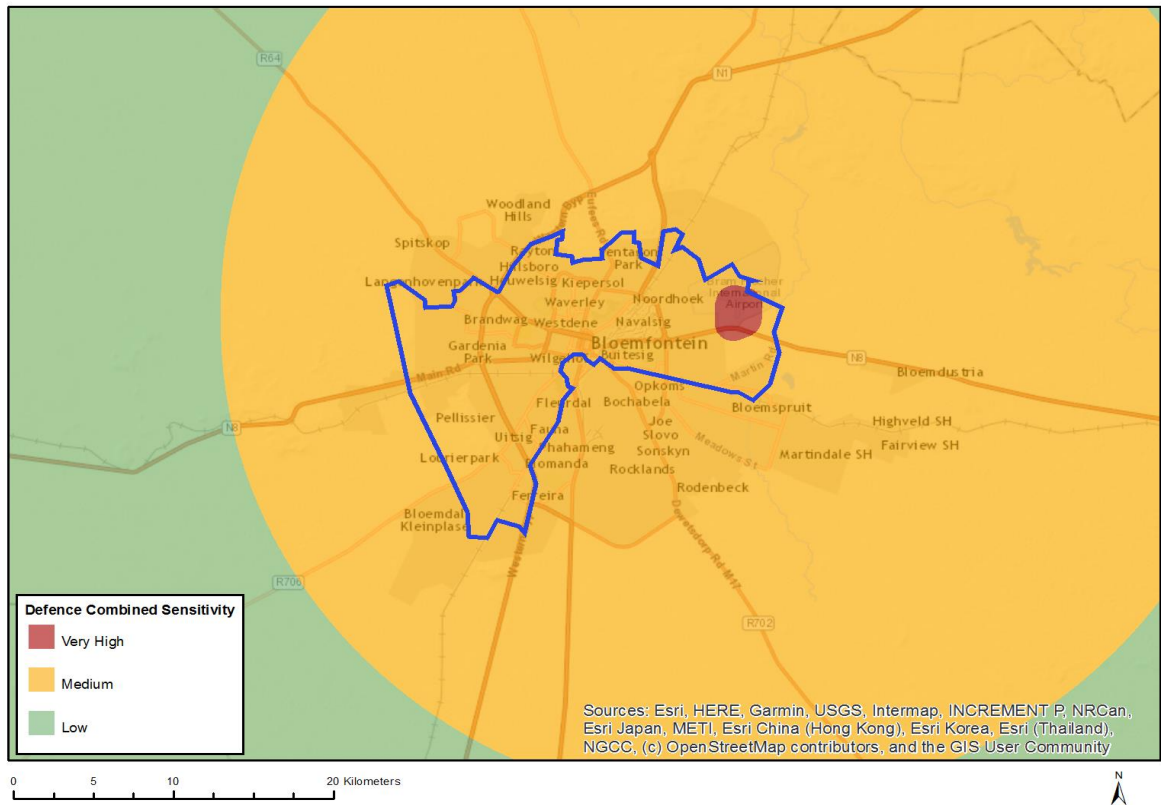


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Rock units with a high paleontological sensitivity
Medium	Rock units with a medium paleontological sensitivity

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

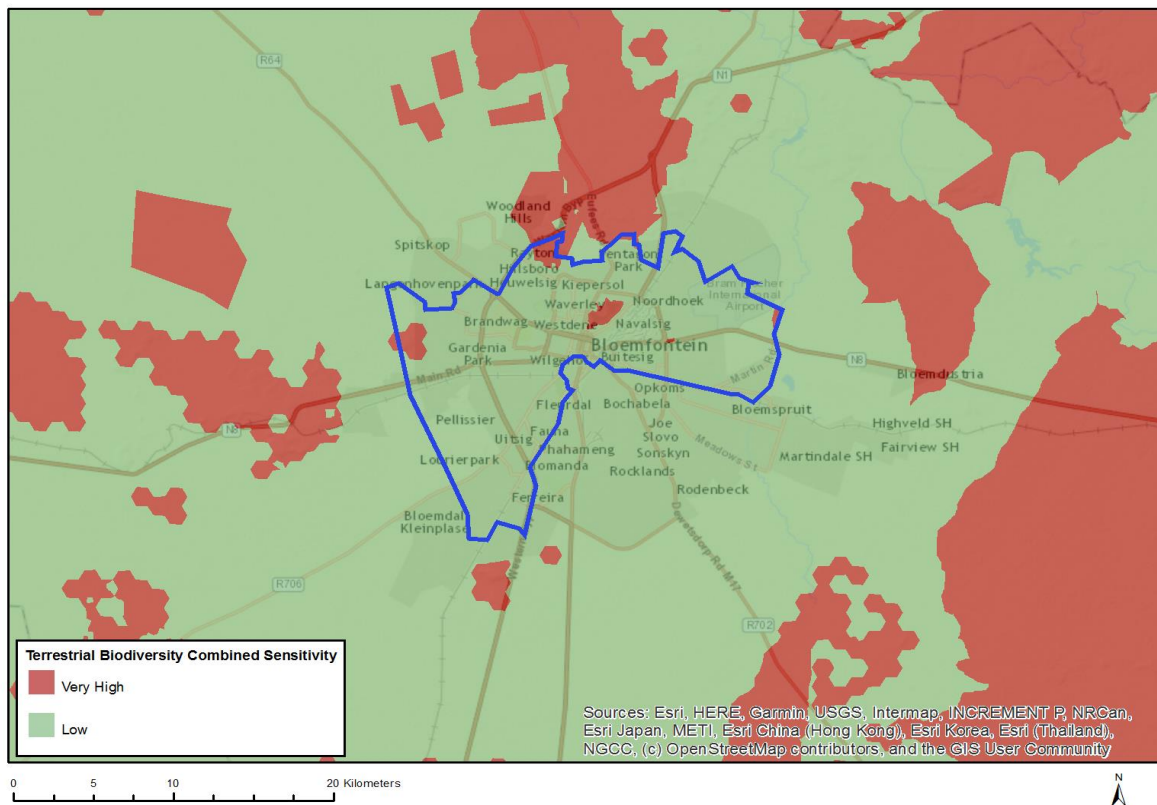


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Defence Site
Very High	Defence Site

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	None
Very High	Protected area
Very High	CBA
Very High	CBA,FEPA
Very High	CBA,Conservation area,Protected area,FEPA,
Very High	CBA,Conservation area,Protected area ,FEPA,Focus area for PAES