



MANGAUNG IPTN – ENVIRONMENTAL SCREENING REPORT

ENVIRONMENTAL SCREENING REPORT FOR THE CITY-WIDE NETWORK (MAPHISA CORRIDOR), AS PART OF THE INTEGRATED PUBLIC TRANSPORT NETWORK IN MANGAUNG METROPOLITAN MUNICIPALITY, FREE STATE PROVINCE



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QUALITY REVIEW

Report Heading: Environmental Screening Report for the City-Wide Network (Maphisa Corridor), as part of the Integrated Public Transport Network, 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 National Environmental Management Act (107 of 1998) 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 and 3 of 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
DESTEA	Department of Economic, Small Business Development, Tourism and Environmental Affairs
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
ESA	Ecological Support Areas
GIS	Geographical Information Systems
IPTN	Integrated Public Transport System
MMM	Mangaung Metropolitan Municipality
NDOT	National Department of Transport
NEMA	National Environmental Management Act (Act 107 of 1998)
NEM:BA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NWA	National Water Act (Act 36 of 1998)
NMT	Non-Motorised Transport
FSPHRA	Free State Provincial Heritage Resource Agency
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;
- 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 Maphisa Corridor which forms part of the City Wide Integrated Public Transport Plan (CWIPTP). 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.

In order to determine the nature of considerations that must be made prior to maintenance and rehabilitation of existing roads, construction of new routes and the erection of bus stops and shelter along the Maphisa Corridor; ground truthing of the site was undertaken on the 30th of August 2019. It must be noted that the routes are in the jurisdiction of MMM and within an urban edge. The proposed new roads fall within Ecological Support Areas as defined by the competent authority, hence listed

activities from the NEMA 2014 EIA regulations (as amended) will be triggered. In addition, the occurrence of pockets of wetlands within the Corridor and the Klein River (which is traversed by the proposed routes at various locations) will require a Water Use Authorisation. This application process will have to be undertaken in consultation with regional DWS in order to obtain guidance on the required process.

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

1.1 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. The strategy proposes the implementation of Integrated Rapid Public Transport Networks (IRPTN) in 12 (now 13) South African cities and is driven by the National Department of Transport (NDoT) in MMM. 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. The project is to be implemented in a number of phases over the next decade.

There has been 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. However, the primary aim of *Hauweng* is to incrementally transform the city's current public transport system to a multi-modal, integrated, high-quality, affordable, universally accessible, safe and reliable commuter service. MMM plans to achieve this aim through the provision of an integrated, high-quality, safe and affordable public transport system to its communities.

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;
- 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 **Maphisa** 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 will provide 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 comprehensive 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 the 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.

1.2 Assumptions, Gaps and Limitations

The assessment is based on information gathered during the site visit and the review of available information. No specialist field assessment or data collection was undertaken to verify site 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.

Ground truthing was undertaken on the 30th of August 2019, however all areas of environmental sensitivity were not visited, hence this report also includes a desktop assessment for some of the environmental sensitive areas. Ground truthing of the entire Corridor will be undertaken at a later stage once the project unfolds.

2. PROJECT LOCATION

The proposed site for the network is located within the jurisdiction Mangaung Metropolitan Municipality within the urban edge of Mangaung township, 5km to the south-east of Bloemfontein town. The OR Tambo road transverses the proposed site on the western section and the network centre coordinates are 29°10'05.2"S, 26°13'35.5"E. The site for the proposed network starts from Hanger road, which leads to Fort Hare and Harvey roads. In the south-western direction, the Fort Hare road then becomes Maphisa road, which joins Moshoeshoe road. **Figure 1** shows the geographic extent of the site, which comprises of the proposed network.

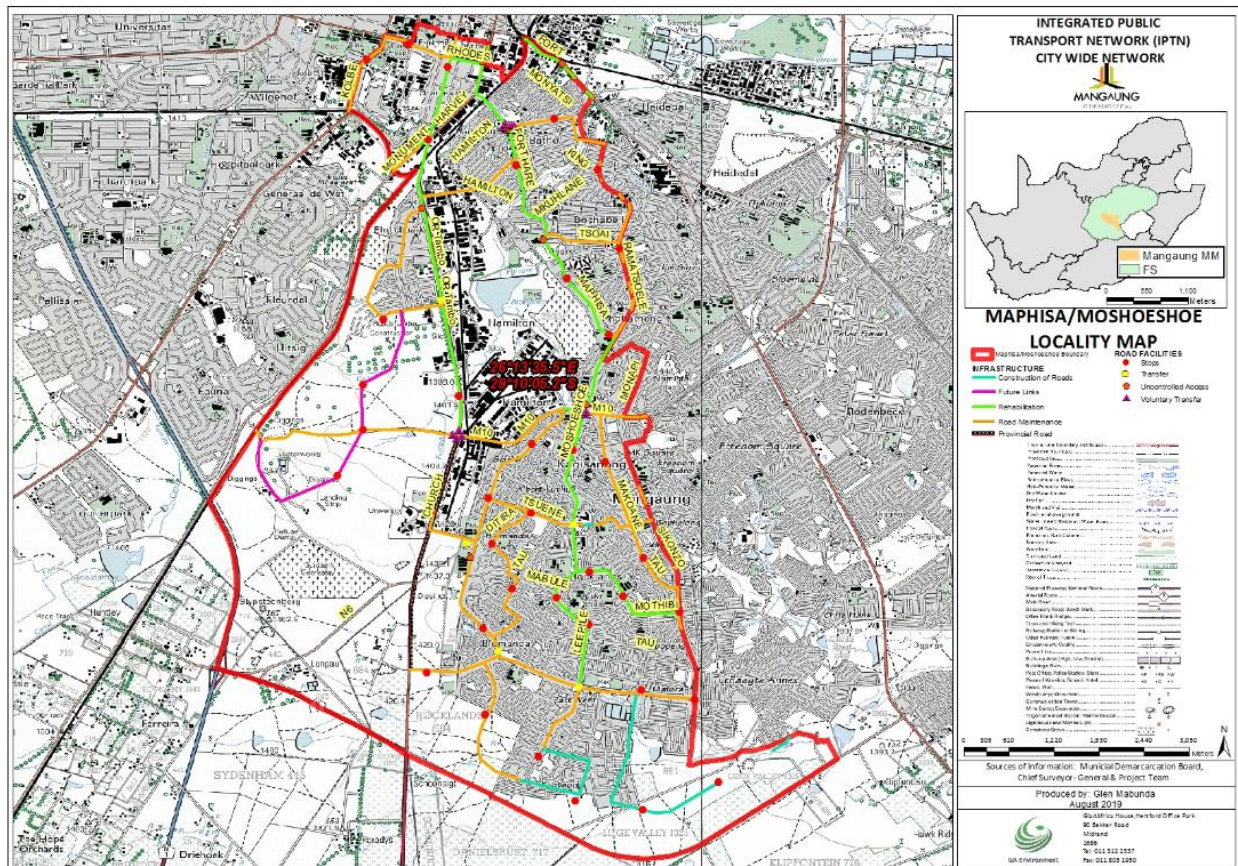


Figure 1: Locality Map of Maphisa showing the proposed Corridor

3. PROJECT DESCRIPTION

According to the CWIPTNP (2019) the Maphisa Corridor will be comprised of the following infrastructure:

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

The Architect impression of 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 during the finalization of this report.

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; and • Station access points/gates. 	
4. Transfers High Capacity	



Figure 2: The conditions of some of the fully operational roads proposed for the Maphisa Corridor

Although the tarred roads were easily drivable, road rehabilitation and maintenance activities (see **Figure 3**) were in progress on some of the roads that are proposed for the Maphisa Corridor. It must be noted that street lighting as well as electricity infrastructure does exist within the Corridor.



Figure 3: Maintenance of the storm water infrastructure noted along one of the roads within the Maphisa Corridor

Where resurfacing of the roads is proposed, the existing alignment is to be followed as far as possible to avoid changes to the road reserve boundaries.

Furthermore, during the ground truthing, it was observed that the proposed construction of a new road at Tsuene Street will cut across already established houses (refer to **Figure 4**). The Systems Planning Work Stream was informed of such observation, the Work Stream then confirm that the proposed network was re-routed to the existing road reserve (**Figure 5**)



Figure 4: A residential property situated adjacent Tsuene Street where the construction of a new road is proposed



Figure 5: Amended Route provided by Systems Planning

4.2 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 proposed site. 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 based desktop study, the proposed site for the Maphisa Corridor is situated within a degraded area and does not fall within a CBA, ESA or any protected area (see **Figure 6** for the Sensitivity map of the proposed site).

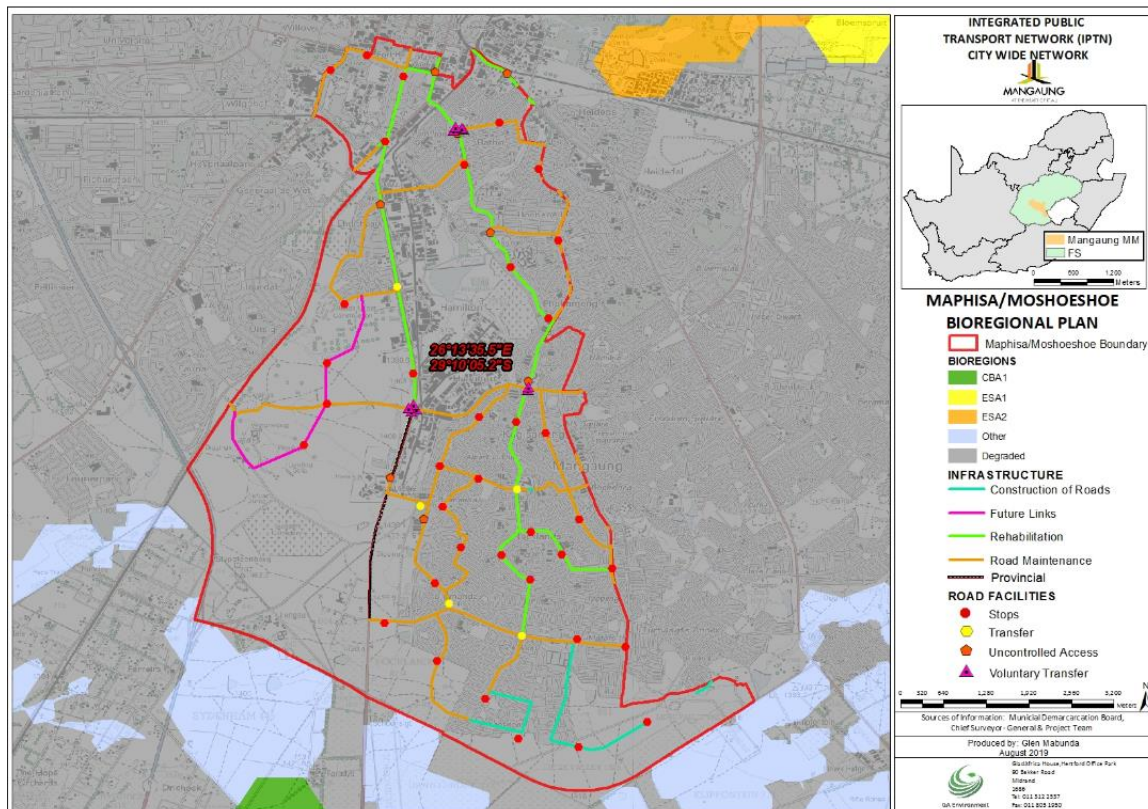


Figure 6: Sensitivity Map for Maphisa Corridor

4.3 Geology and Soils

A desktop-based assessment with the use of shapefiles from the National Department of Rural Development and Land Reform was undertaken. Based on the assessment, the site is largely underlain by Mudstone. See **Figure 7** for the Geology map of the site.

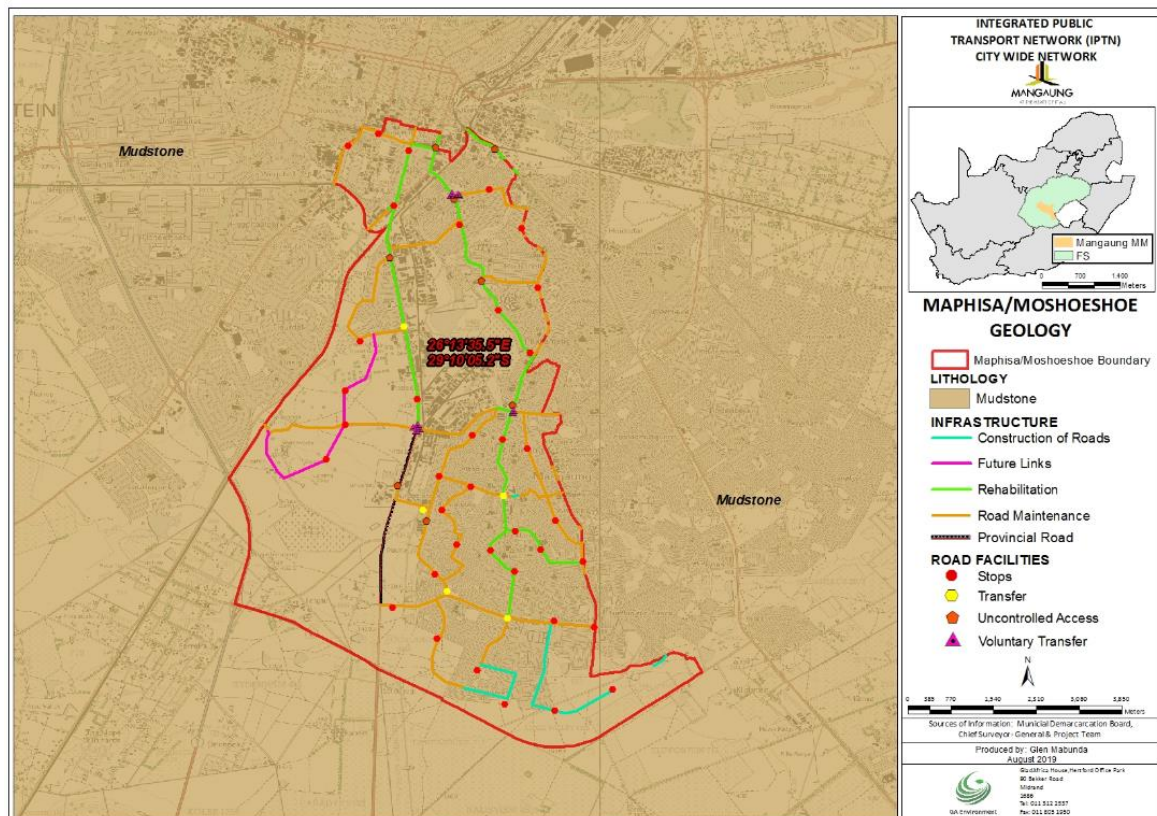


Figure 7: Geology Map for Maphisa Corridor

Since the proposed project also includes the construction of roads, extensive knowledge on the geology of the site will be required in order to determine the founding conditions and pavement designs. It was noted through the GIS based desktop study that there are no dolomitic conditions identified in the network area. A Geotechnical Assessment must be undertaken to determine potential stability issues in the study area. It must be noted that this assessment does not fall within the scope of GA Environment.

4.4 Hydrological Conditions

The proposed Corridor is located in the Upper Orange Water Management Area (WMA) and falls within Quaternary Catchment C52F. According to the desktop assessment using the GIS data, an unknown river runs through the township and the roads forming part of Maphisa Corridor will traverse this river at various locations. Pockets of wetlands are also noted at various locations within the Corridor (see **Figure 8**). Based on the information provided by the Systems planning Work Stream, approximately two new roads (towards the south) will be constructed in this Corridor. The two roads fall within the DWS regulated area (within 500m radius from a wetland). In addition, the proposed road network (rehabilitation of roads) will traverse the identified wetlands mainly within the central section of the Corridor.

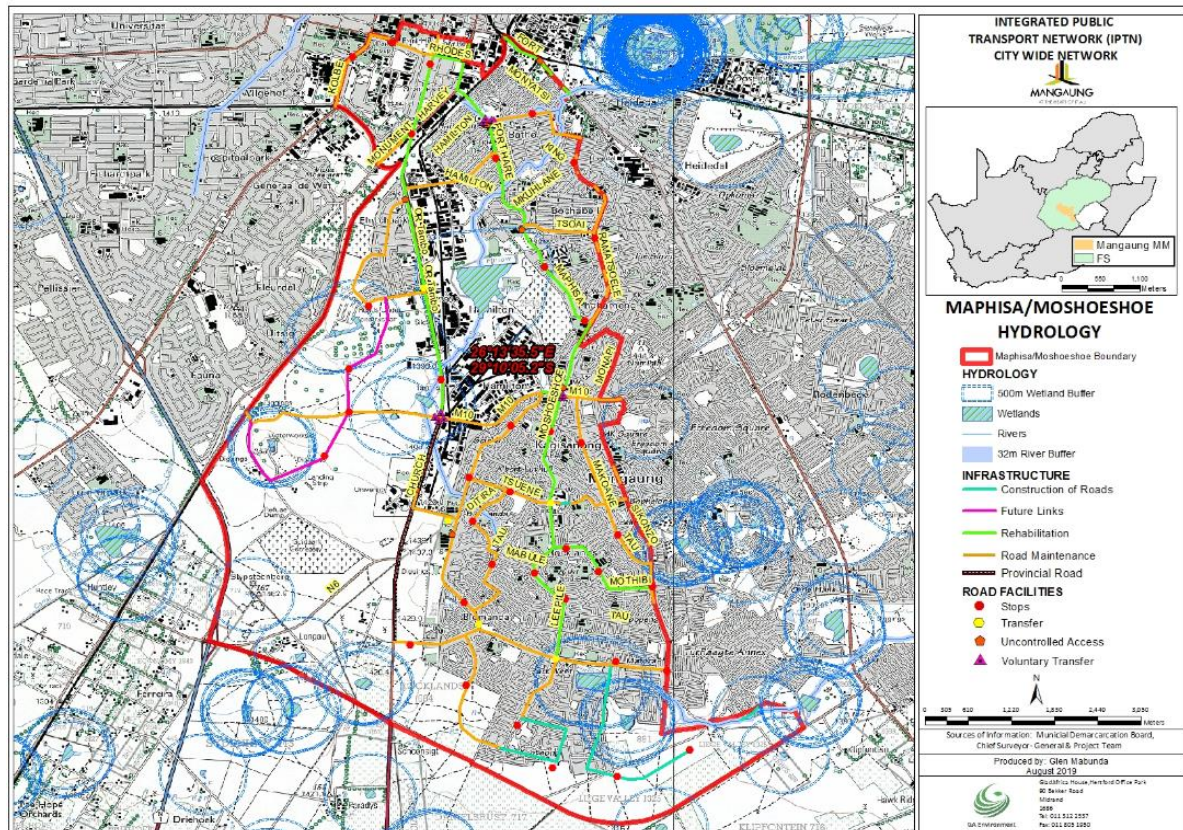


Figure 8: Maphisa Corridor's Hydrology Map

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 Assessment and Delineation; and
- Aquatic Assessment.

The legislation governing any activities within the watercourse is discussed in **Section 5.2** of this Screening Report.

4.5 Fauna and Flora

According to the Mucina & Rutherford's (2006), most of the Corridor site is located within the *Bloemfontein Dry Grassland (Gh 5)* (which is considered endangered) vegetation unit and the *Winburg Grassy Shrubland (Gh 7)* which is considered Least threatened (see **Figure 9**).

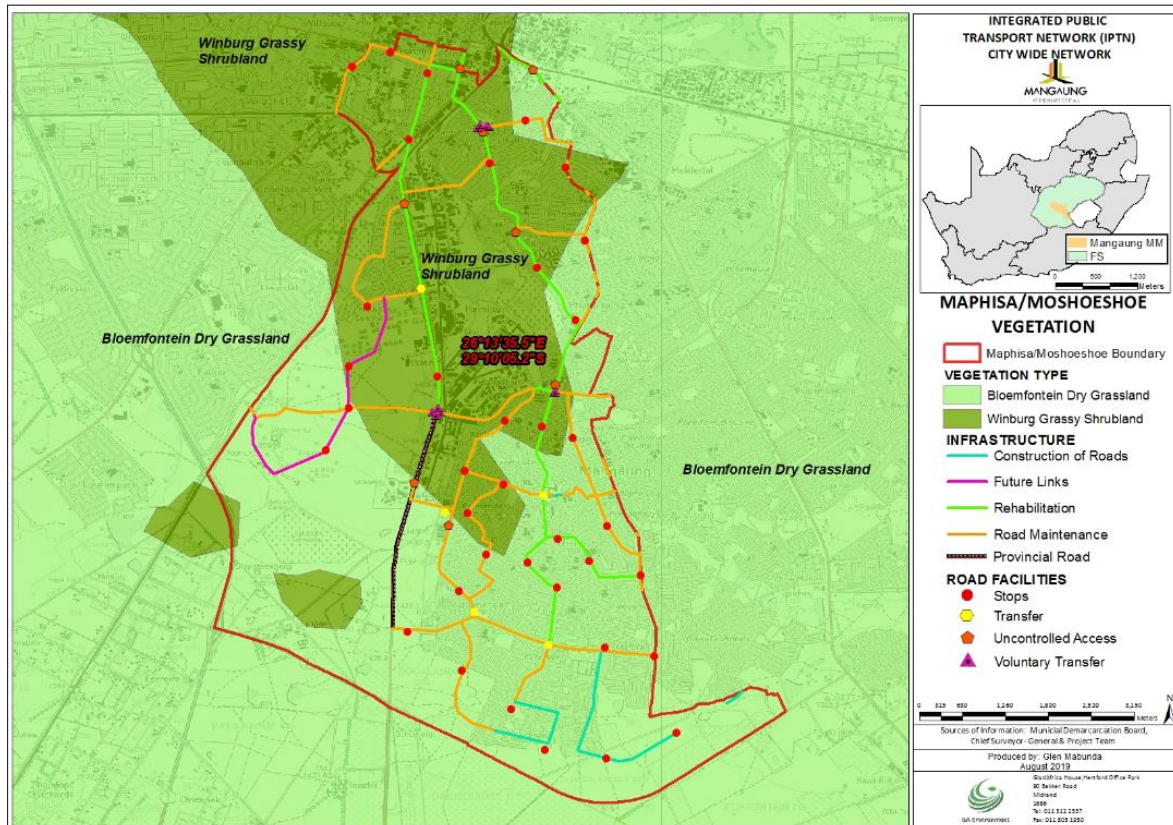


Figure 9: Maphisa Corridor's Vegetation Map

In terms of the fauna observed on site, with the exception of domesticated animals such as the dogs and cats, no other fauna was noted on site during the visit.

4.6 Cultural and Heritage

According to information obtained from the DEA Screening Tool (**Appendix A**) and as presented in **Figure 10**, the entire Corridor is situated within an area of high palaeontology theme sensitivity. Palaeontological Sites are protected according to Section 34 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) as already presented in **Section 5.3**. Based on this, a Palaeontological Impact Assessment might be required for the proposed project.

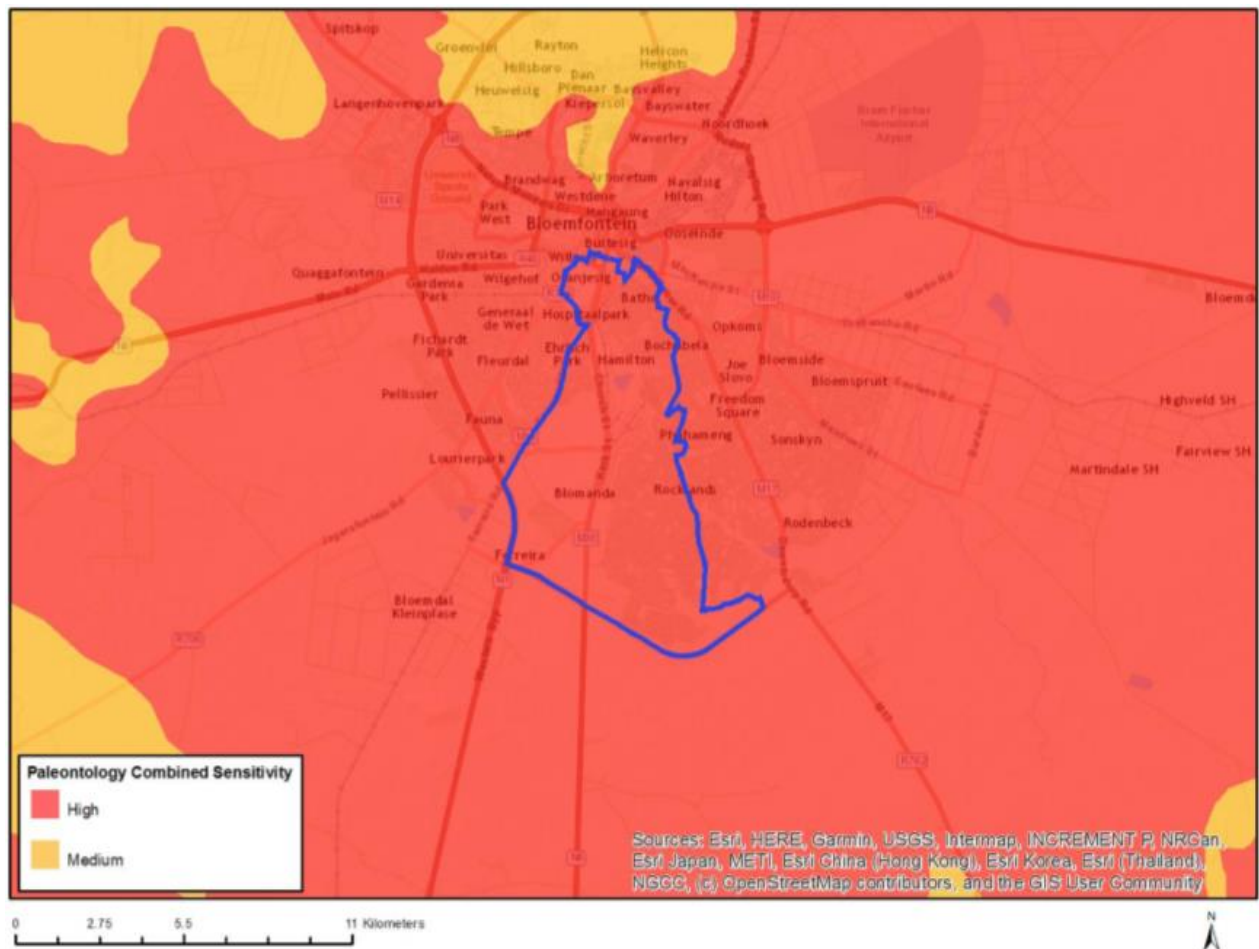


Figure 10: Maphisa Corridor's Palaeontology Theme Sensitivity Map (Source: DEA Screening Tool, 2019)

In addition to the above, it must be noted that the proposed activity of constructing roads (or linear infrastructure of 300m in length) may 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 governs the Management of Heritage Resources associated with certain activities. **Section 5.3** of this report details the above-mentioned activities in line with the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

4.7 Waste Management

Waste management issues were identified to be of major concern during the site visit as several incidents of illegally disposed domestic waste were noted to be creating visual nuisance within the proposed Corridor. Rubbish dumping, building rubble and littering was noted to be imminent on the wetland that was visited on the day of ground truthing, along the along the M10 road **Figure 11** and **12** show soil heaps and litter noted on the road side of one of the Maphisa Corridor routes. .



Figure 11: Rubble and litter noted on the roadside within Maphisa Corridor



Figure 12: General waste noted on one of the roads proposed for construction within Maphisa Corridor

4.8 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); and
- Free State Provincial Heritage Resources Agency (FSPHRA)

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

5. LEGISLATIVE REQUIREMENTS

5.1 NEMA EIA Regulations 2014 (as amended)

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;
- EIA Regulations Listing Notice 1 published in G.N. 983 defines activities which will trigger the need for a Basic Assessment process;
- EIA Regulations Listing Notice 2 published in 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.

- EIA Regulations Listing Notice 3 published in 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.

Table 2: Listed Activities in Terms of NEMA EIA Regulations (as amended)

Listing Number	Description of Listing triggered by the proposed activity	Applicability
Listing Notice 3 Activity 4	<p>The development of a road wider than 4 meters with a reserve less than 13.5 meters.</p> <p>b. Free State</p> <p>ii Inside Urban Areas</p> <p>(aa) Areas zoned for use as public open space;</p> <p>(bb) Areas designated for conservation use in the Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; or</p> <p>(cc) Areas within urban protected areas.</p>	The proposed new roads will have a road reserve of 13m. In addition, although the proposed Corridor is not located with the CBA or ESA, the future links of this Corridor will occur within a Green Area.
Listing Notice 3 Activity 18	<p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>b. Free State</p> <p>ii Inside Urban Areas</p> <p>(aa) Areas zoned for use as public open space;</p> <p>(bb) Areas designated for conservation use in the Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; or</p> <p>(cc) Areas within urban protected areas.</p>	This activity is yet to be confirmed depending on the design of the roads that will require upgrading.

The triggered Listed Activities presented in this report, as well as any possible activities are 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 (DESTE) 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.

It is important to note that this Environmental Screening was undertaken in terms of the current promulgated 2014 EIA Regulations (as amended). Since the proposed IPTN will be implemented in an incremental manner, there is a possibility of legislation changes, as well as possible promulgation of Provincial Environmental Management Framework Regulations. The implication of the aforementioned could result in triggered activities as documented in this report being not applicable. Should this be the case, Section 28 (Duty of Care) of the National Environmental Management Act (Act 107 of 1998) shall be implemented.

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'. An Environmental Management Plan shall be compiled for the proposed project in order to management potential environmental impacts and independent Environmental Control Monitoring and Auditing is recommended.

5.2 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 and initial field assessments, 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.

Certain activities, such as construction activities within these areas are regulated by the Department of Water and Sanitation and will require a Water Use Authorisation in terms of Section 21 of the National Water Act.

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. The proposed project in Maphisa Corridor will trigger the following Water Uses are under Section 21 of the National Water Act, 1998 (Act No. 36 of 1998):

- (c) impeding or diverting the flow of water in a watercourse; and*
(i) altering the bed, banks, course or characteristic of a watercourse.

As illustrated in Section 4.4, the proposed route will traverse the Klein River at various locations within the Corridor. Pockets of wetlands are also situated at various locations within the Corridor.

A Water Use Authorisation will be required for the proposed Corridor. Consultation with the regional DWS must be undertaken to obtain guidance about the required process.

5.3 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 Authority (FSPHRA).

Section 4.6 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 Maphisa Corridor. With regards to the project, Section 35, 36 and 38 of the Act are applicable and will be discussed

As presented in Section 4.6, the Maphisa Corridor 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 **Palaeontology 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. FSHRA 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.

5.4 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 Maphisa Corridor. The results of the tool are indicated in the Report attached as Appendix A.

Various Specialist assessments will be required for the undertaking of the proposed development in Maphisa. There is however an allowance of the EAP to motivate for the reasons for not including certain assessments in the assessment report. Based on the screening tool and the site visit which was undertaken as part of the screening process, the following Specialist Assessments will likely be undertaken for the proposed project in Maphisa Corridor. However, the need for these assessments will be discussed with the competent authority during the pre-application meeting.

- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontology Impact Assessment;
- Aquatic and Wetland Impact Assessment;
- Noise Impact Assessment;
- Traffic Impact Assessment;
- Geotechnical Assessment; and

- Socio-Economic Assessment.

6. CONCLUSION AND RECOMMENDATIONS

This Environmental Screening investigation was undertaken to determine if any legislative or other requirements must be met for the proposed Mangaung City-Wide Scan (Maphisa Corridor). This report is based on an assessment of information gathered during the site investigation and a subsequent review of available information.

Based on the findings of this report there were no technical flaws identified and the proposed development is feasible, will have impacts of low significance and should proceed provided no major construction activity is undertaken. In a case where major construction activities such as the construction of the new Maphisa Corridor routes are proposed, the following recommendations can be deduced from the environmental screening process:

- Undertake a Water Use Authorisation application as per the National Water Act; 1998 (Act 36 of 1998);
- Storm water management plan should be drafted by the Infrastructure Work stream. This plan will be implemented in order to prevent contaminated water from entering the watercourses; and
- Consultation with DESTEA and DWS must be undertaken to confirm the Specialist assessments that must be undertaken for the proposed project.

7. REFERENCES

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

Mangaung Metropolitan Municipality (2014). Integrated Public Transport Plan First Order Operations Plan Report (2014),

Mangaung Metropolitan Municipality (2019). Draft City Wide Integrated Public Transport Plan

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: Maphisa

Date screening report generated: 27/08/2019 10:16:31

Applicant: Manguang Metropolitan Municipality

Compiler: Kirthi Peramaul

Compiler signature:

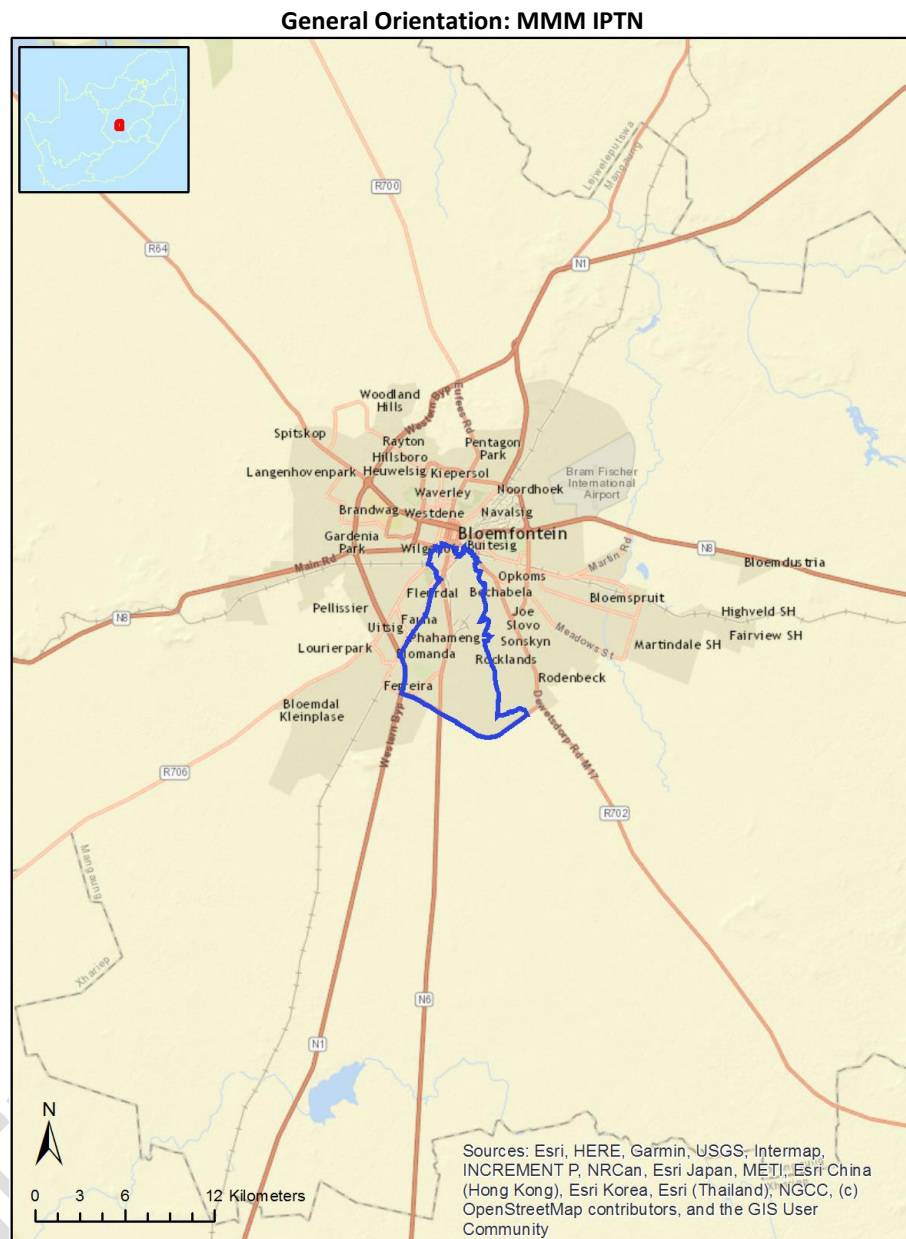
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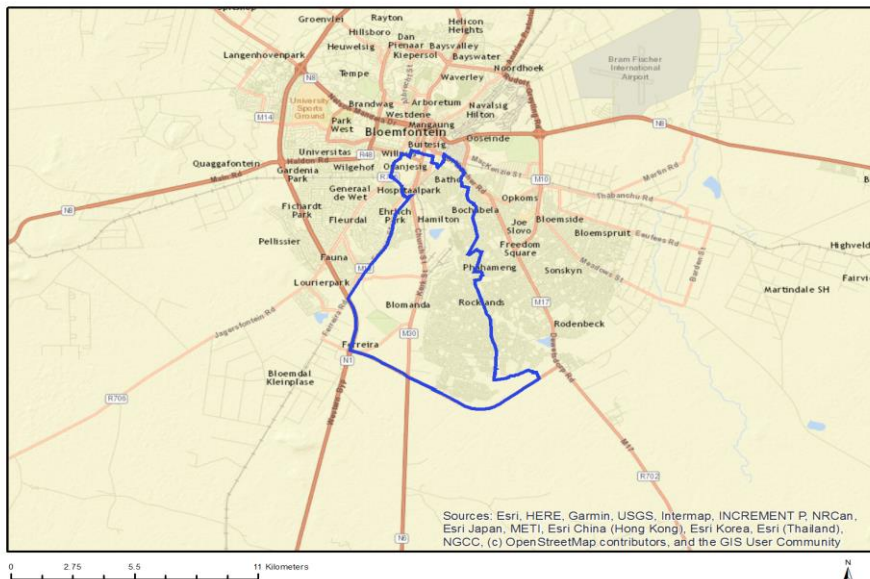
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Proposed Project Location

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/Erf Number	Portion	Latitude	Longitude
1	BLOEMFONTEIN	7735	00000	-29.15052	26.21495
2	BLOEMFONTEIN	7744	00000	-29.14962	26.21393
3	BLOEMFONTEIN	10414	00000	-29.12373	26.22284
4	BLOEMFONTEIN	4997	00000	-29.13388	26.22015
5	BLOEMFONTEIN	4918	00000	-29.12723	26.21766
6	BLOEMFONTEIN	4936	00000	-29.13064	26.21978
7	BLOEMFONTEIN	4705	00000	-29.1607	26.22776
8	BLOEMFONTEIN	3944	00048	-29.12983	26.22255
9	BLOEMFONTEIN	3531	00004	-29.12707	26.22082
10	BLOEMFONTEIN	3183	00003	-29.13062	26.22347
11	BLOEMFONTEIN	7750	00000	-29.14837	26.21411
12	BLOEMFONTEIN	3943	00000	-29.12509	26.22375
13	BLOEMFONTEIN	4660	00000	-29.14751	26.22091
14	BLOEMFONTEIN	4963	00001	-29.13187	26.22141
15	BLOEMFONTEIN	10410	00000	-29.15108	26.21641
16	BLOEMFONTEIN	4952	00000	-29.13178	26.22021
17	BLOEMFONTEIN	6757	00000	-29.13351	26.20934
18	BLOEMFONTEIN	3944	00027	-29.12971	26.22161
19	BLOEMFONTEIN	3944	00032	-29.12976	26.22185
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22	BLOEMFONTEIN	27832	00000	-29.16344	26.21189
23	BLOEMFONTEIN	23496	00000	-29.15473	26.21671
24	BLOEMFONTEIN	22031	00000	-29.17846	26.22103
25	BLOEMFONTEIN	24681	00000	-29.1278	26.21825
26	BLOEMFONTEIN	11117	00000	-29.16751	26.232
27	BLOEMFONTEIN	11134	00000	-29.16838	26.22961
28	BLOEMFONTEIN	27846	00000	-29.16208	26.21458
29	BLOEMFONTEIN	7655	00000	-29.14492	26.21241
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36	BLOEMFONTEIN	26474	00000	-29.12946	26.21945
37	BLOEMFONTEIN	26575	00000	-29.15703	26.21462
38	BLOEMFONTEIN	26583	00000	-29.15673	26.21499
39	MANGAUNG	60288	00000	-29.21174	26.21969
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226	MANGAUNG	26656	00000	-29.15758	26.23942
227	MANGAUNG	23459	00000	-29.13928	26.22816
228	MANGAUNG	20627	00000	-29.19885	26.24016
229	MANGAUNG	268	00000	-29.13047	26.22545
230	MANGAUNG	1561	00000	-29.17425	26.2347
231	MANGAUNG	2723	00000	-29.16348	26.23476
232	MANGAUNG	1726	00000	-29.17948	26.22529
233	MANGAUNG	2731	00000	-29.16396	26.23452
234	MANGAUNG	379	00000	-29.13279	26.22941
235	MANGAUNG	290	00000	-29.13089	26.22986
236	MANGAUNG	7559	00000	-29.17809	26.23259
237	MANGAUNG	7436	00000	-29.17567	26.23031
238	MANGAUNG	5650	00000	-29.19437	26.23291
239	MANGAUNG	5654	00000	-29.19469	26.23326
240	MANGAUNG	3064	00000	-29.18902	26.2395
241	MANGAUNG	3075	00000	-29.18849	26.23994
242	MANGAUNG	5409	00000	-29.19717	26.23241
243	MANGAUNG	10514	00000	-29.1735	26.2282
244	MANGAUNG	10520	00000	-29.1738	26.22893
245	MANGAUNG	15597	00000	-29.19779	26.22075
246	MANGAUNG	15602	00000	-29.19725	26.22079
247	MANGAUNG	8023	00000	-29.17318	26.24226
248	MANGAUNG	7264	00000	-29.17686	26.22612
249	MANGAUNG	16819	00000	-29.20617	26.22835
250	MANGAUNG	16824	00000	-29.20642	26.2285
251	MANGAUNG	16294	00000	-29.20217	26.22281
252	MANGAUNG	16725	00000	-29.20574	26.22803
253	MANGAUNG	16605	00000	-29.20389	26.22659
254	MANGAUNG	16075	00000	-29.20328	26.22038
255	MANGAUNG	11807	00000	-29.18657	26.22363
256	MANGAUNG	11491	00000	-29.18586	26.2236
257	MANGAUNG	22226	00000	-29.13672	26.22065
258	MANGAUNG	17659	00000	-29.19386	26.22503
259	MANGAUNG	16845	00000	-29.20639	26.22506
260	MANGAUNG	21492	00000	-29.19805	26.23225
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262	MANGAUNG	563	00000	-29.13451	26.23353
263	MANGAUNG	2150	00000	-29.18191	26.23364
264	MANGAUNG	2584	00000	-29.19413	26.22386
265	MANGAUNG	2341	00000	-29.14686	26.22609
266	MANGAUNG	2346	00000	-29.14721	26.22591
267	MANGAUNG	1270	00000	-29.19737	26.2258
268	MANGAUNG	7503	00000	-29.17575	26.23222
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271	MANGAUNG	4742	00000	-29.19131	26.23295
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274	MANGAUNG	5337	00000	-29.19657	26.23597
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277	MANGAUNG	11584	00000	-29.18859	26.22827
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279	MANGAUNG	10352	00000	-29.17052	26.23064
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281	MANGAUNG	16546	00000	-29.20407	26.22573
282	MANGAUNG	16807	00000	-29.20517	26.22916
283	MANGAUNG	16810	00000	-29.20552	26.22901
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285	MANGAUNG	11342	00000	-29.18225	26.22434
286	MANGAUNG	15308	00000	-29.19808	26.22436
287	MANGAUNG	15408	00000	-29.19615	26.22068
288	MANGAUNG	22281	00000	-29.1377	26.22285
289	MANGAUNG	5257	00000	-29.19212	26.23186
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291	MANGAUNG	2232	00000	-29.18649	26.23605
292	MANGAUNG	2267	00000	-29.18797	26.23561
293	MANGAUNG	2283	00000	-29.18758	26.23522
294	MANGAUNG	2287	00000	-29.18802	26.23527
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296	MANGAUNG	800	00000	-29.13986	26.2365
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298	MANGAUNG	5585	00000	-29.19147	26.2295
299	MANGAUNG	6492	00000	-29.18392	26.23229
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303	MANGAUNG	2917	00000	-29.1909	26.24491
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306	MANGAUNG	10693	00000	-29.18214	26.22265
307	MANGAUNG	16328	00000	-29.20364	26.22197
308	MANGAUNG	16332	00000	-29.20343	26.22147
309	MANGAUNG	18412	00000	-29.20031	26.22849
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311	MANGAUNG	16567	00000	-29.20448	26.22745
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313	MANGAUNG	20669	00000	-29.19985	26.24179
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315	MANGAUNG	26031	00000	-29.15834	26.2394
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317	MANGAUNG	1925	00000	-29.18124	26.22865
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319	MANGAUNG	2729	00000	-29.16383	26.23527
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321	MANGAUNG	203	00000	-29.1316	26.22617
322	MANGAUNG	207	00000	-29.1312	26.22637
323	MANGAUNG	348	00000	-29.13126	26.23127
324	MANGAUNG	352	00000	-29.13167	26.23085
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326	MANGAUNG	6676	00000	-29.18996	26.22969
327	MANGAUNG	5643	00000	-29.19381	26.23229
328	MANGAUNG	6534	00000	-29.18615	26.23354
329	MANGAUNG	5661	00000	-29.19514	26.23346
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331	MANGAUNG	6184	00000	-29.19322	26.23034
332	MANGAUNG	5368	00000	-29.19753	26.23524
333	MANGAUNG	11251	00000	-29.18117	26.22668
334	MANGAUNG	10445	00000	-29.17191	26.22979
335	MANGAUNG	6426	00000	-29.18822	26.22921
336	MANGAUNG	7315	00000	-29.17578	26.22682
337	MANGAUNG	7655	00000	-29.17744	26.22875
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342	MANGAUNG	11754	00000	-29.18759	26.2233
343	MANGAUNG	10982	00000	-29.18358	26.22787
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352	MANGAUNG	610	00000	-29.13576	26.23446
353	MANGAUNG	214	00000	-29.13044	26.22682
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360	MANGAUNG	4485	00000	-29.18951	26.23544
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364	MANGAUNG	11776	00000	-29.18872	26.22397
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368	MANGAUNG	10361	00000	-29.17138	26.22981
369	MANGAUNG	7716	00000	-29.17498	26.22949
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372	MANGAUNG	15986	00000	-29.2007	26.22311
373	MANGAUNG	16800	00000	-29.2044	26.22952
374	MANGAUNG	17884	00000	-29.19689	26.22869
375	MANGAUNG	15325	00000	-29.19735	26.22272
376	MANGAUNG	10854	00000	-29.18116	26.22276
377	MANGAUNG	11914	00009	-29.18817	26.22461
378	MANGAUNG	11435	00000	-29.18431	26.2234
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380	MANGAUNG	22332	00000	-29.13871	26.22269
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382	MANGAUNG	22100	00000	-29.13634	26.22423
383	MANGAUNG	22105	00000	-29.13618	26.22403
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386	MANGAUNG	18179	00000	-29.19986	26.22943
387	MANGAUNG	17604	00000	-29.19441	26.22273
388	MANGAUNG	18248	00000	-29.199	26.23187
389	MANGAUNG	18252	00000	-29.19855	26.23194
390	MANGAUNG	21690	00000	-29.19828	26.23735

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395	MANGAUNG	5971	00000	-29.19192	26.22869
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402	MANGAUNG	11155	00000	-29.18598	26.2281
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412	MANGAUNG	16897	00000	-29.20675	26.22701
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420	MANGAUNG	23021	00000	-29.13537	26.2321
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425	MANGAUNG	5195	00000	-29.19034	26.22815
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433	MANGAUNG	11379	00000	-29.18311	26.22467
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435	MANGAUNG	16135	00000	-29.2053	26.22412
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552	MERITING	178	00000	-29.20131	26.23411
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566	MANGAUNG	44317	00000	-29.1964	26.24134
567	MANGAUNG	55155	00000	-29.14113	26.2345
568	MANGAUNG	55013	00000	-29.13378	26.22943
569	MANGAUNG	55811	00000	-29.15543	26.23759
570	MANGAUNG	57923	00000	-29.21043	26.23558

571	MANGAUNG	57187	00000	-29.2037	26.23349
572	MERITING	977	00000	-29.20272	26.24131
573	MANGAUNG	56507	00000	-29.15328	26.23598
574	MANGAUNG	57074	00000	-29.20226	26.23079
575	MANGAUNG	56686	00000	-29.14415	26.22527
576	MANGAUNG	56175	00000	-29.15118	26.23446
577	MANGAUNG	28342	00000	-29.14687	26.24012
578	MANGAUNG	28423	00000	-29.14881	26.23873
579	MANGAUNG	28314	00000	-29.14743	26.23923
580	MANGAUNG	26343	00000	-29.15478	26.23683
581	MANGAUNG	26347	00000	-29.15449	26.23675
582	MANGAUNG	30598	00000	-29.14715	26.2333
583	MANGAUNG	28130	00000	-29.14939	26.23781
584	MANGAUNG	41146	00000	-29.16469	26.23799
585	MANGAUNG	43013	00000	-29.19309	26.24148
586	MANGAUNG	41645	00000	-29.17597	26.23728
587	MANGAUNG	43770	00000	-29.19856	26.24519
588	MANGAUNG	40630	00000	-29.1628	26.23728
589	MANGAUNG	49139	00000	-29.18938	26.23706
590	MANGAUNG	55586	00000	-29.13461	26.22991
591	MANGAUNG	55602	00000	-29.1345	26.23186
592	MANGAUNG	53592	00000	-29.19151	26.24344
593	MERITING	706	00000	-29.20357	26.23947
594	MANGAUNG	56964	00000	-29.14009	26.2209
595	MANGAUNG	57212	00000	-29.20543	26.23419
596	MANGAUNG	58357	00000	-29.19914	26.24697
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598	MANGAUNG	55890	00000	-29.15252	26.23177
599	MANGAUNG	26434	00000	-29.15848	26.23659
600	MANGAUNG	26452	00000	-29.15716	26.23638
601	MANGAUNG	43578	00000	-29.19654	26.23668
602	MANGAUNG	40311	00000	-29.17257	26.23443
603	MANGAUNG	41791	00000	-29.17737	26.2347
604	MANGAUNG	42973	00000	-29.19392	26.24382
605	MANGAUNG	42504	00000	-29.18369	26.23947
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607	MANGAUNG	40526	00000	-29.16582	26.23482
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611	MANGAUNG	57412	00000	-29.20581	26.23118
612	MANGAUNG	57417	00000	-29.20572	26.23094
613	MANGAUNG	56916	00000	-29.13393	26.22422
614	MANGAUNG	56996	00000	-29.14169	26.22183
615	MANGAUNG	30048	00000	-29.14095	26.2248
616	MANGAUNG	30510	00000	-29.14883	26.23304
617	MANGAUNG	30524	00000	-29.14847	26.23158
618	MANGAUNG	48396	00000	-29.18676	26.23885
619	MANGAUNG	41380	00000	-29.18272	26.24039
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621	MANGAUNG	41458	00000	-29.1802	26.23639
622	MANGAUNG	39863	00000	-29.19901	26.24406
623	MANGAUNG	50651	00000	-29.18167	26.24105
624	MANGAUNG	50148	00000	-29.18885	26.24598
625	MANGAUNG	47051	00000	-29.17977	26.2339
626	MANGAUNG	48392	00000	-29.18656	26.23917
627	MANGAUNG	53718	00000	-29.18529	26.23866
628	MANGAUNG	55540	00000	-29.14276	26.22998
629	MANGAUNG	55206	00000	-29.14124	26.23388
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632	MANGAUNG	30744	00000	-29.14517	26.23698
633	MANGAUNG	28158	00000	-29.145	26.23806
634	MANGAUNG	40725	00000	-29.16399	26.23837
635	MANGAUNG	40370	00000	-29.17204	26.23329
636	MANGAUNG	48003	00000	-29.16541	26.24044
637	MANGAUNG	43463	00000	-29.19269	26.24522
638	MANGAUNG	48477	00000	-29.18794	26.23852
639	MANGAUNG	41617	00000	-29.17566	26.23662
640	MANGAUNG	41622	00000	-29.17472	26.23634
641	MANGAUNG	41769	00000	-29.17952	26.23673
642	MANGAUNG	39883	00000	-29.19967	26.24338
643	MANGAUNG	42479	00000	-29.18264	26.238
644	MANGAUNG	48144	00000	-29.18462	26.2403
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646	MANGAUNG	55697	00000	-29.13232	26.22474
647	MANGAUNG	57204	00000	-29.20446	26.23428
648	MANGAUNG	55978	00000	-29.15289	26.23309
649	MANGAUNG	28440	00000	-29.14969	26.23752
650	MANGAUNG	28114	00000	-29.14907	26.23561
651	MANGAUNG	28119	00000	-29.14911	26.23644
652	MANGAUNG	28142	00000	-29.14929	26.23576
653	MANGAUNG	28170	00000	-29.14509	26.2399
654	MANGAUNG	30481	00000	-29.14725	26.22928
655	MANGAUNG	43583	00000	-29.19624	26.23647
656	MANGAUNG	40839	00000	-29.16654	26.23765
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659	MANGAUNG	42051	00000	-29.18191	26.23856
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661	MANGAUNG	49366	00000	-29.19075	26.23928
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663	MANGAUNG	43990	00000	-29.19529	26.24313
664	MANGAUNG	40508	00000	-29.16729	26.2349
665	MANGAUNG	50490	00000	-29.17936	26.24072
666	MANGAUNG	50058	00000	-29.18665	26.24456
667	MANGAUNG	49691	00000	-29.16988	26.23789
668	MANGAUNG	49698	00000	-29.16921	26.23831
669	MANGAUNG	44648	00000	-29.19469	26.23944
670	MANGAUNG	47985	00000	-29.16512	26.24057
671	MANGAUNG	44154	00000	-29.19699	26.23693
672	MANGAUNG	47018	00000	-29.17933	26.2339
673	MANGAUNG	55629	00000	-29.13499	26.23091
674	MANGAUNG	55595	00000	-29.13441	26.23123
675	MANGAUNG	30860	00000	-29.1438	26.23804
676	MANGAUNG	40954	00000	-29.17039	26.23601
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678	MANGAUNG	41278	00000	-29.17829	26.23904
679	MANGAUNG	42985	00000	-29.19385	26.24534
680	MANGAUNG	42989	00000	-29.19409	26.24498
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685	MANGAUNG	49874	00000	-29.17243	26.23818
686	MANGAUNG	50076	00000	-29.18707	26.24313
687	MANGAUNG	50520	00000	-29.17902	26.23977
688	MANGAUNG	49028	00000	-29.1895	26.24165
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692	MANGAUNG	58156	00000	-29.20585	26.23538
693	MANGAUNG	31033	00000	-29.14159	26.23607
694	MANGAUNG	40395	00000	-29.1713	26.23322
695	MANGAUNG	40788	00000	-29.16623	26.24028
696	MANGAUNG	41040	00000	-29.16451	26.23697
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699	MANGAUNG	41391	00000	-29.16773	26.2407
700	MANGAUNG	41393	00000	-29.16792	26.2405
701	MANGAUNG	41048	00000	-29.17834	26.24043
702	MANGAUNG	41050	00000	-29.17842	26.24016
703	MANGAUNG	43211	00000	-29.19299	26.24581
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707	MANGAUNG	50157	00000	-29.19034	26.24611
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709	MANGAUNG	48107	00000	-29.17284	26.23739
710	MANGAUNG	48962	00000	-29.1901	26.24294
711	MANGAUNG	44150	00000	-29.19778	26.24142
712	MANGAUNG	54876	00000	-29.13893	26.23381
713	MANGAUNG	54881	00000	-29.13847	26.23402
714	MANGAUNG	54989	00000	-29.13312	26.2284
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716	MANGAUNG	55612	00000	-29.13475	26.2304
717	MERITING	133	00000	-29.19999	26.23409
718	MANGAUNG	57580	00000	-29.20872	26.23
719	MERITING	922	00000	-29.20191	26.24045
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721	MANGAUNG	29987	00000	-29.20063	26.21892
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732	MANGAUNG	50386	00000	-29.1763	26.2392
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735	MANGAUNG	50613	00000	-29.18039	26.24213
736	MANGAUNG	50617	00000	-29.1807	26.24179
737	MANGAUNG	48950	00000	-29.18911	26.24235
738	MANGAUNG	48954	00000	-29.18941	26.24258
739	MANGAUNG	44408	00000	-29.19767	26.24445
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741	MANGAUNG	54840	00000	-29.13888	26.23563
742	MANGAUNG	55349	00000	-29.15019	26.23292
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749	MANGAUNG	57135	00000	-29.20383	26.23158
750	MANGAUNG	56527	00000	-29.1527	26.23542

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755	MANGAUNG	41356	00000	-29.18194	26.23986
756	MANGAUNG	43439	00000	-29.19096	26.24269
757	MANGAUNG	43957	00000	-29.19552	26.24064
758	MANGAUNG	43961	00000	-29.19581	26.24035
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773	MANGAUNG	55817	00000	-29.15618	26.23778
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777	MANGAUNG	53639	00000	-29.18472	26.23597
778	MANGAUNG	53644	00000	-29.18416	26.23586
779	MERITING	515	00000	-29.20028	26.23601
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781	MANGAUNG	55928	00000	-29.15362	26.23268
782	MERITING	208	00000	-29.20001	26.23162
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792	MANGAUNG	47940	00000	-29.16363	26.23971
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796	MANGAUNG	49655	00000	-29.16977	26.24044
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802	MANGAUNG	55832	00000	-29.15595	26.2375
803	MANGAUNG	55147	00000	-29.14109	26.2343
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806	MANGAUNG	55802	00000	-29.15472	26.23889
807	MANGAUNG	53615	00000	-29.19159	26.24247
808	MERITING	947	00000	-29.20246	26.24079
809	MERITING	951	00000	-29.20262	26.24046
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818	MANGAUNG	41603	00000	-29.17574	26.23685
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845	MANGAUNG	41677	00000	-29.17767	26.23794
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873	MANGAUNG	43205	00000	-29.19233	26.24577
874	MANGAUNG	41816	00000	-29.17837	26.2346
875	MANGAUNG	42022	00000	-29.18155	26.2352
876	MANGAUNG	49821	00000	-29.1731	26.2413
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878	MANGAUNG	50675	00000	-29.18097	26.24199
879	MANGAUNG	49593	00000	-29.16684	26.24122
880	MANGAUNG	49278	00000	-29.1906	26.23785
881	MANGAUNG	49127	00000	-29.18955	26.23924
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883	MANGAUNG	53554	00000	-29.19274	26.23986
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891	MANGAUNG	57248	00000	-29.20648	26.23301
892	MANGAUNG	57339	00000	-29.20675	26.23029
893	MANGAUNG	56485	00000	-29.15306	26.23647
894	MANGAUNG	56641	00000	-29.15347	26.23458
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896	MANGAUNG	58513	00000	-29.13166	26.2267
897	MERITING	1050	00000	-29.20094	26.24597
898	MERITING	50	00000	-29.20125	26.23521
899	MANGAUNG	58119	00000	-29.20654	26.23595
900	MANGAUNG	58123	00000	-29.20646	26.2353
901	MANGAUNG	57394	00000	-29.20508	26.23081
902	MANGAUNG	57399	00000	-29.20574	26.23053
903	MERITING	1638	00000	-29.20355	26.24279
904	MERITING	1238	00000	-29.20163	26.2443
905	MANGAUNG	57778	00000	-29.20923	26.2338
906	MANGAUNG	57784	00000	-29.20999	26.23345
907	MANGAUNG	54684	00000	-29.13115	26.23533
908	MERITING	1161	00000	-29.2021	26.24443
909	MERITING	579	00000	-29.20047	26.23822
910	MERITING	999	00000	-29.20315	26.24195
911	MERITING	1493	00000	-29.20279	26.24564
912	MANGAUNG	56454	00000	-29.15283	26.23633
913	MANGAUNG	56457	00000	-29.15277	26.23619
914	MERITING	1581	00000	-29.20362	26.24402
915	MERITING	1220	00000	-29.20104	26.24325
916	MERITING	736	00000	-29.20316	26.23628
917	MERITING	1114	00000	-29.20184	26.24592
918	MERITING	1016	00000	-29.20363	26.24137
919	MERITING	1020	00000	-29.20377	26.24103
920	MERITING	478	00000	-29.20015	26.23971
921	MANGAUNG	58414	00000	-29.20104	26.249
922	MANGAUNG	55511	00000	-29.14577	26.22999
923	MANGAUNG	56886	00000	-29.13313	26.22366
924	MERITING	1212	00000	-29.20115	26.24406
925	MERITING	1053	00000	-29.2009	26.24567
926	MERITING	1560	00000	-29.20331	26.24438
927	MERITING	1565	00000	-29.20287	26.24446
928	MANGAUNG	58458	00000	-29.20067	26.24695
929	MANGAUNG	57790	00000	-29.20954	26.23338
930	MANGAUNG	57795	00000	-29.21008	26.23201

931	MERITING	770	00000	-29.20129	26.2405
932	MERITING	1144	00000	-29.20233	26.24616
933	MERITING	1147	00000	-29.20229	26.24585
934	MERITING	901	00000	-29.20208	26.24178
935	MANGAUNG	57981	00000	-29.20919	26.23596
936	MANGAUNG	57986	00000	-29.20904	26.23519
937	MERITING	290	00000	-29.20127	26.23171
938	MERITING	295	00000	-29.20086	26.2317
939	MANGAUNG	56444	00000	-29.15285	26.23678
940	MERITING	1304	00000	-29.20127	26.24892
941	MERITING	1325	00000	-29.20316	26.2488
942	MANGAUNG	58475	00000	-29.20089	26.24745
943	MERITING	13	00000	-29.19927	26.23273
944	MERITING	23	00000	-29.19942	26.23395
945	MANGAUNG	58410	00000	-29.20055	26.24883
946	MERITING	839	00000	-29.20107	26.24022
947	MANGAUNG	56880	00000	-29.1324	26.22396
948	MANGAUNG	57435	00000	-29.20595	26.23204
949	MANGAUNG	56888	00000	-29.13293	26.22386
950	MANGAUNG	56892	00000	-29.13334	26.22371
951	MERITING	1713	00000	-29.20406	26.24327
952	MERITING	369	00000	-29.19968	26.23605
953	MERITING	385	00000	-29.20102	26.23622
954	MERITING	806	00000	-29.20133	26.24153
955	MERITING	454	00000	-29.20121	26.23843
956	MANGAUNG	56904	00000	-29.13323	26.22424
957	MANGAUNG	56133	00000	-29.15201	26.23393
958	MERITING	1688	00000	-29.20382	26.2429
959	MANGAUNG	58103	00000	-29.20616	26.23507
960	MANGAUNG	58496	00000	-29.19883	26.24826
961	MANGAUNG	58504	00001	-29.19864	26.24562
962	MERITING	823	00000	-29.20082	26.24183
963	MANGAUNG	55886	00000	-29.1522	26.23149
964	MANGAUNG	56851	00000	-29.13411	26.22482
965	MERITING	1380	00000	-29.20253	26.24519
966	MERITING	1415	00000	-29.20389	26.24765
967	MERITING	829	00000	-29.20048	26.24224
968	MERITING	832	00000	-29.20044	26.24033
969	MANGAUNG	56113	00000	-29.15235	26.23383
970	MANGAUNG	57068	00000	-29.20264	26.23166
971	MANGAUNG	58423	00000	-29.20016	26.24848
972	MERITING	1428	00000	-29.20298	26.24719
973	MANGAUNG	56132	00000	-29.15196	26.23392
974	MERITING	1598	00000	-29.20268	26.24365
975	MERITING	1604	00000	-29.2032	26.24357
976	MERITING	234	00000	-29.20044	26.23201
977	MANGAUNG	57822	00000	-29.2093	26.23153
978	MANGAUNG	57827	00000	-29.20989	26.23155
979	MERITING	1251	00000	-29.20148	26.24282
980	MERITING	746	00000	-29.20279	26.23537
981	MANGAUNG	56312	00000	-29.15157	26.23642
982	MERITING	878	00000	-29.20097	26.24232
983	MERITING	885	00000	-29.2016	26.24222
984	MERITING	1170	00000	-29.20122	26.24463
985	MERITING	1607	00000	-29.20347	26.24352
986	MERITING	1612	00000	-29.20344	26.24332
987	MANGAUNG	54628	00000	-29.13119	26.23335
988	MANGAUNG	57739	00000	-29.20965	26.23261
989	MANGAUNG	56491	00000	-29.15314	26.23678
990	MANGAUNG	56495	00000	-29.15318	26.23658

991	MERITING	754	00000	-29.20197	26.2355
992	MERITING	757	00000	-29.20023	26.24042
993	MERITING	1097	00000	-29.20157	26.24514
994	MANGAUNG	58118	00000	-29.20655	26.2361
995	MERITING	1357	00000	-29.20223	26.24284
996	MANGAUNG	55056	00000	-29.13316	26.22756
997	MERITING	1658	00000	-29.20298	26.24257
998	MERITING	867	00000	-29.20117	26.24104
999	MERITING	873	00000	-29.20064	26.24113
1000	MERITING	1200	00000	-29.20091	26.24359

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	11.6
2	14/12/16/3/3/1/1092	Solar PV	Approved	11.6
3	14/12/16/3/3/1/564	Solar PV	Approved	10.2

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

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 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

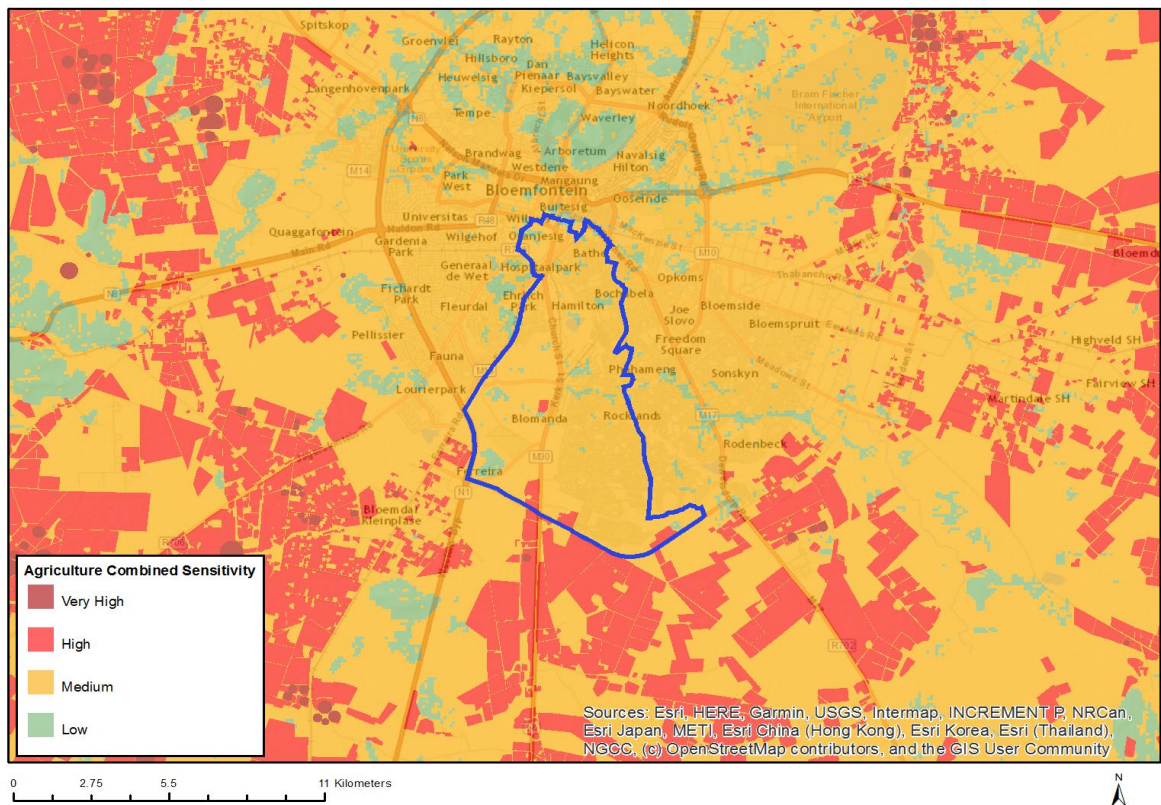
Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment 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

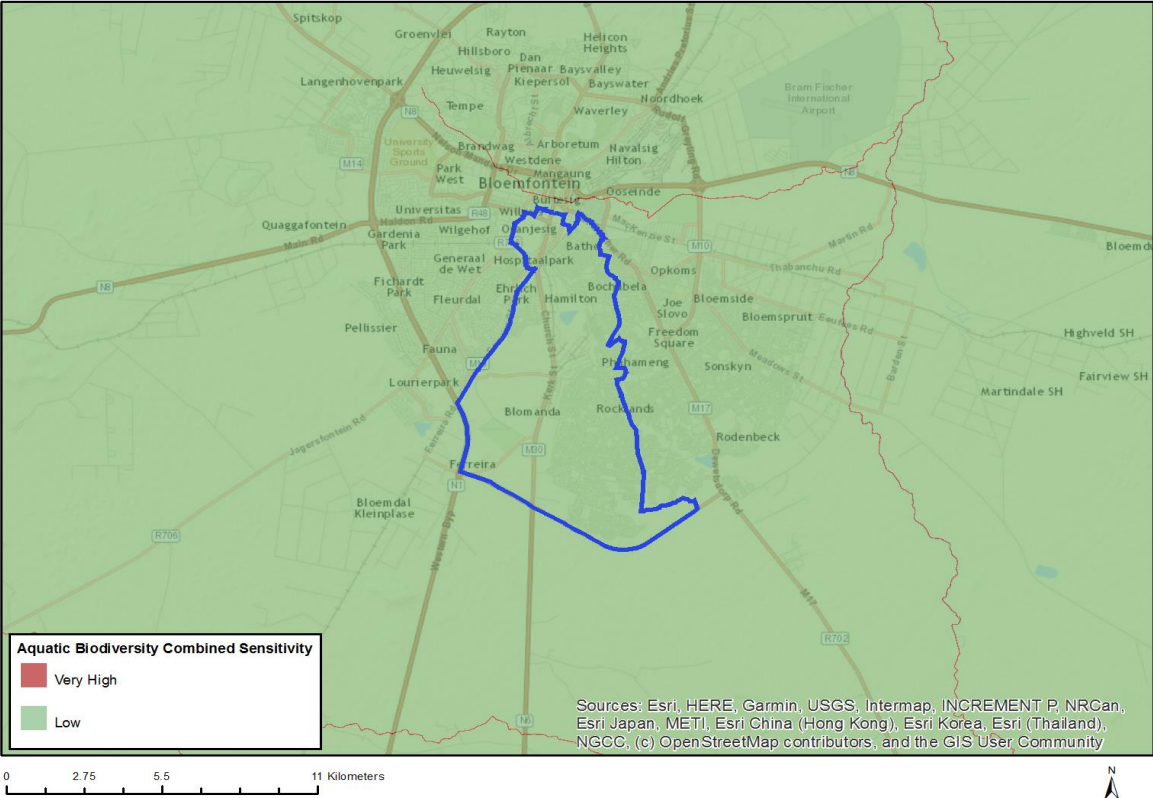


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	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

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

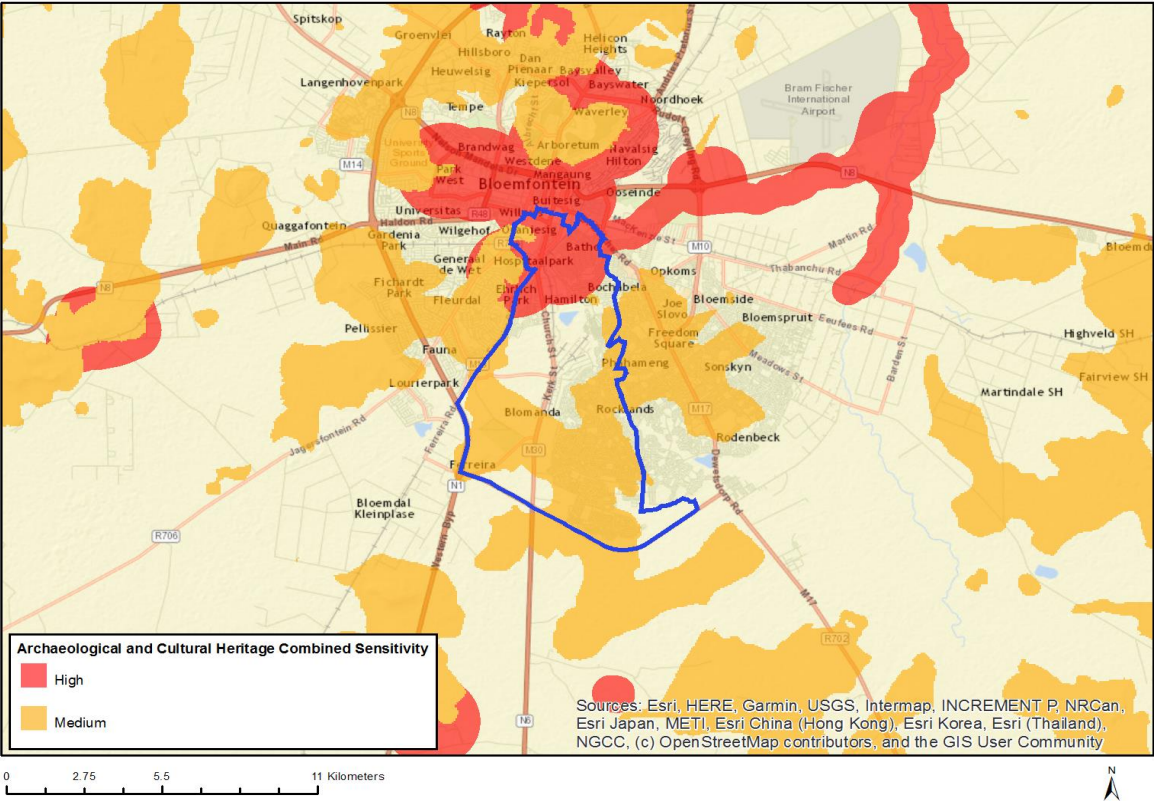


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity Areas

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

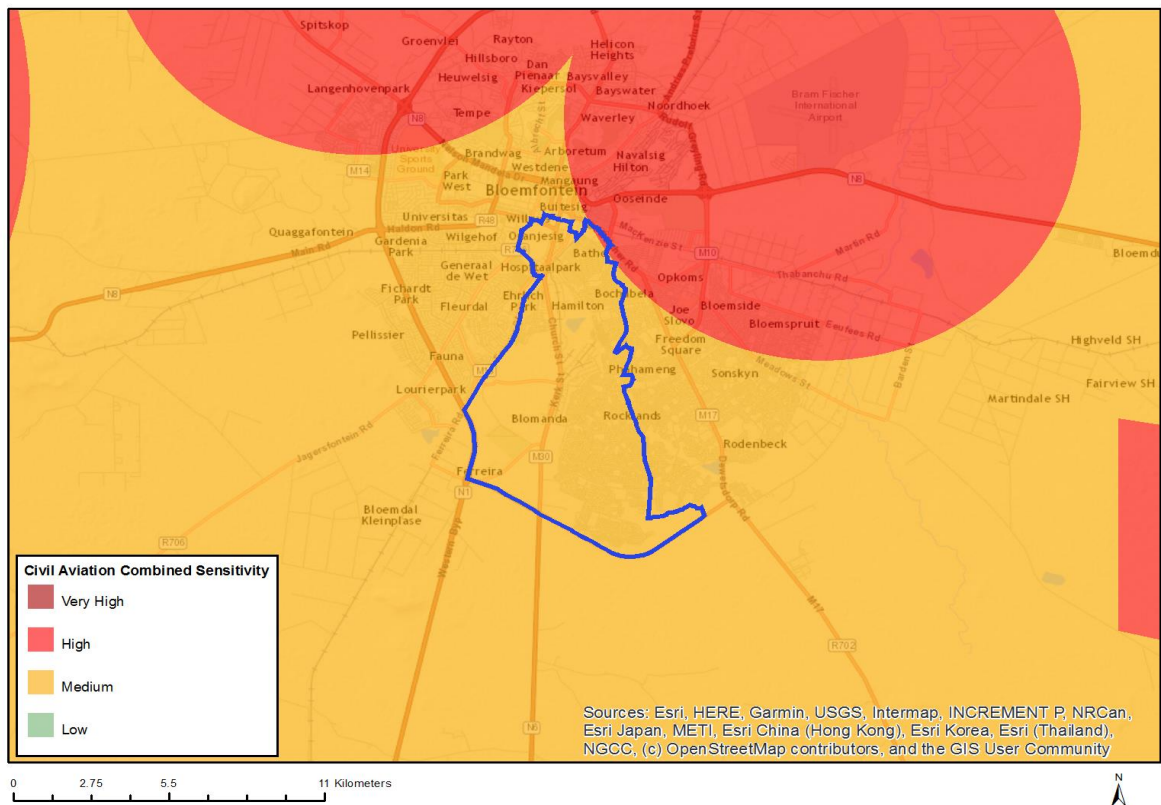


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

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

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

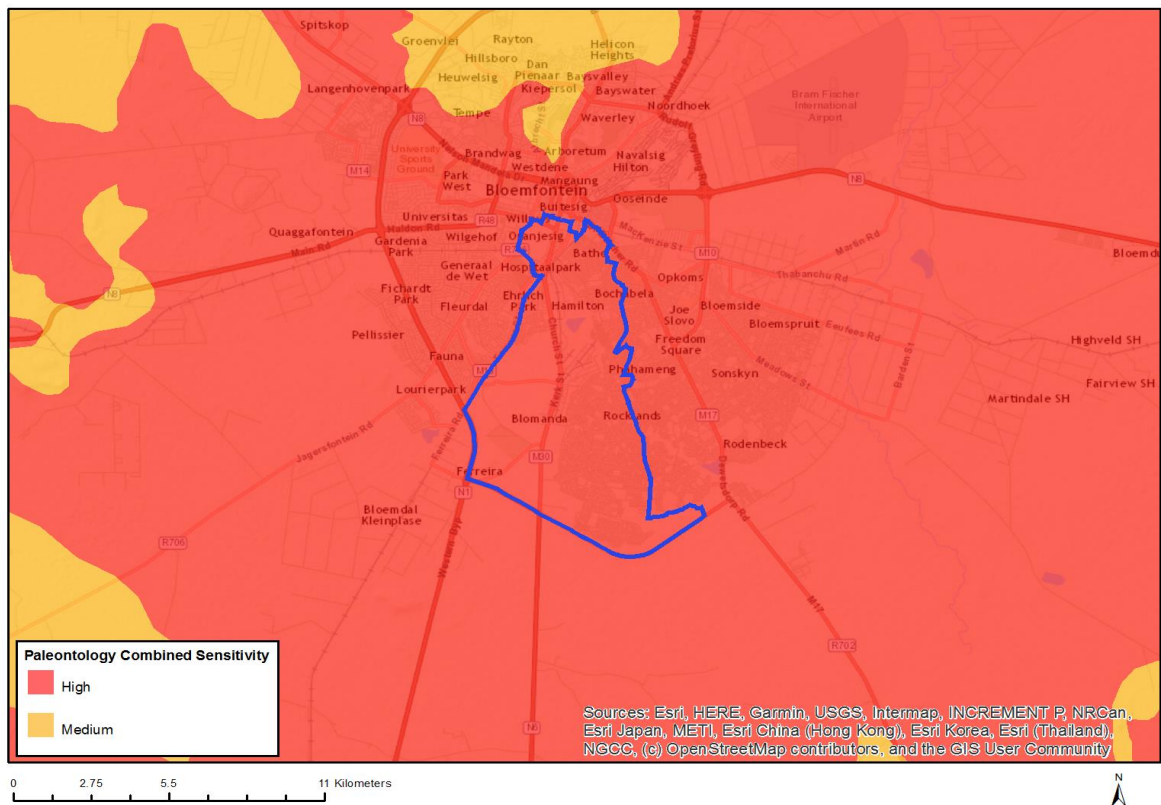


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 15 km of a civil aviation radar
High	Within 8 km of other civil aviation aerodrome
Medium	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

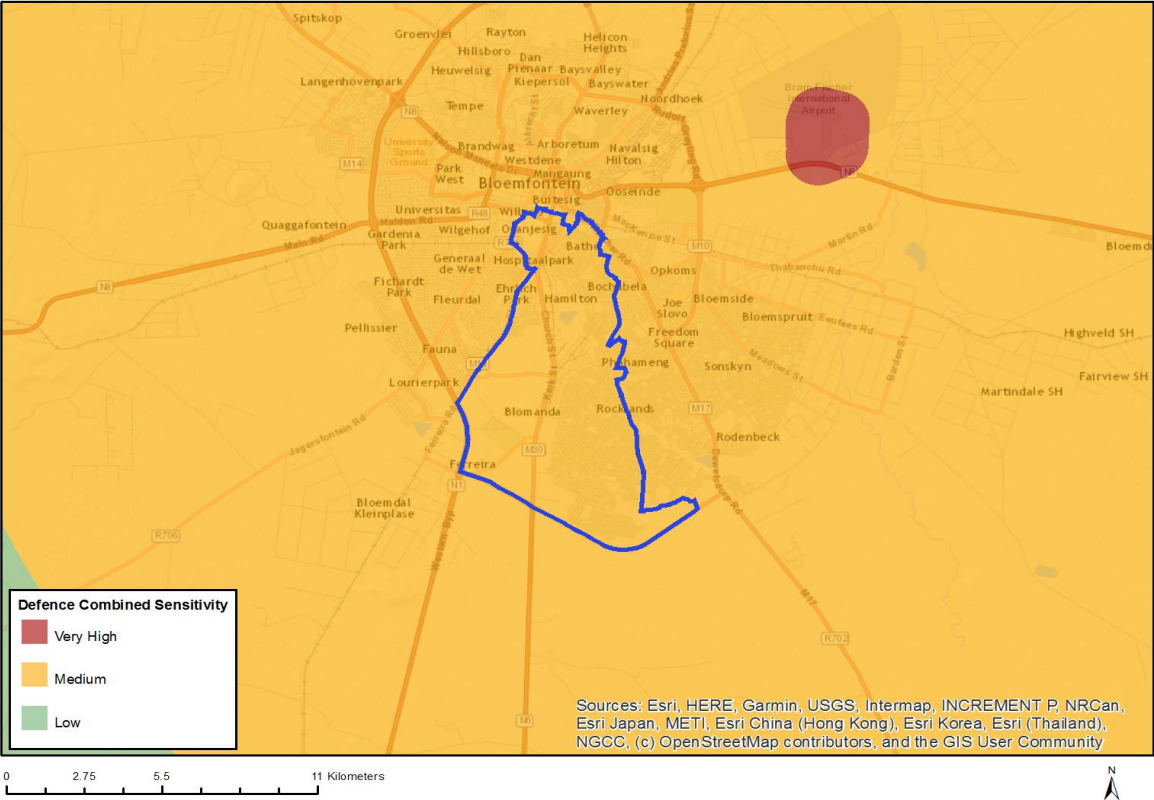


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

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

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

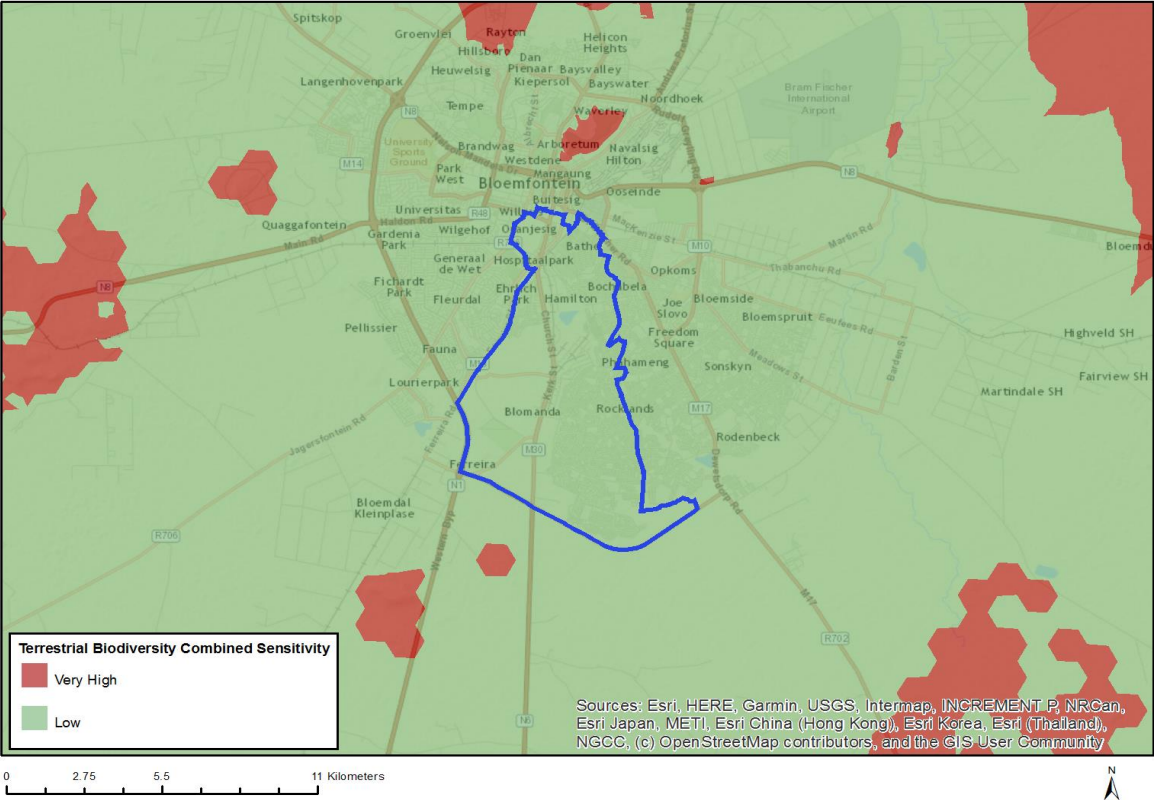


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	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