CITY OF MBOMBELA
THE ULTIMATE DESTINATION

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES

Environmental Stewardship

ZETHU - MATSULU DRAFT BASIC ASSESSMENT REPORT - WASTE TRANSFER FACILITY

MATSULU WASTE TRANSFER FACILITY DRAFT BASIC ASSRSSMENT REPORT

Document Name: ZMW-Report-BAR FOR MATSULU WASTE TRANSFER FACILITY

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Abbreviations:

BAR - Basic Assessment Report
CBD - Central Business District
CDF - Conservation Development Framework
CPA - Catchment Protected Areas
CWDS - Tekwane West Central Waste Disposal Site
DEDET - Mpumalanga Department of Economic Development, Environment and Toursim (DEDET).
EAP - Environmental Assessment Practitioner
EMP – Environmental Management Plan
EMPr - Environmental Management Programme report
IAP – Interested and Affected Parties
IDP – Integrated Development Plan
GN - Government Notice
KNP – Kruger National Park
KNMP - Kruger National Park Management National Plan
MLM - City of Mbombela Local Municipality
MWTW - Matsulu Water Treatment Works
Myezo - Myezo Environmental Management Services
NEMA - National Environmental Management Act
NEMWA – National Environmental Management Waste Act
NEMBA - National Environmental Management Biodiversity Act
NEMPAA - National Environmental Management Protected Areas Act
NGO – Non-Governmental Organization
PNA - Priority Natural Areas
PTY – Private Company
SAHRA – South African Heritage Resources Agency
SANBI - South African National Biodiversity Institute
SDF - Spatial Development Framework
VPA - Viewshed Protected Area
ZCS - Zethu Consulting Services

1. INTRODUCTION

1.1 Background

The City of Mbombela Local Municipality (MLM) seeks to establish a Waste Transfer Station within Matsulu Township in Mandela Park within Ehlanzeni District Municipality, Nelspruit. The MLM appointed Zethu Consulting Services (ZCS) as their Professional Service Provider for the proposed project. Zethu Consulting Services has contracted Myezo Environmental Management Services (Myezo) as the Environmental Assessment Practitioner (EAP) for the project.

1.2 Objectives of the Study

The objective of the basic assessment process is to ensure that the environmental aspects surrounding the proposed development and activity are protected from negative developmental impacts presented by the estabishment of a Waste Transfer Station in Matsulu. The process also seeks, through a stakeholder consultative process, to achieve aspects oulined below:

- Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Describe the need and desirability of the proposed alternatives;
- Undertake an impact and risk assessment process inclusive of cumulative impacts which focus on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives.

From the impact risk assessment, to determine:

- the nature, significance, consequence, extent, duration, and probability of the impacts occurring to,
- the degree to which these impacts can either be reversed; may cause irreplaceable loss of resources; and can be managed, avoided or mitigated,
- through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to:
- identify and motivate a preferred site, activity and technology alternative,
- identify suitable measures to manage, avoid or mitigate identified impacts, and
- identify residual risks that need to be managed and monitored.

Compile an Environmental Management Programme (EMPr) to ensure all the potential identified impacts are mitigated, audited and monitored to protect the environment and human health.

1.3 Approach

1.3.1 Basic Assessment Report Requirements and Report Structure

The nature and all related developmental impacts for the proposed project are detailed in this draft Basic Assessment Report (BAR). This report has been compiled in accordance with the requirements of the EIA Regulations of December 2014. This draft Basic Assessment Report has been compiled following the information required as stated within the Regulations. Prior to the Inception meeting, a literature research and information collection process was undertaken to understand the Status Quo. The data collection and consolidation process included consultations with institutions such as the Council for Geoscience for geological data for the site.

This BA Report has been drafted in accordance to the EIA Regulations, 2014 and adheres to the requirements contained in Appendix 1 of GNR 982, as noted in Table 1.3.1., which as such, provides the BAR structure. The

supporting documents that are mentioned from each of the Sections follow that specific Section number and are called Annexures. The specific Appendices stipulated in the Regulaitons are referenced as Appendix A, B, etc.

Table 1.3.1: Content of a BA Report (2014 EIA Regulations)

2014 EIA Regulations	Description of EIA Regulations Requirements for BA Reports	Location in the BA Report
Appendix 1, Section 3 (a)	Details of – (i) The EAP who prepared the report; and the expertise of the EAP; and (ii) The expertise of the EAP, including a curriculum vitae.	Section 2 & Appendix G2
Appendix 1, Section 3 (b)	The location of the activity, including – (i) The 21 digit Surveyor General code of each cadastral land parcel; (ii) Where available, the physical address and farm name; (iii) Where the required information in items (i) and (ii) is not available, coordinates of the boundary of the property or properties	Section 3
Appendix 1, Section 3 (c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is – (i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Section 3.1.7 and Appendix A
Appendix 1, Section 3 (d)	A description of the scope of the proposed activity, including – (i) All listed and specified activities triggered; (ii) A description of the activities to be undertaken, including associated structures and infrastructure.	Section 4
Appendix 1, Section 3 (e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.	Section 5
Appendix 1, Section 3 (f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.	Section 6
Appendix 1, Section 3 (h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including- (i) Details of all alternatives considered; (ii) Details of the Public Participation Process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which the impacts- (aa) Can be reversed; (bb) May cause irreplaceable loss of resources; and (cc) Can be avoided, managed, or mitigated. (vi) The methodology used in deterring and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; (vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographic, physical, biological, social, economic, heritage and cultural aspects; (viii) The possible mitigation measures that could be applied and level of residual risk; (ix) The outcome of the site selection matrix; (x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and;	Section 7 & 8 Section 9 and Appendix H Section 9.2.3.4 Section 10 Section 10.11 Section 10.12 Section 10.13 Section 10.13 Section 10.15

	(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity.	Section 10.15
Appendix 1, Section 3 (i)	A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) A description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.	Section 11 Section 11.1 Section 11.2
Appendix 1, Section 3 (j)	An assessment of each identified potentially significant impact and risk, including- (i) Cumulative impacts; (ii) The nature, significance and consequences of the impact and risk; (iii) The extent and duration of the impact and risk; (iv) The probability of the impact and risk occurring; (v) The degree to which the impact and risk can be reversed; (vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) The degree to which the impact and risk can be avoided, managed or mitigated.	Section 10 and Section 12
Appendix 1, Section 3 (k)	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report.	Section 10 and Section 13
Appendix 1, Section 3 (l)	An environmental impact statement which contains- (i) A summary of the key findings of the environmental impact assessment; (ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.	Section 14 Section 14
Appendix 1, Section 3 (m)	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	Section 15 and Appendix F
Appendix 1, Section 3 (n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	Section 16
Appendix 1, Section 3 (o)	A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 17
Appendix 1, Section 3 (p)	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.	Section 18
Appendix 1, Section 3 (q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	Section 19
Appendix 1, Section 3 (r)	An undertaking under oath or affirmation by the EAP in relation to- (i) The correctness of the information provided in the report; (ii) The inclusion of the comments and inputs from stakeholders and interested and affected parties; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.	Section 20.1 and Section 20.2
Appendix 1, Section 3 (s)	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts.	Section 21
Appendix 1, Section 3 (t)	Where applicable, any specific information required by the Competent Authority.	-
Appendix 1, Section 3 (u)	Any other matter required in terms of section 24(4) (a) and (b) of the Act.	-

1.3.2 Environmental Management Programme (EMPr)

An Environmental Management Programme (EMPr) has been compiled according to Appendix 4 of the GNR 982 of the EIA Regulations (2014) for the construction, operational and decommissioning phases of the project. The EMPr is attached as Appendix F.

2. FULL DETAILS OF THE EAP

2.1 Environmental Assessment Practitioner (EAP)

Myezo Environmental Management Services (Pty) Ltd (Myezo) has been commissioned by Zethu Consulting Services (ZCS) to conduct Basic Assessment Studies and compile a Basic Assessment Report (BAR) for the proposed establishment of a Waste Transfer Station at Matsulu Township. The project is located on Erf 312 in Mandela Park, within the Mbombela Local Municipality in Mpumalanga Province.

Babalwa Fatyi, the Environmental Assessment Practitioner (EAP), who is the founder of Myezo, is a Registered Professional Natural Scientist (400123/01). She is also registered with Institute of Environmental Management and Assessment, Lincoln, UK (0025153). She has consulting experience, having worked for an engineering consulting company, after which she also worked for a mining company, responsible for overseeing the company's compliance with its environmental obligations.

She has academic qualifications to back-up her experience, having obtained Master of Science (*cum laude*) and receiving 'SA Association for Advancement of Science Award' for an outstanding MSc Degree in the Faculty of Science. Babalwa has undertaken several environmental management and public consultation projects in terms of the National Environmental Management Act (No. 107 of 1998), as well as environmental authorisations, in terms of Mineral and Petroleum Resources Development Act (No 28 of 2002).

Her work experience has allowed her an insight with respect to sector specific environmental requirements ranging from authorisations, implementation and monitoring. She is thus still active in promoting environmental stewardship, through utilisation of a series of integrated environmental management tools, for attainment of long lasting and meaningful economic prosperity.

She has compiled more than 25 Environmental Management Plans (EMPs) and programmes and more than 20 Basic Assessment Reports (BARs), within the various sectors and industries. A comprehensive illustration of her qualifications is included in the CV and profile attached as Appendix G2. A profile of Myezo is included as Appendix G3.

Table 2.1.1: EAP description and contact information

Environmental Assessment Practitioner (EAP):	Myezo Environmental Management Services (Pty) Ltd
Contact person:	Babalwa Fatyi
Profession:	Managing Director and EAP
Physical ddress:	645 Jacqueline Drive, Unit 17 Garsfontein, Pretoria, 0040
Postal address:	Postnet Suite B165, Private Bag X18 Lynnwood Ridge
Telephone:	012 998 7642
Fax:	012 998 7641
Cell:	082 772 2418
E-mail:	babalwa@myezo.co.za

EAP Qualifications	Master of Science (*cum laude*): Ecology	
EAP Registrations/Associations	The South African Council for Natural Scientific Professions (SACNASP)	Institute of Environmental Management and Assessment (IEMA), Lincoln, UK
Registration Number	400123/01	(0025153)

3. THE LOCATION OF THE ACTIVITY

3.1 Project Location

3.1.1 Site Identification

The site has the following Surveyor-general Cadastral Code 21 digit site reference numbers as provided in Table 3.1.1.1 below.

Table 3.1.1.1: Surveyor-general Cadastral Code 21 digit site (erf/farm/portion) reference numbers

T	0	J	U	0	0	7	0	0	0	0	0	0	3	1	2	0	0	0	0	0

3.1.2 Change of Land use

The current zoning of the site is agricultural as confirmed by the zoning certificate (Annexure 3.1.2).

3.1.3 Physical Address and Farm name

The proposed waste transfer site is located within Matsulu Farm Erf 312 which is 154 583.95 m^2 in size and will accommodate waste from the Matsulu township. Matsulu township is located within the realms of MLM, Ehlanzeni District Municipality, Mpumalanga Province. It lies next to the N4 National road 41 km east of Nelspruit (Mbombela) Central Business District (CBD). The project locality is shown in Figure 3.14-1 as well as Appendix A. The detailed locality information is provided in Table 3.1.4.1.

3.1.4 Site Address

Table 3.1.4.1: The detailed locality information for the proposed site

Building Name or Number	Matsulu Farm Erf 312
Street	Matsulu, Triumph Road
City/Closest Town	Mandela Park
Province	Mpumalanga
Local Municipality	Mbombela Local Municipality
District Municipality	Ehlanzeni District Municipality
Property Description (Deeds Act or name of farm, town, city or agricultural holding	Matsulu Township
Postal address	1 Nel Street,

	Mbombela Local Municipality		
Postal code:	1200	Cell:	
Telephone:	013 759 2239	Fax:	013 759 2146
E-mail:	lesibam@mbombela.gov.za		

Local authority in whose jurisdiction the proposed activity will fall:	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs		
Contact person:	Ms DA Sibiya		
Postal address:	7 Government Boulevard, Building 6, Riverside Park, Mbombela, 1200		
Postal code:	Private Bag X11219, Mbombela, 1200	Cell:	084 587 9053
Telephone:	013 766 6067/8	Fax:	013 759 4085
E-mail:	dasibiya@mpg.gov.za		

Property Owner: Mbombela Local Municipality

3.1.5 Wards in Matsulu

According to the City of Mbombela's website, the Matsulu area falls under the Nelspruit B. Matsulu is divided into two different wards which are; Ward 13 and Ward 28. The area where the Matsulu Waste Transfer Station is proposed to be in is situated in Matsulu Ward 13.

3.1.6 Size of Site and Classification

Table 3.1.6.1: Size and classification of the site

Size of facility for a waste management activity	Small
Area where the waste management activity takes place	Erf 312, Matsulu Township, Mandela Park, Mbombela
Classification of facility in terms of climatic water balance	B-
Classification of Facility in terms of the type and the quantity of waste received	G

3.1.7 Geographical Co-ordinates of All External Corner Points of the Site

Table 3.1.7.1: The site corner co-ordinates as shown in Figure 3.1.7-1

Number of corner	**Latitude**			**Longitude**		
1	25°	31'	46"	31°	22'	6"
2	25°	31'	46"	31°	21'	45"

Number of corner	Latitude			Longitude		
3	25°	31'	50"	31°	21'	46"
4	25°	31'	45"	31°	21'	47"
5	25°	31'	45"	31°	21'	47"
6	25°	31'	44"	31°	21'	52"
7	25 °	31'	44"	31°	21'	55"
8	25°	31'	47"	31°	21'	55"
9	25°	31'	43"	31°	21'	58"
10	25°	31'	42"	31°	21'	58"
11	25°	31'	40"	31°	21'	58"
12	25°	31'	44"	31°	21'	59"
13	25°	31'	40"	31°	21'	60"
14	25°	31'	46"	31°	21'	60"
15	25°	31'	41"	31°	22'	2"
16	25°	31'	43"	31°	22'	3"
17	25°	31'	43"	31°	22'	4"

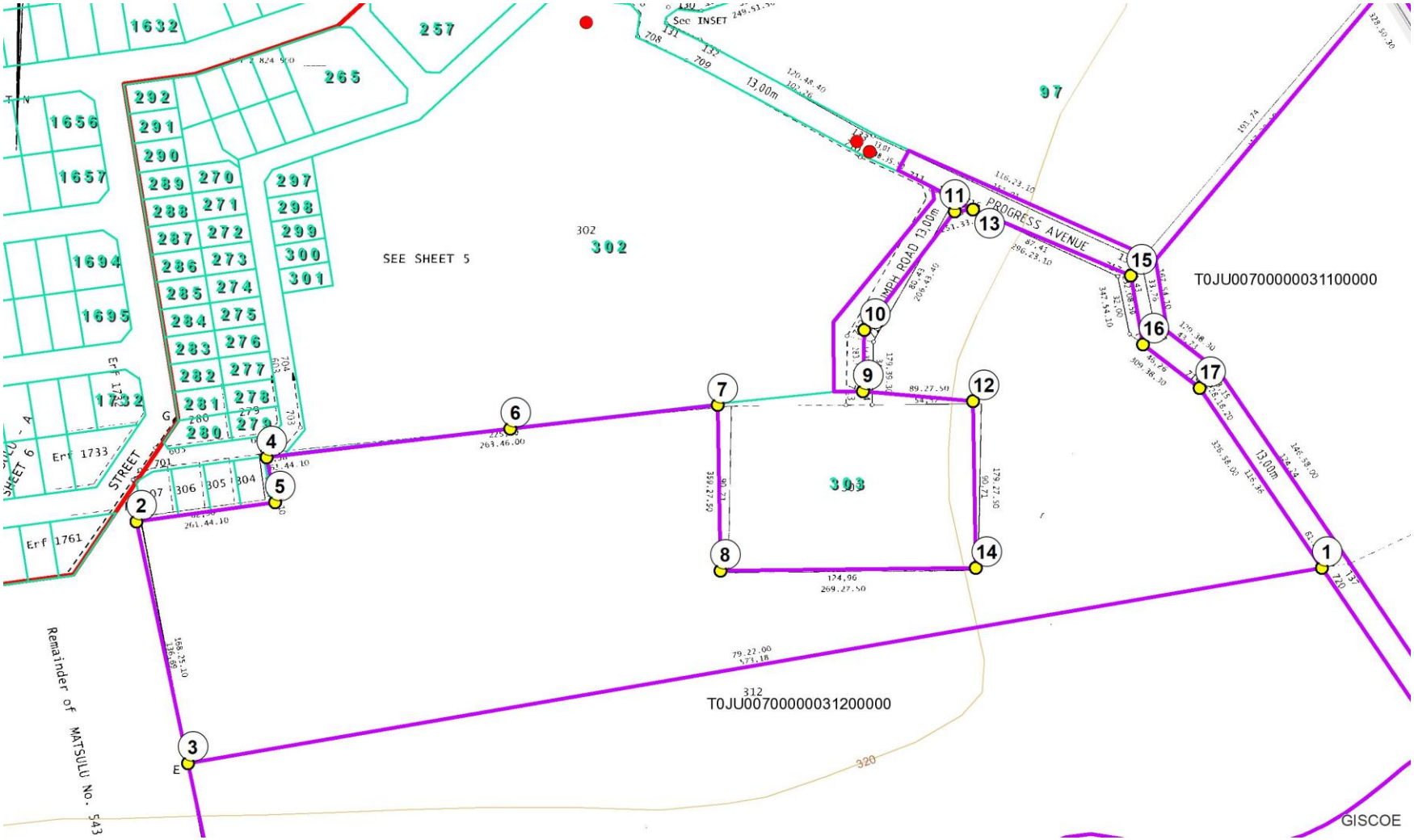


Figure 3.1.7-1 Geographical co-ordinates of all external corner points of the site. (To be read in conjuction with Table 3.1.7.1).

4. DETAILED DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY

4.1 Project Title

Basic Assessment Report for the proposed construction of a Waste Transfer Station in Matsulu Township, Mandela Park in Mbombela Local Municipality.

4.2 Project Description

The City of Mbombela Local Municipality (MLM) is proposing to establish a Waste Transfer Station at Matsulu Madela Park within Matsulu Township (Figure 4.2-1). The site will temporarily receive, sort and store general waste before it is hauled to the Tekwane West Central Waste Disposal Site (CWDS). The proposed waste transfer site is located within Matsulu Farm Erf 312 which is 154 583.95 m^2 in size and will accommodate waste from the Matsulu Township and handle an estimated 65 tonnes of general waste on a daily basis. The total development footprint area covered by the infrastructure including roads and parking areas will be 27 965.74 m^2.

4.3 Project Scope

The project activity includes the receiving, sorting, temporarily storing of general waste and transportation, for its disposal at the Tekwane Disposal Site. The waste will be collected by municipal trucks from the households on a daily basis as per the municipal waste collection schedule for each area. The various streams of mixed general waste will be brought to the proposed Matsulu Waste Transfer facility, where it will be offloaded into the General Waste Sorting Area and sorted according to the different waste streams. The general waste will be sorted into recyclable, non-recyclable and organic waste. Each stream will be diverted to its appropriate area as per the standard operating procedures for the site. The non-recyclable waste will be compacted into the "walk in floors" containers, which will be covered before being hauled for disposal at the licensed Tekwane Disposal Site. The recyclable materials will be sorted into different classes of waste streams. The sorted recyclable materials will be transported to the area for packaging and transported to the Local Recycling Companies. A working relationship with local recycling companies will be established for delivery and for further processing, outside of the proposed site. Organic waste will be received, sorted and chipped into components for compost making. The compost making will not be done at the site but transported to the relevant site that caters for compost making.

Matsulu township is located within the realms of MLM, Ehlanzeni District Municipality, Mpumalanga Province. It lies next to the N4 National Road 41 km east of Nelspruit (Mbombela) Central Business District (CBD). The project locality is shown in Appendix A1 and A2.

The current project area falls in a vacant land, of which is portion is currently used as an informal dumping site is situated below the Matsulu Water Treatment Works (MWTW) as shown in Figure 4.5-1. In order for the Mbombela Local Municipality to formalise the waste management at Matsulu Township, as part of their implementation of the overarching Mbombela Integrated Waste Management Strategy, they have adopted the approach of providing of a licensed Waste Transfer Station.

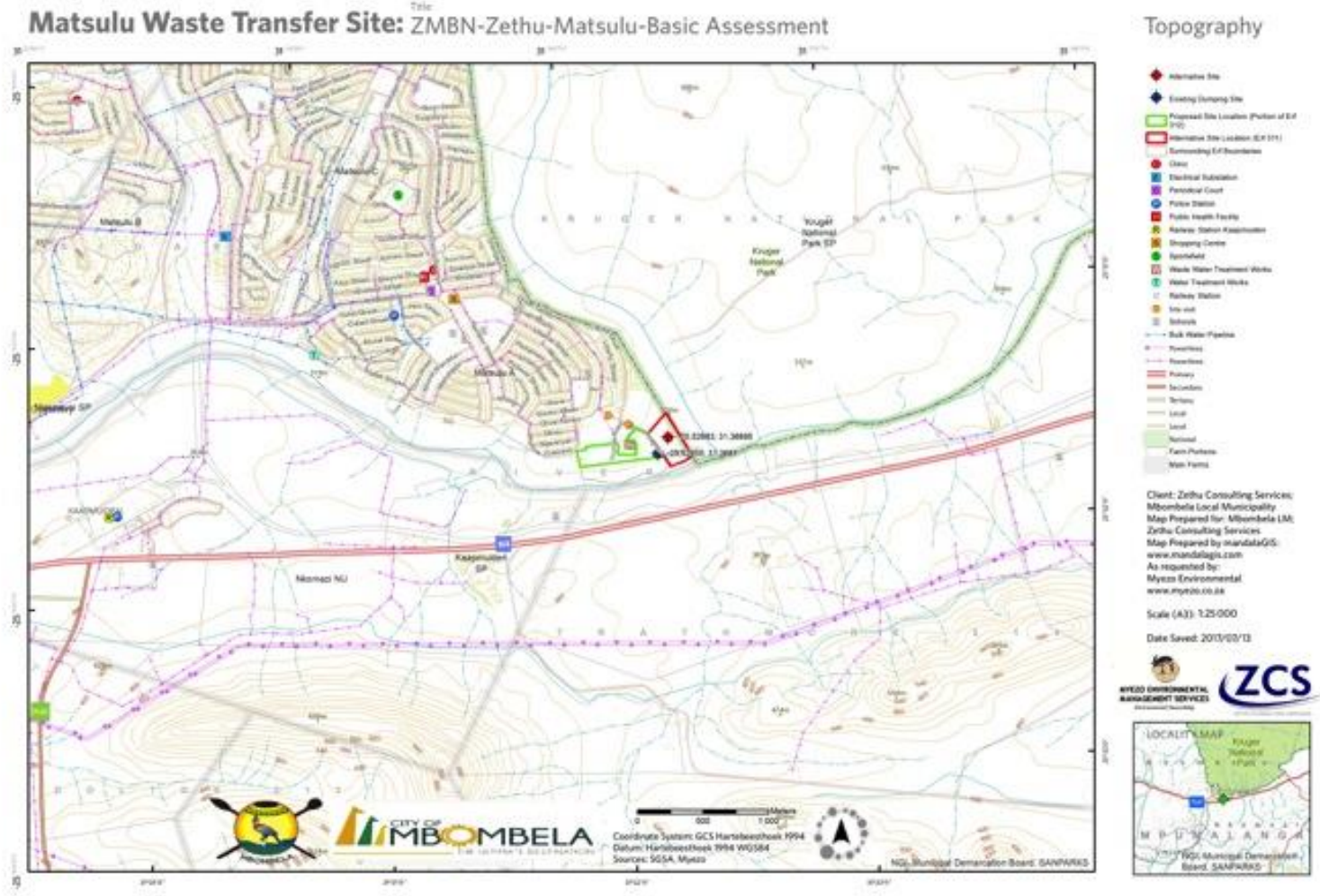


Figure 4.2-1 Local Setting Map

The Central Waste Management Strategy proposed:

The First Generation, Integrated Waste Management Plan recommended a Central Waste Disposal Site.
• The site was to be closer to the source of waste generation, namely Nelspruit, White River, Kanyamazane and Commercial hubs.
• The site is to be supported by transfer stations that will temporarily store the waste, sort recyclables, compact the waste prior to long haulage in appropriate vehicles to the Central Waste Disposal Site.
• A number of potential sites were investigated and four sites were identified for Basic assessment, namely White River, Hazyview, Matsulu and Kabokweni; to date White River Transfer Station is licensed while Hazyview is still being considered by the Mpumalanga Department of Economic Development, Environment and Toursim (DEDET).
• The land allocation for transfer stations was approved by a Council Resolution in August 2013.
• The EIA and Permit Application Reports were presented on 3 August 2005 to the interested and affected parties (IAPs). The reports were finalised with comments received and submitted to DEDET and the then DWAF (now DWS) respectively for further consideration.
• Delisting of Delta E.M.D (Pty) Ltd site in Mbombela was approved as part of the EIA Report.
• Permit was issued on 27 October 2007.
• Construction of the site was completed on 15 December 2010
• Council has appointed a Site Operator: Buhle Besive Waste Management.
• Monitoring Committee was established comprising of Chairperson, Relevant Authorities, Adjacent land owners and Ward Councillor.

Source: Mbombela Local Municipality (Bes Practice: Regionalisation of Waste Services, Waste Khoro 2013).

The proposed facility will also form part of MLM Integrated Waste Management Strategy that aims at reducing waste tonnage currently disposed of at the landfill site. The key infrastructure required for the development of the proposed project will comprise of the following:

- Waste Transportation Options,
- Public Waste Drop-Off Area,
- Waste Recovery and Recycling Area,
- Garden Waste (Composting area),
- Office administration area with ablution facilities, and
- Municipal vehicle parking area and vehicle wash bays.

4.4 Associated infrastructure

The site layout/engineering drawings have proposed the following infrastructure for the site as shown in Appendix A1 and Appendix A2:

- Guard House
- Office block and Kitchen
- Ablution facilities with changing rooms
- Waste sorting area – Sorting and Recycling Area with concrete slab
- Waste compacting area
- Public off-loading area
- Skip pick –up area
- Truck off-loading area
- Truck pick-up area
- Wash bays – The wash bays would need an application for a Water Use licence in terms of the National Water Act, 1998(Act No. 36 of 1998).
- Parking Bay Areas
- Parking area for rear-end compactor

4.5 Operational times

The operational times are outlined below.

Table 4.5.1: Site Operational times

Period	From	Until
Weekdays	07h30	16h00
Saturdays	08h00	14h00
Sunday	08h00	14h00
Public holidays	08h00	14h00

4.6 Waste Quantities

4.6.1 Types of waste and list the estimated quantities expected to be managed daily.

The types and estimated quantities at the site are provided as follows:

Table 4.6.1: Types of waste and list the estimated quantities expected to be managed daily

Hazardous waste	Non-hazardous waste	Total waste handled (**tonnes per day)
N/A	General Waste	65
N/A	Building Rubble	7
N/A	Green Waste	**9.5**
N/A	Office Waste (Paper and Newspaper)	**1.5**
N/A	Metal	**6**
N/A	Cardboards	**4**
N/A	Food Residues	**2**

4.6.2 Recovery, Reuse, Recycling, treatment and disposal quantities.

The applicable waste types and quantities expected to be disposed of and salvaged annually are provided below.

Table 4.6.2: Applicable waste types and quantities expected to be disposed of and salvaged annually

Types of Waste	Main Source (Name of Company)	Quantities		On–Site Recovery Reuse Recycling Treatment or Disposal	Offsite Recovery Reuse Recycling Treatment or Disposal	Offsite Disposal
		TONS/ MONTH	M^3/ MONTH	Method & location	Method location and contractor details	
General Waste	Matsulu Township	10.5	23.1	Temporary Storage	Disposed to Tekwane Landfill	

Builders Rubble	Matsulu Township	0	0	Temporary Storage	Disposed to Tekwane Landfill	
Green Waste	Matsulu Township	9.5	20.9	Temporary Storage	Disposed to Tekwane Landfill	**Composting site**
Office Waste	Matsulu Township	1.5	3.3	Temporary Storage	Disposed to Tekwane Landfill	Potential Local Recycling Companies

4.7 Waste, Effluent, Emissions, Energy and Noise Management

4.7.1 Solid Waste Management

Solid waste will be generated during all phase of the project. Construction rubble and litter will be generated during the construction and decommissioning phases of the project and more litter will be generated during the operational phase. Waste Management Plan and procedures will be implemented and adhered to. Solid waste management infrastructure such as litter bins and recyclable material colour coded and labelled bins will be provided within the site. Regular maintenance and cleaning will be ensured to eliminate odours that will attract ants, flies, rats, birds and other animals to the site.

4.7.2 Liquid effluent

No liquid effluent will be discharged from the site except through the proper sewage system that will be implemented as part of the planned infrastructure development for the site. The temporal ablution facilities to be provided during site establishment and construction will be managed and maintained regularly and properly used by the site workers. Spillages or leaks will be checked daily and reported immediately to reduce the potential of soil, surface water and ground water pollution.

4.7.3 Emissions into the atmosphere

The only emissions envisaged at the site are from dust resulting from vehicular movement on the site during the offloading of construction material at stockpiling areas during construction and the offloading of waste at operational phase. No other emissions will be experienced at the proposed site.

4.7.4 Water use

Water use for all site operations will be sourced from the municipality. Water for human consumption and use will be sourced from the municipality. Should water be sourced from the nearby natural water sources (Crocodile River), a Water Use Licence in terms of the National Water Act No 36 of 1998, would need to be applied for. The nearby Waste Water Treatment Plant could be a water source for dust suppression, however the use of treated effluent from the Waste Water Treatment Plant will require a Water Use Licence. Rainwater harvesting options from the infrastructure roof and installation of JoJo Tanks will be considered, however, proper storm water management systems will be installed and conditions within the EMPr will be adhered to.

4.7.5 Energy efficiency

All energy requirements for the site will be provided for by the municipality. In the case where high voltage is required, appropriate electricity sources would need to be provided by the municipality. In the event that there are power outages or Eskom load shedding, the site will use a back-up generator. The use of alternative power source such as solar power will be considered.

4.8 Socio-economic value of the activity

The project is envisaged to provide temporal and permanent jobs for the local community. The job creation and employment opportunity will boost the socio-economic status of the community and lead to increase quality of life. Local economic development through engagement of local SMMEs will also be a positive impact to the community. It is estimated that the project will provide a value of R1,2 million for jobs created.

4.8.1 Capital value of proposed activity

The estimated capital value for the project is R12 million, with 10% (R1,2 million) estimated as a contribution towards the temporal and permanent jobs to be created.

4.8.2 Temporal and permanent jobs

An estimated number of between 10 and 15 jobs will be created within the site from the local community members. Envisaged personnel to be on site are:

- Security guards
- Site Manager
- Administrator
- Site Operational Line supervisors
- Health and Safety Officer
- Waste Operators - Receiver, Sorters, Compactors, Loaders etc
- Cleaners

4.9 Competence to operate site

4.9.1 Municipal Overall Site Management

The City of Mbombela Local Municipality will ensure that all personnel on the site undergo specific waste management training. Technical skills will be acquired through on-site training in general health and safety, and procedures will be prescribed for day-to-day running of the site.
The site will be the sole responsibility of the Senior Manager within the Solid Waste Management Department and his details are as follows:

Mr Lesiba Maluleke	Senior Manager Solid Waste Management	Planning and manage solid waste management services. Municipal waste management officer.	B Tech Degree Environmental health (Solid Waste Management and Occupational Health and Safety).

4.9.2 Technical Competence and Site Management

The proposed waste transfer facility will be designed by a professional engineering team to adequately contain general waste for a temporary period prior to collection by Municipality and haulage to the Tekwane Landfill site. The site will be operated by a Waste Management Contractor (WMC) with the responsibility of overseeing delivery and collection of waste, monitoring and cleaning operations. City of Mbombela Local Municipality will designate an Environmental Officer (EO) to ensure compliance with set licence conditions.




Photo: 4.2-1: Examples of sorted and baled recyclable material

4.10 Listed and specific activities triggered

Table 4.10.1: Table of specific activities triggered

Indicate the No. and Date of Relevant Notice:	**Activity Numbers (as listed in the Waste Management Activity):**	**Describe Each Listed Activity:**
NEMA EIA Regulations, 2014, Government Notice R983 of 04 December 2014 (as amended on 07 April 2017) (Listing Notice No. 1)	**Activity 27**	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – (i) the undertaking of linear; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
NEMA EIA Regulations, 2014, Government Notice R985 of 4 December 2014 (as amended on 07 April 2017) (Listing Notice No. 3)	**Activity 12**	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (f) Mpumalanga (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, with an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment (ii) Within critical biodiversity areas identified in bioregional plans; or (iii) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.
	Activity 14	**ACTIVITY 14** The development of— (x) buildings exceeding 10 square metres in size; or (xii) infrastructure or structures with a physical footprint of 10 square metres or more; f. Mpumalanga (i) Outside urban areas: (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation.

NEMWA Government Notice GN 921 in Gazette No. 37083 of 29 November 2013	**Category A (2)**	The sorting, shredding, grinding, crushing, screening or bailing of general waste at a facility that has an operational area in excess of 1000 m^2.
	Category A (3)	The recycling of general waste at a facility that has an operational area in excess of 500 m^2, excluding recycling that takes place as an integral part of an internal manufacturing process within the same premises.
	Category A (5)	The recovery of waste including the refining, utilisation, or co- processing of waste in excess of 10 tons but less than 100 tons of general waste per day or in excess of 500 kg but less than 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal manufacturing process within the same premises.

4.11 Description of the activities to be undertaken including associated structures and infrastructures

The proposed facility will be used for collecting, sorting, compacting and transferring of waste to more suitable containers for haulage to the Tekwane landfill Site (Photo 4.12-1 – 4.12-2) The proposed facility will also form part of MLM Integrated Waste Management Strategy that aims at reducing waste tonnage currently disposed of at the landfill site. The key infrastructure required for the development of the proposed project will comprise of the following:

- Guard House;
- Waste Transportation Options ("Walk-in Floor" containers) and Skip bins;
- Public Waste off-loading Area;
- Waste Recovery and Recycling Area (as illustrated in Figure 4.12-1);
- Office administration area with ablution facilities and changing rooms;
- Municipal vehicle parking area and vehicle wash bay. The washbays would need an application for a Water Use licence in terms of the National Water Act, 1998(Act No. 36 of 1998);
- Parking areas;
- Parking area for rear-end compactor;
- Compacting area;
- Truck pick-up area;
- Truck off-loading area.

4.12 Site Layout

The site layout or locality plan (Figure 4.12-1) will comprise of the project plan and other sections of the station. The planned infrastructure at the site such as temporal ablution facilities and construction of more permanent infrastructure including offices and ablution facilities with washrooms, parking bays, compacting area and wash bays. The wash bays will require a Water Use Licence. All the proposed infrastructure is included in the site layout as shown in Figure 4.12-2 and Appendix A1. The services, infrastructure and equipment planned for the proposed site is shown in Figure 4.12-1 (a-e) below.
As indicated, the waste will be finally transported to Tekwane Waste Disposal Site, the entrance of which is illustrated in Photo 4.12-1.

(a) Walking Floor

(b) Waste Compactor

(c) Front view with roll-on bins into which waste is compacted.

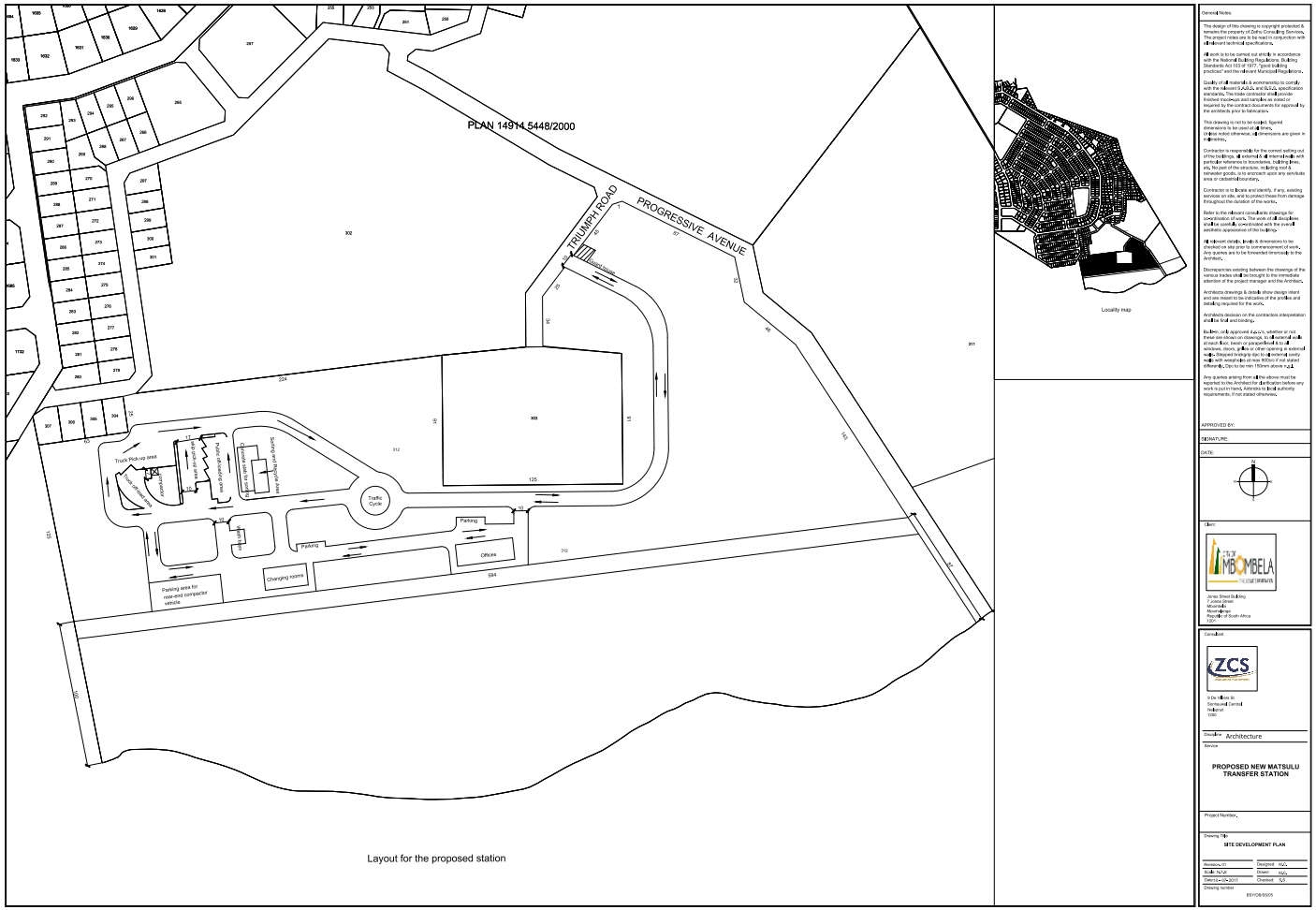
(d) Truck tipping into the compacter.

(e) Example of containers at the Public drop-off area.

Figure 4.12-1 Photographic illustration of services and infrastructure planned for the site

Photo 4.12-1. Tekwane West Site Notice before the entrance to the disposal site

Photo 4.12-2. Secure and Access Controlled entrance to the Tekwane West Disposal Site



Layout for the proposed station

Figure 4.12-2 Site layout with infrastructure

4.12.1 Access road to site

The site can be accessed by an existing network of roads, from Oliver Tambo Street through to Urban Street that turns into Progressive Street. From Urban Street the site can be accessed through Triumph road. There are current plans to upgrade the road into the site and provision has been made for 7 m for road, 2 m for the walk way (Figure 4.12-1 and Figure 4.12-2). Access to the proposed Matsulu Waste Transfer Facility will be through an existing access road on the property (Triumph Road and Capital Road). The site will be fenced off and secured by a security gate. The entrance will have a boom gate with a guardhouse and security guard to control the types of vehicles and waste allowed on and to prevent salvagers accessing the site. From the entrance placement of prominent signage, private vehicles will be directed to the public drop-off facility and municipal trucks to the skip site. An example of the proposed design is similar to the Tekwane Disposal Site (Photo 4.12-1 and Photo 4.12-2). It is proposed that the on-site roads will be built with 80 mm interlocking heavy duty paving bricks. The paving is designed in order to withstand the load of waste delivery vehicles that will utilise the site on a daily basis. The entire site will be fenced to prevent illegal salvaging of materials and ensure safety of both the community and site workers. Fencing will be approximately 1.8 m in height using palisade or similar material.

4.12.2 Current land-use where the site is situated

The land use where the site is located is agricultural land with open spaces and the project will require a land rezoning application before commencing with the operations at the proposed site. The current project area falls in a vacant land (Figure 4.12.2-1(a)), part of which has a portion currently used as an informal dumping site as shown in Figure 4.12.2-1(c), situated below the Matsulu Water Treatment Works (MWTW). The site is bordered by a residential area of Matsulu. The specific open space that is earmarked for the waste disposal site is used for subsistence farming (cultivation of maize is practiced) as illustrated in Figure 4.12.2-1(d). There is also an informal, indiscriminate dumping at the site at about 100 m from the banks of the Crocodile River as shown in Figure 4.12.2-1 (b). The project area is about +300 m from the fence of the Kruger National Park, which is one of tourist attractions in Mpumalanga. There is a waste water treatment plant about 50 m North-West of the proposed site. There is also informal recycling activities observed in the area as shown in Figure 4.12.2-1(e).

Moreover, for other activities observed around the proposed site (Figure 4.12.2-1 (a) –(e)) are spatially represented in the locality map (Appendix B). The co-ordinates from which these pictures were taken from are indicated under each photograph.

(a) Excavated Area (S 25°31’76.1”, E 31°22’ 15.5”)

(b) Crocodile River where informal fishing is

	practiced (S 25°31'78.1", E 31°22'23.1")
  (c) Waste illegal dumped on the proposed site (25°31'77.0", E 31°22'10.4")	
 (d) Agricultural Activities (25°31'74.1",E 31°22'07.6")	 (e) Recycling Activities on the proposed area (S 25° 31'77.3", E 31°22'10.4")

Figure 4.12.2-1 Land use activities surrounding the area of the proposed site

4.13 Project Activities

The project seeks to receive various types of waste from Matsulu township and the anticipated waste streams are:

- General waste
- Builders rubble
- Green waste
- Office waste.

The quantities for each waste stream will be determined during the waste stream analysis study to be conducted. The project activities are indicated in Section 4.2 and are outlined in Table 10.13.2.1 These activities are outlined as follows:

4.13.1 Activities at Planning and Design Phase

(a) Site selection

- Development of drawings
- Construction plans
- Consolidation of safety files and other regulatory operational manuals

(b) Mobilisation and site establishment

- Transporting equipment, materials and personnel to site
- Site clearing
- Set mobile office facility
- Install storage and ablution facilities
- Install waste disposal facilities
- Clearing of access points where necessary

(c) Auxiliary Services

- Portable water supply and storage tanks
- Diesel, petrol and HFO storage facility roads
- Office buildings, training centre, emergency services and cafeteria
- Workshops: electrical and mechanical
- Instrumentation and control
- Security offices
- Fire protection equipment

4.13.2 Activities at Construction Phase

- Portable water
  - Water tanks will be erected for storage of portable water.

- Stores
  - There will be a hydrocarbon store goods-returned storage area and a street works store. All these areas will be equipped with fire protection and emergency equipment.

- Parking areas
- Access roads and mine haul roads
- Electricity substation and network
- Boiler-making, vehicles, railway maintenance
- Washing and screening
- Conveyors
- Crushing plant installations

- Soil storage
  - All top soil will be stripped and stockpiled

- Surface water structures
  - All roads will be equipped with storm water control structures

- Designs of storm water systems
  - The management of storm water is important it limits erosion, therefore ensuring a sustainable solution. Storm water from external catchment will be diverted around the dirty catchment to allow uncontaminated water to flow back to the natural environment.

- According to Government Notice 704 (GN 704), Regulation 6, a storm water dam will be designed to accommodate the 1:50 year flood volume without spilling. In addition, the minimum freeboard for a residue disposal facility and return water dam should be at least 0,8m above full supply level.

4.13.3 Activities at Operational phase

- Receiving waste
- Offloading waste
- Sorting waste
- Compaction
- Loading and transporting

4.13.4 Activities at Decommissioning and rehabilitation Phase

- Demolition of certain structures
- Ripping and clarification of haul roads
- Dismantling of structures that will need to be removed
- De-establishment and site clean up
- Decommissioning and final rehabilitation

5. DESCRIPTION OF THE POLICY AND LEGISLATIVE CONTEXT WITHIN WHICH THE DEVELOPMENT IS PROPOSED

5.1 Legislative Requirements specific to Waste Transfer Facility

Table 5.1.1: Specific activities triggered specific to the Waste Transfer Facility

Indicate the No. and Date of Relevant Notice:	**Activity Numbers (as listed in the Waste Management Activity):**	**Describe Each Listed Activity:**
NEMA EIA Regulations, 2014, Government Notice R983 of 04 December 2014 (as amended on 07 April 2017) (Listing Notice No. 1)	**Activity 27**	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – (i) the undertaking of linear; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
NEMA EIA Regulations, 2014, Government Notice R985 of 4 December 2014 (as amended on 07 April 2017) (Listing Notice No. 3)	**Activity 12**	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (f) Mpumalanga (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, with an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment (ii) Within critical biodiversity areas identified in bioregional plans; or (iii) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.
	Activity 14	**ACTIVITY 14** The development of— (x) buildings exceeding 10 square metres in size; or (xii) infrastructure or structures with a physical footprint of 10 square metres or more; f. Mpumalanga (i) Outside urban areas: (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation.
NEMWA Government Notice GN 921 in Gazette No. 37083 of 29 November	**Category A (2)**	The sorting, shredding, grinding, crushing, screening or bailing of general waste at a facility that has an operational area in excess of 1000 m^2.

2013	**Category A (3)**	The recycling of general waste at a facility that has an operational area in excess of 500 m^2, excluding recycling that takes place as an integral part of an internal manufacturing process within the same premises.
	Category A (5)	The recovery of waste including the refining, utilisation, or co- processing of waste in excess of 10 tons but less than 100 tons of general waste per day or in excess of 500 kg but less than 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal manufacturing process within the same premises.

5.2 Applicable legislation and guidelines

Table 5.2.1: Applicable legislation and guidelines

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Chapter 1 (2)(4)(ii) Section 24	Chapter 1 (2)(4)(ii)(iv) Section 24 Environmental authorisations The potential consequences for or impacts on the environment of listed activities or specified activities must be considered, investigated, assessed and reported on. Reporting is to the competent authority	Yes	Storage, handling and transportation of waste requires authorisation. It is a legal offence to commence a listed activity prior to obtaining an environmental authorisation (except in response to an emergency, to protect human life, property, or the environment.
	Section 17 Section 19 Section 20 Section 43 – 57	*Deals with waste reduction, re-use, recycling and recovery* *Deals with the listing of waste management activities.* *No person may commence, undertake or conduct a waste management activity, except in accordance with: • The requirements or standards determined in terms of section 19(3) for that activity; or • a waste management license issues in respect of that activity, if a license is required.* *Deals with waste management licences and the procedures for such applications*	Yes	Waste facility will be dealing with waste reduction through compaction and recycling (composting) Waste facility will require a licence or authorisation before it commences its operations.
	NEMA EIA Regulations, 2014, published under in Gazette No. 38282 on 4 December 2014 (as amended on 07 April 2017) Listing Notice 1	**ACTIVITY 27** *The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—* i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Yes	The establishment of a waste site will require the clearance of vegetation for construction of a Construction site, the Waste facility operations area, an office, ablution facilities, kitchen, offloading zone, sorting zone, compaction zone and composting zone. The typical area required for a waste recycling and transfer station is between 2 ha and 3 ha. The estimated footprint of the infrastructure for the proposed site is 154 583,95 m^2 (15,4584 ha), which is much less than the 20 ha mentioned.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
	NEMA EIA Regulations, 2014, Gazette No. 38282 on 4 December 2014 (as amended on 07 April 2017) Listing Notice 2	**ACTIVITY 4** *The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.*	No	The waste to be off-loaded is general waste which is classified as non-hazardous. No hazardous or dangerous goods will enter or store at the site. The domestic general waste material will be stored in "Walking floor" containers that will have a volume of 95 m^3.
	NEMA EIA Regulations, 2014, Government Notice R985 of 4 December 2014 (as amended on 07 April 2017) Listing Notice No. 3	**ACTIVITY 12** *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* (f) Mpumalanga i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, with an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment ii. Within critical biodiversity areas identified in bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.	Yes	The establishment of a waste site will entail the clearance of vegetation for the construction of the proposed site infrastructure, the Waste facility operations area, an office, ablution facilities with change rooms, kitchen, offloading zone, sorting zone, compaction zone and loading zone including parking areas. The typical area required for a waste recycling and transfer station is between 2 ha and 3 ha. The estimated footprint of the infrastructure for the proposed site is 154 583,95 m^2, which is much more than the 300 square metres footprint mentioned. The Terrestrial CBA Map highlights that the proposed development area falls under Malelane Mountain Bushveld.
		ACTIVITY 14 *The development of—* *x) buildings exceeding 10 square metres in size; or* *(xii) infrastructure or structures with a physical footprint of 10 square metres or more;* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more* f. Mpumalanga i. Outside urban areas: (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (hh) Areas within 10 kilometres from national	Yes	The establishment of a waste site will entail construction of the proposed site infrastructure, the Waste facility operations area, an office, ablution facilities with change rooms, kitchen, offloading zone, sorting zone, compaction zone and loading zone including parking areas. The estimated footprint of the infrastructure for the proposed site is 154 583,95 m^2, which is much more than the 10 square metres footprint mentioned. The proximity of proposed site to the KNP and the Crocodile river are considered as sensitive areas. According to the SANBI map the area is regarded as sensitive.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation.		The proposed site +/– 300 m from the Kruger National Park boundary fence and the alternativr site is about +/- 50m from the KNP fence.
		ACTIVITY 14 *The development of—* *x) buildings exceeding 10 square metres in size; or* *(xii) infrastructure or structures with a physical footprint of 10 square metres or more;* f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies (bb) National Protected Area Expansion Strategy Focus areas- (cc) World Heritage Sites (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority. (ee) Sites or areas identified in terms of an international convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves;	No	(aa) Not applicable. The area for the proposed site is outside the Protected area (SANBI Maps). (bb) Not Applicable. According to the environmental settings the proposed study area falls under the Malelane Mountain Bushveld vegetation and the Mpumalanga Protected Area Expansion Strategy does not state the Malelane Mountain Bushveld as a targeted vegetation for expansion. (cc) Not applicable. There are 9 heritage sites in South Africa and the KNP is not listed (UNESCO). (ee) Area ids not listed in terms of international convention. (ff) Area zoned as agricultural and is currently transformed with cultivation and informal housing development encroaching the proposed site. Not described as a critical biodiversity area or ecosystem area. (gg) Area proposed not a core area within a biosphere reserve.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		ACTIVITY 7 *The development and related operation of facility or infrastructure for the bulk transportation of dangerous goods-* (i) In gas form outside an industry complex using pipelines exceeding 1000 metres in length, with a throughput capacity of more than 700 tons per day. (ii) In liquid form, outside an industrial complex, using pipelines exceeding 1000 metres in length, with a throughput capacity of more than 50 cubic metres per day; or (iii) In solid form outside an industrial complex, using funiculars or conveyors with a throughput of more than 50 tons per day.	No	A truck off-load area with 1 'walking floor' containers (volume of 95 m^3) and/or 1 waste compactor; a public off-load area with 3 to 5 bulk containers (30 m^3 each) and a garden waste off-load area with a wood chipper. No dangerous goods will be received into the site or transported for disposal at the landfill site.
		ACTIVITY 10 *The development and related operation of facility or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.*	No	The development of a waste transfer station in which the facility will entail a public off-load area with 3 to 5 bulk containers (30 m^3 each) The facility will have a temporal storage area for "walk in floor" (95 m^3) containers. No dangerous goods will be handled at the site. Not triggered. The amount of general waste to be handled at the site has a total capacity exceeding 80 cubic metres.
		ACTIVITY 15 *The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for—* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan.*	No	The establishment of a waste site will require the clearance of vegetation for construction of a Construction site, the Waste facility operations area, an office, ablution facilities, kitchen, offloading zone, sorting zone, compaction zone and composting zone. The typical area required for a waste recycling and transfer station is between 2 ha and 3 ha which is much less than the 20 ha mentioned. The estimated footprint of the infrastructure for the proposed site is 154 583,95 m^2 (15,4584 ha), which is much less than the 20 ha mentioned.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		ACTIVITY 27 *The development of a road—* *(ii) [a road administered by a provincial authority;] …* *(iii) [a road] with a reserve wider than 30 metres; but excluding [the development and related operation of] a road—* *- for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010, in which case activity 24 in Listing Notice 1 of 2014 applies;* *- which is 1 kilometre or shorter; or* *- where the entire road falls within an urban area.*	No	The development of an access road to the waste facility. Existing road networks will be used, however plans are in place to expand the road to 7m wide.
	NEMA EIA Regulations, 2014, Government Notice R985 in Gazette No. 38282 on 4 December 2014 (as amended as 07 April2017) Listing Notice No. 3	**ACTIVITY 4** *The development of a road wider than 4 metres with a reserve less than 13,5 metres.* *f. Mpumalanga* *i. Outside urban areas:* *(aa) A protected area identified in terms of NEMPAA, excluding disturbed areas;* *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;* *(dd) Sites or areas identified in terms of an international convention;* *(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(ff) Core areas in biosphere reserves; or* *(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas, where such areas comprise indigenous vegetation.*	No	The access road to the entrance of the waste facility will be developed. The existing road networks will be used. The proposed waste facility in in close proximity to a protected area, a National Park and the Crocodile River. (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas, where such areas comprise indigenous vegetation. The area is already disturbed and transformed through cultivation.
	NEMA EIA Regulations, 2014 Government Notice R982 in	**ACTIVITY 10** *The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous goods, where*	No	The waste facility will handle general waste and no dangerous goods will be received at the site. There will be proper screening for dangerous goods materials at the entrance to the facility before

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
	Gazette No. 38282 on 4 December 2014 Listing Notice 2	*such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.* *f. Mpumalanga* *i. Outside urban areas:* *(aa) A protected area identified in terms of NEMPAA, excluding conservancies;* *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;* *(dd) Sites or areas identified in terms of an international convention;* *(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(ff) Core areas in biosphere reserves;* *(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, where such areas comprise indigenous vegetation; or (hh) Areas within a watercourse or wetland, or within 100 metres of a watercourse or wetland; or* *ii. Inside urban areas:* *(aa) Areas zoned for use as public open space; or* *(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.*		offloading of the waste material so as to divert the material offsite.
		ACTIVITY 14 *The development of—* *x) buildings exceeding 10 square metres in size; or* *(xii) infrastructure or structures with a physical footprint of 10 square metres or more;* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more* *f. Mpumalanga* *i. Outside urban areas:*	Yes	The proposed waste facility to be constructed is far more than the 10m^2 mentioned: The typical area required for a waste recycling and transfer station is between 2 ha and 3 ha(+/-25 000 m^2) which is much more than the 300 m^2 mentioned. The proposed area is close to a protected area, a National Park and the Crocodile Park.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		(aa) A protected area identified in terms of NEMPAA, excluding conservancies; *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) World Heritage Sites;* *(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;* *(ee) Sites or areas identified in terms of an international convention;* *(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(gg) Core areas in biosphere reserves; or* *iii. Inside urban areas:* *(aa) Areas zoned for use as public open space;* *(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose; or* *(cc) Areas seawards of the development setback line.*		
		ACTIVITY 15 *The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had and equivalent zoning, on or after 02 August 2010.* *d. Mpumalanga* *i. Inside urban areas; or* *ii. A protected area identified in terms of NEMPAA, excluding conservancies*	No	The current land use will be transformed to accommodate the construction of the waste facility. The Zoning for a waste facility must be industrial area. The area is already transformed and cultivated. The proximity of the proposed site to a protected area, the Kruger National Park, will need to consider the rezoning of the proposed land from agricultural to industrial zone. The location of the proposed facility must not impact on the environment within a sensitive ecosystem of the KNP.

Relevant Act	**Number and date of relevant notice (Regulations)**	**Listed Activity as described in the regulations**	**Applicable to the project? Yes or No**	**Description of the project which fits this activity listing**
National Environmental Management Biodiversity Act, 2004 (Act No. 107 of 1998)	Section 52	*Ecosystems that are threatened or in need protection.* *1) (a) The minister may, by notice in the Gazette, publish a national list of ecosystems that are threatened and in need of protection* *(b) An MEC for environmental affairs in a province may, by notice in the Gazette public a provincial list of ecosystems in the province that are threatened and in need of protection* *2) The following categories of ecosystems may be listed in terms of subsection (1):* (a) Critically endangered ecosystems, being ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subjected to an extremely high risk of irreversible transformations (b) Endangered ecosystems, being ecosystem that have undergone degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems; (C) Vulnerable ecosystems, being ecosystems that have a high risk of undergoing signification degradation of ecological structure, function or composition as a result of human intervention, although they are not critical endangered ecosystems or endangered ecosystems; and (d) Protected ecosystems, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed in terms of paragraphs. 3) A list referred to in subsection (1) must describe in sufficient details the location of each	No	The area is represented as the Malelane Mountains Bushveld (SVI 3) in the Vegetation Map of South Africa for SANBI. The area is already transformed due to informal agricultural and cultivation by community members.

Relevant Act	**Number and date of relevant notice (Regulations)**	**Listed Activity as described in the regulations**	**Applicable to the project? Yes or No**	**Description of the project which fits this activity listing**
		ecosystem on the list. 4) The Minster and the MEC for environment affairs in a relevant province, respectively, must at least every five years reviews any national or provincial list publications by the Minister or MEC in terms of subsection (1). (5) An MEC may publish or amend a provincial list only with the concurrence of the Minister.		
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008): (NEM:WA)	Schedule 5 (Section 19) Category A	Storage and transfer of waste: *1. The temporary storage of general waste at a facility, including a waste transfer facility and container yard, that has the capacity to receive in excess of 30 tonnes of general waste per day or that has a throughput capacity in excess of 20 m^3 per day, including the construction of a facility and associated structures and infrastructure for such storage.*	Yes	Waste storage and handling must adhere to the provisions of the Act. The waste handling and transportation must also be compliant with the general requirements. The waste facility will receive waste, sort and store it in the mobile containers, compact it before transportation to the Tekwane West Central Waste Disposal Site (CWDS), The volumes to be stored and transferred will be less than 30 tonnes per day. The facility will have a Truck load off-load area (1 'walking floor') containers (volume of 95m^3) and or 1 waste Compactor. The Public off-load area with 3-5 bulk containers (30m^3 each) ~ 90m^3 to 150m^3 The construction of the waste facility, office block, ablution facilities and kitchen for the waste operations. The mobile "walk in floor" containers will be used for the temporal storage and transportation of waste.
		Recycling and recovery: *3. The sorting and shredding of general waste at a facility that has the capacity to receive in excess of one ton of general waste per day, including the construction of a facility and associated structures and infrastructure for such sorting or shredding*	Yes	Waste will be sorted and temporarily stored into containers and compacted before being transported.

Relevant Act	**Number and date of relevant notice (Regulations)**	**Listed Activity as described in the regulations**	**Applicable to the project? Yes or No**	**Description of the project which fits this activity listing**
		Treatment of waste: *5. The biological, physical or physicochemical treatment of general waste or the autoclaving, drying or microwaving of general waste at a facility that has the capacity lo receive in excess of 10 tonnes of general waste per day, including the construction of a facility and associated structures and infrastructure for such treatment.*	Yes	The waste will be stored into the mobile containers and compacted before transportation
		Disposal of waste on land: *9. The disposal of general waste to land covering an area of less than 100 m 2 or 200 m3 air space, including the construction of a facility and associated structures and infrastructure for such disposal.*	Yes	Waste from the facility will be disposed at the licenced Tekwane West Central Waste Disposal Site (CWDS).
		Expansion or decommissioning of facilities and associated structures and infrastructure *12. The expansion or decommissioning of facilities and associated structures and infrastructure for activities listed in this Schedule.*	Yes	Decommissioning Phase of the waste facility should the municipality wish to do so.
	Section 9(3)	*In exercising its executive authority contemplated in Subsection (1), a municipality may furthermore, amongst other things, set: Local standards for the separation, compacting and storage of solid waste that is collected as part of the municipal* *• service or that is disposed of at a municipal waste disposal facility;* *• Local standards for the management of solid waste that is disposed of by the municipality or at a waste disposal facility owned by the municipality. Including requirements in respect of the avoidance and the minimization of the generation of waste and the re-use, recycling and recovery of solid waste;* *• Local standards in respect of the directing of solid waste that is collected as part of the municipal service or that is disposed of by the municipality or at a municipal waste disposal facility to specific waste treatment and disposal facilities and; • Local standards in respect of the control of litter.*	Yes	The proposed waste facility must adhere to the local municipality standards and all related municipal by-laws for the operation of the facility.
National Environmental Management: Waste Act, 2008 (Act	Waste Classification	*CHAPTER 7 ANNEXURES TO REGULATIONS* *Annexure 1: Wastes that do not require*	Yes	The waste to be off-loaded at the waste site must be screened and only general waste that does not contain hazardous waste or

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
No. 59 of 2008)	Regulations, 2013 No.R634 Chapter 7 (2a) Annexure 1	*Classification or Assessment* *(1) The wastes specified in item 2 of this Annexure do not require classification in terms of Regulation 4(1), nor assessment in terms of Regulation 8(1)(a).* (2) (a) General waste- (i) Domestic waste; (ii) Business waste not containing hazardous waste or hazardous chemicals; (iii) Non-infectious animal carcasses; (iv) Garden waste; (v) Waste packaging; (vi) Waste tyres; (vii) Building and demolition waste not containing hazardous waste or hazardous chemicals; and (viii) Excavated earth material not containing hazardous waste or hazardous chemicals.		material must be accepted at the site. Pre-screening of waste critical.
	NEMWA Government Notice GN 921 in Gazette No. 37083 of 29 November 2013 Category A	Recycling or recovery of waste *(2) The sorting, shredding, grinding, crushing, screening or bailing of general waste at a facility that has an operational area in excess of 1000 m2.* (3) The recycling of general waste at a facility that has an operational area in excess of 500 m^2, excluding recycling that takes place as an integral part of an internal manufacturing process within the same premises. (5) The recovery of waste including the refining, utilisation, or co- processing of waste in excess of 10 tons but less than 100 tons of general waste per day or in excess of 500 kg but less than 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal manufacturing process within the same premises.	Yes	The types of waste products expected at the public drop-off area will be mainly dry and largely recoverable types of wastes such as paper, glass, wood, steel and garden wastes. The waste collected at the public area that is not recoverable and directed to the sorting and recycle area will be dropped into the compactor or walking floor containers when the containers are full. The waste collected at the public area that is not recoverable and directed to the sorting and recycle area will be dropped into the compactor or walking floor containers when the containers are full. The roll-on containers have a volumetric capacity of 25 m3 (12 tons) each. Containers will also be made available for small quantities of hazardous waste such as oil, fluorescent lights, and batteries.
	NEMWA Government Notice GN 921 in Gazette No. 37083 of 29 November 2013 Category B	Storage of hazardous waste (1) The storage of hazardous waste in lagoons excluding storage of effluent, wastewater or sewage. *Reuse, recycling or recovery of waste* (2) The reuse or recycling of hazardous waste in excess of 1 ton per day, excluding reuse or	No	Containers will also be made available for small quantities of hazardous waste such as oil, fluorescent lights, and batteries.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		recycling that takes place as an integral part of an internal manufacturing process within the same premises. (3) The recovery of waste including the refining, utilisation, or co- processing of the waste at a facility that processes in excess of 100 tons of general waste per day or in excess of 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal manufacturing process within the same premises.		
	NEMWA Government Notice GN 921 in Gazette No. 37083 of 29 November 2013 Category C a) Norms and Standards for Storage of Waste, 2013.	Storage of waste: *(a) Norms and Standards for Storage of Waste, 2013.* *These norms and standards apply to any person who stores general (more than 100 m³) or hazardous waste (more than 80 m³) exceeding 90 days in a waste storage facility. These facilities are required to comply with the norms and standards without a need to conduct a basic assessment and obtain a WML.*	No	The facility caters for waste drop-off, sorting, compaction and transfer of waste to Tekwane West Central Waste Disposal Site (CWDS), not only storage as stipulated within the Norms and Standards. The waste will not be temporarily stored for more than 3 days and does not exceed the 90 days prescribed. The typical area required to operate the facility is between 2ha and 3ha. The facility will have a Truck load and off-load area (1 'walking floor') containers (volume of 95m³) and or 1 waste Compactor. The Public off-load area with 3-5 bulk containers (30m³ each) ~ 90m³ to 150m³. The municipality plans to ensure that putrescible, food and restaurant waste will not be stored on site but hauled away on a regular basis. The proposed facility will do more activities than just storage prescribed in the Norms and Standards for Storage, 2013.
	National Standards for disposal of waste to landfill – GN 34414, 2011-07-01	*Prescribes the requirements for the disposal of waste to landfill as contemplated in Regulation 8(1)(b) and (c) of the Regulations.*	Yes	Waste disposal from the transfer station to CDWS must be legal and compliant to the requirements. The disposal site is licensed.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008): (NEM:WA) Draft Norms and Standards for Sorting, Shredding, Grinding, Crushing, Screening or Bailing of General Waste, 2017 Chapter 2: Chapter 3	 Section 4(1), (5) (a) - (l) Section 5 (1), (3), (4) Section 6(1) -(7) **Sections 7 -11** *All Sections and Subsections are applicable*	Yes	*Registration:* The waste facility must be registered with the competent authority. *Location:* The location must consider the proximity to sensitive areas such as biodiversity sensitive ecosystems and protected areas *Construction & Design:* *Management of Facility/ Operations* Waste handling, storage, sorting, shredding, screening, compacting and transportation. General operation of a waste facility
National Water Act, 1998 (Act No. 36 of 1998)	GNR 324 Regulations Listing Notice 3 of 2014	**Section 21 (g)** Disposing of waste in a manner which may detrimentally impact on water resources.	No	Waste will be transported and disposed at Tekwane landfill site. No waste material will be directly disposed into the nearby river. The route of trucks from the site to Tekwane disposal site will be outlined to ensure no water pollution results from the truck travelling close to the water course. The trucks will be covered when transporting waste from the site to the Waste disposal site to avoid wind blown litter and waste spillage on the road. Temporally stored waste on site will be covered to avoid wind blown litter ending up into the Crocodile river.
	Section 19 Chapter 3 Protection of Water Resources Part 4: Pollution prevention of Water Resources	**ACTIVITY 1** *Prevention and remedying the effects of pollution* *It is the responsibility of an owner of land, a person in control of land or a person who occupies or uses that land to take all reasonable measures to prevent pollution of a water resource from occurring, continuing or*	Yes	Potential pollution (groundwater pollution) must be prevented and remedied. The proposed Transfer Station is about +/- 100 m from the Crocodile River. The river needs to be protected in terms of section 19 of National Water Act.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
		recurring. If these measures are not taken the authorities may do whatever is necessary to prevent the pollution or remedy its effects and may recover all reasonable costs.		
	Section 20	Emergency incidents A responsible person must report an emergency incident and take measures to: • Contain and minimise the effects of the incident; • Clean up; • Remediate any damage that may have occurred; • Take measures to prevent the recurrence of the incident		All mitigation measures listed within the EMPr will be adhered to.
	GN. No. R544	**ACTIVITY 11:** *The construction of:* *(i) canals;* *(ii) channels;* *(iii) bridges;* *(iv) dams;* *(v) weirs;* *(vi) bulk storm water outlet structures;* New (vii) marinas; (viii)jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	No	The construction of the waste facility must observe the 32 m threshold for development of any infrastructure within a 32 m of a watercourse. The current layout was done such that the site is approximately more than 100 m from the water course (Crocodile River).
	GN. No. R545	**ACTIVITY 17** *The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils.*	No	Extraction or removal of peat soil from the river for construction of the infrastructure for the waste facility. No river material will be used.
Occupational Health and Safety Act 85 of 1993	Regulations For Hazardous Chemical Substances (R. 1179 25 August 1995)	*The regulations make provision for the control of exposure of employees to substances hazardous to health and the correct labelling, packaging, transportation and storage of hazardous chemical substances. Hazardous chemical substances are*	Yes	The Occupational Health and Safety Act (OHSA) focuses on health and safety aspects of employees in the workplace. Health ad Safety for the employees during operations of handling waste, tools, machinery and transportation

Relevant Act	**Number and date of relevant notice (Regulations)**	**Listed Activity as described in the regulations**	**Applicable to the project? Yes or No**	**Description of the project which fits this activity listing**
		defined in terms of these regulations to mean any toxic, harmful, corrosive or irritant substance, or a mixture of such substances for which: • An occupational exposure limit is prescribed, or; • An occupational exposure limit is not prescribed but which creates a hazard to health. In addition, monitoring of employees and their work environment is required.		
Health Act 63 of 1977		*The Act provides measures for the promotion of health of inhabitants of the Republic of South Africa. In terms of the Act, every local authority is required to take all lawful, necessary and reasonable practicable measures to maintain its district at all times in a hygienic and clean condition, and to prevent the occurrence of any nuisance or unhygienic condition.*	Yes	Handling of waste material, sorting, crushing, shredding etc.The waste facility must not pose a threat to the employees and all entering the site.
National Road Traffic Act 93 of 1996	Regulations and SANS Codes SANS 10230: Vehicle Inspection Requirements SANS 10231: Operational Requirements SANS 10232: Emergency Response Information SANS 1518-1: Design Requirements for Vehicles	*Transportation of hazardous waste.* *The regulations and associated SANS Codes set out standards for the transport of hazardous waste inlcuding but not limited to: classifications; lbelling; vehicle requirements and licensing; driver training; licensing and responsibilities; loading; route planning; operator agreements; emergency response; reporting of accidents and incidents and compatibility of load.*	No	Regulations deal with transportation of hazardous material however certain aspects of the act apply to the transportation of general waste from the proposed waste transfer facility to landfill site for disposal. Prevention of littering and compliance to all legal requirements of transportation from waste transfer station to CDWS,
THE SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED SANRA NATIONAL ROADS ACT 7 OF 1998 WHITE PAPER ON INTEGRATED POLLUTION AND WASTE MANAGEMENT FOR SOUTH AFRICA GG 20978 / 2000- 03-17 WHITE PAPER ON INTEGRATED	Section 25:	*To make provision for a National Roads agency for the Republic to manage and control the national roads system and take charge of the development, maintenance and rehabilitation of natural roads with the framework of government policy. The National Rods Agency is responsible for the financing, management, control, planning, development, maintenance and rehabilitation of South African national roads system.* *The aim of this White Paper was to underscore the*	Yes	Ensure that no vehicle linked to the operations of the facility leaves any litter or waste material on the provincial or national roads.

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
POLLUTION AND WASTE MANAGEMENT FOR SOUTH AFRICA GG 20978		*importance of preventing pollution and waste and avoids environmental degradation. This White Paper focuses on co-operative governance as envisaged in the Constitution.*		
OTHER POLICIES AND GUIDLINES				
Name of Legislation	**Regulating Authority**	**Promulgated Year**	**Applicable to the project? Yes or No**	**Description of the project which fits this activity listing**
Mpumalanga Conservation Act (Act no. 10 of 1998)	Local government (MTPA)	1998	Yes	Environmental Protection is key in ensuring the proposed project's successful implementation whilst limiting negative impacts to the environment. An EMPr has been developed for the site to ensure the conservation of the environment and biodiversity.
National Forestry Act, (Act no. 84 of 1998)	DWAF	1998	No	Clearance of forest trees must be prohibited. The current site is a vacant, transformed land with informal agricultural cultivation activities and illegal waste dumping. No forest trees will be removed without permission.
National Waste Management Strategy (2001)	DEA (National)	2001	Yes	Project 's objectives and proposed activities aligned to the National Strategy.
Mbombela Local Municipality Soild Waste Management Strategy (2013)	Local government	2013	Yes	The Strategy seek to develop four (4) waste transfer stations that will temporarily store waste and ensure haulage for disposal at the centrally located Tekwane Central Waste Disposal Site.
City of Mbombela Local Municipality Solid Waste Management By-Laws Notice 154	Local government	2016	Yes	All waste facilities must comply to the by laws set out for the storage, collection, handling and transportation of waste 9: Waste Transfer Stations 1) Any holder must (a) utilised appropriate waste transfer stations as directed by the Municipality or service provider; and (b) adhere to the operational procedures of a transfer station as set out by the Municipality
City of Mbombela Local Municipality – Noise Abatement By-Laws	Local government	1992	Yes	According to City of Mbombela Local Municipality's noise abatement by-laws of 1992, no person shall in any street or public place in or on any premises between 22:00 and 06:00 shout, sing or otherwise make any loud noise. Nor shall they operate, play or sanction the operation or performing of any radio, television set, phonograph drum, musical instrument, sound amplifier or similar device which produces or reproduces amplified sound. The by-laws also state that any person who contravenes or fails to comply with the provision of the law shall be guilty of an offence and shall upon conviction be liable to a fine not exceeding R300 or be imprisoned for a period not exceeding 12 months or receive both a fine and imprisonment. In case of a continued offence, the offender shall be fined an amount not exceeding R200 each day, on which the offence continues. Application of recommended noise/sound ambient levels including the measurement of ambient sound level and noise level. The By-

Relevant Act	Number and date of relevant notice (Regulations)	Listed Activity as described in the regulations	Applicable to the project? Yes or No	Description of the project which fits this activity listing
				laws also include the role of the Health Officer in relation to enforcement of the noise abatement by-laws requirements.
Kruger National Park Environmental Management Plan (KNP)	Provincial and Local Government	2011	Yes	The KNP has an Integrated Environmental Management Plan that provides best practice guidelines for the management of the environment and biodiverity inside and outside the boundary of the park. The draft Conservation Development Framework (CDF) provides guidelines for potential future development, rehabilitation and the management of land-use along the parks borders. Components of the CDF inlcude the park interface zones (zones where surrounding land use change could affect the park) which are classed into 3 different categories. The first category is Priority Natural Areas (PNA) which are important for long-term persistence of biodiversity in and around the park, these areas further include areas which may be earmarked for future park expansion. The second category is Catchment Protected Areas (CPA) which are the areas that are important for the hydrological processes to the park. The third category is the Viewshed Protected Area (VPA), which are the areas were development will affect the aesthetic experience of the visitors to the park. The Kruger National Park Management Plan (2011:39) further states that within these VPAs, any development proposal should be carefully screened to ensure that they do not impact excessively on the aesthetics of the park. According to Figure 10.9.1-1, the proposed area for the Matsulu Waste Transfer Station falls under the VPA. The aesthetics of the proposed development needs to be assessed.

6. MOTIVATION FOR THE NEED AND DESIRABILITY FOR THE PROPOSED DEVELOPMENT

Within the municipal IDP (2016/2017), environmental protection and illegal waste dumping are listed as key problem areas. The proposed establishment of a public waste drop off facility within the area will prevent and minimize illegal dumping activities, thereby preventing pollution.

In their 2015/2016 Service Delivery and Budget Implementation Plan (SDBIP), the Mbombela Local Municipality listed the following as key performance indicators and targets for waste management:

Table 6.1: Mbombela Local Municipality key perfomance indicators and targets for waste management

Development Priority	Development Objectives	Key Performance Indicators	Target Project Description	2015/2016 Budget
Waste and environmental management	To strengthen the delivery of sustainable integrated human settlement and environmental management	Number of transfer stations licensed = 4	Construction of 4 Waste Transfer Stations	**R600 000**
		Number of EPWP Participants trained = 600	Training of 600 EPWP beneficiaries	**R700 000**
		Number of illegal dumping areas cleared = 40	Clearing and Management of 40 illegal dumping spots	**R1 200 000**

The proposed activity forms part of an Integrated Waste Management approach aimed at reducing the amount of waste transported to the landfill site and prevent illegal dumping. In addition, the proposed activity supports the implementation of the National Waste Management Strategy which promotes waste recovery and waste beneficiation.

Any anticipated and potential negative impacts are adequately mitigated in accordance with the Environmental Management Programme (EMPr) developed for the facility and is attached as Appendix F.

The overall benefits of the proposed activity include the following:

Social:

- Waste management services improved.
- Public health improved from reduced pollution and illegal dumping sites that attract vectors such as rodents and flies.

Economic:

- Temporal and permanent jobs result in increased quality of life.
- Economic development in the area.

Environmental:

Improved environmental well-being
Eradication of illegal dumping sites
Improved waste management system
Reduced pollution from illegal dumped waste
Improved land use management

7. MOTIVATION FOR THE PREFERRED SITE, ACTIVITY AND TECHNOLOGY ALTERNATIVE

7.1 Preferred Site

Site Alternative S1 (preferred alternative)

Site Erf 312

This alternative is preferred from an environmental perspective as the area proposed for the construction is within transformed and degraded vegetation and will result in insignificant environmental impacts. The site is currently vacant and utilised as an illegal waste dumping site as shown in Photo 7.1-1. However the close proximity of the Crocodile River to the proposed site is an area with potential for surface water pollution should the mitigation measures within the EMPr not be implemented or adhered to.

The Crocodile River is +/- 100 m from the left hand side of the site boundary and about 82 m from the right hand side of the site boundary and the river banks is high and the flood is not expected to rise above this high river bank.

IMG_1149: Existing site – Illegal dumping site

IMG_1152: Existing site – illegal dumping site

Photo 7.1-1 Current status of the proposed site for the construction of the Matsulu Waste Transfer Station

7.2 Alternative Site

7.2.1 Site Alternative S2 (least preferred alternative)

The identified site alternative for the development of the proposed Matsulu Waste Transfer Station is located at Erf 311 Matsulu farm in Mandela Park with the T0JU00700000031100000 Surveyor-general Cadastral Code 21 digit site (erf/farm/portion) reference number. The proposed alternative site is shown as Photo 7.2.1 and Figure 7.2-1.

Description	Total Size (in m^2)
Total size of farm portion 311	61 011.94
Total development footprint area covered by infrastructure including roads and parking areas.	18 140

Photo 7.2-1 Current status of the considered alternative site on Erf 311 (least preferred site).

This option is least preferred for the following reasons:

Site Erf 311

Although the site is also a municipal property, its close proximity to the KNP fence presents a challenge both on a legal basis and the safety of both the animals within the park and the workers at the proposed facility (see Appendix A). The noise levels from the site might have an impact to the wellbeing of the animals etc, specialists studies would have to be conducted on the sensitivity levels and threshold levels of noise the animals can tolerate. The equipment, machinery and processes within the proposed site would then need to be specialised not to exceed the provided threshold.

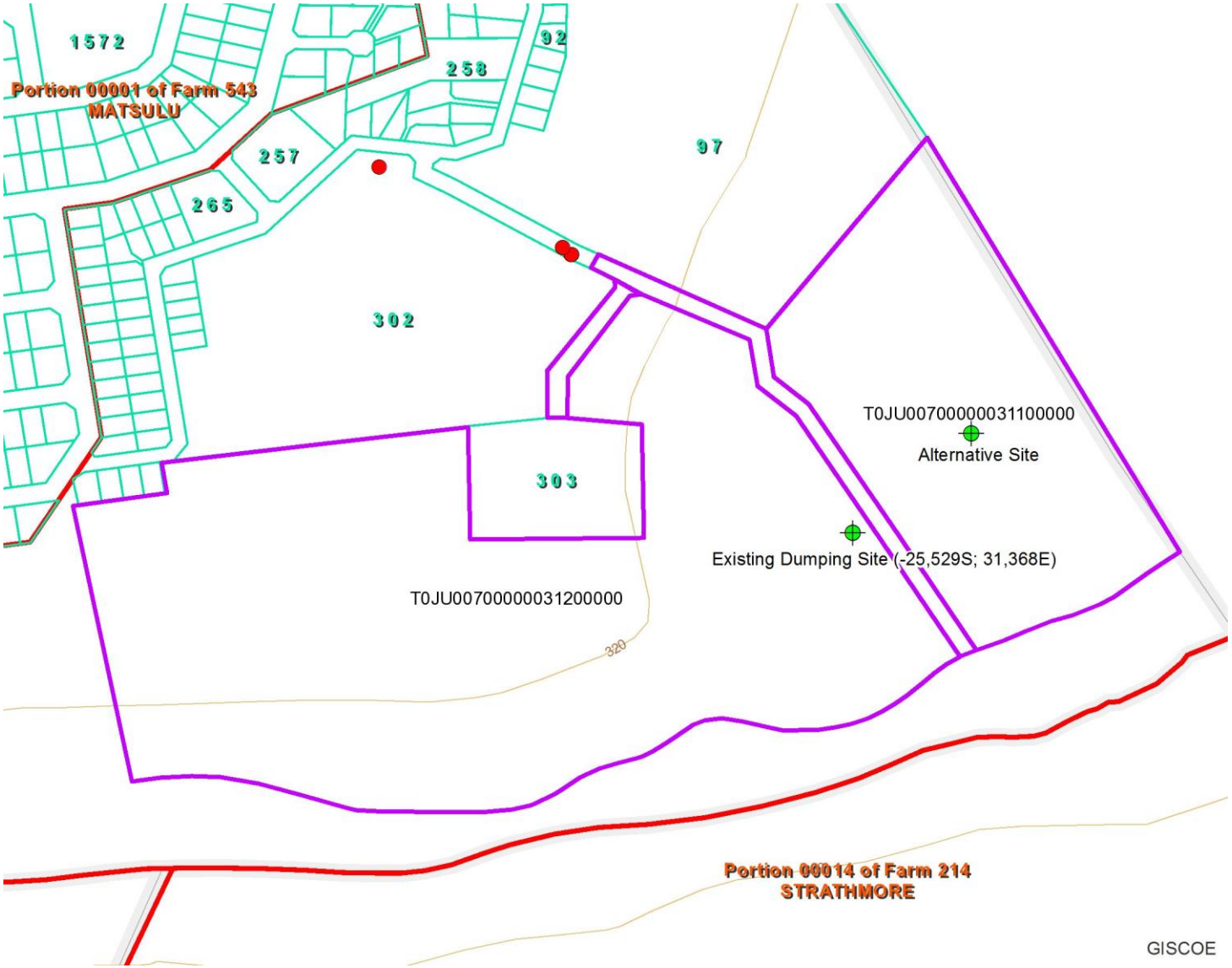


Figure 7.2-1 Alternative site, Erf 311 location map

7.3 Technology Alternative

Technology Alternatives

Technology Alternative T1 (preferred technology method)

Walk in floor containers technology

The "walk in floor " method of temporal storage and haulage to the Tekwane Waste Disposal Site is the proposed and preferred method for the Matsulu Waste Transfer station. The alternative to the "walk in" approach is the normal approach and process of using skip bins for the collection and temporal storage of waste.

Advantages:

- ✓ Uses less energy
- ✓ Produces less noise due to compaction.

Disadvantages:

- × Newly introduced technology used mostly internationally.
- × Readily available training manuals are unavailable and facilitators in the country.

(a) Walking Floor

(b) Front view with roll-on bins into which waste is compacted.

Photo 7.3-1 Proposed technology alternatives

Alternative T2 (least preferred method)
Conventional normal compaction technology

Advantages:
- ✓ Normal and standard method of compaction.
- ✓ Readily available trained and skilled work force for operating the machinery.
- ✓ Readily available training available in the country.

Disadvantages:
- Uses more energy and produced more noise for compaction.
- Required much more intensive work labour before material is hauled to the landfill site.

7.4 No-Go Alternative

The no-go alternative entails not constructing the proposed waste transfer facility and leaving the current status as is (Photo 7.4-1). This includes the continuation of the prominent illegal dumping practices currently prevalent in the area. The health risks associated with these practices and challenges with waste collection and management systems within the municipality promote an increase with disease spreading vectors such as rodents, flies and cockroaches. This is a health risk to the current informal housing development encroaching on the proposed site.

IMG_1149: Existing site – Illegal dumping site

IMG_1152: Existing site – illegal dumping site

Photo 7.4-1 Current Status of the proposed existing site

8. A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVE WITHIN THE SITE

8.1 Details of all the alternative considered

8.1.1 Site Alternatives S1 and S2

During the site identification phase, there are two sites which belong to the municipality that were considered, Erf 311 and Erf 312. Both municipal stands belong to the municipality, however the location of Erf 311 presented immediate obvious "high risk" areas of concern for consideration. Erf 311 has two natural water sources on the eastern side (Ntsikazi River) and on the southern side (Crocodile river). Furthermore, Erf 311 is located about 300 m from the Kruger National Park fence. The Crocodile River is located south of the proposed location for Erf 312 about 100 m from the proposed site boundary.

The location of both Erf 311 and Erf 312 and their proximity to environmentally sensitive areas provided a criteria for considering Erf 312 as the preferred Site Alternative S1. The details of each Site Alternative are provided in Section 7 above and the and motivation for the preferred alternative is provided in detail in Section 10.14 and the site selection matrix in Section 10.14.3.

9. PUBLIC PARTICIPATION PROCESS

Public participation is a process that is designed to enable all interested and affected parties (IAPs) to voice their opinions and concerns that enable the practitioner to evaluate all aspects of the proposed development, with the objective of improving the project by maximising its benefits while minimising the adverse effects. IAPs include all interested stakeholders, technical specialists, and the various relevant government departments to work together to produce better decisions. The projected milestones for the PPP are provided in Table 9.3.2.6 below.

The objective of the public participation process is to:

- Confirm the key stakeholders to include in the process, municipal departments, businesses, NGOs and the communities within the MLM;
- Compilation and maintenance of the stakeholder database for the duration of the project as well as the background information document;
- Introduce the project to the stakeholders to obtain their inputs in the proposed mitigation measures;
- Communicate with the stakeholders at all key applicable project stages;
- Take into consideration all inputs and comments made during engagement sessions for input into the reports to be generated;
- Hold public meetings in the vicinity of the affected areas (Matsulu) as necessary.

9.1 Identification of Interested and Affected Parties (IAPs)

The first step in identifying IAPs was to first locate the proposed area of study through a Windeed Map Search. After the site were located on the map, the ERF number of the proposed study site and ownership was found using the map derived from the Windeed Search.

Furthermore, the Deeds Office was used to obtain details of the adjacent property owners. Once the property owners were identified, an IAP register was created. The parties that were included in the IAP register included; property owners, relevant authorities (competent authorities) and businesses situated around the proposed site.

9.2 Consultation of stakeholders and Regulatory Authority

9.2.1 Regulatory Authority Consultation

A Pre-application meeting was held with the Department of Agriculture and Rural Development and Land Administration (DARDLA) on 8 May 2017 with Ms Dudu Sibiya and Ms Pamela Ntuli, the outcomes of the meeting are outlined within the comments and response Section 9.2.3.4 and Table 9.2.3.4-1 of the report and also attached as Appendix H1.1.

The Application Forms were submitted on the 11 September 2017 to the Regulatory Authority and the signed letters of acknowledgement of receipt were received on the 14 September 2017. The copy of the letter is attached as Appendix H1.2. The Final BAR will be submitted on the 11 December 2017, which is the regulated 90 days from the 11 September 2017. SAHRA was consulted and awaits the form lodgement of the site application in their database before they submit their comments.

9.2.2 Consultation with stakeholders and local authorities

A meeting was held with the Department of Agriculture and Rural Development and Land Administration on 8 May 2017 and outcomes of such meeting are included as Appendix H1.1. The outcomes of the meeting were shared with the client Zethu on 25 May 2017 and a request was extended for these to be shared with the Mbombela Local Municipality. The outcomes of the same meeting with DARDL were shared with Ms Dudu via email on 25 May 2017, the correspondence is attached as Appendix H1.3

A meeting was held with the Ward Councillors on 8 May 2017, where preliminary data was shared, minutes are included as Appendix H2.1. The Ward Councillor was provided with progress on the project on 27 July 2017. The minutes of the meeting of 8 May 2017 were shared with the Ward Councillor on 27 July 2017 (communication attached as Appendix H2.2). An acceptance of the proceedings were submitted on the 29 July 2017, as attached in Appendix H2.3.

9.2.3 Notification of Key Stakeholders and Interested and Affected parties

9. 2.3.1 Site notification and adverts

Site notices of the Draft BAR were erected at the proposed site (Erf 312) and other relevant identified areas on the 29 September 2017. With the assistance of the Local municipality officials and Ward Councillors the Public notices were distributed in strategic areas within the 100 m radius of the site on the 29 September 2017 as follows:

- Matsulu Local Municipality offices
- Matsulu Library
- Matsulu Primary School
- Matsulu Clinics
- Local garage
- Spar
- Youth Development Centre (outside the 100m radius to the proposed site)

The neighbouring property owners were notified in writing and copies of the DBAR were circulated to the relevant state departments and commenting authorities. Copies of the Site notice placed at the various strategic areas will be available in the final BAR.

9.2.3.2 Newspaper Advert

The availability of the original Draft Basic Assessment Report (DBAR) was advertised in the local newspaper on the 29th September 2017, Lowvelder, affording the public 30 days to submit comments on the proposed development. The commenting period on the DBAR closed on the 29th October 2017. Copies of the newspaper adverts are attached as Appendix H5.

9.2.3.3 Comments and Response Report

All comments received from the preliminary consultation with the stakeholders have been captured and are presented in Table 9.2.3.3-1 and also attached as into the Comments and Response Report Appendix H6, further comments on the draft BAR will be incorporated during the later phases of the report updating process. All received comments from the Public Participation Process will be consolidated into a Comments and Response Report and attached as an Appendix in the Final BAR.

A preliminary consultation meeting was also held with Ward Councillor on the 08th of May 2017 at the municipal offices. The objective of this meeting was to introduce the Ward Councillor to the project. The key aspects that were discussed include:

- Animal concerns in relation to the safety of the community– the escaping of animals from the KNP where the animals are shot as a control measure that is followed by the Rangers of the Kruger National Park;
- Land invasion – the cultivated land is currently used by informal farmers, however the farmers know that the land belongs to the Municipality therefore there will be no problem when the Proposed projects starts;
- Public participation – It was highlighted that only Ward 13 was affected by this Project and a close working relationship will need to take place with Ward 13 Councillor, Mr Andrew Thabethe . There is a possibility for there to be an engagement with the Traditional Councillor and this will be facilitated by Ward Councillor Donald Nkosi. Ward Councillor Andrew Thabethe will call a meeting for the affected parties within Ward 13. It was then stated that the local newspapers including - Lowveld Newspaper and Mpumalanga News will be used to communicate and notify the stakeholders about the project. The underlying issues that were raised in the meeting include:
    - Odour (smelling)
    - Legal dumping
    - Kruger National Park will be affected
    - Waste moving towards the houses
    - Demarcation implication
    - Flooding
    - Noise for the animals
    - The site is used for fishing

9.2.3.4 Summary of the issues raised by interested ad affected parties

The detailed summary of the issues and concerned raised by the consulted Interested and Affected Parties is provide in details Table 9.2.3.4-1 and are attached as Appendix H6.

In summary the key issues that were identified and raised as concerns are:

- Proximity of site to KNP boundary fence and Crocodile River
- Animal concerns
- Land invasion
- Existing houses near site
- Animal shootings from KNP
- Lack of participation within the KNP Community engagement strucures
- Public participation process outline
- Odour (smelling)
- Legal dumping
- Kruger National Park involved
- Waste moving towards the houses
- Demarcation implication
- Loss of fishing potential for community
- Flooding
- Proposed road development
- Noise for the animals
- Potential presence of animals within the Crocodile river (e.g hippos??).

Table 9.2.3.3-1: Summary of key issues identified and concerns raised

ISSUE/COMMENT	RAISED BY	RESPONSE	SECTION WITHIN BAR ADDRESSSING ISSUE
Meeting with Department of Agriculture, Rural Development and Land Administration (DARDLA) – 08 May 2017			
Clarity on process for authorisation to be followed for the Matsulu Waste Transfer Station	Ms Babalwa Fatyi (BF)- Myezo Project Manager indicated that when the consultants were initially engaged, the thinking was that a basic assessment process would be undertaken for the waste transfer stations. However, the project proponent has since indicated that there is a possibility that these transfer stations have to be undertaken under the Norms and Standards regulations, which calls for registration of the site.	Department of Agriculture, Rural Development and Land Administration (DARDLA): Dudu Sibiya (DS) indicated that there was an enquiry from Mbombela Local Municipality about the storage of waste and she had responded to say that with those small household volumes, the site could just be handled under the Norms and Standards process. This was not referring to the transfer stations. It is as such assumed that the belief that this process for the Matsulu waste transfer station should follow the registration process of regulation under the Norms and Standards, might have come from the misunderstanding of that guidance. It was emphasized at the meeting that guidance was pertaining only to storage of low volumes of waste, which are covered under Category (C) of the Waste Licencing Regulations (R901) promulgated under the Waste Act.	Section 4 and Section 5
Matsulu Waste Transfer licencing process		Ms DS advised that from preliminary understanding of the project, it seems that it triggers Category (A) activities and as such requires a basic assessment process. The obvious activities are: **Recycling or recovery of waste** (*2) The sorting, shredding, grinding, crushing, screening or bailing of general waste at a facility that has an operational area in excess of 1000m2.* *(3) The recycling of general waste at a facility that has an operational area in excess of 500m2, excluding recycling that takes place as an integral part of an internal manufacturing process within the same premises.* Ms Pamela Ntuli (PN) added that some site has trenching and conveyor belts and also materials recovery processes. When a detailed layout of the site and actual activities has been provided, then the department can make a conclusive advice	Section 4 and Section 5

		on the licencing approach. However, it is definitely not Norms and Standards process but a basic assessment process for now. The sensitivity of the site can even deem it as a full EIA based on the other triggered activities.	
Application for an integrated licence approach	Ms Pamela Ntuli (PN): DARDLA	Ms Pamela Ntuli (PN) cautioned that it might also be possible to follow an integrated licence approach should there be other triggered listed activities such as the road construction..	Section 4 and Section 5
Proximity to the National Park boundary For now, the proximity to the national park boundary can also trigger the Listing Notice 3 of NEMA		Noted.	Section 10.9
The proximity to the water course (Crocodile River) The proximity of the site to the watercourse (Crocodile River) must also be looked into because the boundary fence will be a determining aspect. The boundary fence of the transfer station and the boundary fence of the park must be looked at and assess the radius and NEMA regulations listing notices in that regard.		Noted.	Section 10

Specialist Studies for the Site Sensitivity Determination The Specialist studies will also be determined by the sensitivity of the site.		BF indicated that the project proposal did not include full description of the site, that the will be a requirement of Specialist studies and this is based on theory experience for the licencing of similar transfer stations. The biodiversity study might be required but the site has been cleared and is heavily cultivated. Ground water studies would be required if the project activities would have trenching and other processes associated with materials recovery.	Section 21
Socio-economic impacts – informal housing development eradication There are also aspects of the informal housing developments that have encroached into the waste transfer site area.	Ms Babalwa Fatyi (BF): Myezo Project Manager	BF responded that the Municipality would have to address this aspect and the environmental study indicate how it will be covered and the impact of the transfer station on the human livelihoods and health.	Section 10.13 Table 10.13.2.1
Listed activities triggered Identification of trigger activities and indicate appropriate process to follow.	Ms Babalwa Fatyi (BF): Myezo Project Manager	Once the listed activities are submitted to the department, they will be verified and the project team will be advised on which process to follow regarding the application process. The option would be to send only the waste licence application if there are no waste licences that are triggered to fill the NEMA regulations application form and stipulate all activities including waste licence regulations and as such following the integrated Environmental Authorisation (EA) application process.	Section 4.10 and Table 4.10.1 Section 5.1 and Table 5.1.1
Meeting with Ward Councillors – 08 May 2017			
Community safety - Animal concerns in relation to the safety of the community – the escaping of animals from the KNP where the animals are shot as a control measure that is followed by the Rangers of the Kruger National Park.			Section 10.9 and Table Section 10.13.1 Table 10.13.2.1
Land invasion – The cultivated land is currently used by informal farmers, however the farmers know that the land belongs to the Municipality therefore there will be no problem when the Proposed projects starts		SM responded by stating that the invasion of the proposed project site was addressed to the people involved. The Ward Councillor addressed the issue to the community. He also stated that the cultivated lands are used by informal farmers. The informal farmers know that the land is owned by the Municipality, so there will be no problem when the projects starts.	Section 10.13 Table 10.13.1 and 10.13.2.1
Existing houses near site - There are houses near to the site of the Waste Transfer Station.	Myezo Project Assistant: Nelisiwe Mokoena	BF elaborated by stating that there are structure of houses and the project team also saw a cultivated area in the project site.	Section 10.13 and Table 10.13.2.1
Public participation -		(a) SM stated that the ward 13 is the only ward affected and	Section 9

(a) Are all wards affected by the project? (b) Which procedure to be followed regarding the Traditional Councillor. (c) Which local newspaper the community uses.	Myezo Project Assistant: Nelisiwe Mokoena Myezo Project Manager: Babalwa Fatyi	we are going to work closely with Ward Councillor Andrew Thabethe, he is the Ward Councillor for Ward 13. (b) SM stated that the team must work with the Ward Councillors, but if we need to contact the Traditional Councillor we can contact him through Ward Councillor Donald Nkosi (DN). (c) SM stated that the Councillor Chamber publication office can be used to distribute pamphlets and for newspapers the Lowveld newspaper and Mpumalanga News will be used.	
A question was asked about the public meeting.	Myezo Business Development Manager: Sicelo Jebe	SM stated that the Ward Councillor will call the affected area for the public meeting, so that the meeting can be in order. It was highlighted that only Ward 13 was affected by this Project and a close working relationship will need to take place with Ward 13 Councillor, Mr Andrew Thabethe. There is a possibility for there to be an engagement with the Traditional Councillor and this will be facilitated by Ward Councillor Donald Nkosi. Ward Councillor Andrew Thabethe will call a meeting for the affected parties within Ward 13. It was then stated that the local newspapers including - Lowveld Newspaper and Mpumalanga News will be used to communicate and notify the stakeholders about the project	Section 9, Section 9.2.3
Odour (smelling)	All Ward Councillors present at meeting: Cnllr Gladys Mabuza (GM Cnllr Sabelo Masuku (SM) Cnllr Andrew Thabethe (AT) – Ward 13 Cnllr Donald Nkosi (DN	Noted	Section 10.3.1 and Table 10.13.1, Table 10.13.2.1 – Air Quality
Illegal dumping		Noted	Section 4.12.2 and Figure 4.12.2-1(c) Section 10.3.1 and Table 10.13.1, Table 10.13.2.1 – Waste Management
Kruger National Park involved		Noted	Section 10.9
Waste moving towards the houses		Noted	Section 10.3.1 and Table 10.13.1, Table 10.13.2.1 – Air Quality Section 10.3.1 and Table 10.13.1, Table 10.13.2.1 – Waste Management Mitigation measures.
Demarcation implication		Noted	Section 10,.9 and Section

			10.13 Table 10.13.2.1
Flooding		Noted	Section 10.13 Table 10.13.2.1 – Storm water management & flooding management plan
Noise for the animals		Noted	Table 10.13.2.1 – Noise mitigation measures
The site is used for fishing		Noted	Section 4.12.2 and Figure 4.12.2-1 (b) Section 10.11 Section 10.13 and Table 10.13.1 Table 10.13.2.1 – Socio economic and land use management mitigation measures.
Animal shootings - Reported that there was an elephant that was reportedly shot on the 20th of April 2017, during their site visit. Ward Councillor.	Myezo Project Manager: Babalwa Fatyi	SM stated that animals do get shot when it tries to escape from the park. This is done because it becomes dangers to the other animals in the park. The animals are shot by rangers from the Kruger National Park	Section 10.9 Section 10.11 Section 10.13 and Table 10.13.1 Table 10.13.2.1 – Safety mitigation measures
Community engagement in escaped animal sightings – Question asked on how the community informs the park if there is an animal that has escaped from the park and whether the community has a formal structure for such matters.	Myezo Project Manager: Babalwa Fatyi	SM stated that they do have a structure and there is no representative from the community, however they do have emergency number to call the park if they see any animal in the community.	Section 10.9 Section 10.9.1 Section 10.9.2 Section 10.11 Section 10.13 and Table 10.13.1 Table 10.13.2.1 – Safety mitigation measures
Road developments – The project team was informed that there is a proposed road to Malelane which will pass by the Waste Transfer Station.	Cnllr Sabelo Masuku	Noted. To check with Department of Roads and Transport on their proposed road network development that may affected the proposed site for the construction of the Matsulu Waste Transfer Station.	Section 6
Flooding - It confirmed that the proposed site is near the Crocodile River. Ward Councillor AT stated during flooding the water can move up to the disposal site. BF suggested that flood lines must be done.	Cnllr Andrew Thabethe	Noted.	Section 10.13 and Table 10.13.1 Table 10.13.2.1 – Storm water management mitigation measures and

It was noted that the proposed site is also near the Kruger National Park boundary fence. It was also realised that there is a fishing park for the community. an alternative site was also identified. The project team also observed some animals that seemed like hippos in the Crocodile River.			flood management plan. Flood line study to be conducted to ensure proper measures are in place to mitigate against flooding to the site. Section 15

9.2.3.4 Public Revision of the Draft BAR

The draft BAR was provided to the public for 30 days for review to their comments and inputs for review and inclusion into the final BAR. The BAR copies has been distribute at the local municipality office, the library and the local schools.

- The Draft BAR was made available in hard copy at the local municipality offices, the Matsulu library and also electronically distributed to stakeholders on the IAP register as of 29 September 2017. Site notices notifying people about the availability of the BAR were displayed at Matsuslu Primary School; Matsulu clinics; Matsulu Local Municipality offices; Matsulu Library; Local garage; Spar and Youth Development Centre which falls outside the 100 m radius to the proposed site.

Copies of the Draft Basic Assessment Report were submitted to the following Authorities for comment:

- Mbombela Local Municipality– Pollution and Chemical Management Directorate
- Mbombela Local Municipality– Waste Management
- Mbombela Local Municipality – Municipal Manager's office
- Ehlanzeni District Municipality
- Traditional Authorities
- Kruger National Parks (SANPARKs)
- Lubambiswano Community Forum
- Department of Water and Sanitation
- Department of Health
- Heritage Mpumalanga
- Nkomati Catchment Management Agency
- Department of Transport and Public Works

9.2.3.5 Final Consultation BAR

The final consultation with the key stakeholders will entail the review process of the Final Draft BAR for a period of 21 days before submission to the Competent Authority.

9.2.3.6 PPP summary (Process and Appendices)

The key activities undertaken thus far are summarised in Table 9.3.2.6-1 below.

Table 9.3.2.6-1: PPP Summary of activities undertaken

Activity	Description	Date	Appendices	Attached Yes or No
1. Authority Consultation	Consultation with the Competent Authority – MDALEA (Pre – application meeting)	08 May 2017	Appendix H1	Yes
2. Consultation with other stakeholders	Consultation with key stakeholders including:	08 May 2017 25 May 2017	Appendix H2	Yes
	Municipal departments	26 – 27 September 2017	Appendix H2.1	No
	SANPARKs	28 September 2017	Appendix H2.2	No
	SAHRA	28 September 2017	Appendix H2.3	No
	Ward Councillors – (Project introduction and identification of issues and concerns)	08 May 2017	Appendix H2.4	Yes
3. Identification of	Identify all key IAP to be		Appendix H3	Yes

Interested and Affected Parties (IAPs) and Compiled IAP Register	consulted and involved in the process with the assistance of Ward Councillors. A list and database of all key IAPs has been compiled and will be regularly maintained.			
4. Compile IAP Comments Report	IAP Comments report	18 September 2017	Appendix H4	Yes
5. Submission of Application forms and receipt of Acknowledgement letter	Application forms submitted to Competent Authority on the 11th September 2017 and Letter of Acknowledgement received from Competent Authority on the 14 September 2017.	11 September 2017 14 September 2017	Appendix H5 Appendix H5.1	Yes Yes
6. Site notification	Erect public site notices in strategic positions as agreed with Ward Councillors and municipal department.	21 September 2017	Appendix H6	Yes
7. Newspaper Advert	Adverts posted in local newspapers, Shout news paper, Mpumalanga news, Mpumalanga Mirror and Corridor Gazette .	21 September 2017	Appendix H7	Yes
8. Comments and Response Report	All received comments from the Public Participation Process have been consolidated into a Comments and Response Report. The draft report is attached as Appendix H8.	18 September 2017	Appendix H8	Yes
9. Public Revision of the Draft BAR	The public will be provided with 30 days to review the Draft BAR and forward their comments and inputs for review and inclusion into the final BAR.	29 September 2017	Appendix H9	Planned
10. Final Consultation BAR	The final consultation with the key stakeholders will entail the review process of the Final Draft BAR for a period of 21 days before submission to the Competent Authority.	14 November 2017	Appendix H10	Planned
17. Submission of BAR to GDARD	1 day	11 December 2017	11 December 2017	Planned
18. Receipt of environmental authorisation from GDARD	After 107 days	11 December 2017	28 March 2018 (without 22 days for Dec holidays)	Planned
			19 April 2018 (including 22 days for December holiday period from 15 Dec to 5 Jan 2018)	

10. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES (THE ENVIRONMENTAL ATTRIBUTED DESCRIBED

ENVIRONMENTAL SETTINGS

10.1 Hydrology

The site is situated close to Crocodile River, Crocodile River runs in a west-east direction leaving the site on the north Fishing activities takes place on Crocodile River; this was noted during the site visit on the 8 of May 2017 (Figure 4.12.2-1(b)).

10.2 Geohydrology

Matsulu area is underlain by a granite aquifer which is estimated to store approximately 5000 m^3 of water per km^2 and receives ±25 000 m^3 per annum of recharge from rainfall. Large exploitation of groundwater is limited due to the physical hydraulic nature of granite aquifers. Groundwater quality is good although there are high threats of contamination due to informal settlements development around the area. Groundwater drainage is in an easterly direction.

10.3 Vegetation type

The Matsulu township area is occupied mainly by the Malelane Mountain Bushveld (Figure 10.3-1) and the area falls with minimal habitat remaining (Figure 10.3-2). The general vegetation type surrounding the outskirts of the township is open savannah on mountains and higher-lying slope, with open to dense, short mountain Bushveld on rocky rocky outcrops and lover vegetation types are Waterberg Mountain Bushveld (SVCB 17) and Roodeberg Bushveld (SVCB 18). According to South African Biodiversity Institute (SANBI) the project area falls under protect buffer zone area.
The vegetation of this landscape is very heterogeneous, but *Combretum apiculatum* is omnipresent on the shallow soils regardless of the parent material of the soil. The structure of the woody component varies from dense to moderate, 3 metre high shrubs with single trees and can be described as a bush savanna. Other woody plants which are there are Acacia *nigrescens, Combretum zeyheri, C. collinum, Terminalia sericea, T. prunioides, Dischrostachys cinerea subsp. Africana, and Acacia tortilis*. The vegetation is very similar to that found on the koppies in the Lowveld Sour Bushveld of Pretoriuskop and elements of this landscape are also sporadically found amongst the mountains.

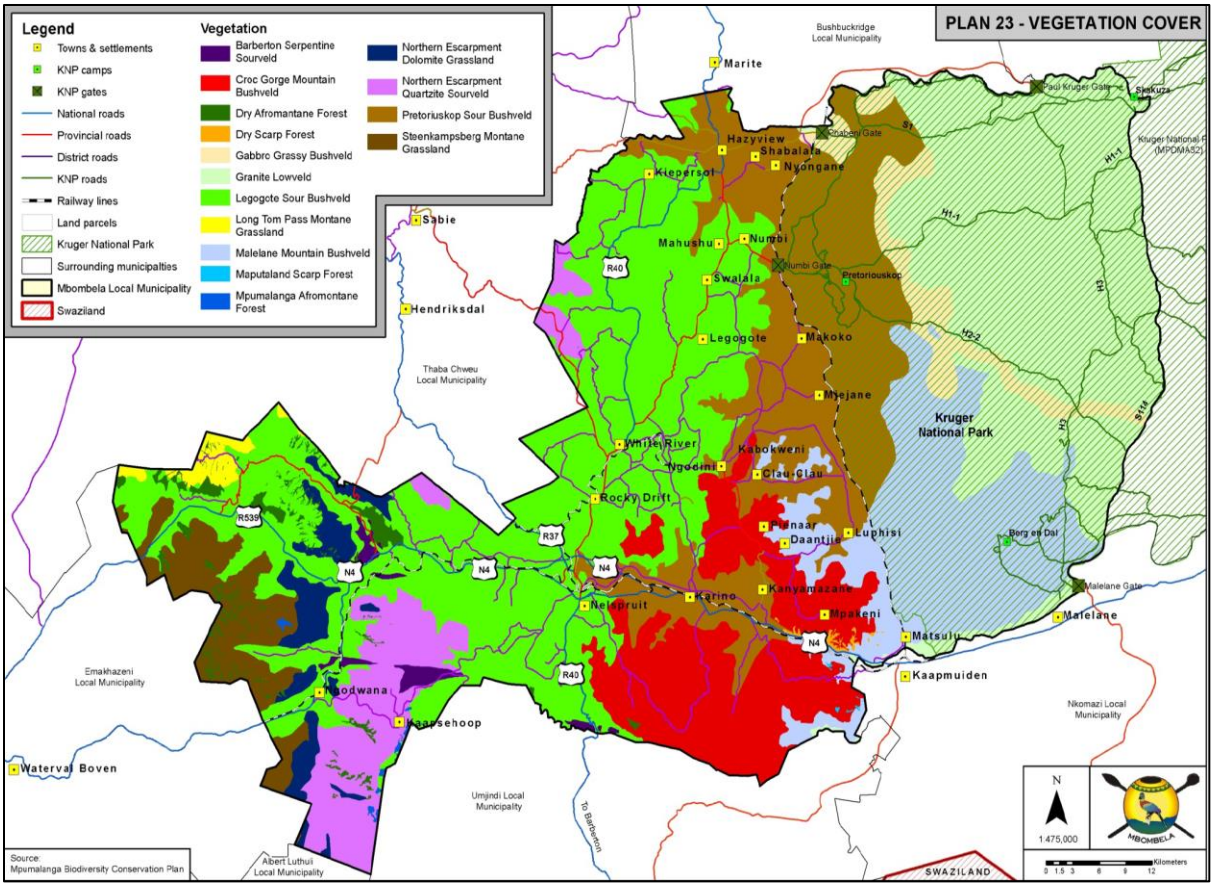


Figure 10.3-1 Mbombela Vegetation cover

The dominant grasses in this area are *Heteropogon contortus, Pogonarthria squarrosa, Panicum maximum, Digitaria eriantha subsp. Pentzii, Cymbopogon plurinodis, Aristida congesta subsp. Barbicollis, Tricholaena monachne, Trichoneura grandiglumis, Enneapogon cenchroides and Themeda triandra*. A common garden flower Gerbera *jamesonii* occurs extensively in this mountain veld.

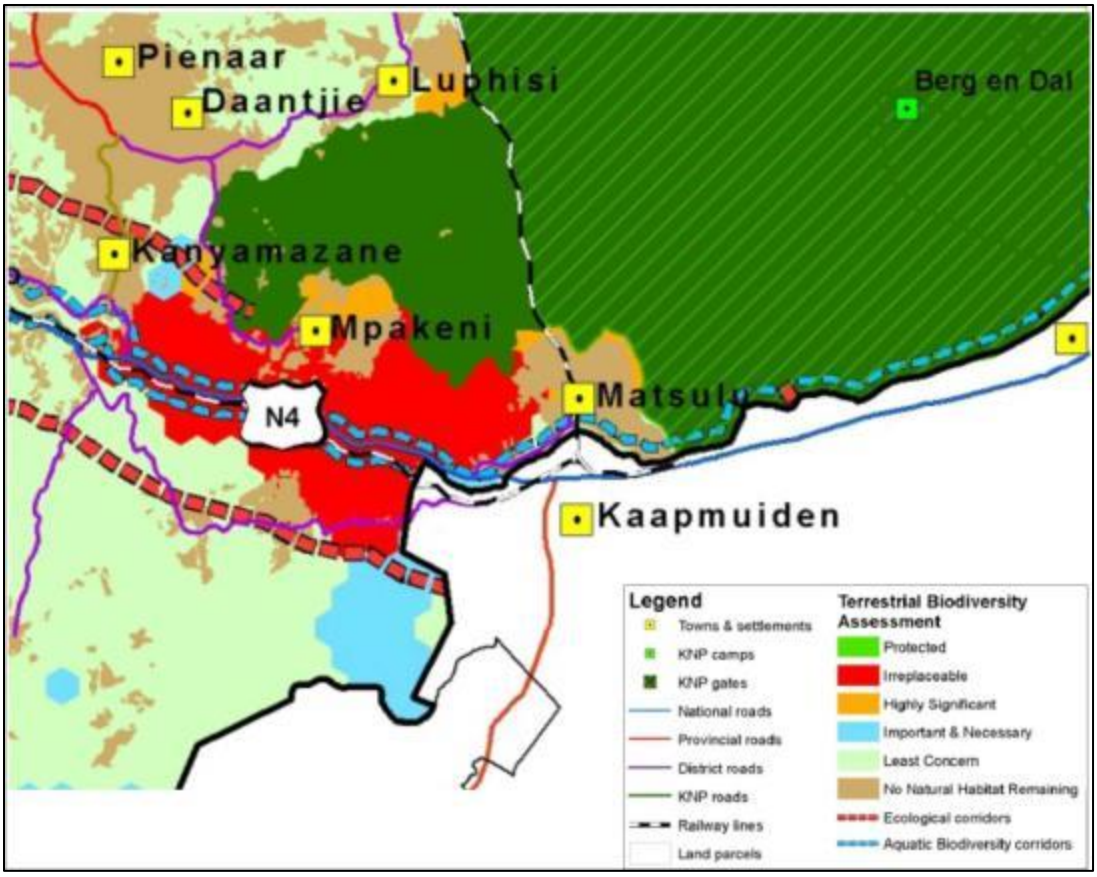


Figure 10.3-2 Terrestrial Biodiversity plan

10.4 Soils

Harmse & Van Wyk (1972) regards the soils of this landscape as shallow rocky soils and classify them in the Lithosol category. The most common soil forms that occur are Mispah and Glenrosa. Clay accumulation took place to a limited degree in the bottomlands and Valsriver and Oakleaf soils developed. The soils of the mountainous plateaus are well drained; more deeply leached and generally classified as Hutton soils. Land capability is rated low (Figure 10.4-1). The dominated soils are Ab42 Hu 16/17; 600 -1200 mm; SaCI-CI 53 %, and Ba67 Rock & shallow soils 31 %. The soils of the two land types are similar, with Ba67 containing a higher percentage of shallow soils, but both land types are dominated by red, moderately deep to deep, medium- to heavy-textured soils of the Hutton form, which are generally very favourable for cultivation, despite the high clay content (35-55) in places within Ab42. The land type Ba64 occurs in the foot slopes and river plain area of the Crocodile River.

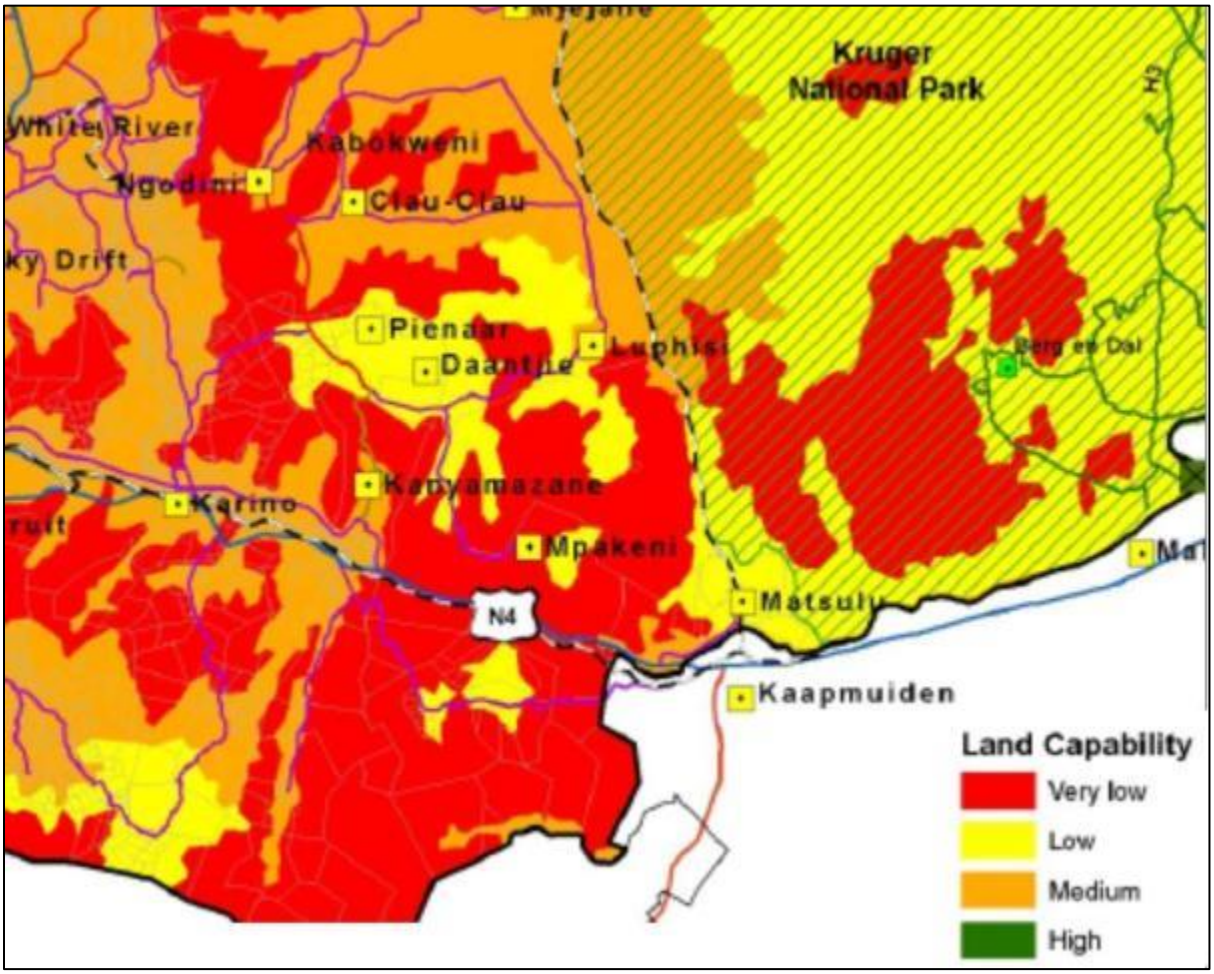


Figure 10.4-1 Land Capability Plan.

10.5 Elevation

The altitude varies from around 400 m above sea level at the river to over 800 m above sea at the highest points.

10.6 Climate

Matsulu area lies within the sub-tropical lowveld climatic region, which is typically characterised by hot rainy summers and warm dry winters; The wet season is between October and March and dry seasons are between April- October as well as having an average annual rainfall is in the order of 600 - 700 mm (Figure 10.6-1). The average daily minimum and maximum temperatures are between 16 °C and 31°C respectively, as measured in the area. Matsulu has an annual average temperature in the order of 20°C (Mbombela spatial development framework – 2011/2012*)*

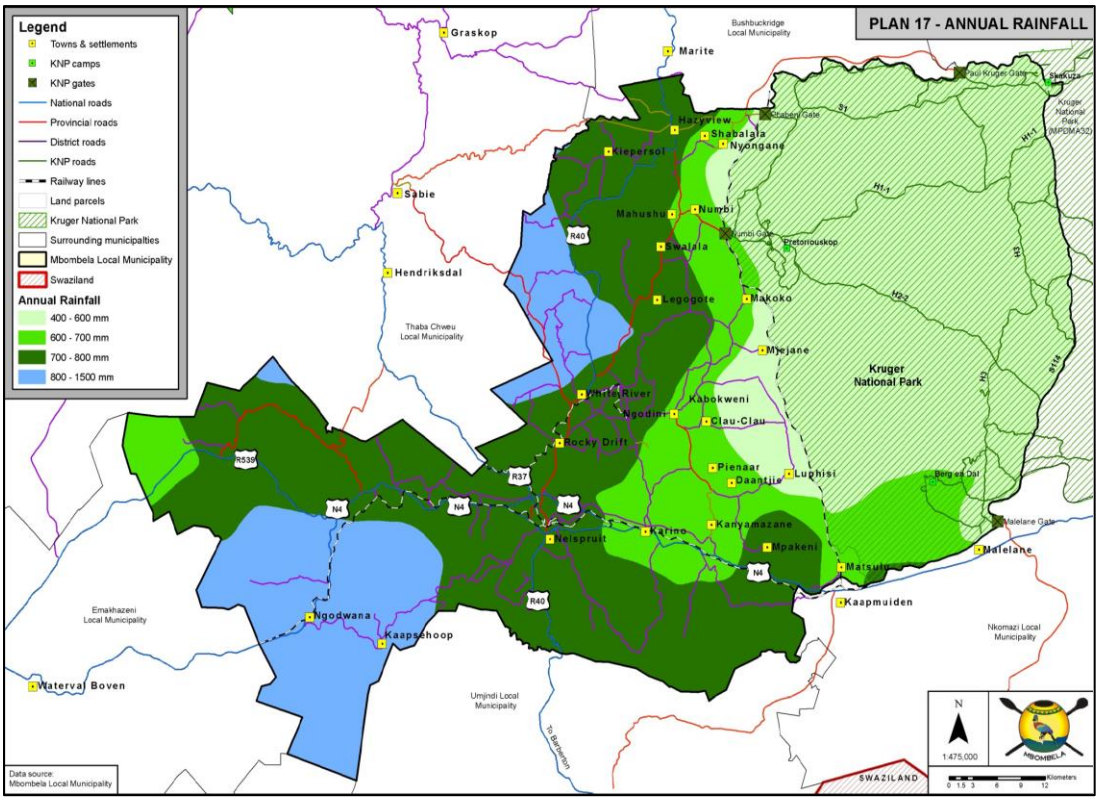


Figure 10.6-1 Average temperature and precipitation.

Seasonal variation in winds for Matsulu is shown in Figure 10.6-2. During the spring and summer seasons, a predominant easterly wind is observed whereas during the autumn and winter seasons, predominant westerly and north-north-westerly winds are observed. Generally fast wind speeds are observed throughout the year. To note this there is no weather station at Matsulu; hence the data was generated from the average of two closest Weather Stations namely Nelspruit and Kruger National.

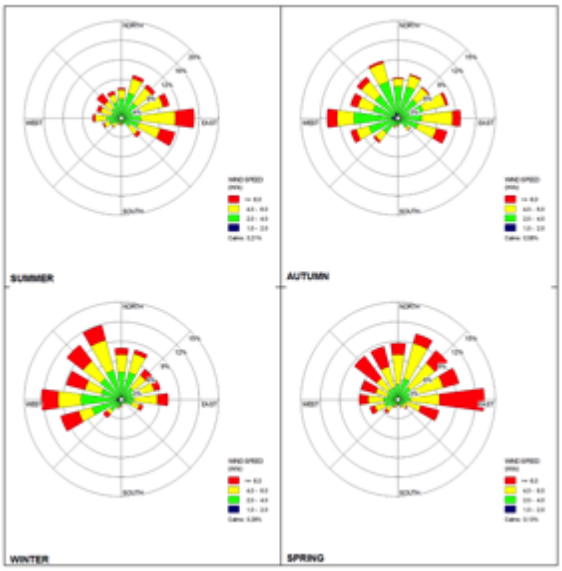


Figure 10.6-2 Wind Roses.

10.7 Geology

According to Geological Survey (1986), Matsulu area is underlain mainly by Biotite Trondhjemite Gneiss and Migmatite of the Nelspruit granite suite (Figure 10.7-1).

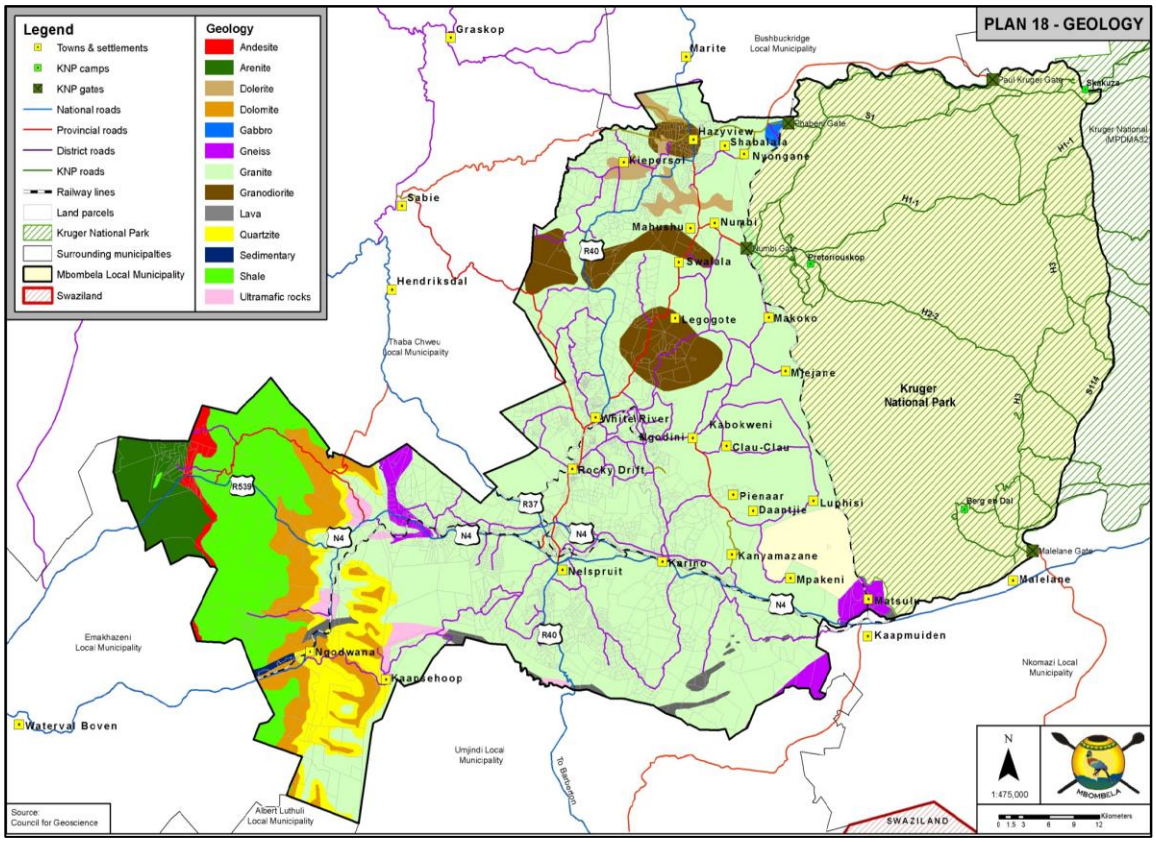


Figure 10.7-1 Mbombela geology map.

10.8 Socio-Economic setting

According to the City of Mbombela Local Municipality Spatial Development Framework (2011 -2030), Matsulu Township is fairly secluded, situated in the easternmost part of the municipality, approximately 45 km east of Nelspruit. Matsulu is wedged between the Kruger National Park, Mthethomusha Nature Reserve and the N4 highway and is bisected by the railway line to Phalaborwa. Matsulu consists of the formal townships of Matsulu A, B, C and Matsulu West. Proximity to the N4 makes it a rapid growing area with a high influx of people leading to informal settlement. According to the City of Mbombela's website, the Matsulu area falls under the Nelspruit B. Matsulu is divided into two different wards which are; Ward 13 and Ward 28. The area where the Matsulu Waste Transfer Station is proposed to be in is situated in Matsulu Ward 13 (Appendix 1).

Matsulu is predominantly residential and provides the necessary community and social facilities. Businesses prefer to settle along the main roads providing good access and visual exposure.

Other significant landmarks in Matsulu include the Matsulu Soccer Stadium, Nkululeko Circuit Office and Matsulu Cultural Centre. In 2010, it was reported to have a population of about 60 000 people.

Being the economic centre of the province of Mpumalanga as well as the region, Mbombela has experienced constant economic growth over the past few years. However, rural villages and townships showed an increase in poverty levels during the same period. Today, the majority of residents in areas such as kaNyamazane and Matsulu are still highly dependent on Nelspruit and white-owned farms for employment opportunities. The establishment of Tekwane, between Nelspruit and kaNyamazane on the Maputo Corridor, a Provincial Housing Board residential development and industrial land for development, has been identified as a spatial and economic link between the historically white and black towns (Development Works, 1999). It is also envisaged that the expanding tourism industry would lead to more job creation as well as the emergence of Black entrepreneurs in the tourism industry.

It seems as if informal economic activities are vibrant throughout some of the townships. Although the average income level is low, there seem to be a significant diversity in income patterns. Residents in Matsulu have a higher proportion of households within the R1000.00 – R3000.00 income bracket than kaNyamazane because the majority of the former kaNgwane government officials reside in Matsulu and have now been incorporated into the Mpumalanga provincial government and the Nelspruit TLC, now the Mbombela Local Municipality (Development Works, 1999). Income levels seem lowest in the R188 (former homeland) areas. Residential costs are however also lower in R188 areas, compared to R293 areas.

In both kaNyamazane and certain extensions of Matsulu some residents have invested considerable sums of money in consolidating, extending or improving their dwellings (Development Works, 1999).

The Matsulu Township is in Mpumalanga under the Ehlanzeni District Municipality and Mbombela Local Municipality. From the Census webpage, in 2011 the population of Matsulu was 47306. In terms of the gender percentages, females had higher percentage with 52.24% and males had a slightly less percentage with 47.76%. The majority of the people of the Matsulu Township are Africans (99.47% of the population) while 0.57% is made of other races such as white (0.12%), Coloured (0.24%), Indian and Asians (0,07%) and the remaining consists of other races (0.09%). The ethnic groups were divided to the following percentages; 92.76% had IsiSwati as their first language, 2.48% had Xitsonga as their first language, 1.77% had English as their first language, 1.08% IsiZulu and the remaining percentage were split amongst other different ethnic groups.

According to the Final Draft Mbombela Spatial Development Framework 2011-2030 (2012) Mbombela Local Municipality has 62% of the its population under the age of 29 years and 65% of the population within working age (15-64 years). In terms of income profiles of the Mbombela Local Municipality, at least there has been a decrease in the number of people without any sort of income (From 2001 to 2007) from 66% to 42%. 83% of the population earned below poverty lines income of R1600 and less per month. The economic sectors that employs many residents within the local municipality are; government services which employed 28.3% of the population, trade and accommodations which employed 24.7% of the population and finance and business which employed 25.1% of the population of Matsulu.

The Final Draft Mbombela Spatial Development Framework 2011-2030 (2012), states that the Mbombela youth needs to be catered for in terms of skills development programmes. These need to be matched with appropriate employment opportunities to minimise migration to the other parts of the country in search of tertiary education or better employment opportunities. In accordance to the Mbombela Annual Report 2010-2011 (2011) only 7.6% of the residents in the Mbombela Local Municipality had education levels higher than grade 12, while 24.8% of the population had no formal schooling. According to the Final Draft Mbombela Spatial Development Framework 2011-2030 (2012), the education levels in the Mbombela Local Municipality are generally low and this may be attributed to the socio-economic issues such as; poverty, lack of access to and poor quality of educational facilities.

10.9 Proximity of the proposed site to the Kruger National Park boundary

The proximity of the proposed site to the Kruger National Park is an area that could present high risk impacts due to the environmental sensitive nature of the KNP mission and vision.

Their goal to protect and conserve the biodiversity in its natural state is also guided by the number of international commitments and conventions signed to align their vision to global sustainable development principles and standards. As an international tourism destination, KNP must always adhere to their Environmental Best Practices and guidelines to ensure that all land use around the boundary of the Park also align to the same principles and guidelines.

10.9.1 Relationship between the Kruger National Park, surrounding communities and development along the boundaries.

According to the Kruger National Park Management Plan (2011:38), the Conservation Development Framework (CDF) provides guidelines for potential future development, rehabilitation and the management of land-use along the parks borders. However, the Kruger National Park Management National Plan (KNMP) further stated that the CDF was not completed in 2011 when the Management Plan was drafted.
According to the Kruger National Park Management Plan (2011:39) one component of the CDF is the park interface zones (zones where surrounding land use change could affect the park), which are classed into 3 different categories. The first category is Priority Natural Areas (PNA) (Figure 10.9.1-1), which are important for long-term persistence of biodiversity in and around the park. The PNAs include areas which may be earmarked for future park expansion. The second category is Catchment Protected Areas (CPA) which are the areas that are important for the hydrological processes to the park. The third category is the Viewshed Protected Area (VPA), which are the areas where development will affect the aesthetic experience of the visitors to the park. The Kruger National Park Management Plan (2011:39) further states that within these VPAs, any development proposal should be carefully screened to ensure that they do not impact excessively on the aesthetics of the park. The proposed area for the Matsulu Waste Transfer Station falls under the VPA

category (Figure 10.9.1-1). The aesthetics of the proposed development has been included in the assessment of identified impacts in Section 12 and Table 14.1.

It is imperative that the proposed site also aligns their environmental management principles and management measures with those of KNP to ensure minimal disturbance to the environmentally sensitive ecosystem.

The KNP has an Integrated Environmental Management Plan that provides best practice guidelines for the management of the environment and biodiversity inside and outside the boundary of the park.

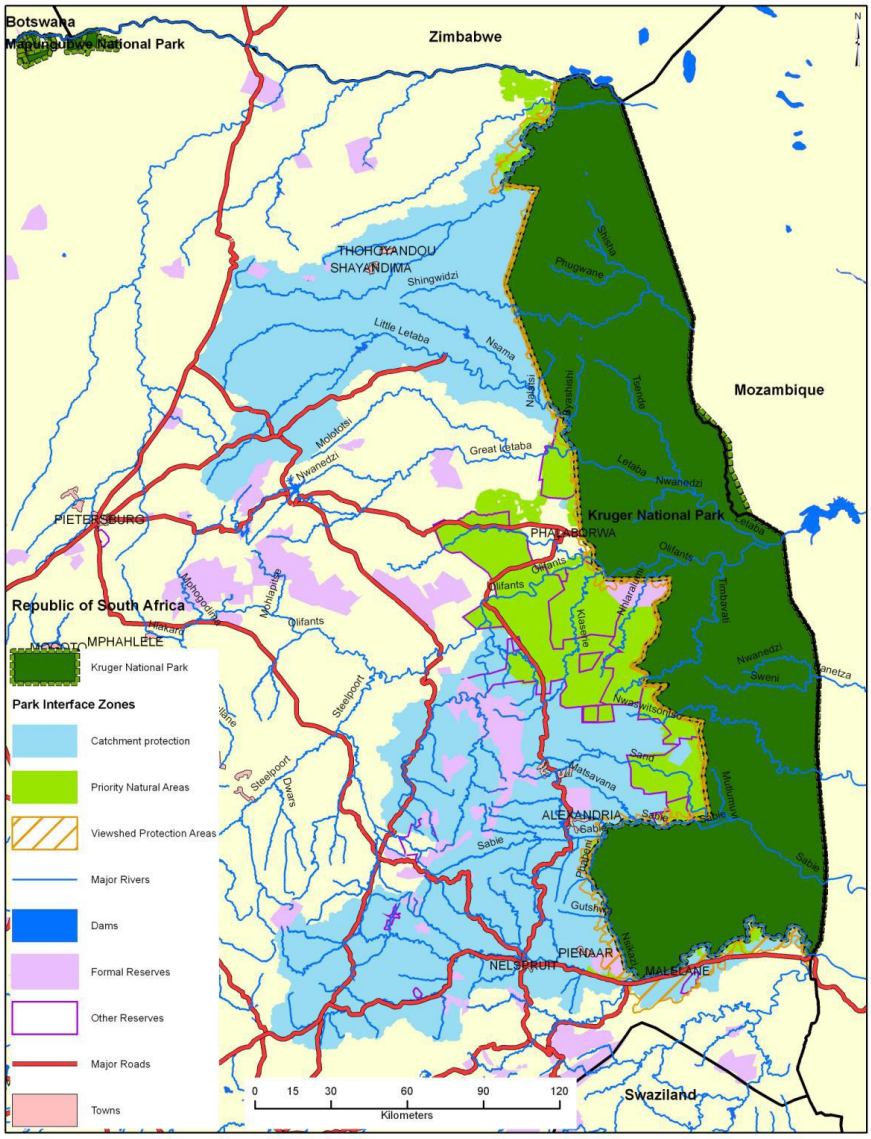


Figure 10.9-1 Map of the park interface zones close to the Kruger National Park. (Source: Kruger National Park Management Plan (2011)).

10.9.2 Communication with local communities

The Kruger National Park (KNP) communicates with the local communities around the park and communities away from the park that are influenced by activities in and around the park. The communities are divided in to seven community forums where the proposed site of development falls under the Lubambiswano Community Forum (Kruger National Park Management Plan, 2011:76).

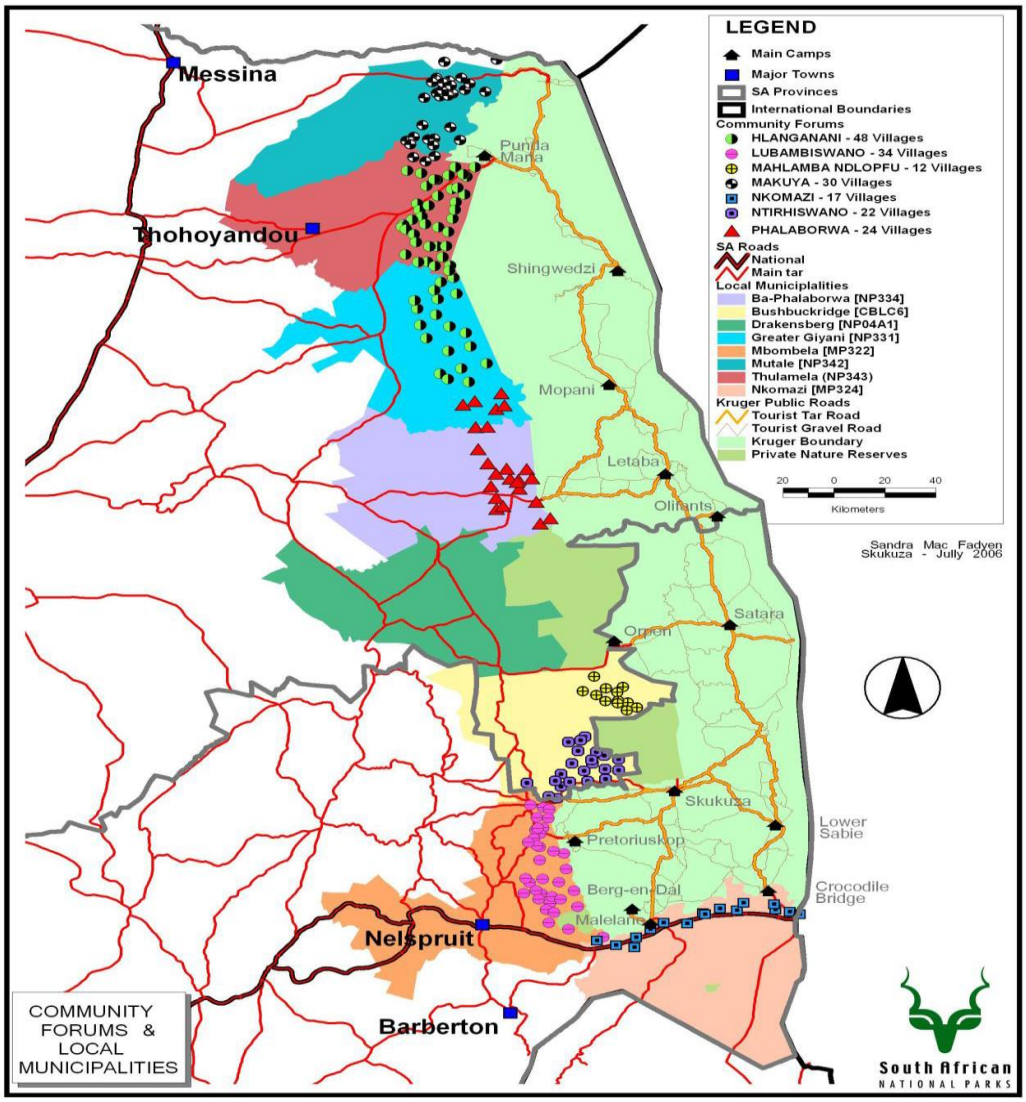


Figure 10.9-2 Map of community forums around the Kruger National Park. (Source: Kruger National Park Management Plan (2011))

10.9.3 Zoning

According to the Revised Zoning System of the Kruger National Park (2012) for SANParks to deliver on its vision of "Connecting to Society" and to supplement the provision for land claims, there are zones that were added in the KNP: A Peripheral Development Zone (PDZ) which extends 2 km into the Park and a Multiple Use Zone which extends 3km outside the boundary of the KNP and 5 km inside the boundary of the KNP. In these areas, the KNP management may agree on terms with communities for joint ventures. The PDZ provides an opportunity for socio-economic development opportunities within a 2 km buffer from the boundary of the park that would support job creation amongst communities. These development opportunities include park entrance gates, reception, ablution facilities, parking areas, interpretative centre and accommodation facilities such as rest camps, lodges, bush camps, picnic sites, view sites and rustic picnic site. The proposed site falls within the PDZ (Figure 10.9-3).

There are also traditional use management areas within the boundary of the park that were developed from the current traditional use of natural resources patterns in the KNP. Responsible and sustainable use of natural resources may take place in these traditional use management areas, which extend for 5 kms into the National Park as illustrated in Figure 10.9-3.

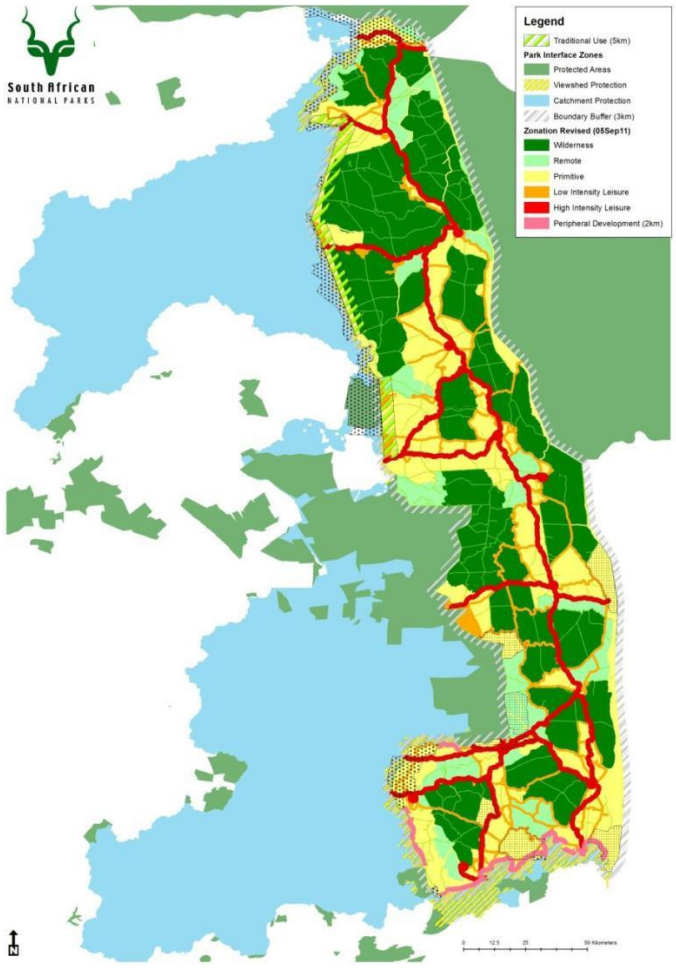


Figure 10.9-3 Map of the Kruger National Park showing different development zones and buffers (Source: Revised Kruger National Park Zonation (2012))

10.11 The impacts and risks identified for each alternative

Potential impacts for both site alternatives (Erf 312, preferred site alternative and Erf 311, the least preferred site) include but not limited to:

- Loss of viable agricultural land,
- Loss of biodiversity – Clearing of vegetation for construction of proposed site has direct impact on loss of faunal biodiversity and an indirect impact could result from use on non-biological pest control programme (for rodents) that could be ingested by the local fauna. The rodents ingest the chemicals from the site and the animals such as birds, dogs, cats are affected by ingesting the poisoned rodents,
- Increased influx of job seekers in the proposed area,
- Pollution – leachate,
- Soil erosion – lack of storm water management system,
- Soil pollution – windblown litter and contamination from oil leaks and spills,
- Surface water pollution – lack of proper storm water management infrastructure, slope management, lack of oil spills management system, lack of flood management strategy,
- Ground water pollution – lack of soil pollution management system,
- Human health wellbeing – existence of disease spreading vectors (rodents, flies, cockroaches),
- Odour – uncovered putrid waste stored for extended periods of time such as food waste and grass, presence of vermin nuisance such as flies, rodents and birds attracted by the smell from the site,
- Increased ambient noise level – construction machinery and equipment, labourers on site,,
- Increased traffic of trucks and vehicles bringing in waste at the public drop off facility,
- Visual aspects – dust from site establishment without dust suppression methods, emissions from extended use of trucks and equipment through the project life stages,
- Visual intrusion – infrastructure establishment that does not blend with the natural environment,
- Air Quality: dust,
- Socio-economic aspects – job creation, local economic development opportunities, local SMME development and empowerment, skills development, training opportunities, loss of fishing potential from the Crocodile River by the community.

The impacts and risks identified for the alternative site Erf 311 are identical to those in the preferred alternative except for the following:

- Air Quality: dust,
- Wind blowing litter into the Ntsikazi River and over the KNP fence,
- Surface water pollution and ground water pollution – proximity to the Ntsikazi River to the right of the site and the Crocodile River to the South- east of the site,
- Noise impact for the animals within the Park,
- Disturbance to biodiversity.

10.12 The methodology used in determining and ranking

An Impact Assessment Methodology for Assessing the Impact Significance of proposed activities is outlined below. The assessment of possible impacts during the project life cycle stages was done through the establishment of a standardised and internationally recognised methodology to assess the significance of the potential environmental impacts of the proposed waste recovery and recycling activities. The significance of the impacts was determined through the following:

For each impact, the SEVERITY (size or degree), DURATION (time scale) and EXTENT (spatial scale) are used to determine the CONSEQUENCE of the impact.

The section below outlines the assessment methodologies utilised in the study.

10.12.1 Methodology for Assessing Heritage Site Significance

Table 10.12.1 : Ranking criteria for environmental impacts

SEVERITY/INTENSITY	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Limited loss of resources.
DURATION	L	Quickly reversible. Less than the project life. Short term (< 15 years)
	M	Reversible over time. Life of the project. Medium term (> 20 years)
	H	Permanent. Beyond closure. Long term (Indefinite))
SPATIAL SCALE	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

Table 10.12.2: Determining the consequence

			SPATIAL SCALE		
SEVERITY	**DURATION**		**Site Specific (L)**	**Local (M)**	**Regional/ National (H)**
Low	**Long term**	**H**	Medium	Medium	Medium
	Medium term	**M**	Low	Low	Medium
	Short term	**L**	Low	Low	Medium
Medium	**Long term**	**H**	Medium	High	High
	Medium term	**M**	Medium	Medium	High
	Short term	**L**	Low	Medium	Medium
High	**Long term**	**H**	High	High	High
	Medium term	**M**	Medium	Medium	High
	Short term	**L**	Medium	Medium	High

The SIGNIFICANCE of an impact is then determined by multiplying the consequence of the impact by the probability of the impact occurring, as shown in Table 10.12.2 with interpretation of the impact significance outlined in Table 10.12.3.

Table 10.12.3: Determining the Significance Rating

		CONSEQUENCE		
PROBABILITY (of exposure to impacts)		**L**	**M**	**H**
Definite/ Continuous	**H**	Medium	Medium	High
Possible/ frequent	**M**	Medium	Medium	High
Unlikely/ seldom	**L**	Low	Low	Medium

Table 10.12.4: The interpretation of the impact significance

SIGNIFICANCE	CRITERIA
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

Table 10.12.5: The interpretation of the status of the impact

IMPACT STATUS	CRITERIA
Positive	The impact benefits the environment
Negative	The impact results in a cost to the environment
Neutral	The impact has no effect on the environment

Once the significance of an impact has been determined, the CONFIDENCE in the assessment of the significance rating is ascertained using the rating systems outlined in Table 10.12.6.

Table 10.12.6: Definition of confidence ratings

CONFIDENCE RATINGS*	CRITERIA
High	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact. Greater than 70% sure of impact prediction
Medium	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact. Between 35% and 70% sure of impact prediction.
Low	Limited useful information on and understanding of the environmental factors potentially influencing this impact. Less than 35% sure of impact prediction.

* The level of confidence in the prediction is based on specialist knowledge of that particular field and the reliability of data used to make the prediction.

The degree to which the impact can be reversed is estimated using the rating system shown in Table 10.12.7

Table 10.12.7: Definition of Reversibility Ratings

REVERSIBILITY RATINGS	CRITERIA
Irreversible	Where the impact is permanent.
Partially Reversible	Where the impact can be partially reversed.
Fully Reversible	Where the impact can be completely reversed.

The degree to which there will be a loss of resources, as shown in Table 10.12.8 refers to the degree to which a resource is permanently affected by the activity, i.e. the degree to which a resource is irreplaceable.

Table 10.12.8: Definition of loss of resources

LOSS OF RESOURCES	CRITERIA

Low	Where the activity results in a loss of a particular resource but where the natural, cultural and social functions and processes are not affected.
Medium	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified way.
High	Where the activity results in an irreplaceable loss of a resource.

Lastly, the degree to which the impact can be mitigated or enhanced is shown in Table 10.12.9.

Table 10.12.9: Degree to which impact can be mitigated

DEGREE TO WHICH IMPACT CAN BE MITIGATED	CRITERIA
None	No change in impact after mitigation.
Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
Low	Where the significance rating drops by one level, after mitigation.
Medium	Where the significance rating drops by two to three levels, after mitigation.
High	Where the significance rating drops by more than three levels, after mitigation.

10.13 Positive and negative impacts that the proposed activity and alternatives

The environmental impacts to be presented by the proposed project will be divided into the project cycle stages or phases. Each potential impact identified in Table 10.13.1, has been further classified into three categories: Direct, Indirect and Cumulative Impacts in Table 10.13.2 The severity/nature of the impact will indicate whether the impact presents a negative or positive outcome to the receiving environment.

Table 10.13.1: Positive and negative impacts identified for proposed site and alternatives.

Project Phase	Activity	Potential Impacts	Impact Status (positive or negative)
Planning and Design	1. Waste Licence Application and Environmental Authorisation (a) Submit applications for Environmental Authorisation and Waste licence. (b) Submit application for Wate use licence, if applicable.	No development Development without Environmental Authorisation and EMPr lead to Environmental degradation. Environmental Authorisation granted & Environmental protection	Negative Positive
	2. Site Assessment, Selection and Establishment (a) Site selection (b) Site Assessment (c) Site preparation – Clearing of vegetation (d) Stripping of topsoil (e) Levelling, grading and compaction (f) Excavation for perimeter fencing	• Loss of topsoil • Soil compaction; • Soil erosion from soil exposure and increased surface water run-off; • Trampling on vegetation; • Loss of biodiversity • Loss of vegetation	Negative

	(g) Installation of fence around site (h) Material stockpiling (i) Construction of access roads and entrance security gate and guardhouse. (j) Servicing and maintenance of machinery and equipment	• Disturbance to soil structure • Soil pollution from oil leaks and spillages	
	3. Development of drawings (a) Site Layout plans (b) Construction plans (c) Consolidation of safety files and other regulatory operational manuals	• Properly designed infrastructure • EMPr and Best Practice guidelines including Site Management and Operational Plans • Poorly designed infrastructure • Environmental degradation	Positive Negative
	4. Removal of informal housing development encroaching the proposed waste drop-off and transfer site in consultation with community. (a) Social Plans	• Soil erosion • Bare and exposed soil • Dust from dismantling of infrastructure • Loss of shelter and sense of belonging (displacement) • Loss of life due to potential flooding from the Crocodile River during high rainy season.	Negative
	5. Site Safety and Access: (a) Excavation for fence; (b) Install fencing and security gate; 6. Delivery and stockpiling of construction material 7. Safety and site management, environmental induction, Source PPE safety equipment	• Damage to top soil; Siltation; Compaction of soil; • Dust from offloading of construction of material; • Theft of material & vandalisation of site infrastructure	Negative
	8. Site clearing: (a) Clearing of vegetation for construction 9. Site Infrastructure (a) Set mobile office facility (b) Install storage and ablution (c) facilities (d) Install waste disposal facilities (e.g waste bins) (e) Clearing of access points where necessary	• Loss of soil • Loss of vegetation, disturbance to flora and displacement of faunal species. • Increase in storm water velocity and soil erosion, • Sedimentation of watercourse from eroded soil.	Negative
	10. Auxiliary Services (a) Portable water supply and storage tanks (b) Diesel, petrol and HFO storage facility roads (c) Office buildings, training centre, emergency services and cafeteria (d) Workshops: electrical and mechanical (e) Security offices (f) Fire protection equipment	• Visual intrusion	Negative
	11. Machinery and Equipment delivery to site	• Soil pollution from oil and chemical leaks or spillages	Negative
	12. Recruitment of local site workers	(a) Improved economic and social status	Positive
	13. Training of site workers: Skills development of employees in various	• Improved skill levels • Exposure to new vocational	Positive

	skills such as finance, management, marketing, sales, stock etc. Socio-economic opportunities	training and opportunities	
	14. Access road use by Trucks for site establishment material delivery at the site.	• Improved economic and social status • Improved skill levels	Negative
Construction	15. Construction Camp Management	• Increased traffic volumes • Public safety (motorists and pedestrians)	Negative
	16. Delivery of construction materials 17. Grading/ levelling of the landscape 18. Ripping/ loosening of soil	• (Dust • Noise	Negative
	19. Cutting of slope and levelling for site infrastructure construction	• Change in topography: • Change to the slope of the existing site; • Visual intrusion due to the stockpiling of material on site.	Negative
	20. Construction activities - debris, construction rubble and oil spills	• Soil erosion, increased erosion levels due to run-off of water. • Exposure of soil, • little precipitation and evaporation, loss of habitat life. • Soil pollution - waste illegal dumping • Water pollution – stormwater coming into contact with construction materials, oil spills and construction waste.	Negative
	21. Waste generation during construction	(a) An increase in the amount of litter being generated (b) Non-use of sanitation facilities. (c) Construction waste or rubble (d) Soil and Surface water pollution due to wind blown litter.	Negative
	22. Vehicular movement during construction: • Increase in dust and erosion from clearing of vegetation, earth moving activities, as a result of earthworks, demolition, as well as the delivery and mixing of construction materials. • Emissions from construction vehicles • and increase in vehicle traffic. • Uncovered stockpiled construction material on site • Traffic, congestion and potential for collisions during the construction phase.	• Air Quality: ➢ Dust ➢ Emissions ➢ Visibility ➢ Visual intrusion • Soil erosion ➢ Personnel Safety	Negative
	23. Environmental contamination from building rubble, chemical leaks, spills and emissions, human excrement and litter.	• Soil pollution • Surface water pollution • Ground water pollution	Negative

	24. Potential visual intrusion of construction/demoliti on activities on the views of sensitive visual receptors	• Visual impacts: ➢ Visual intrusion	Negative
	25. Use of construction equipment (for the construction of the proposed infrastructure and demolition of existing infrastructure).	(a) Noise impacts: • Level of noise generated on site from ➢ vehicular movement, construction personnel working and ➢ the use of equipment and machinery during construction work e.g. trucks offloading waste, compactor, loading of waste for haulage to disposal site. Noise from demolition works.	Negative
	26. Construction activities: Safety of personnel	• Safety impacts: ➢ <u>Safety and fire</u> - Potential impact on the safety of construction workers due to construction activities (such as welding, cutting, working at heights, lifting of heavy items etc.). – open excavations and movement of construction vehicles cause a safety risk to people using footpaths in the area. Risk of fire due to construction activities and unauthorised fires on site (during cooking for example). - Potential health injuries to construction personnel as a result of construction work (i.e. welding fumes).	Negative
	27. Construction activities: Disturbance of Heritage Resources from construction activities.	• Disturbance to heritage resources • Loss of heritage resources	Negative
Operational	28. Receive the waste 29. Separation into streams 30. Temporal Storage of waste streams at the site 31. Loading into "walk in floors" containers 32. Transportation for disposal	• Odours • Waste Spills • Potential oil spills and leaks during offloading, loading and transportation for disposal. • Vectors: ➢ Flies and Rats • Birds, cats and dogs	Negative
	31. Temporal storage of garden waste at site - unlined surface	• Water pollution/ contamination of water sources and ground water	Negative
	32. Unlined surfaces for waste drop off, packaging and loading to trucks for disposal	• Ground water pollution • Soil pollution	Negative

	33. Flat and smooth surfaces around the site without proper storm water management system	• Storm water management	Negative
	34. Vehicular movement: Trucks offloading and loading waste	• Air Quality: ➢ Dust/Emissions	Negative
	35. Trucks and vehicle maintenance (General Operations and Maintenance)	• Soil pollution from oil and chemical spills during maintenance service	Negative
	36. Vehicular movement, construction personnel working and the use of equipment and machinery during operational phase e.g. trucks offloading waste, compaction of waste, loading of waste for haulage to disposal site. Possible chipping of garden waste before transportation to composting site.	• Noise impacts: ➢ Level of noise generated on site from trucks and vehicles in and out of the site ➢ Operation of machinery and equipment ➢ Loading waste and transportation for disposal.	Negative
	36. Socio-economic Impact	• Employment creation (approximately 10 -15 new jobs) • Skills development • Local economic development	Positive
Decommissioning /Rehabilitation	37. Demolition of all infrastructure on the site	• Surface water pollution • Air pollution: ➢ Dust from the ripping and demolition of all infrastructure on site. ➢ (Emissions from trucks hauling off the building rubble from the site.	Negative
		• Soil pollution ➢ Oil spills, waste spills etc. from demolition and movement of trucks etc.	Negative
		• Traffic ➢ Additional traffic of trucks removing demolition rubble to the landfill site for construction material.	Negative
		• Noise: ➢ Noise from the demolition process (machinery, trucks and equipment) to be used.	Negative
	38. Poor rehabilitation methods implementation	• Landscape scarring • Visual intrusion: ➢ Poorly rehabilitated site leads to unsightly area to surrounding communities.	Negative
	39. Decommissioning of site	• Socioeconomic impacts: ➢ Loss of employment and economic stability of community.	Negative

10.13.1 Health and Safety Impacts

The health and safety impacts are anticipated throughout the project life cycle stages and the implementation of the proposed mitigation measures are critical to the minimization of the identified impacts and their potential risks. There are a number of aspects involved in the planning and design of a waste disposal facility that may cause impacts during the operation of the facility. These include the determination of the capacity of the facility, access control, the locality of the drop-off areas in relation to compaction area, ablution and dining facilities, admin buildings etc. Public will only be allowed at the drop-off area and not in the recycling and compactor area for safety reasons.

The *capacity of the facility* to handle the daily waste deliveries, *layout and design of the facility* and the *choice of equipment* are all important factors that will determine the smooth and environmentally friendly operation of the facility. *Noise, odour* management and *nuisances such as flies, rodents* can all be controlled with the correctly chosen equipment and operation thereof.

Water management on the site is an important factor. Potentially contaminated waters (compactor area) must be directed to the sewer system. *Concentrated storm water from the paved areas* and *water from the wash bays* may cause surface water pollution. *Safety of workers on site in relation to the possibility of escaped animals from the adjacent KNP* will be addressed with the involvement of key stakeholders particularly from KNP Management and community representatives.

Operational procedures to deal with incidents and emergencies promptly must be readily available and the workers must be trained on health and safety procedures. Appointment of a Health and Safety officer is ideal. With a lack of such planning and mitigation measures, the possible impacts are of high significance.

10.13.2 Cumulative Impacts

The overall positive cumulative impacts of the proposed activity will be improved and efficient waste management within the Mbombela Local Municipality. This activity will reduce the amount of waste illegally dumped in open areas and also the amount transported to landfill, thereby conserving landfill air space and prolonging the life span of the landfill site. The Public drop off facility is necessary in order to provide the community with an additional facility that will accept garden / green waste thereby preventing and minimising the illegal dumping of these materials, which accumulate (negative) over time.

The identified impacts and the proposed mitigation measures are summarized in Table10.13.2.1

Table 10.13.2.1: Impacts and Mitigation measures of the proposed Matsulu Waste Transfer Station

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td colspan="7">PHASE: PRE-CONSTRUTION (PLANNING & DESIGN PHASE)</td></tr>
<tr><td>1. Waste License Application and Environmental Authorisation</td><td>(a) Submit Waste & Environmental Authorisation Application Form</td><td>Direct</td><td>No development of Waste Transfer Facility</td><td>Design and Planning</td><td>The impact of no environmental authorisation and the approved waste licence is high and could result in the Waste Drop-off Facility not being developed. The need for the facility within the area is key to the municipality waste management strategy to offer waste management services. The potential job opportunities and skills development to be created will be lost for the local community. The impact of environmental pollution for the operation of such a facility without proper authorisation would be significantly high.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>High</td></tr>
<tr><td>Spatial scale and duration</td><td>National –long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>Low</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>High</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td>• Ensure all Legislative and procedural requirements are met including specified timelines and protocols outlined within the BA Regulations before commencing with construction.
• Application for Environmental Authorisation has been submitted (Ref no: 17//4/WL/MP322/17/01)
• Application for a Waste Licence has been submitted (Ref No: 1/3/16/1E-118).
• Communicate with relevant stakeholders on all project plans and progress.
• Ensure transparency with project scope and implementation.</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td>2. Site Assessment & Establishment:
Site selection
Site Establishment & Preparation

3. Development of drawings
Construction plans
Consolidation of safety files and other regulatory operational manuals</td><td>(a) Soil compaction;
(b) Trampling on vegetation;</td><td>Direct</td><td>Land to be cleared of vegetation
Change of land use of identified site(s)</td><td>Design and Planning</td><td>The impact on the soil will be low as the proposed site area is already transformed and cultivated. The soil has been trampled and there are informal household development encroaching the site area. Mitigation measures to be adhered to.
<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Medium</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>Medium</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr><tr><td>Significance rating prior to mitigation</td><td>Low</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Careful consideration to reduce the footprint of the proposed activity not to increase impact to the environment.
Poor design & planning could result in highly significant environmental impacts.
Construction camp will be located on a previously disturbed area and should be located at least 100m from the watercourse.
Low noise machinery to be sourced.
Construction site and Environmental Management Plans (CEMP) will be implemented together with the EMPr.
Notification of community representatives about site development plans.</td></tr>
<tr><td>4. Removal of informal housing development encroaching the proposed waste drop-off and transfer site</td><td>(a) Soil erosion Bare and exposed soil
(c) Dust from dismantling of infrastructure
(d) Loss of shelter and sense of belonging (displacement)
(e) Loss of life due to potential flooding from the Crocodile river</td><td>Direct</td><td>Soil surface & composition

Air quality Human health inhaling dust Human life and security Socio-economic aspects e.g job loss and loss of livelihood and economic</td><td></td><td>The impact of the topsoil removal will be low as the area already has informal housing development and cultivated areas. The socio-economic impacts will be high due to the displacement of the community and loss of sense of belonging and livelihood. The Social Plan will be implemented.
<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>High</td></tr><tr><td>Spatial scale and duration</td><td>Local -long term</td></tr><tr><td>Probability of occurrence</td><td>High</td></tr><tr><td>Degree to which impact can be reversed</td><td>Medium</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr></table></td><td>Consultation with Municipality and Ward Councillors to address the matter with the informal residents within the site.
A Social Plan will be developed to address the removal and relocation of the illegal residents within the informal housing development in consultation with the community.</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td></td><td>during wet rainy season.</td><td></td><td>benefits
Human and faunal life due to flooding from the Crocodile river</td><td></td><td><table><tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td></td></tr>
<tr><td>Site Safety and Access:
5. Excavation for fence; Install fencing and security gate;

6. Delivery and stockpiling of construction material.

7. Safety and site management, environmental induction, Source PPE safety equipment</td><td>(a) Damage to top soil;
(b) Siltation; Compaction of soil;
(c) Dust from offloading of construction of material;
(d) Theft of material & vandalisation of site infrastructure</td><td>Direct/Cumulative</td><td>Site material safety
Personnel safety</td><td>Design and Planning</td><td>The impact on the soil will be low as the proposed site area is already transformed and cultivated. The soil has been trampled and there are informal household development encroaching the site area. Mitigation measures to be adhered to.<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Low</td></tr><tr><td>Spatial scale and duration</td><td>Low, Local -short term</td></tr><tr><td>Probability of occurrence</td><td>Low</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr><tr><td>Significance rating prior to mitigation</td><td>Low</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Material required for fencing will be stored at a clearly demarcated area within the contractor camp. The camp will be located close to the area earmarked for infrastructure like ablution facilities in order to centralize the impacted area.
All areas for material stockpiling will be demarcated and kept secured at all times.
Perimeter fence will be checked regularly for damage and be fixed immediately.
Any suspicious movements around the site will be reported and investigated.
No mixing of stockpile material will be allowed.
All stockpile material will be covered (i.e top soil) to prevent soil erosion and potential water sources from surface water runoff.
Dust suppression methods will be implemented.
Site safety protocols will be adhered to.</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr>
<td>8. Site clearing:
clearing of vegetation for construction

9. Site Infrastructure
• Set mobile office facility
• Install storage and ablution
• facilities
• Install waste disposal facilities (e.g waste bins)
• Clearing of access points where necessary</td>
<td>(a) Loss of soil

(b) Loss of vegetation, disturbance to flora and displacement of faunal species.

(c) Increase in storm water velocity and soil erosion,

(d) Sedimentation of watercourse from eroded soil.</td>
<td>Direct</td>
<td>Soil structure
Biodiversity
Water sources</td>
<td>Design and Planning</td>
<td>The impact will be medium due to the loss of habitat for the local fauna and flora within the area, however there is already disturbance to the biodiversity from the illegal housing development and cultivated land. The recommendations within the Site Establishment Plan and the EMPr will be adhered to.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local –long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table>
</td>
<td>All construction activities to be completed within the proposed footprint indicated in the layout drawings.
All natural areas outside the demarcated site area will be demarcated with barrier as no-go areas.
The no-go areas must not be accessed by construction personnel or vehicles.
All construction activities, materials, equipment and personnel to be restricted to within the area specified.
Rehabilitation of areas disturbed during construction shall be undertaken through landscaping and planting of indigenous species.
A comprehensive alien vegetation eradication and control programme will be implemented during and after construction and continue for the lifetime of the facility.
Provide mobile chemical toilets.</td>
</tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td>10. Auxiliary Services
Portable water supply and storage tanks
Diesel, petrol and HFO storage facility roads
Office buildings, training centre, emergency services and cafeteria
Workshops: electrical and mechanical
Security offices
Fire protection equipment</td><td>(a) Visual intrusion</td><td>Direct</td><td>Aesthetic value of the area</td><td>Design and Planning</td><td>There is potential for visual intrusion due to the establishment of structures and infrastructure, however this impact is considered low due to the area being transformed already therefore the site is not a pristine area.<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Low</td></tr><tr><td>Spatial scale and duration</td><td>Local –long term</td></tr><tr><td>Probability of occurrence</td><td>Medium</td></tr><tr><td>Degree to which impact can be reversed</td><td>Medium</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr><tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Construct the boundary wall in a manner in keeping with the area. Solid fencing and vegetative screening can improve the visual appearance of the drop-off and can provide a buffer to noise and dust. Plant trees to soften the effect of the wall and further screen the proposed structures (note: should there be sufficient Municipal/ project budget for such planting).</td></tr>
<tr><td>11. Machinery and Equipment delivery to site</td><td>(a) Soil pollution from oil and chemical leaks or spillages</td><td>Direct/Cumulative</td><td>Water sources
Soil pollution
Human life (Personnel and Communities)</td><td>Planning and Design</td><td>The impact on the soil will be low as the proposed site area is already disturbed and transformed through cultivation. The soil has been trampled and there are informal household development encroaching the site area. All machinery and equipment on site to be maintained regularly and checked daily for leaks before and after use. Mitigation measures within the EMPr to be adhered to.</td><td>Site Establishment and Management Specification and Procedures to be adhered to.
Reduce risk of incidents due to operation of</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
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<tr><td>Degree to which impact can be reversed</td><td>Medium</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table>
</td><td>vehicles and equipment during site clearing.
Safety procedures will be adhered to.
Ensure adherence to the EMPr.</td></tr>
<tr><td>12. Recruitment of local site workers</td><td>(a) Improved economic and social status</td><td>Direct</td><td>Job creation</td><td>Design and Planning
Construction
Operational
Decommissioning and Rehabilitation</td><td>There will be creation of job opportunities during all the phases of the project. The impact will be positive and high for boosting the livelihood status of the households within the area and also local economic development for the local SMMEs.
<table>
<tr><td>Impact Status</td><td>Positive</td></tr>
<tr><td>Severity</td><td>High</td></tr>
<tr><td>Spatial scale and duration</td><td>Local –long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>Medium</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>High</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>High</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating after mitigation</td><td>Medium</td></tr>
</table>
</td><td>Local community personnel to be sourced/recruited for rehabilitation.
Local site workers to undergo extensive safety and environmental induction training on environmental and wetland rehabilitation requirements including worker behaviour on site.
Ensure use of PPE at all times.
Odour management plan to be implemented.
Waste Management plan will be implemented. No waste will be stored for more than a day on site.
Noise Management plan will be implemented.
Housekeeping rules to will be enforced.
Ensure that all illegal dumping sites on the vicinity of the site and its surrounding areas are cleared before</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>construction and rehabilitated to reduce further impacts.</td></tr>
<tr><td>13. Training of site workers:
Skills development of employees in various skills such as finance, management, marketing, sales, stock etc.</td><td>(a) Improved skill levels
(b) Exposure to new vocational training and opportunities.</td><td>Direct</td><td>Human
Skills level & empowerment</td><td>Planning & Design</td><td>The impact of the proposed project will entail the empowerment of local community workers due to the training programmes and skills development. The impact is rated high with a positive impact to the local community's empowerment and development. Engagement of local training SMMEs is encouraged as to increase local SMME development within the area.

<table><tr><td>Impact Status</td><td>Positive</td></tr><tr><td>Severity</td><td>High</td></tr><tr><td>Spatial scale and duration</td><td>Local –long term</td></tr><tr><td>Probability of occurrence</td><td>High</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr><tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr><tr><td>Cumulative impact after mitigation</td><td>High</td></tr><tr><td>Significance rating after mitigation</td><td>High</td></tr></table></td><td>Skill development in the local community will be promoted and encouraged.
Provision of opportunities for exposure to other vocational areas will be encouraged.
Empowerment of community through other educational programmes will be encouraged.
Site specific awareness programmes will be encouraged.
Provision of on-site accredited training will be encouraged.</td></tr>
</table>

<table>
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<tr><td rowspan="2">14. Access road use by Trucks for site establishment material delivery at the site.</td><td>(a) Increased traffic volumes

(b) Public safety (motorists and pedestrians)</td><td>Direct</td><td>Existing road infrastructure
Other road users
Pedestrians</td><td>Design and Planning</td><td>The impact of the delivery of site establishment will be medium due to the fact that there will be increase in traffic flow within the area of trucks. The delivery will de done during normal working hours (08h00 – 17h00) and thus will not create disturbance to community after hours. The number of trips and trucks will be kept to a minimum to reduce potential accidents to local public and pedestrians. Speed limit will be strictly enforced.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local –long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td>Ensure adherence to speed limit of 30km/hr before the entry to the site.
Installation of speed humps to enforce speed limit to be considered.
Safety monitors especially at the intersections will be placed to ensure safety of motorists and pedestrians.
Educate staff about the impacts of off-road driving.</td></tr>
<tr><td>(c) Dust
(d) Noise</td><td>Direct/Cumulative</td><td>Local communities
Other road users</td><td>Design and Planning, Construction, Operational, Decommission and Rehabilitation</td><td>Dust emissions are likely to occur due to vehicular movement as the roads leading to the proposed site are gravel. The severity of this impact is anticipated to be low, if mitigation measures such as dampening of the gravel road and adherence to speed limits are observed. Furthermore, the traffic volume is anticipated to be low during this phase of the project, in comparison with the Construction and Operational Phase. Air pollution from emanating from vehicular emissions is also anticipated to be low if the mitigation measures prescribed in this Environmental Management Plan are adhered to.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local –long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
</table></td><td>Ensure adherence to speed limit of 30km/hr before the entry to the site.
Installation of speed humps to enforce speed limit to be considered.
Dust suppression methods will be implemented.
Investing in trucks with a lower ambient noise emission system will be considered.</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td><table>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td></td></tr>
<tr><td colspan="7">PHASE: CONSTRUCTION</td></tr>
<tr><td>15. Construction Camp Management</td><td>• Social disturbance:
➢ Noise
➢ Dust
➢ Safety
➢ Pollution
➢ (litter)</td><td>Direct/Cumulative</td><td>Environmental & human health</td><td>Design and Planning</td><td>The impact of the construction camp within the area will have a low impact to the neighbouring community. The presence and movement of site workers will be limited to the boundary of the site during normal working hours. The Site management protocols and procedures will be implemented as prescribed within the EMPr.

<table>
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<tr><td>Spatial scale and duration</td><td>Local -short term</td></tr>
<tr><td>Probability of occurrence</td><td>Medium</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td>• Construction camp will be located on a previously disturbed area and should be located at least 100 m from</td></tr>
</table>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						the watercourse. • Construction camp & ablution facilities will be out of the sensitive zone areas and proper CEMP (Construction Site Environmental Management men

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						t Plans) will be implemented together with the EMPr. • Built structures will not break the horizon. • Consideration of using screen planting to obstruct the view of

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						construction camp and stockpile from road users will be regarded. Use of only local indigenous vegetation will be ensured. Disaster Management Plan and all Site Health and Safety Procedures will be implemented. Dust suppression will be implemented within the site to minimise air quality and visibility impacts. Fires will only be allowed

<table>
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<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a firebreak will be cleared around the perimeter of the camp and office sites.
A designated place for food preparation and eating will be established at the construction site.
Dry chemical toilets will be made available at a ration of 1 toilet per 10 staff, within the campsite perimeter and will be cleaned and serviced as requested by the service provider.
Workers movements will be limited to the construction area only and will be enforced in terms of the contracts of appointments.
Any complaints will be addressed accordingly and records will be kept thereof.
Residents will be notified 7 days in advance of disruptions to services (water, electricity and road closures).</td></tr>
<tr><td>16. Delivery of construction materials

17. Grading/ levelling of the landscape

18. Ripping/</td><td>(a) Damage to top soil;
(b) Compaction of soil;
(c) Soil pollution due to oil leaks from machinery;</td><td>Direct</td><td>Soil surface
Soil structure/ Soil composition</td><td>Construction</td><td>The impact is regarded as low as the area proposed for development is already transformed and cultivated. The implementation of mitigation measures outlined in the EMPr will ensure the impact is low.
<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Low</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>Low</td></tr></table></td><td>Bare surfaces will be managed as small as possible.
All personnel to use the construction environmental management programme guidelines to reduce</td></tr>
</table>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
loosening of soil	(d) Loss of vegetation; (e) Increase in storm water velocity and soil erosion; (f) Loss of biodiversity; (g) Dust generation; (h) Noise from machinery, equipment and personnel;				**Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Negligible **Cumulative impact prior to mitigation**: Low **Significance rating prior to mitigation**: Low **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	machinery and personnel noise levels to low. The Contractor must strip and stockpile all soil within the site for use at a later stage. Topsoil removed will be stockpiled in a specified area. Stockpiles will be placed outside of the retained wetland buffer. Stockpiles will be covered and protected from wind and rain with the use of tarpaulins where necessary. The Engineer must use discretion in this regard. Sanitation facilities must not be located within 50m of any water resources or water drainage areas. Facilities will be regularly checked and serviced regularly to reduce risk of soil pollution, surface water and groundwater pollution. Vegetation clearing on the site should take place only immediately prior to construction in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.
19. Cutting of slope and levelling for site infrastructure construction	Change in topography: Change to the slope of the existing site;	Direct	Cutting of slope and levelling of current site for construction	Construction	The impact of slope cutting is considered medium due to the change in the topography of the area, however the area proposed for the development is already transformed and cultivated. Implementation of proposed mitigation measures within the EMPr will reduce the impact significantly low.	Ensure topography aligned to the building designs and minimises impact to environment and human safety.

<table>
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<tr><td></td><td>Visual intrusion due to the stockpiling of material on site.</td><td></td><td>and foundation establishment</td><td></td><td><table>
<tr><td>Impact Status</td><td>Negative</td></tr>
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<tr><td>Spatial scale and duration</td><td>Local -short term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td></td></tr>
<tr><td>20. Construction activities - debris, construction rubble and oil spills</td><td>(a) Soil erosion, increased erosion levels due to run-off of water.
(b) Exposure of soil, little precipitation and evaporation, loss of habitat life.

(b) Soil pollution - waste illegal dumping

(c) Water pollution – stormwater coming into</td><td>Direct</td><td>Soil health
Surface water resources health
Ground water health</td><td>Construction</td><td>Impacts emanating from the construction activities such as offloading and stockpiling of construction material, movement of trucks and machinery will result in soil erosion, soil pollution and potential water pollution from spillage and seepage into water resources. These impacts are however considered to be low after the implementation of mitigation measures.<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
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<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Medium</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
</table></td><td>Once earthworks are complete, disturbed areas are to be stabilised to prevent erosion.
All construction vehicles and machinery and equipment will be properly maintained to prevent leaks.
All bare surfaces to be re-vegetated or paved to reduce the impacts of soil erosion from increased surface water runoff and surface water pollution.
Clearance of all illegal dumping sites prior to construction.</td></tr>
</table>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
	contact with construction materials, oil spills and construction waste.				**Significance rating after mitigation**: Low	
21. Waste generation during construction	(a) An increase in the amount of litter being generated (b) Non-use of sanitation facilities. (c) Construction waste or rubble (d) Soil and Surface water pollution due to wind blown litter.	Direct	Soil health Site Aesthetic value	Construction Decommissioning and Rehabilitation	There is potential for pollution of land, soil and water due to improper waste disposal such as littering, overflowing bins, and burning of waste on site. This impact is considered to be low after implementation of mitigation measures. The construction rubble will be removed and disposed appropriately. **Impact Status**: Negative **Severity**: Medium **Spatial scale and duration**: Local -short term **Probability of occurrence**: Low **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Low **Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	Environmental Awareness induction training will be conducted to address the general site and sanitation facilities management. Site management procedures and guidelines will be implemented and all waste and rubble will be collected in appropriate waste receptacles and disposed of at the nearest authorised landfill site.

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td>22. Vehicular movement during construction:
• Increase in dust and erosion from clearing of vegetation, earth moving activities, as a result of earthworks, demolition, as well as the delivery and mixing of construction materials.
• Emissions from construction vehicles
• and increase in vehicle traffic.
• Uncovered stockpiled construction material on site
• Traffic, congestion and potential for collisions during the construction phase.</td><td>(a) Air Quality:
• Dust
• Emissions
• Visibility
• Visual intrusion
• Soil erosion
• Personnel Safety</td><td>Direct</td><td>Air Quality
Human health (inhalation of dust and emissions from the site)
Human safety - potential collisions and incidents on site</td><td>Construction</td><td>Air quality impacts emanating from the construction activities such as increased dust result from the offloading and stockpiling of construction material, movement of trucks. There will also be soil erosion, soil pollution and potential water pollution from spillage and seepage into water resources. These impacts are however considered to be low after the implementation of mitigation measures.

<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Medium</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>Low</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Low</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr><tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Dust suppression methods will be implemented.
Implement the site Health and Safety Plan.
Ensure that construction vehicles travelling on unpaved roads do not exceed a speed limit of 30 km/hour.
Limit vehicles, people and materials to the construction site.
Limit construction activities to day time hours (08h00 -17h00)
Road barricading should be
undertaken where required and road safety signs should be adequately installed at strategic points within the construction site.</td></tr>
<tr><td>23. Environmental contamination from building rubble, chemical leaks, spills and emissions, human excrement and litter.</td><td>(a) Soil pollution
(b) Surface water pollution
(c) Ground water pollution</td><td></td><td>Soil health
Water quality</td><td>Construction</td><td>Impacts emanating from the construction activities such as offloading and stockpiling of construction material, movement of trucks and machinery will result in soil erosion, soil pollution and potential water pollution from spillage and seepage into water resources. These impacts are however considered to be low after the implementation of mitigation measures.</td><td>Regular check of the vehicles, machinery and equipment operating on site will be ensure
Should a hydrocarbon or other chemical spill occur, clean up procedures will be undertaken a.s.a.p., in line with best practice: Spills on soil will be contained by using oil absorbents and/or peat sorbs to absorb the spill. This will be cleaned and removed into adequate hazardous waste containers.
All contaminated soil will</td></tr>
</table>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
					Impact Status: Negative **Severity**: Medium **Spatial scale and duration**: Local -short term **Probability of occurrence**: Low **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: High **Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	be removed and placed into hazardous waste bins Spills on water will be addressed by personnel on site or by pollution control contractors, using oil absorbents or oil skimmers. Oil contaminated absorbent material or skimmed-off chemicals need will be disposed of in hazardous waste bins or sealable drums. No spilled products will be disposed of in sewers or storm water drains, or be deliberately ignited. Gloves/PPE will be worn when handling spilled petroleum products.

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td>24. Potential visual intrusion of construction/demoliti on activities on the views of sensitive visual receptors</td><td>Visual impacts: Visual intrusion</td><td>Direct</td><td>Visibility of neighbouring communities and road users</td><td>Construction Decommissioni ng and Rehabilitation</td><td>There is potential for visual intrusion due to the establishment of structures and infrastructure during construction and demolition during decommissioning, however this impact is considered low due to the existence of infrastructure on site therefore the site is not pristine area but has already been disturbed.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local -short term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Low</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td>Dust suppression methods will be implemented.
Good housekeeping on site to avoid litter and minimise waste will be ensured.
Litter and rubble will be timeously removed from the construction site and disposed at a licenced waste disposal facility.
Additional mitigation measures could include:
Construct the boundary wall in a manner in keeping with the area.
Solid fencing and vegetative screening can improve the visual appearance of the drop-off and can provide a buffer to noise and dust.
Plant trees to soften the effect of the wall and further screen the proposed structures (note: should there be sufficient Municipal/ project budget for such planting).</td></tr>
</table>

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr><td>25. Use of construction equipment (for the construction of the proposed infrastructure and demolition of existing infrastructure).</td><td>(a) Noise impacts:
Level of noise generated on site from
vehicular movement, construction personnel working and
the use of equipment and machinery during construction work e.g. trucks offloading waste, compactor, loading of waste for haulage to disposal site.
Noise from demolition works.</td><td>Direct/Cumulative</td><td>Human health - too much noise affects the ear and hearing abilities of personnel and neighbouring community.</td><td>Construction and Decommissioning and Rehabilitation</td><td>The construction of the structures will only cause a temporal increase in ambient noise levels during construction and decommissioning phase. The noise will only be limited to construction activities. The expected noise caused by these construction vehicles is however, foreseen to be low, as the expected noise will be from the truck engines and generators. The noise will only be experienced during normal working hours and only during construction and operational phases. Therefore probability of excessive noise is medium and will have medium intensity. It is anticipated that the noise levels will increase during the Operational phase as the trucks offload the waste material and the compactor compresses the waste sorted waste before transportation to the landfill site.<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>High</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>High</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr><tr><td>Significance rating prior to mitigation</td><td>Low</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Limit construction activities to day time hours
Construction personnel must wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer.
Ensure construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate</td></tr>
<tr><td>26. Construction activities: Safety of personnel</td><td>Health and Safety impacts:
<u>Safety and fire</u>
- Potential impact on the safety of construction workers due to construction activities (such as welding, cutting, working at heights, lifting</td><td>Direct</td><td>Human life
Human health</td><td>Construction</td><td>Due to the nature of the proposed project it is likely that heavy equipment and machinery will be utilised. The potential for accidents and injuries is likely, however the severity of the impact is considered to be medium.<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Medium</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>High</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>High</td></tr></table></td><td>Ensure that a skilled and competent Contractor is appointed during the construction phase. The Contractor will be evaluated during the tender/appointment process in terms of safety standards.
The Contractor must ensure that all construction personnel are provided with adequate PPE for use</td></tr>
</table>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
	of heavy items etc.). – open excavations and movement of construction vehicles cause a safety risk to people using footpaths in the area. Risk of fire due to construction activities and unauthorised fires on site (during cooking for example). Potential health injuries to construction personnel as a result of construction work (i.e. welding fumes).				**Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	where appropriate. The Contractor must undertake a Construction Phase Risk Assessment. A Construction Site Manager or Safety Supervisor should be appointed, in conjunction with the project manager, to monitor all safety aspects during the construction phase. This could be the same person that is assigned to co-ordinate the construction traffic. Ensure that roads are not closed during construction, which may restrict access for emergency services. The Contractor must ensure that all construction personnel are provided with adequate PPE for use where appropriate. Strict adherence to the Site Health and Safety Plan to be ensured.

<table>
<tr><th>ACTIVITY</th><th>IMPACTS</th><th>TYPE OF IMPACT</th><th>ASPECTS AFFECTED</th><th>PHASE</th><th>SIGNIFICANCE RATING</th><th>MITIGATION MEASURES</th></tr>
<tr>
<td>27. Construction activities: Disturbance of Heritage Resources from construction activities.</td>
<td>Heritage resources</td>
<td>Direct</td>
<td>Heritage resources</td>
<td>Construction, Operational & Decommissioning/ Rehabilitation</td>
<td>
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local -long term</td></tr>
<tr><td>Probability of occurrence</td><td>Low</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Low</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table>
</td>
<td>The Contractor must ensure that all personnel are aware of potential Heritage resources that might exist in the site and proper protocol of reporting and recording will be followed.
The relevant Heritage Authorities will be contacted upon discovery of any Heritage resources.</td>
</tr>
</table>

<table>
<tr><td colspan="7">PHASE: OPERATIONAL</td></tr>
<tr><td rowspan="2">28. Receive the waste

29. Separation into streams

30. Temporal Storage of waste streams at the site

31. Loading into “walk in floors” containers

32. Transportation for disposal</td><td>(a) Odours

(b) Waste Spills</td><td>Direct/ Cumulative</td><td>Human health</td><td>Operational</td><td>The impact of odours within the site during offloading, sorting and compaction is medium. The temporal storage of food waste has a high potential for odour. A poorly and inadequately designed facility and operational procedures will lead to odour being a nuisance to the neighbouring community. Proposed mitigation measures within the EMPr will be implemented to reduce the significance of the impact to low.

<table><tr><td>Impact Status</td><td>Negative</td></tr><tr><td>Severity</td><td>Medium</td></tr><tr><td>Spatial scale and duration</td><td>Local -short term</td></tr><tr><td>Probability of occurrence</td><td>Low</td></tr><tr><td>Degree to which impact can be reversed</td><td>High</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Low</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr><tr><td>Significance rating prior to mitigation</td><td>Low</td></tr><tr><td>Cumulative impact after mitigation</td><td>Low</td></tr><tr><td>Significance rating after mitigation</td><td>Low</td></tr></table></td><td>Proper facility design and operational procedures will significantly reduce odour problems.
Ensure that the waste is sorted accordingly and stored in appropriate containers.
Waste material will not be stored for long periods, disposal of waste will be done daily.
The surface areas will be lined, cemented and impermeable.
No work to be conducted in porous surfaces.
Good housekeeping measures will be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.
Protective clothing will be worn at all times.
Extra precaution will be taken for site worker working at the Garden/Green waste area.</td></tr>
<tr><td>(b) Potential oil spills and leaks during offloading, loading and transportation for disposal.</td><td>Direct/Cumulative</td><td>Soil health
Surface and Ground water health</td><td>Operational</td><td><table><tr><td>Nature of impact</td><td>Negative</td></tr><tr><td>Severity</td><td>Medium</td></tr><tr><td>Extent and duration</td><td>Local - long term</td></tr><tr><td>Probability of occurrence</td><td>Probable</td></tr><tr><td>Degree to which impact can be reversed</td><td>Low</td></tr><tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr><tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr></table></td><td>Ensure trucks and vehicles are regularly checked and serviced.
Oil spills kits will be readily available.
Fire kits and fire extinguishers to be readily available around the site.
Health and Safety Protocols to be implemented and adhered to.</td></tr>
</table>

					Significance rating prior to mitigation: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	
	(c) Vectors: Flies and Rats	Direct/Cumulative	Human health	Operational	The impact of the presence of rodents and flies on site is rated as medium. Rats and flies present a potential health concern at a waste transfer facility, which could easily spread to the neighbouring community and adjacent landowners. Site workers will take extra precaution on site to avoid potential health hazards presented by infections from rat bites and rat urine. **Impact Status**: Negative **Severity**: Medium **Spatial scale and duration**: Local -short term **Probability of occurrence**: Low **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Negligible **Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	Ensure that the waste is temporarily stored, sorted and disposed off as soon as possible to reduce the abundance of flies and rats within the site. Ensure that the waste site perimeter is sealed and regularly checked for holes and cracks. Daily cleaning of the site exterior and interior to be done. Site manager will implement a pest control program at least once every quarter. Good housekeeping measures will be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.
	(d) Birds, cats and dogs	Direct/Cumulative	Human health Animal health	Operational	The presence of food waste has a medium impact to the human health by presenting a nuisance of birds, cats and dogs roaming within the neighbouring community. The health of animals will be affected due to the ingesting of poisoned rats from non-biological pest control methods for rodent control programme. **Impact Status**: Negative **Severity**: Medium **Spatial scale and duration**: Local -long term **Probability of occurrence**: Low **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Low **Cumulative impact prior to mitigation**: Medium	Ensure the temporal waste stored on site is covered within the appropriate containers. No waste or litter will be exposed or on the floor. Litter covers will be used on containers on site and on trucks during transportation to the landfill site.

					Significance rating prior to mitigation: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	
31. Temporal storage of garden waste at site - unlined surface	(a) Water pollution/ contamination of water sources and ground water	Direct/Cumulative	Surface water and groundwater	Operational	The impact of temporal storage on unlined surfaces is considered medium due to potential of spillages of waste and chemicals and could lead to contamination of water sources and ground water. Proposed mitigation measures will be implemented and the impact will be low. **Nature of impact**: Negative **Extent and duration**: Local –long term **Probability of occurrence**: Medium **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Medium **Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	Ensure that water use for the garden waste and dust suppression is the permitted quantities. No excess water will be wasted. Prevent excess water that could lead to surface water and result in soil erosion and water surface pollution of the nearby Crocodile River.
32. Unlined surfaces for waste drop off, packaging and loading to trucks for disposal	(a) Ground water pollution (b) Soil pollution	Direct/Indirect	Ground water health Water users dependent on ground water Soil health	Operational	The impact of dropping off waste, packaging and loading for disposal will have a medium impact on unlined soil surfaces due to potential of spillages of waste and chemicals and could lead to contamination of soil including water sources and ground water. Proposed mitigation measures will be implemented and the impact will be low. **Nature of impact**: Negative **Severity**: Medium **Extent and duration**: Local –long term **Probability of occurrence**: Medium **Degree to which impact can be reversed**: High **Degree to which impact may cause irreplaceable loss of resource**: Medium **Cumulative impact prior to mitigation**: Medium **Significance rating prior to**: Low	Line all surfaces and protect all bare surfaces within the site by planting indigenous plants to reduce soil erosion and ground water pollution.

					mitigation |	
					Cumulative impact after mitigation | Low	
					Significance rating after mitigation | Low	
33. Flat and smooth surfaces around the site without proper storm water management system	(a) Storm water management	Direct/Cumulative	Soil erosion	Operational	Impact considered medium due to the potential of increased runoff water from the flat and smooth surface onto bare soil leading to soil erosion. This may also lead to transportation of contaminated soils from oil and chemical spillages into water sources or ground water. Implementation of mitigation measures within the EMPr will reduce the impact to low risk. **Nature of impact** | Negative **Severity** | Medium **Extent and duration** | Local –short term **Probability of occurrence** | Medium **Degree to which impact can be reversed** | Medium **Degree to which impact may cause irreplaceable loss of resource** | Negligible **Cumulative impact prior to mitigation** | Medium **Significance rating prior to mitigation** | Medium **Cumulative impact after mitigation** | Low **Significance rating after mitigation** | Low	Ensure the site has proper functional storm water management system that is cleaned and maintained regularly. Identified leaks will be repaired and issues of water wastage will be addressed as soon as these are identified. Installation of oil traps and proper disposal systems wil be implemented. Over-wetting, saturation and unnecessary runoff during dust control activities and irrigation will be avoided. All heavy vehicles and machinery will be kept in good working order and serviced regularly.
34. Vehicular movement: Trucks offloading and loading waste	(a) Air Quality: Dust/Emissions	Direct/Cumulative	Air Quality; Human Health	Operational	Air quality impacts emanating from the construction activities such as increased dust result from the offloading and stockpiling of construction material, movement of trucks. There will also be soil erosion, soil pollution and potential water pollution from spillage and seepage into water resources. These impacts are however considered to be low after the implementation of mitigation measures. **Nature of impact** | Negative **Extent** | Medium **Extent and duration** | Local –long term **Probability of occurrence** | High **Degree to which impact can be** | High	Ensure trucks adhere to speed limits inside the site and outside the site. Ensure that dust suppression methods are implemented as outlined in the EMPr.

					reversed	
					Degree to which impact may cause irreplaceable loss of resource	Negligible
					Cumulative impact prior to mitigation	Medium
					Significance rating prior to mitigation	Medium
					Cumulative impact after mitigation	Low
					Significance rating after mitigation	Low
35. Trucks and vehicle maintenance (General Operations and Maintenance)	(a) Soil pollution from oil and chemical spills during maintenance service	Direct/Cumulative	Soil health Surface and Ground water health	Operational	The impact of oil spills and leaks will have a medium impact on unlined soil surfaces due to potential of spillages of waste and chemicals and could lead to contamination of soil including water sources and ground water. Proposed mitigation measures will be implemented and the impact will be low.	Ensure that the trucks and vehicles maintenance service is offsite or conducted in an appropriately designed and constructed workshop. Ensure safe storage and use of all the hazardous and flammable chemicals and substances for the maintenance service. All Health and Safety Protocols and Procedures to be implemented and adhered to. Refuelling of trucks will be done offsite.
					Nature of impact	Negative
					Severity	Medium
					Extent and duration	Local – long term
					Probability of occurrence	Probable
					Degree to which impact can be reversed	Low
					Degree to which impact may cause irreplaceable loss of resource	Low
					Cumulative impact prior to mitigation	Medium
					Significance rating prior to mitigation	Medium
					Cumulative impact after mitigation	Low
					Significance rating after mitigation	Low

<table>
<tr>
<td>36. Vehicular movement, construction personnel working and the use of equipment and machinery during operational phase e.g. trucks offloading waste, compaction of waste, loading of waste for haulage to disposal site. Possible chipping of garden waste before transportation to composting site.</td>
<td>(a) Noise impacts:
• Level of noise generated on site from trucks and vehicles in and out of the site
• Operation of machinery and equipment
• Loading waste and transportation for disposal.</td>
<td>Direct/Cumulative</td>
<td>Community hearing health
Site Workers</td>
<td>Construction, Operational & Decommissioning & Rehabilitation</td>
<td>There increase in ambient noise levels during operational phase will have a moderate impact. The noise will only be limited to operational hours (07h30 – 16h00). The noise will only be experienced during normal working hours and only during construction and operational phases. Therefore probability of excessive noise is medium and will have medium intensity. It is anticipated that the noise levels will increase during the Operational phase as the trucks offload the waste material and the compactor compresses the waste sorted waste before transportation to the landfill site.
<table>
<tr><td>Impact Status</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Spatial scale and duration</td><td>Local - long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Medium</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table>
</td>
<td>Limit construction activities to day time hours
Construction personnel must wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer.
Ensure construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate.</td>
</tr>
<tr>
<td>36. Socio-economic Impact</td>
<td>(a) Employment creation (approximately 10 - 15 new jobs)

(b) Skills development

(c) Local economic development</td>
<td>Direct/Cumulative</td>
<td>Community well being and food security
Local economic boost</td>
<td>Construction, Operational & Decommissioning & Rehabilitation</td>
<td>There will be creation of job opportunities during all the phases of the project. The impact will be positive and high for boosting the livelihood status of the households within the area and also local economic development for the local SMMEs.
<table>
<tr><td>Nature of impact</td><td>Positive</td></tr>
<tr><td>Extent and duration</td><td>Local - long term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Negligible</td></tr>
<tr><td>Cumulative impact prior to</td><td>Low (+)</td></tr>
</table>
</td>
<td>Enhance the use of local labour and local skills as far as reasonably possible.
Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained.
Ensure that an equitable percentage allocation is provided for local labour employment as well as specify the use of small-to-medium enterprises</td>
</tr>
</table>

					mitigation | **Significance rating prior to mitigation** | Low (+) **Cumulative impact after mitigation** | Medium **Significance rating after mitigation** | Medium	and training specifications in the Contractors contract. Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.
PHASE: DECOMMISSIONING/ REHABILITATION						
37. Demolition of all infrastructure on the site	(a) Surface water pollution	Direct/Cumulative	Crocodile river proximity, risk of sedimentation from the contaminated surface water run off.	Decommissioning/ Rehabilitation	The impact of demolition of all infrastructure is considered medium due to potential of demolition waste and debris could lead to contamination of water sources and ground water. Proposed mitigation measures will be implemented and the impact will be low. **Nature of impact** | Negative **Extent and duration** | Local - short term **Probability of occurrence** | High **Degree to which impact can be reversed** | Medium **Degree to which impact may cause irreplaceable loss of resource** | Negligible **Cumulative impact prior to mitigation** | Low **Significance rating prior to mitigation** | Low **Cumulative impact after mitigation** | Low **Significance rating after mitigation** | Low	Ensure that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Limit work to working hours (07h30 –16h00).
	Air pollution: (a) Dust from the ripping and demolition of all infrastructure on site. (b) Emissions from trucks hauling off the building rubble from the site.	Direct/Cumulative	Air Quality	Decommissioning/ Rehabilitation	Dust will be generated during the dismantling of structure and infrastructure. This impact is considered to be low after the implementation of mitigation measures. **Nature of impact** | Negative **Severity** | Medium **Extent and duration** | Local - short term **Probability of occurrence** | High **Degree to which impact can be reversed** | High **Degree to which impact may cause irreplaceable loss of resource** | Low **Cumulative impact prior to** | Medium	• Ensure that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Dust suppression method to be implemented. • Limit work to working hours (07h30 –

				mitigation	
				Significance rating prior to mitigation	Medium
				Cumulative impact after mitigation	Low
				Significance rating after mitigation	Low
					16h00).
Soil pollution (a) Oil spills, waste spills etc. from demolition and movement of trucks etc.	Direct/Cumulative	Soil health	Decommissioning/ Rehabilitation	The impact on soil resources will be medium during the decommissioning phase due to the dismantling of structures and infrastructure and the ripping of the surface.	Ensure that the trucks and vehicles maintenance service is offsite or conducted in an appropriately designed and constructed workshop. Ensure safe storage and use of all the hazardous and flammable chemicals and substances for the maintenance service. All Health and Safety Protocols and Procedures to be implemented and adhered to. Refuelling of trucks will be done offsite
				Nature of impact	Negative
				Severity	Medium
				Extent and duration	Local - long term
				Probability of occurrence	Probable
				Degree to which impact can be reversed	Medium
				Degree to which impact may cause irreplaceable loss of resource	Low
				Cumulative impact prior to mitigation	Medium
				Significance rating prior to mitigation	Medium
				Cumulative impact after mitigation	Low
				Significance rating after mitigation	Low
Traffic (a) Additional traffic of trucks removing demolition rubble to the landfill site for construction material.		Road surface Other road users Pedestrians	Decommissioning/ Rehabilitation	During the decommissioning phase it is anticipated that the traffic volume generated by the movement of vehicles will have a medium impact on traffic flow in the area.	Ensure that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Limit work to working hours (07h30 – 16h00)
				Nature of impact	Negative
				Severity	Medium
				Extent and duration	Local - short term
				Probability of occurrence	High
				Degree to which impact can be reversed	High
				Degree to which impact may cause irreplaceable loss of resource	Low
				Cumulative impact prior to	Low

					mitigation	
					Significance rating prior to mitigation	Medium
					Cumulative impact after mitigation	Low
					Significance rating after mitigation	Low
	(a) Noise: Noise from the demolition process (machinery, trucks and equipment) to be used.		Site workers Neighbouring community	Decommissioning/ Rehabilitation	The impact of noise from the demolition and dismantling of the infrastructure on site in considered medium before the implementation of mitigation measures. The impact will be low after implementation of mitigation measures. **Nature of impact**: Negative **Severity**: Medium **Extent and duration**: Local - short term **Probability of occurrence**: High **Degree to which impact can be reversed**: Medium **Degree to which impact may cause irreplaceable loss of resource**: Negligible **Cumulative impact prior to mitigation**: Medium **Significance rating prior to mitigation**: Medium **Cumulative impact after mitigation**: Low **Significance rating after mitigation**: Low	• Ensure that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. • Limit work to working hours Limit construction activities to day time hours (07h30 – 16h00). • Construction personnel must wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer. • Ensure construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate.

						• Consider use of trucks with muted levels of noise to cater for the proximity to the KNP and potential impact to the animals. • A buffer zone between the proposed site and the receptors (residential and animals)will be maintained. Noise control measures and noise screening methods such as planting of trees as wind and noise breaks will be implemented. • IAPs will be informed about the impending excessive noise and the duration. • Generators and other equipment will be housed in casings to reduce noise levels withn the site. • No loud music or excessive noise generated by employees will be allowed on site.
38. Poor rehabilitation methods implementation	(a) Landscape scarring (b) Visual intrusion: Poorly rehabilitated site leads to unsightly area to surrounding communities.	Direct/Cumulative	Landscape & Topography	Decommissioning/ Rehabilitation	Poorly designed Rehabilitation Plans will lead to ripping and scarring of the landscape. The impact is considered medium and with implementation of mitigation measures will be low Poorly rehabilitated site will lead to an unattractive landscape and affect the overall aesthetic value of the area. The impact is considered medium as the area is close to the KNP which as a tourist attraction area and a signatory to various international conventions and agreements must adhere to international standards. The poorly rehabilitated site due to its proximity to the park will affect the outlook of the area. The rehabilitated site must blend with the rest of the surrounding environment. The impact will be low after implementation of mitigation measures.	• Ensure that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan.

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td><table>
<tr><td>Nature of impact</td><td>Negative</td></tr>
<tr><td>Severity</td><td>Medium</td></tr>
<tr><td>Extent and duration</td><td>Local – long term</td></tr>
<tr><td>Probability of occurrence</td><td>Low</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>Low</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Low</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Low</td></tr>
<tr><td>Significance rating after mitigation</td><td>Low</td></tr>
</table></td><td></td></tr>
<tr><td>39. Decommissioning of site</td><td>Socioeconomic impacts:
(a) Loss of employment and economic stability of community.</td><td>Direct/ Cumulative</td><td>Community economic security
Food security</td><td>Decommissioning/ Rehabilitation</td><td>The impact of job losses due to the closure of the proposed site is considered medium as the personnel will have received training in other skills to cater for the exit strategy. Other opportunities of employment will be identified before the closure of the proposed site is finalised. The impact after implementation of mitigation measures will be low.<table>
<tr><td>Nature of impact</td><td>Positive</td></tr>
<tr><td>Extent and duration</td><td>Local-short term</td></tr>
<tr><td>Probability of occurrence</td><td>High</td></tr>
<tr><td>Degree to which impact can be reversed</td><td>High</td></tr>
<tr><td>Degree to which impact may cause irreplaceable loss of resource</td><td>-</td></tr>
<tr><td>Cumulative impact prior to mitigation</td><td>Low</td></tr>
<tr><td>Significance rating prior to mitigation</td><td>Low</td></tr>
<tr><td>Cumulative impact after mitigation</td><td>Medium</td></tr>
<tr><td>Significance rating after mitigation</td><td>Medium</td></tr>
</table></td><td>• Skills development training to include skills that are outside the Waste management field.
• Diversification of vocational skills to be encouraged.
• Post-project programmes linked to IDP to be encouraged.
• Redeploy to other running projects.
• Business skills to be provided to all personnel on site.</td></tr>
</table>

						• Train the Trainer programmes to be encouraged for personnel at site to provide training programmes to other community members and other areas with newly established Waste Transfer Stations. • Establishment of Cooperatives by the personnel to be encouraged to sustain them even after the decommissioning of the current site.

10.14 Site and Technology Alternatives

10.14.1 Details of all the Site Alternative considered

10.14.1.1 Site Alternatives S1 and S2

During the site identification phase, there are two sites which belong to the municipality that were considered, Erf 311 and Erf 312. Both municipal stands belong to the municipality, however the location of Erf 311 presented immediate obvious "high risk" areas of concern for consideration. Erf 311 has two natural water sources on the eastern side (Ntsikazi River) and on the sourthern side (Crocodile River). Furthermore, Erf 311 is located about 300m from the Kruger National Park fence. The Crocodile River is located south of the proposed location for Erf 312.

The location of both Erf 311 and Erf 312 and their proximity to environmentally sensitive areas provided a criteria for considering Erf 312 as the preferred Site Alternative S1. The details of each Site Alternative are provided in Section 8 above.

Alternative S1 (preferred alternative)

Site Erf 312

This alternative is preferred from an environmental perspective as the area proposed for the construction is within transformed and degraded vegetation and will result in insignificant environmental impacts. However the close proximity of the Crocodile River to the proposed site is an area with potential for surface water pollution should the mitigation measures within the EMPr not be implemented or adhered to.

Alternative S2 (least preferred alternative)

This option is least preferred for the following reasons:

Site Erf 311

Althought the site is also a municipal property, its close proximity to the KNP fence presents a challenge both on a legal basis and the safety of both the animals within the park and the workers at the proposed facility. The noise levels from the site might have an impact to the wellbeing of the animals etc, specialists studies would have to be conducted on the sensitivity levels and threshold levels of noise the animals can tolerate. The equipment, machinery and processes within the proposed site would then need to be specialised not to exceed the provided threshold**.**

10.14.2 Details of Technology Alternatives considered

Alternative T1 (preferred technology method)

"Walk in floor" containers technology

The "walk in floor " method of temporal storage and haulage to the Tekwane Waste Disposal Site is the proposed and preferred method for the Matsulu Waste Transfer station. The alternative to the "walk in" approach is the normal approach and process of using skip bins for the collection and temporal storage of waste.

Alternative T2 (least preferred method)

Conventional normal compaction technology

- Normal and standard method of compaction.
- Readily available trained and skilled work force for operating the machinery.
- Readily available training available in the country.

10.14.3 Site Selection Matrix

The following parameters and environmental components were considered for the selection of the site for the proposed activity:

1. Appropriate zoning
2. Land ownership
3. Topography
4. Location
5. Site Access
6. Environmental status
7. Proximity to the river
8. Proximity to the KNP boundary fence
9. Current land use
10. Community Preference
11. Technological
12. Economical (capital and operating costs)
13. Heritage

Table 10.14.3-1: Site Selection Matrix of parameters and environmental components

	1. Appropriate zoning	**2. Land ownership**	**3. Size of available area**	**3. Topography**	**4. Location**	**5. Site Access**	**6. Environmental status**	**7. Proximity to the river**	**8. Proximity to the KNP boundary fence**	**9. Current land use**	**10. Community Preference**	**11. Technological**	**12. Economical (capital and operating costs)**	**13. Heritage Resources**
Site Erf 312	Not appropriate, zoned as agricultural land, however, plans for rezoning to industrial zone in place.	Municipal	Bigger in size than Erf 311. All proposed infrastructure fits and there is still room left within the proposed site. (Appendix A1)	Relatively flat	Mandela Park, Matsulu	Road network established, site can be accessed through Triumph Road.	Land within the proposed area is already transformed and cultivated with some informal housing encroaching.	From the far left the proximity is 100m; and from far right the proximity is 87m from the structure boundaries to the river.	Not too close (+/- 300m) from KNP fence.	• Cultivation • Informal housing development • Recreational activities • Fishing	Yes, access to recreational activities and fishing in the Crocodile river by the community are further from this site and closer to Erf 311.	"Walk – in floors" containers to be used to store and transport waste to disposal site.	Much more economical with no extra budget for the development of access roads to the site.	Not Applicable. None discovered or recorded
Site Erf 311	Not appropriate, zoned as agricultural, however, plans for rezoning to industrial zone in place.	Municipal	Smaller in size even though the planned infrastructure would fit but there is not much room as compared to Erf 312. (Appendix A2)	Relatively flat	Mandela Park, Matsulu	Road not well developed, site can be accessed through Capital Road that is within the residential area.	Land is cultivated and disturbed.	The alternative site the proximity is 101 m to the river bank from the right hand side of the proposed site.	Too close (+/- 50m) from KNP fence	Cultivated land.	No, access points to recreational activities and fishing in the Crocodile river by the community are closer to this site.	"Walk – in floors" containers to be used to store and transport waste to disposal site.	More expensive with establishment of new access roads to be budgeted for and for authorisations to be applied for.	Not Applicable. None discovered or recorded.

10.15 A concluding statement indicating the preferred alternatives, including preferred location of the activity

This Basic Assessment Process provides an indication of likely/potential environmental impacts based on subjective criteria, the public consultation process, and maps of the site and nature of the receiving environment. The construction impacts are directly interrelated with normal waste transfer facility. It is therefore important that the Mbombela Local Municipality (the applicant) and Zethu Consulting Services (Pty) Ltd), ensure continual monitoring as a means to ensure environmental protection. It is also essential that the EMP and Operational Management Plan be updated in order to reflect actual impacts and the changing institutional and legal environment as appropriate.

This Environmental Impact Statement describes the Project, the expected environmental conditions on the Matsulu Waste Transfer Facility, and assesses the likely effects of the proposed project on the environment. The Environmental Impact Statement also includes an assessment of likely cumulative effects of the project in combination with other past, present or reasonably foreseeable projects, as required. It describes the effects for normal conditions and as a result of accidents and malfunctions.

The development of a public waste drop off facility would reduce any potential risks associated with illegal waste dumping within the area. The close proximity of the proposed site to the Crocodile River is an area with potential for surface water pollution and the existing Kruger National Park as a conservation area, presents an area of environmental sensitivity. This would require all precautions to be undertaken to maintain and protect the sensitive areas and adhere to the EMPr.

The proposed project would also add socio-economic benefits to the community through job creation and support local economic development.

The identified potential environmental impacts and their mitigation measures are outlined in detail in Table 6.1 and also within the EMPr (attached as Appendix F). With the implementation of the mitigation measures suggested in the EMPr, the significance of impacts on site can be reduced to Low.

Alternative 1 (preferred alternative)

This alternative is preferred from an environmental perspective as the area proposed for the construction is within transformed and degraded vegetation and will result in insignificant environmental impacts. However the close proximity of the Crocodile River to the proposed site is an area with potential for surface water pollution should the mitigation measures within the EMPr not be implemented or adhered to.

Alternative 2 (least preferred alternative)

This option is least preferred for the following reasons:

Site Erf 311

Althought the site is also a municipal property, its close proximity to the KNP fence presents a challenge both on a legal basis and the safety of both the animals within the park and the workers at the proposed facility. The noise levels from the site might have an impact to the wellbeing of the animals etc, specialists studies would have to be conducted on the sensitivity levels and threshold levels of noise the animals can tolerate. The equipment, machinery and processes within the proposed site would then need to be specialised not to exceed the provided threshold. The use of trucks and equipment of low noise levels could be considered to reduce the impact.

The access from this site is also not as easy as the preferred site. This site is also more close to the access point of the Crocodile river, where the community visit for recreational fishing and picnics.

11. A FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS

11.1 Description of all environmental issues and risks that were identified

A preliminary background research was done to obtain an overview of the project context from an environmental, legal, policy and administrative, as well as institutional context. The baseline environmental assessment studies of the receiving environment that are likely to be affected by the proposed waste drop off facility were conducted. Impacts were identified through use of collected data from the literature review of the municipality and its related documents such as the State of the Environment Report (SoER), IDP, SDF, Waste Management Strategy, communication with the municipality officials, consultation with the authorities from the Competent Authority offices, research of information from SANBI and Windeed and professional expertise. Once the impacts were identified, they were assessed for significance, using the criteria and methodology provided in Section 14. The first stage of impact assessment was identification of environmental activities, aspects and impacts. This was supported by the identification of receptors and resources, which allowed for an understanding of the impact pathway and an assessment of the sensitivity to change.

11.2 An assessment of the significance of each issues and risk and an indication of the extent to which the issues and risk can be avoided or addressed by the adoption of mitigation measures.

The significance of the impact was then assessed by rating each variable according to defined criteria. The purpose of the rating was to develop a clear understanding of influences and processes associated with each impact.

Impact management objectives were then determined from previous knowledge of the EAP whilst undertaking similar studies, input from project team, IAPs and stakeholders, existing documents and reports. The significance of the impact also determined the impact management objectives to be utilised e.g. whether the impact will require on-going monitoring or if mitigation measures could be implemented to reduce the impact within a specific period of time. Existing regulations, guidelines and standards with regards to the different activities/impacts to be undertaken were also utilized to determine impact management objectives such as Norms and Standards for Storage of Waste, 2013 will be used to guide on waste management strategies.

Potential issues of concerns, gathered during meetings and scoping report review stages were assessed further by specialists, to identify the key aspects and the impacts resulting from those aspects. Interested and affected parties were identified and informed about the project. They were given an opportunity to raise any concerns they might have about the project as well as suggested solutions. The scoped issues will then be used to ascertain the aspects and associated impacts.

The identification, description, evaluation and comparison of alternatives are important for ensuring the objectivity of the assessment process.

The assessment of alternatives was, where possible, done in a way that feeds back into the planning or design of the activity, thereby optimizing the positive aspects and minimizing the negative aspects that were highlighted optimal formulation of alternatives. In instances where it was clear that such an interactive and iterative process had been followed in the development of a preferred alternative, it was then appropriate to terminate the assessment of other alternatives, excluding the no-go alternative, that have been considered and assessed in such a process during the course of the assessment.

The assessment of alternatives as a minimum, included the following:

- The consideration of the no-go alternatives as a baseline scenario (even in case where the no-go alternative is not a realistic alternative)

- A comparison of the selected alternatives; and
- The providing of reasons for the elimination of an alternative.

Where alternative locations or sites were identified as alternatives such as is the case with the slimes dam positions, the features of each location or site was assessed. The comparative assessment considered the following aspects:

Capital and operating costs;
Direct, indirect and cumulative impacts;
Degree to which the impacts could be reversed by application of mitigation measures;
Physical, legal or institutional constraints; and
A No Go option should remain the default option and will always be included to provide the baseline for assessment of the impacts of other alternatives and also to illustrate the implications of not authorizing the activity.

The proposed method of assessing duration significance

The method of assessing the significance is provided under Section 14.

12. ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

The full description of the method used for the assessment of each identified potentially significant impact and risk has been discussed in detail in Section 11 above. The assessment of the significance rating is provided in Table 10.13.2.1.

13. SUMMARY OF FINDINGS AND IMPACTS AND IMPACT MANAGEMENT MEASURES

Table 13.1: Planning and Design Phase Summary of Potential Impacts and assessment

	No Authorisation	**Soil loss, compaction and Trampling on vegetation**	**Soil erosion (removal of informal housing)**	**Surface Water pollution**	**Soil Pollution**	**Visual intrusion**	**Dust Pollution**	**Employment (improved economic and social status)**
Impact Status	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Positive
Severity	High	Medium	High	Medium	Medium	Low	Low	High
Extent and duration	National –long term	Local –short term	Local – long term	Local -short term	Local - long term	Local - long term	Local - long term	Local - long term
Probability of occurrence	High	Medium	High	High	Probable	High	High	High
Degree to which impact can be reversed	Low	High	Medium	Medium	Low	Low	High	Medium
Degree to which impact may cause irreplaceable loss of resource	High	Medium	Medium	Negligible	Negligible	Negligible	Medium	Low
Cumulative impact prior to mitigation	Medium	Low	Medium	Low	Medium	Medium	Medium	High
Significance rating prior to mitigation	Medium	Low	Medium	Low	Medium	Medium	Medium	High
Degree to which it can be mitigated	Low	High	High	High	High	Medium	High	High
Proposed mitigation	• Ensure all Legislative and procedural requirements are met including specified timelines and protocols outlined within the BA Regulations before commencing with	Careful consideration to reduce the footprint of the proposed activity not to increase impact to the environment. Poor design & planning could result in highly significant	• Municipality and Ward Councillors to address the matter with the	The river is about 100 m away from the proposed site. Strict adherence to the EMPr will be ensured. Flood year line studies critical to ensure safety from future	Mitigation measures within the EMP to be implemented. These include proper transportation procedures, covering of trucks when	The drop-off site will be managed in such a way that it does not create visual intrusion. Vegetation screening etc. will be implemented as	Implement dust suppression methods and adhere to the mitigation measures as recommended in the EMP.	Local community personnel to be sourced/recruited for rehabilitation. Local site workers to undergo extensive safety and environmental induction training on environmental and wetland

	construction. • Application for Environmental Authorisation has been submitted (Ref no: 17//4/WL/MP322/17/01) • Application for a Waste Licence has been submitted (Ref No: 1/3/16/1E-118). • Communicate with relevant stakeholders on all project plans and progress. Ensure transparency with project scope and implementation.	environmental impacts. Construction camp will be located on a previously disturbed area and should be located at least 100 m from the watercourse. Low noise machinery to be sourced. Construction site and Environmental Management Plans (CEMP) will be implemented together with the EMPr. • Notification of community representatives about site development plans.	informal residents within the site. • A Social Plan will be developed to address the removal and relocation of the illegal residents within the informal housing development in consultation with the community.	flooding.	transporting waste etc. Keep to speed limit etc.	recommended in the EMP.		rehabilitation requirements including worker behaviour on site. Ensure use of PPE at all times. Odour management plan to be implemented. Waste Management plan will be implemented. No waste will be stored for more than a day on site. Noise Management plan will be implemented. Housekeeping rules to will be enforced. • Ensure that all illegal dumping sites on the vicinity of the site and its surrounding areas are cleared before construction and rehabilitated to reduce further impacts.
Cumulative impact post mitigation	Low	Low	Low	Low	Low	Low	Low	Medium
Significance rating after mitigation	Low	Low	Low	Low	Low	Low	Low	Medium

Table 13.2: Operational Phase Summary of Potential impacts and assessment

	Traffic	Job Creation	Noise	Surface Water pollution	Spillage of material	Visual intrusion	Dust Pollution
Impact Status	Negative	Positive	Negative	Negative	Negative	Negative	Negative
Severity							
Extent and duration	Local -short term	Local -short term	Local -short term	Local -short term	Local -long term	Local - long term	Local -short term
Probability of occurrence	High	High	High	High	Probable	High	High
Degree to which impact can be reversed	Medium	High	Medium	Medium	Low	Low	High
Degree to which impact may cause irreplaceable loss of resource	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Cumulative impact prior to mitigation	Low - Medium	Low	Medium	Low	Medium	Medium	Medium
Significance rating prior to mitigation	Low - Medium	Low	Medium	Low	Medium	Medium	Medium
Degree to which it can be mitigated	High	High	High	High	High	Medium	High
Proposed mitigation	Traffic movement with normal working hours (07h30-16h00)	Employ & train local community members	Construction to be limited to standard working hours (07h30 - 16h00)	The river is.... away from the proposed site. The river will not be affected by the construction activities that will take place within the allocated site and the EMP is implemented.	Mitigation measures within the EMP to be implemented. These include proper transportation procedures, covering of trucks when transporting waste etc. Keep to speed limit etc.	The drop-off site will be managed in such a way that it does not create visual intrusion. Vegetation screening etc. will be implemented as recommended in the EMP.	Implement dust suppression methods and adhere to the mitigation measures as recommended in the EMP.

Cumulative impact post mitigation	Low	Low	Low	Low	Low	Low	Low
Significance rating after mitigation	Low	Low	Low	Low	Low	Low	Low

Table 13.3: Decommissioning Phase Summary of Potential impacts and assessment

	Traffic	**Job Creation**	**Noise**	**Dust Pollution**
Nature of impact	Negative	Positive	Negative	Negative
Extent and duration	Local -short term	Local -short term	Local -short term	Local -short term
Probability of occurrence	High	High	High	High
Degree to which impact can be reversed	Low	High	Medium	High
Degree to which impact may cause irreplaceable loss of resource	Negligible	Negligible	Negligible	Negligible
Cumulative impact prior to mitigation	Low	Low	Medium	Medium
Significance rating prior to mitigation	Medium	Low	Medium	Medium
Degree to which it can be mitigated	High	High	High	High
Proposed mitigation	Adequate schedule of vehicle flow and maintenance.	Redeploy to other local projects as continuous provision of employment and skills development.	Decommissioning to be limited to standard working hours (07h30- 16h00)	Implement dust suppression methods.
Cumulative impact post mitigation	Low	Medium	Low	Low

Significance rating after mitigation	Low	Medium	Low	Low

14. ENVIRONMENTAL IMPACT STATEMENT

14.1 Summary of key findings of the environmental impact assessment

This Basic Assessment Process provides an indication of likely/potential environmental impacts based on subjective criteria, the public consultation process, and maps of the site and nature of the receiving environment. The construction impacts are directly interrelated with normal waste transfer facility. It is therefore important that the Mbombela Local Municipality (the applicant) and Zethu Consulting Services (Pty) Ltd), ensure continual monitoring as a means to ensure environmental protection. It is also essential that the EMP and Operational Management Plan be updated in order to reflect actual impacts and the changing institutional and legal environment as appropriate.

This Environmental Impact Statement describes the Project, the expected environmental conditions on the Matsulu Waste Transfer Facility, and assesses the likely effects of the proposed project on the environment. The Environmental Impact Statement also includes an assessment of likely cumulative effects of the project in combination with other past, present or reasonably foreseeable projects, as required. It describes the effects for normal conditions and as a result of accidents and malfunctions.

The development of a public waste drop off facility would reduce any potential risks associated with illegal waste dumping within the area. The close proximity of the proposed site to the Crocodile River is an area with potential for surface water pollution and the existing Kruger National Park as a conservation area, presents an area of environmental sensitivity. This would require all precautions to be undertaken to maintain and protect the sensitive areas and adhere to the EMPr.

The proposed project would also add socio-economic benefits to the community through job creation and support local economic development.

The identified potential environmental impacts and their mitigation measures are outlined in detail in Table 6.1 and also within the EMPr (attached as Appendix F). With the implementation of the mitigation measures suggested in the EMPr, the significance of impacts on site can be reduced to Low.

Site Alternatives
Alternative S1 (preferred alternative)

Site Erf 312

This alternative is preferred from an environmental perspective as the area proposed for the construction is within transformed and degraded vegetation and will result in insignificant environmental impacts. However the close proximity of the Crocodile River to the proposed site is an area with potential for surface water pollution should the mitigation measures within the EMPr not be implemented or adhered to.

Alternative S2 (least preferred alternative)

This option is least preferred for the following reasons:

Site Erf 311

Althought the site is also a municipal property, its close proximity to the KNP fence presents a challenge both on a legal basis and the safety of both the animals within the park and the workers at the proposed facility. The noise levels from the site might have an impact to the wellbeing of the animals etc, specialists studies would have to be conducted on the sensitivity levels and threshold levels of noise the animals can tolerate. The equipment, machinery and processes within the proposed site would then need to be specialised not to exceed the provided threshold.

14.2 A map at an appropriate scale which superimposes the proposed activity

A site layout map and a topographic map has been attached as Appendix A1.

14.3 A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

ENVIRONMENTAL IMPACT SUMMARY

Table 14.3.1: Summary of the potential impacts at construction phase

A. Construction Phase

Potential Impact	Significance before mitigation	Significance after mitigation
Traffic	Low - Medium (negative)	Low (negative)
Job creation	Low (positive)	Medium (positive)
Dust Pollution	Low (negative)	Low (negative)
Noise increase	Low - Medium (negative)	Low (negative)

Table 14.3.2: Summary of the potential impacts at operational phase

B. Operational Phase

Potential Impact	Significance before mitigation	Significance after mitigation
Spillage of waste during transportation	Medium (negative)	Low (negative)
Job creation	Medium (positive)	High (positive)
Noise increase	Low (negative)	Low (negative)
Visual	Low (negative)	Low (negative)
Traffic	Low (negative)	Low (negative)
Dust and odours	Low (negative)	Low (negative)
Vectors (mice, pests, flies etc)	Low (negative)	Low (negative)
Wind blown litter	Medium (negative)	

Table 14.3.3: Summary of the potential impacts at decommissioning phase

C. Decommissioning Phase

Potential Impact	Significance before mitigation	Significance after mitigation
Traffic	Low (negative)	Low (negative)
Job creation during decommission	Low (positive)	Medium (positive)
Dust Pollution	Low (negative)	Low (negative)
Noise increase	Low (negative)	Low (negative)

15. IMPACT MANAGEMENT MEASURE FROM SPECIALISTS REPORTS AND THE EMPR

15.1 Specialist Studies Reports

No specialist studies have been engaged at this stage of the project, however during the preliminary findings of the site assessment, it was noted that the following studies might need to be commissioned upon availability of funding:

15.1.1 Surface Water and Ground Water Studies

The site is within 100 m from the Crocodile River. The proximity of the site to the Crocodile River might warrant such studies. The site activities do not entail trenching and holding of water that might seep into underground water resources. Ground water studies would be required if the project activities would have trenching and other processes associated with materials recovery.

- **Flood line Study**

The proximity of the proposed site to the Crocodile River and the alternative site to the Ntsikazi River, prompts for a need to conduct flood lines studies. The final layout that was produced by engineering's on 18 July 2017 indicate that the structures will be located at a distance of more or less around 100m from the water course. The final site layout is attached as Appendix A1.

15.1.2 Heritage Impact Assessment (HIA)

There is no need for the HIA since the site is already transformed and mostly cultivated. However, any archaeological remains that are found will be communicated with SAHRA.

15.1.3 Biodiversity Studies

The site is already transformed and the background data and site review was used to ascertain impacts.

15.2 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

The full EMPr is attached as Appendix F.

16. ASPECTS WHICH WERE CONDITIONAL TO THE FINDING OF THE ASSESSMENT

- Flood year line studies
- Impact of proposed activities on site on animal behaviour unknown
- Biodiversity of the Crocodile River and Ntsikazi River not researched.

17. A DESCRIPTION OF ANY ASSUMPTION, UNCERTAINTIES, GAPS IN KNOWLEDGE, WHICH RELATE TO THE ASSESSMENT AND MITIGATION MEASURES PROPOSED.

Potential impact of the noise generated by the machinery and equipment at the site to the animals within the KNP.
As a mitigation measure the fencing at the site could include a Green Screening with water-wise indigenous trees to act as both wind and noise breaks. The green fence around the perimeter of the site would reduce the noise levels for both the neighbouring community and the animals within the KNP. All operations will adhere to normal working hours (07h30 – 16h00).

18. A REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED – RECOMMENDATION FROM EAP

It is the opinion of the EAP that any potential negative impacts associated with the proposed general waste drop off facility can be mitigated so as to prevent any long – term degradation of the surrounding environment or nuisance to neighbours. Extra caution will be addressed towards the proximity of the Kruger National Park boundary fence and the Crocodile river which situated approximately about 100 m from the proposed site. Flood management strategies and storm water management systems proposed will be adhered to as prescribed in the EMPr (Appendix F). Dependent on the outcomes and comments of the Competent Authority, specialists studies might be commissioned to ensure that aspects such as Surface Water and Ground Water Quality are investigated. The Flood lines study might also need to be considered. Budgetary requirements and arrangements for the studies to be undertaken would need to be considered by the Applicant.

This activity will assist with the effective management of general waste and garden waste within the area. It will also assist the municipality with addressing the problem of illegal dumping observed with the area. The new proposed public drop off facility is directly aligned with the objectives of the National Waste Management Strategy and the Mbombela Local Municipality Solid Waste Management Strategy (2013) and associated by-laws (2016).

The Environmental Management Programme (EMPr) has been developed for the proposed site and should be implemented in order to reduce any potential localised negative impacts associated with operating a waste drop off facility.

19. WHERE THE PROPOSED ACTIVITY DOES NOT INCLUDE OPERATIONAL ASPECTS, THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED, THE DATE ON WHICH THE ACTIVITY WILL BE CONCLUDED, AND THE POST CONSTRUCTION MONITORING REQUIREMENTS FINALISED

Not Applicable. The Activity will include operational aspects within the site.

20. AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP AND APPLICANT

20.1 An undertaking under oath or affirmation by the EAP

DECLARATIONS

The independent Environmental Assessment Practitioner

I, Babalwa Fatyi of Myezo Environmental Management Services declare under oath that I –

- act as the independent environmental assessment practitioner in this application ;
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2006;
- have and will not have no vested interest in the proposed activity proceeding;
- have no, and will not engage in, conflicting interests in the undertaking of the activity;
- undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- will keep a register of all interested and affected parties that participated in a public participation process; and
- will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

Signature of the Environmental Assessment Practitioner:

Myezo Environmental Management Services (Pty) Ltd

Name of company:

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

20.2 An undertaking under oath or affirmation by the Applicant

The Applicant

I, Mr Lesiba Maluleke of City of Mbombela Local Municipality _ declare under oath that I -

- Am, or represent, the applicant in this application;
- appointed the environmental assessment practitioner as indicated above to act as the independent environmental assessment practitioner for this application;
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Environmental Impact Assessment Regulations, 2010, including but not limited to –
- costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
- costs incurred in respect of the undertaking of any process required in terms of the regulations;
- costs in respect of any fee prescribed by the Minister in respect of the regulations;
- costs in respect of specialist reviews, if the competent authority decides to recover costs; and
- the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of these regulations;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of these regulations; and
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to an appeal being decided in terms of these regulations.

Signature of Applicant

Name of company:
City of Mbombela Local Municipality

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (Above)

21. WHERE APPLICABLE, DETAILS OF ANY FINANCIAL PROVISION FOR THE REHABILITATION, CLOSURE, AND ONGOING POST DECOMMISSIONING MANAGEMENT OF NEGATIVE ENVIRONMENTAL IMPACTS

At this stage, the proposed activity is not operational and there is currently no financial provision provided for its rehabilitation as the facility still to be constructed (dependent on the outcome of the environmental authorisation) is envisaged to be operational for a long-term. The financial provision is for the construction of the Matsulu Waste Transfer station.

22. ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY

23. ANY OTHER MATTERS REQUIRED IN TERMS OF SECTION 24(4)(A) AND (B) OF THE ACT

REFERENCES

Geological Survey, 1986. 1:250 000 scale geological map 2530 Barberton. Council for Geoscience, Pretoria

Koch, F.G.L. & Schoeman, J.L.,1989. Climate data. In: *Land types of the map 2530 Barberton. Mem. Agri. Nat. Res. S. Afr. No 13.* Dept. Agric & Water Supply, Pretoria.

MacVicar, C.N., de Villiers, J.M., Loxton, R.F, Verster, E., Lambrechts, J.J.N., Merryweather, F.R., le Roux, J., Van Rooyen, T.H. & Harmse, H.J. Von M., 1977. Soil classification. A binomial system for South Africa. ARC-Institute for Soil, Climate & Water, Pretoria.

Schoeman, J.L., Turner, D.P. & Fitzpatrick, R.W., 1984.Land type map 2530 Barberton. Agricultural Research Council, Pretoria.

Vegetation Map of South Africa, Lesotho and Swaziland, Sanbi

Mbombela Spatial Development Framework – 2011 – 2030 (2012).

Mbombela Local Municipality, Best Practice: Regionalisation of Waste Services, Waste Khoro 2013)

Mbombela Local Municipality Annual Report 2010 – 2011(2011).

South African National Parks. 2011. Kruger National Park Management Plan.

South African National Parks. 2012. Kruger National Park Revised Zoning System.

APPENDICES:

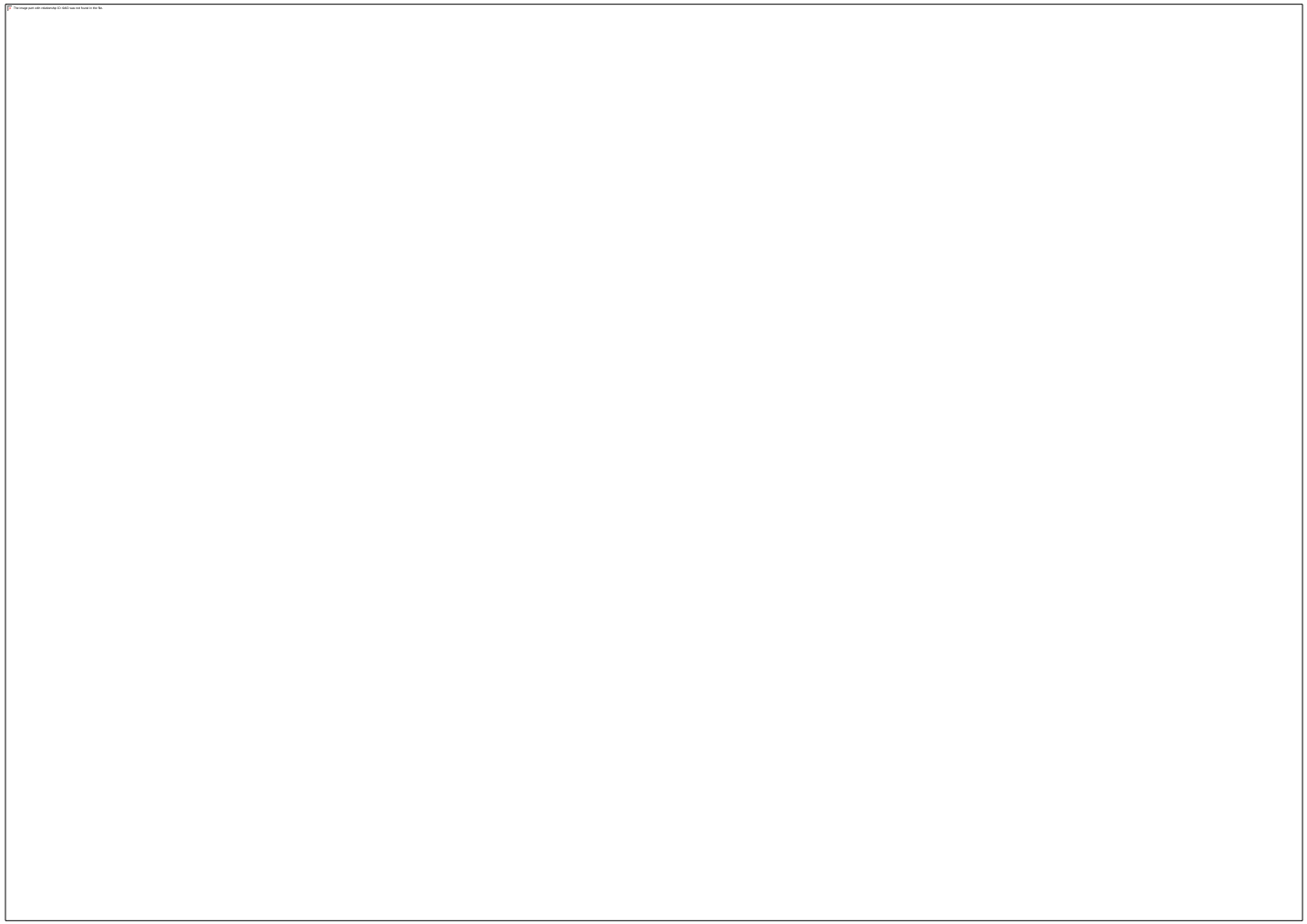
Appendix A: Site Plan – Layout Plan
Appendix A1: Proposed Site Layout Plan
Appendix A2: Alternative Site Layout Plan
Appendix B: Photographs
Appendix C: Facility Illustration(s)
Appendix D: Specialist Reports
Appendix E: Comments and Response Report
Appendix F: EMPr
Appendix G: Other Information
Appendix G1: Declaration by EAP
Appendix G2: CV for EAP
Appendix G3: Declaration by Applicant
Appendix G4: CV for Applicant Representative:
Appendix H: Public Participation Process Appendices
Appendix H1: Authority Consultation – All correspondence (email, letters etc)
Appendix H1.1: Minutes of Meetings + Agenda + Attendance Registers
Appendix H1.2: Acknowledgement letter (re-application forms)
Appendix H2: Consultation with other stakeholders
Appendix H2.1: Communication & correspondence
Appendix H2.2: Minutes of Meetings + Agenda + Attendance Registers
Appendix H3: Site notification + Photos
Appendix H4: Identification of Interested and Affected Parties (I&APs)
Appendix H4.1: IAP Register
Appendix H4.2: Communication records
Appendix H5: Newspaper Advert - attach copy of advert (original for copies to Competent Authority)
Appendix H6: Comments and Response Report – insert full comments and response report
Appendix H6.1: Received comments (emails, fax, letters etc)
Appendix H7: Public Revision of the Draft BAR
Appendix H8: Final Consultation BAR
Appendix I: Any other additional relevant information

Appendix A: Site Plan

Appendix A: Site Plan

Appendix B: Photographs

Appendix B1: Site Photographs



Appendix C: Facility Illustration(s)

Appendix D: Specialist Reports

Appendix D: Specialist Reports
Appendix D1: Geohydrology
Appendix D2: Hydrology
Appendix D3: Biodiversity

Appendix E: Comments and Response Report

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Appendix F: EMPr

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Appendix G: Other Information

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