destea
department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? | YES | |
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

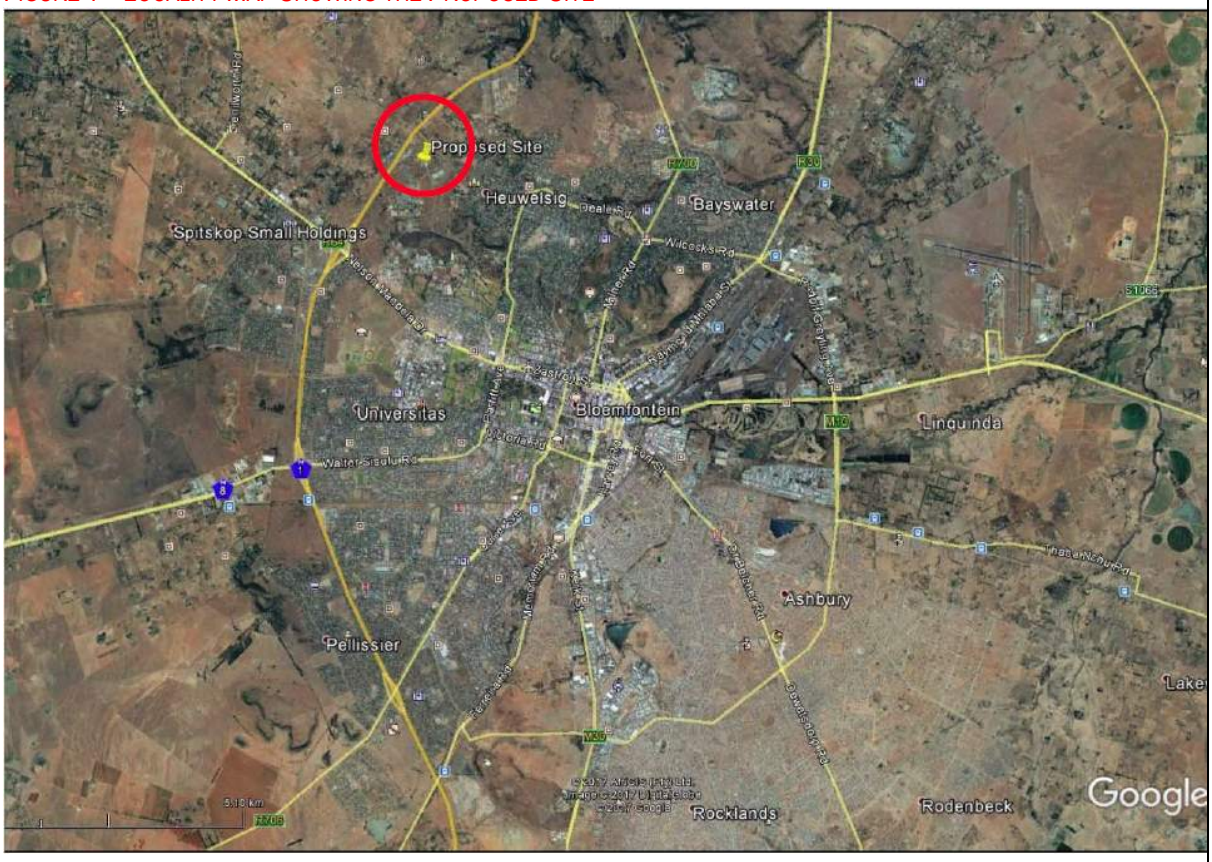
a) Describe the project associated with the listed activities applied for

1. GENERAL

THIS APPLICATION DEALS WITH THE PROPOSED ESTABLISHMENT OF A TOWN ON THE REMAINDER & PORTION 1 OF THE FARM CHARLTON 1395, BLOEMFONTEIN. THE ABOVE MENTIONED PROPERTY CAN BE SEEN ON THE PLAN BELOW AND ATTACHED APPENDIX A & C.

THE SITE IS LOCATED APPROXIMATELY 8.3KM FROM THE BLOEMFONTEIN CITY CENTRE IN A NORTH-WESTERLY DIRECTION AND TO THE WEST OF FRANS KLEYNHANS ROAD AND TO THE NORTH OF REYNECKE AVENUE.

FIGURE 1 – LOCALITY MAP SHOWING THE PROPOSED SITE

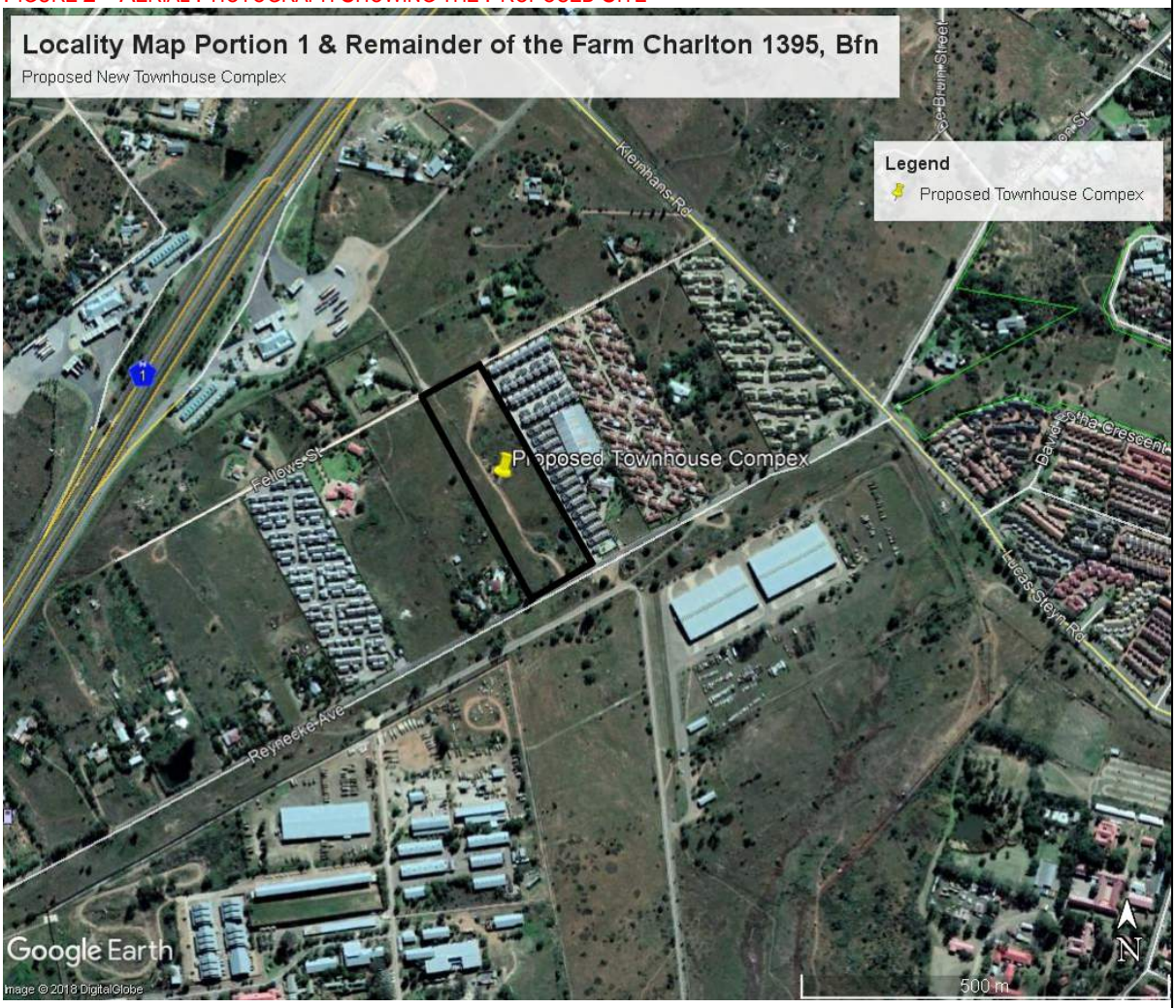


THE SITE IS CURRENTLY A BARE SMALL HOLDING THAT IS VERY DISTURBED DUE TO ILLEGAL BUILDING AND OTHER RUBBLE BEING DUMPED THEREON. IT IS SURROUNDED BY OTHER SMALL HOLDINGS TO THE WEST AND NORTHWEST WHILE TEMPE MILITARY BASE CAN BE FOUND DIRECTLY SOUTHWEST OF THE SITE. THE N1 AND THE ENGEN GARAGE

NEXT TO IT CAN BE FOUND ABOUT 300M SOUTHEAST OF THE PROPOSED SITE. FOUR EXISTING TOWNHOUSE COMPLEXES CAN BE FOUND WITHIN 300M NORTHEAST AND SOUTHWEST OF THE PROPOSED SITE. THE RESIDENTIAL AREA OF HEUWELSIG IS SITUATED ABOUT 500M EAST OF THE PROPOSED SITE. ON THE NORTH WESTERN BOUNDARY OF THE SITE YOU FIND FELLOWS STREET, AND ON THE SOUTH EASTERN BOUNDARY REYNECKE AVENUE.

THE APPLICANT/DEVELOPER (LNJ TRUST) WISHES TO DO AN APPLICATION FOR A TOWNSHIP ESTABLISHMENT IN ORDER TO ENABLE THEM TO SET OUT A RESIDENTIAL ZONING FOR A TOWNHOUSE COMPLEX ON THE SITE. THE APPLICATION WAS ALREADY SUBMITTED TO THE MANGAUNG METRO MUNICIPALITY.

FIGURE 2 – AERIAL PHOTOGRAPH SHOWING THE PROPOSED SITE



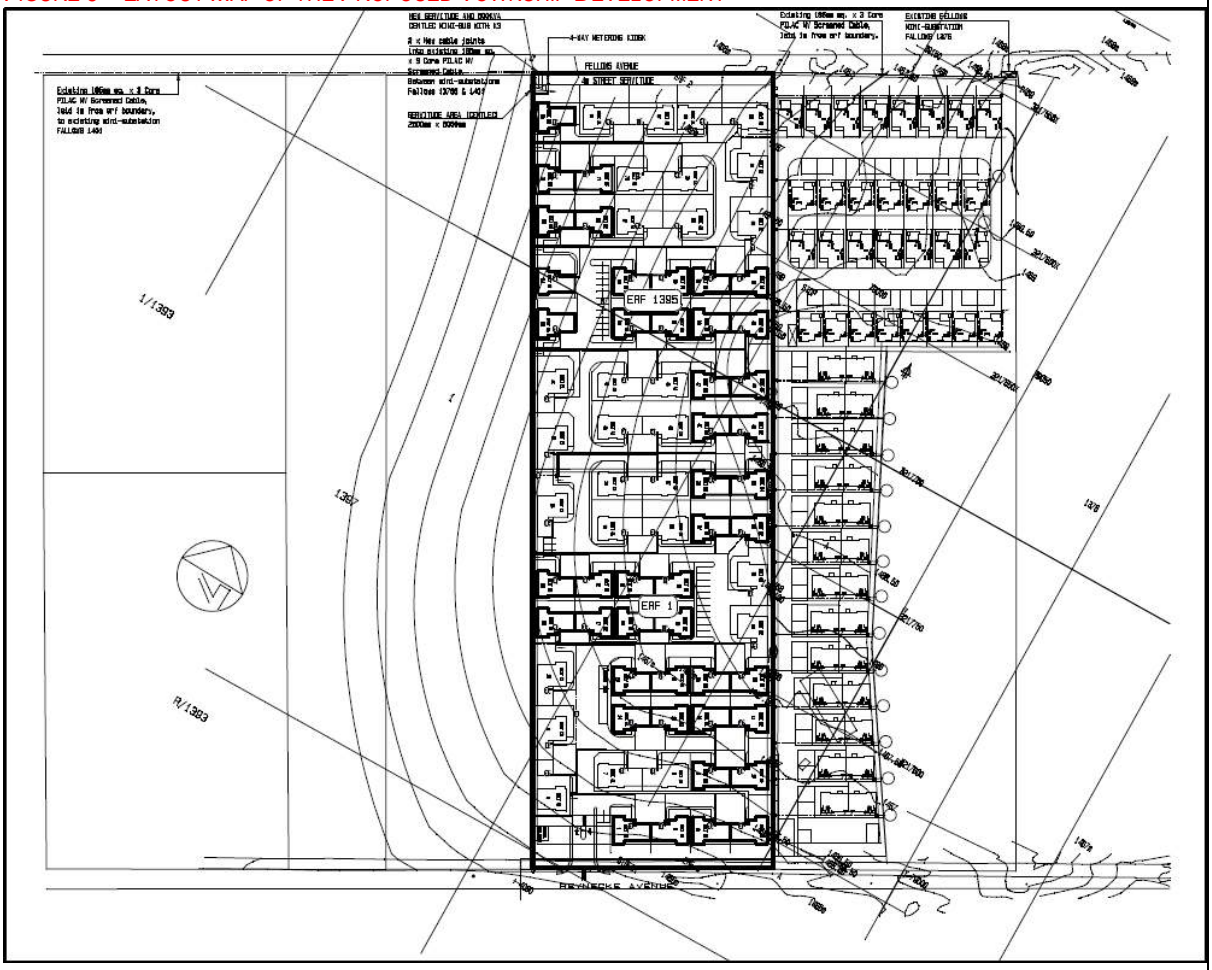
2. PLANNED DEVELOPMENT AND LAYOUT

THE TOWNSHIP APPLICATION WILL BE FOR A PROPOSED TOWNSHIP CONSISTING OUT OF 3 ERVEN, 2 ERVEN ZONED "STREET" (MEASURING APPROX 0.07 HA) AND 1 ERF ZONED "GENERAL RESIDENTIAL" MEASURING APPROXIMATELY 3HA) AS PER THE BAINSVLEI TOWN PLANNING SCHEME NO 1 OF 1986 AND ALSO SUBJECT TO A SERVITUDE AS INDICATED ON THE LAYOUT PLAN NO:2018/11 CHARLTON IN FAVOUR OF CENTLEC.

THE TOWNHOUSE COMPLEX IS PLANNED WITH A DENSITY OF 25 UNITS PER HECTARE AND WITH A MAXIMUM OF 73 UNITS THAT CAN BE ESTABLISHED ON THE SITE. ACCESS WILL BE OBTAINED FROM REYNECKE AVENUE DURING THE

OPERATIONAL PHASE OF THE DEVELOPMENT.

FIGURE 3 – LAYOUT MAP OF THE PROPOSED TOWNSHIP DEVELOPMENT



3. SERVICES

THE EXTERNAL AND INTERNAL CIVIL SERVICES REQUIRED FOR THE DEVELOPMENT AT REMAINDER & PORTION 1 OF THE FARM CHARLTON 1395, BLOEMFONTEIN ARE DISCUSSED IN THE ATTACHED SERVICES REPORT. THE LAYOUT AS SHOWN IN ATTACHED SERVICES REPORT AND MARKED ANNEXURE A THEREIN, WAS USED IN THE EVALUATION.

3.1 WATER SERVICES

THE LOCAL MUNICIPAL SERVICES WAS INVESTIGATED AND TESTED. THE WATER NETWORK INCLUDING THE EXISTING 160MM DIAMETER WATER PIPELINE IN REYNECKE AVENUE IN FRONT OF THE SITE CAN ACCOMMODATE THE PLANNED DEVELOPMENT AND NO ADDITIONAL EXTERNAL INFRASTRUCTURE WILL BE REQUIRED. REFER TO THE WATER LAYOUT MAP ATTACHED TO THE SERVICES REPORT FOR THE PROPOSED WATER DESIGN.

THE HEUWELSIG RESERVOIR DOES NOT HAVE SUFFICIENT AVAILABLE STORAGE CAPACITY TO ACCOMMODATE THE ZONE'S CURRENT OR FUTURE DEMANDS. THIS IS ALSO CONFIRMED IN THE WATER INFRASTRUCTURE CAPACITY ANALYSIS RESPONSE FROM MANGAUNG METRO MUNICIPALITY AS INDICATED IN A LETTER ATTACHED TO THE SERVICES REPORT.

THE LOCAL MUNICIPAL SERVICES WERE INVESTIGATED AND TESTED AND THE WATER SYSTEM AND THE 160MM DIAMETER WATER PIPELINE NEXT TO THE SITE CAN ACCOMMODATE THE FUTURE DEVELOPMENT FOR THE MOMENT IF THE USE OF A LOW REDUCTION VALVE IS INSTALLED AT THE CONNECTION POINT. ADDITIONAL EXTERNAL INFRASTRUCTURE WILL BE REQUIRED IN FUTURE AS INDICATED IN THE WATER ANALYSIS REPORT.

THE DEVELOPMENT WILL BE PROVIDING ADEQUATE WATER BY ERECTING 1M³ STORAGE CAPACITY IN THE DEVELOPMENT TO EVERY RESIDENTIAL UNIT. THE TOTAL STORAGE CAPACITY PLANNED, AMOUNTS TO 73KL. THIS WILL BE DONE BY MEANS OF WATER TANKS AND PRESSURE PUMPS ON THE SITE/ERVEN OF EVERY UNIT AND FACILITY TO BE CONSTRUCTED. THIS WILL REDUCE THE LOAD ON THE SYSTEM DURING PEAK HOURS.

3.1.1 DESIGN STANDARDS FOR THE INTERNAL SERVICES WILL BE ACCORDING TO THE "RED BOOK" AND AS PRESCRIBED BY THE LOCAL MUNICIPALITY SPECIFICATIONS.
3.1.2 THE FIREFIGHTING REQUIREMENTS OF THE DEVELOPMENT IS CLASSIFIED AS "LOW AND MEDIUM-RISK-GROUP 2". SUFFICIENT CAPACITY EXISTS IN THE MAIN AND THE PROPOSED RETICULATION SYSTEMS FOR FIREFIGHTING.
3.1.3 WATER DEMAND - THE ESTIMATED WATER CONSUMPTION CAN BE CALCULATED WITH THE FOLLOWING ASSUMPTIONS:

A) ACCORDING TO THE PLAN, THERE WILL BE 73 RESIDENTIAL DWELLINGS ON THE PROPOSED DEVELOPMENT. THIS WAS DETERMINED USING THE LAYOUT AS SUPPLIED BY THE TOWN PLANNERS.
B) UNIT FLOWS ACCEPTED IS 1000 L/DAY FOR EVERY DWELLING AND SITE DEVELOPED IN THIS PROJECT, WHERE THE AREA PER UNIT DOES NOT EXCEED 2000 M².
C) A PEAK FACTOR OF 3.5.
D) THE WATER SYSTEM HAS AN AVERAGE EXISTING PRESSURE READING OF 552 KPA MEASURED DURING THE PEAK WORKING HOURS FROM 07H00 TO 18H00. REFER TO TABLE 1 IN THE ATTACHED SERVICES REPORT.
E) ALL THE ABOVE IS ACCORDING TO THE NATIONAL BUILDING REGULATIONS.

BASED ON THE ABOVE MENTIONED THE WATER DEMAND PER DWELLING WILL BE 73 000L PER DAY. ACCORDING TO THE ATTACHED SERVICES REPORT THE WATER NETWORK HAS ADEQUATE CAPACITY TO ACCOMMODATE THE PROPOSED DEVELOPMENT AND INADEQUATE STORAGE CAPACITY AS PER THE ANALYSIS. THIS IS HOWEVER RESOLVED WITH THE PROPOSED ONSITE STORAGE AS MENTIONED ABOVE.

3.1.4 PIPE WORK

THE DEVELOPMENT LIES WITHIN THE MANGAUNG METRO MUNICIPALITY AS INDICATED IN ANNEXURE A OF THE ATTACHED SERVICES REPORT. AN EXISTING 160 MM DIAMETER WATER PIPE LINE SERVES ALL OF THIS AREA. THERE IS SUFFICIENT WATER PRESSURE IN THE AREA AS INDICATED IN POINT 2.3.4 OF THE SERVICES REPORT AND THE SYSTEM WILL BE ABLE TO ACCOMMODATE THE NEW DEVELOPMENT AND MORE DEVELOPMENT IN THE FUTURE.

THE DEVELOPMENT CAN BE PROVIDED WITH WATER BY CONSTRUCTING AND CONNECTING THE INTERNAL 110 MM WATER NETWORK WITH THE 160 MM DIAMETER LINE FROM THE EXISTING WATER RETICULATION SYSTEM SITUATED IN THE ROAD RESERVE OF REYNECKE AVENUE AS INDICATED ON THE WATER LAYOUT MAP ATTACHED TO THE SERVICE REPORT. THE WATER CONSUMPTION OF THE DEVELOPMENT AS ANALYZED ABOVE IS POSSIBLE TO SUPPLY WATER FROM THIS CONNECTION WITHOUT A SIGNIFICANT LOSS OF PRESSURE IN THE SYSTEM.

THE DEVELOPMENT WILL BE SUPPLIED BY 110 MM DIAMETER INTERNAL WATER NETWORK WITH A WATER METER FOR THE TOWNHOUSE RESIDENTIAL SITE. THE WATER METER AND THEIR READINGS WILL BE HANDED OVER TO THE LOCAL MUNICIPALITY AFTER CONSTRUCTION. THE OWNERS OF THE TOWNHOUSE COMPLEX WILL HAVE TO SUBMIT AN APPLICATION TO THE COUNCIL FOR THE CONNECTION OF THE INTERNAL NETWORK TO THE MUNICIPAL NETWORK AS PER THE NORMAL PROCEDURES.

3.1.5 Water Network Capacity Analysis

See the Water Network capacity Analysis attached to the services report. It proofs that the system have sufficient capacity and insufficient storage capacity to accommodate the proposed development.

3.2 Sewerage Services

There is an existing 160mm diameter sewer reticulation available right next to the proposed site in Reynecke Avenue and Fallows Street to accommodate the proposed development. A normal gravity sewer line connection will be installed to service the proposed development. The internal reticulation and details are indicated on the sewerage layout drawing attached to the services report.

3.2.1 Estimated flow - The sewerage flow will be calculated by using the following assumption figures:

A) According to the plan, there will be 73 residential dwellings in this development. This is indicated on the layout as supplied by the town planners.
B) Unit flows accepted are 750 l/dwelling/day for single family dwellings.
C) A peak factor of 3.0
D) The system designed according to "Red Book" standards.
E) All the above is according to the National Building Regulations and SABS 1200 LD.

See the attached services report for the sewerage flow calculations.

Based on the above assumptions the sewer demand per dwelling will be 5475l per day.

3.2.2 Pipe work

There is excising sewerage reticulation system next to the site in Reynecke Avenue and Fallows Street that can be used for this development that is sufficient as indicated in the analysis attached to the services report. This development will be connected to the existing 160 mm diameter sewer network with a new internal 160 mm diameter sewer network.

The cost for the internal network will be for the developer. The flow depths of the sewer pipes in the existing sewer network nearby were monitored. The results indicated that the network is only 37% of full capacity during peak hours. The existing network therefore has sufficient capacity to accommodate the proposed development.

3.2.3 Sewerage purification works

The existing 160 mm sewer line drains to a developed sewerage purification works. According to sewer services department, there is sufficient capacity within the purification works to handle the additional sewer for this development. The purification works has been upgraded recently and no problems is expected in the near future.

3.2.4 Adequacy of existing Municipal Network

The capacity of the existing 160 mm diameter outfall sewer in the area was checked and was found to be adequate to accommodate the additional flow.

3.2.5 Sewer Network Capacity Analysis

See the sewer network capacity analysis attached to the services report. The analysis proofs that the system have sufficient capacity to accommodate the planned development.

3.3 Storm water Services

The area for development is an open land with several trees and bush with a gradient that falls from the north eastern side to the south western side of the site.

3.3.1 Existing Storm Water

It is possible to accommodate the storm water run-off from the proposed development in the existing road network adjacent to the site in Reynecke Avenue and Fallows Street. The proposed new storm water runoff from the site will have to be constructed by the developer.

The existing storm water discharge is in existing open drains further down in Reynecke Avenue and Fallows Street. The developer must ensure that the drains are open and in working condition.

The new internal storm water system will be designed for a 1/5 year storm event. The runoff from all new developments may not exceed the pre-development runoff for the applicable minor or major frequency design flood and the required detention facilities must therefore be provided on the erf/development. There will therefore be retention of the storm water as per municipal request. This retention of the storm water will be done on the roads of the townhouse development.

3.3.2 Design Standards

The external storm water drainage consists of overland storm water and culverts systems that are being accommodated in the road itself and is designed for a 1 / 5 year storm event using the parameters and storm water design model as prescribed by the local municipality.

All storm water will be handled using the new internal and existing roads where the velocity will be below 0.8 m/s to accommodate retention of the storm water on the site.

3.3.3 Major Strom Water

In the event of a major storm exceeding the 1/5 year storm, the access storm water can be accommodated in the roads. The roads were designed using barrier curbs than can channel the water inside the roads with no minimum damage to the sites. This will be discharged into the lower lying land and roads southwest of the development.

3.3.4 Municipal Policy

The Municipal policy on storm water for new developments in this area, states that the developer will be responsible to provide full underground piped storm water facilities to cater for all storm water entering his development up to a point where it exits the development.

All the storm water in the area can be accommodated using channells and the road system and cleaning of existing channels according to engineers design.

3.3.5 Flood Line

The site is not subject to any flood lines and the layout plan has been endorsed accordingly.

The nearest storm water stream is south west of the site. The area is estimated 50 meters higher than the nearest 1 : 50 meter flood line.

The area under discussion therefore falls outside the recurrence interval of the 1 in 50 Years flood-line.

4. Electricity Services

See attached in Appendix D the memorandum of services agreement for the provision of electrical services regarding Remainder & Portion 1 of Charlton 1395, Bloemfontein between CENTLEC and the client LNJ Trust.

The propsoed development can therefore connect to the adjacent network. A servitude (2.5m x 6m) for CENTLEC has been provided for in the new development.

5. Roads and Traffic

The proposed new layout plan shows the existing Reynecke Avenue and Fallows Street and the proposed internal roads to be constructed.

5.1 Existing Roads

The recommended roads layout and reserve widths are shown on the drawings attached to the services report. Reynecke Avenue adjacent to the propose development, are in acceptable condition and was constructed recently for the future developments in the area. Fallows Street to the north of the site will be serviced to ensure adequate condition although this road is not going to be utilized for access to the site during the operational phase.

The TIA compiled by KMA Consulting Engineers states the following:

a) The development could generate 80 trips during the morning and afternoon peak.
b) It was previously already determined that the Ray Champion Avenue/ Reynecke Avenue intersection should be upgraded and signalised. The previous identified upgrading should suffice.
c) The Frans Kleynhans Road corridor will be under pressure if all the planned developments are implemented. Previously identified improvements must be implemented.
d) Although the application is for Township Establishment provision will only be made for one erf and a street portion. Limited Township Establishment aspects are involved in the application.
e) It should be possible to effectively develop the site as applied for.

5.2 Municipal Policy

This development will construct roads that will supply access to the proposed sites. These roads will be constructed according to the municipal standards and will be located at the position as indicated on the layout drawing as per annexure C.

THESE ROADS ARE HOWEVER ALREADY CONSTRUCTED RECENTLY AND NO NEW ROADS WILL BE REQUIRED FOR THIS DEVELOPMENT. ALL ROADS ARE INTERNAL TOWNHOUSE ROADS AND WILL NOT BE HANDED OVER TO THE MUNICIPALITY.

5.3 ROADS DESIGN STANDARDS

SEE SECTION 4.3 OF THE ATTACHED SERVICES REPORT FOR THE ROADS DESIGN STANDARDS.

4.3 TRAFFIC IMPACT STUDY

A TRAFFIC IMPACT STUDY WAS COMPILED BY KMA CONSULTING ENGINEERS IN NOVEMBER 2017 AND GIVE A POSITIVE ENDORSEMENT FOR THE DEVELOPMENT.

THE FOLLOWING CONCLUSIONS CAN BE MADE FROM THE TRAFFIC IMPACT STUDY ATTACHED:

A) THE DEVELOPMENT COULD GENERATE 80 TRIPS DURING THE MORNING - AND AFTERNOON PEAK.
B) IT WAS PREVIOUSLY ALREADY DETERMINED THAT THE RAY CHAMPION AVENUE / REYNECKE AVENUE INTERSECTION SHOULD BE UPGRADED AND SIGNALISED. THE PREVIOUSLY IDENTIFIED UPGRADING SHOULD SUFFICE.
C) THE FRANS KLEYNHANS ROAD CORRIDOR WILL BE UNDER PRESSURE IF ALL THE PLANNED DEVELOPMENTS ARE IMPLEMENTED. PREVIOUSLY IDENTIFIED IMPROVEMENTS MUST BE IMPLEMENTED.
D) ALTHOUGH THE APPLICATION IS FOR TOWNSHIP ESTABLISHMENT PROVISION WILL ONLY BE MADE FOR ONE ERF AND A STREET PORTION. LIMITED TOWNSHIP ESTABLISHMENT ASPECTS ARE INVOLVED IN THE APPLICATION.
E) IT SHOULD BE POSSIBLE TO EFFECTIVELY DEVELOP THE SITE AS APPLIED FOR.

BASED ON THE FINDINGS OF THE STUDY THE CHANGE IN LAND USE CAN BE APPROVED FROM A TRAFFIC POINT OF VIEW.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 983,984 and 985	Description of project activity
GN 983 ITEM 27:THE CLEARANCE OF AN AREA OF 1 HA OR MORE, BUT LESS THAN 20HA OF INDIGENOUS VEGETATION	THE DEVELOPMENT WILL REQUIRE CLEARANCE OF MORE THAN 1 HA OF INDIGENOUS VEGETATION. THE SITE IS FURTHERMORE SITUATED WITHIN THE URBAN EDGE.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h) of GN 982, Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.
The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
REMAINDER AND PORTION 1 OF THE FARM CHARLTON 1395, BLOEMFONTEIN.	S 29°04' 36.08	E 26° 11' 11.89
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO ALTERNATIVE SITES AVAILABLE.		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO ALTERNATIVE SITES AVAILABLE.		

In the case of linear activities: N/A

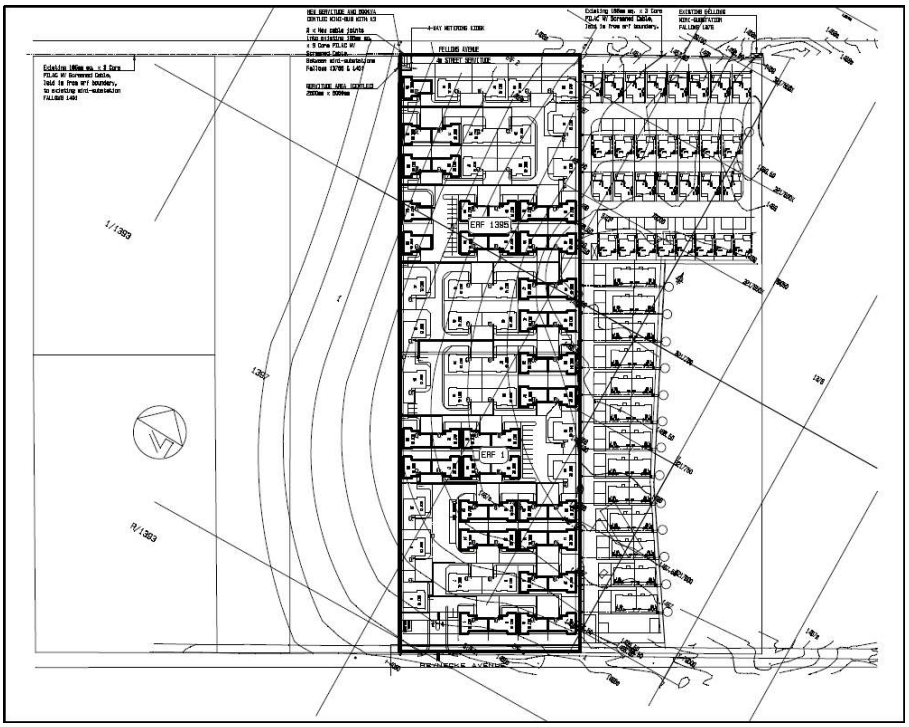
Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		

- End point of the activity

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
REMAINDER AND PORTION 1 OF THE FARM CHARLTON 1395, BLOEMFONTEIN. FIGURE 4 – LAYOUT MAP OF THE PROPOSED TOWNSHIP DEVELOPMENT  	S 29 °04' 36.18	E 26 ° 11' 11.89
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO LAYOUT ALTERNATIVE 2		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
NO LAYOUT ALTERNATIVE 3		

c) Technology alternatives

Alternative 1 (preferred alternative)
THE LAYOUT AS DESCRIBED EARLIER IN THIS REPORT
Alternative 2
NONE
Alternative 3
NONE

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

N/A

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

THE NO-GO ALTERNATIVE WILL ONLY COME INTO EFFECT SHOULD THIS STUDY FIND THAT THE PROPOSED PROJECT WILL HAVE MAJOR ENVIRONMENTAL IMPACTS ON THE RECEIVING ENVIRONMENT THAT CANNOT BE MITIGATED TO ACCEPTABLE LEVELS.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	± 3HA
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

or, for linear activities: N/A

Alternative: N/A	**Length of the activity:**
Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative: NONE IDENTIFIED	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

4. SITE ACCESS

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

Describe the type of access road planned:

THE PROPOSED NEW LAYOUT PLAN SHOWS THE EXISTING REYNECKE AVENUE AND FALLOWS STREET AND THE PROPOSED INTERNAL ROADS TO BE CONSTRUCTED. ACCESS WILL BE OBTAINED TO THE TOWNHOUSE COMPLEX VIA REYNECKE AVENUE.

THE RECOMMENDED ROADS LAYOUT AND RESERVE WIDTHS ARE SHOWN ON THE DRAWINGS ATTACHED TO THE SERVICES REPORT. REYNECKE AVENUE ADJACENT TO THE PROPOSE DEVELOPMENT, ARE IN ACCEPTABLE CONDITION AND WAS CONSTRUCTED RECENTLY FOR THE FUTURE DEVELOPMENTS IN THE AREA. FALLOWS STREET TO THE NORTH OF THE SITE WILL BE SERVICED TO ENSURE ADEQUATE CONDITION DURING THE CONSTRUCTION PHASE.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses; NONE PRESENT ON OR NEAR THE SITE.
- the 1:100 year flood line (where available or where it is required by DWS); NONE PRESENT ON OR NEAR THE SITE.
- ridges; NONE PRESENT ON OR NEAR THE SITE.
- cultural and historical features; NONE PRESENT ON OR NEAR THE SITE.
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- critical biodiversity areas. SITE IS NOT SITUATED WITHIN ANY CRITICAL BIODIVERSITY AREAS

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

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

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?		NO	Please explain
THE AREA IS EARMARKED FOR NEIGHBOURHOOD DEVELOPMENT. THE APPLICANT IS IN THE PROCESS OF APPLYING FOR THE LAND USE RIGHT AS REQUIRED BY THE PROPOSED DEVELOPMENT. AN APPLICATION IS BEING SUBMITTED FOR TOWNSHIP ESTABLISHMENT IN TERMS OF SECTION 16 (2) (A) (I) OF THE MANGAUNG, MUNICIPAL LAND USE PLANNING BY-LAW AS READ TOGETHER WITH THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, ACT 16 OF 2013 (SPLUMA). THE APPLICATION WILL BE FOR A PROPOSED TOWNSHIP CONSISTING OUT OF 3 ERVEN, 2 ERVEN ZONED "STREET" (MEASURING APPROX 0.07 HA) AND 1 ERF ZONED "GENERAL RESIDENTIAL" MEASURING APPROXIMATELY 3HA) AS PER THE BAINSVLEI TOWN PLANNING SCHEME NO 1 OF 1986 AND ALSO SUBJECT TO A SERVITUDE AS INDICATED ON THE LAYOUT PLAN NO:2018/11 CHARLTON IN FAVOUR OF CENTLEC.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
(b) Urban edge / Edge of Built environment for the area	YES		Please explain
PLANNED WITHIN THE URBAN EDGE.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES		Please explain
IN TERMS OF THE IDP, THE AREA IN WHICH THE PROPERTY OF APPLICATION IS LOCATED HAS BEEN EARMARKED FOR "NEIGHBOURHOOD DISTRICT". THIS MEANS THAT THE FOLLOWING DEVELOPMENTS WILL BE REGARDED AS COMPLIANT TO THE POLICY AND COULD BE ALLOWED TO TAKE PLACE IN THE FUTURE: • NEW TOWNSHIP ESTABLISHMENTS SHOULD BE GOVERNED IN TERMS OF EXISTING LEGISLATION.			
(d) Approved Structure Plan of the Municipality	YES		Please explain
IN TERMS OF THE GENERAL LAND USE ADMINISTRATION THE PROPERTY IN QUESTION IS FALLING UNDER THE JURISDICTION OF THE BAINSVLEI TOWN PLANNING SCHEME. THE MAJORITY OF PROPERTIES IN THIS AREA ARE ZONED "HOLDINGS" IN TERMS OF THE BAINSVLEI TOWN PLANNING SCHEME NO.1 OF 1984. THIS MEANS THAT THEIR PRIMARY LAND USE IS RESIDENTIAL AND AGRICULTURAL PURPOSES. THE LOCAL AUTHORITY COMPILED A LOCAL STRUCTURE PLAN IN TERMS OF WHICH, THE AREA IS EARMARKED FOR TOWNSHIP DEVELOPMENT. IT IS THE INTENTION OF THE SCHEME TO ESTABLISH A RURAL LANDSCAPE CHARACTERIZED BY LOW DENSITY DEVELOPMENT.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		NO	Please explain
NO IMPACT ON THE EMF.			

(f) Any other Plans (e.g. Guide Plan)		NO	Please explain
NO. THERE WAS A LOCAL STRUCTURE PLAN OF 1999 WHICH IS CURRENTLY UNDERGOING AMENDMENT BUT THE PROVISIONS OF AT THE SDF ARE IN PLACE AS INDICATED IN 1 (C) ABOVE.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES		Please explain
THE SDF HAS INDICATED THIS SECTION OF THE CITY AS AN AREA OF FUTURE NEIGHBOURHOOD DEVELOPMENT, A NUMBER OF PLOTS IN THE VICINITY HAVE ALREADY BEEN DEVELOPED AS NEW TOWNSHIP EXTENSIONS (TOWNHOUSE COMPLEXES). THESE ARE POPULAR IN THE MARKET AND FAMILIES ARE SETTLING TO START UP NEW LIFE IN THE NEW AREA.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES		Please explain
YES, THE PROJECT IS ADDRESSING THE ISSUES OF SUPPLY OF HOUSING SERVICES AIMED AT A PARTICULAR SEGMENT OF THE MARKET, THE PRIVATE CLIENTS ARE ABLE TO ACCESS CAPITAL FOR HOUSING SERVICES. THE PROJECT IMPLEMENTATION WILL ADD TO THE PROVISION OF JOBS AND THE GROWTH OF THE LOCAL ECONOMY.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		Please explain
ELECTRICITY, WATER AND SEWER CONNECTIONS ARE AVAILABLE AT THE SITE. SEE THE SERVICES REPORTS ATTACHED IN APPENDIX D TO THIS REPORT.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		Please explain
PLANNING FOR INFRASTRUCTURAL PROVISION TO DEAL WITH THE EXPECTED POPULATION GROWTH WAS DONE AND CULMINATED IN THE INFRASTRUCTURE MASTER PLAN. THIS DOCUMENT REPRESENTED A GUIDE FOR MUNICIPAL INVESTMENT PLANNING AND SERVED TO OPEN DEVELOPMENT OPPORTUNITIES IN THE TARGETED AREAS WERE COMMUNITIES TEND TO SETTLE. THE SERVICES REQUIRED FOR THE NEW DEVELOPMENT PLANNED ARE ALREADY IN PLACE AND IT MAKES THE DEVELOPMENT TO BE FULLY FUNCTIONAL WITHIN A DESIGNATED AREA. THIS NEW EXTENSION OF THE CITY IS MAKING ORDERLY DEVELOPMENT POSSIBLE AND WILL ENSURE THE SUSTAINABILITY OF THE CITY IN THE LONG TERM.			

7. Is this project part of a national programme to address an issue of national concern or importance?		NO	Please explain
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		Please explain
THE PROPOSED PROJECT DOES NOT INTRODUCE A FOREIGN LAND USE IN THE AREA, THE LAND SURROUNDING THE PIECE OF LAND IS ALREADY USED AS A FULLY DEVELOPED NEIGHBOURHOOD WITH ALL THE SUPPORT LAND USES. THE LOCATION OF THE FACILITY WILL COMPLEMENT THE NATURAL GROWTH PATTERN OF THE CITY AS CONFIRMED IN THE IDP.			
9. Is the development the best practicable environmental option for this land/site?	YES		Please explain
SURROUNDING AREAS HAVE ALREADY BEEN DEVELOPED WITH RESIDENTIAL UNITS. ALL SERVICES ARE ALSO AVAILABLE AT THE PROPOSED SITE. THE SITE IS FURTHERMORE ALREADY EARMARKED FOR RESIDENTIAL DEVELOPMENT IN THE MMM SDF. NO ENVIRONMENTAL CONSTRAINTS WERE IDENTIFIED TO EXIST ON THE PROPOSED SITE.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		Please explain
NO MAJOR IMPACTS WERE IDENTIFIED AS PART OF THIS REPORT.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
THE SITE IS ALREADY EARMARKED FOR RESIDENTIAL DEVELOPMENT IN THE MMM SDF. RESIDENTIAL DEVELOPMENTS ALREADY EXIST IN THE ADJACENT SURROUNDINGS.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	Please explain
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	Please explain
THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?		NO	Please explain
THE PROJECT IS DEEMED TO BE IN LINE WITH THE NATIONAL PLANS IN THAT THE ENVISAGED DEVELOPMENT IS REGARDED AS AN EXTENSION OF THE RESIDENTIAL COMPONENT AND INTRODUCES A MIXTURE OF LAND USES THAT IS RECOMMENDED IN THE LOCAL DEVELOPMENT LEGISLATION SUCH AS SPLUMA ON SUSTAINABLE DEVELOPMENT.			
15. What will the benefits be to society in general and to the local communities?			Please explain
THE DEVELOPMENT WILL PROVIDE MUCH NEEDED RESIDENTIAL DEVELOPMENT.			

16. Any other need and desirability considerations related to the proposed activity?	Please explain
-	
17. How does the project fit into the National Development Plan for 2030?	Please explain
THE PROJECT IS DEEMED TO BE IN LINE WITH THE NATIONAL PLANS IN THAT THE ENVISAGED DEVELOPMENT IS REGARDED AS AN EXTENSION OF THE RESIDENTIAL COMPONENT AND INTRODUCES A MIXTURE OF LAND USES THAT IS RECOMMENDED IN THE LOCAL DEVELOPMENT LEGISLATION SUCH AS SPLUMA ON SUSTAINABLE DEVELOPMENT.	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
THE GENERAL OBJECTIVE OF INTEGRATED ENVIRONMENTAL MANAGEMENT TO: (A) PROMOTE THE INTEGRATION OF THE PRINCIPLES OF ENVIRONMENTAL MANAGEMENT AS SET OUT IN SECTION 2 OF NEMA INTO THE MAKING OF ALL DECISIONS WHICH MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT WAS COMPLIED WITH; (B) POTENTIAL IMPACTS ON THE ENVIRONMENT WAS IDENTIFIED, PREDICTED AND EVALUATED. SOCIO-ECONOMIC CONDITIONS AND CULTURAL HERITAGE, THE RISKS AND CONSEQUENCES AND ALTERNATIVES AND OPTIONS FOR MITIGATION OF ACTIVITIES, WITH A VIEW TO MINIMISING NEGATIVE IMPACTS, MAXIMISING BENEFITS, AND PROMOTING COMPLIANCE WITH THE PRINCIPLES OF ENVIRONMENTAL MANAGEMENT SET OUT IN SECTION 2 WAS TAKEN INTO ACCOUNT AND PROVIDED; (C) THE EFFECTS OF ACTIVITIES ON THE ENVIRONMENT RECEIVED ADEQUATE CONSIDERATION BEFORE ACTIONS WILL BE TAKEN IN CONNECTION WITH THEM; (D) ADEQUATE AND APPROPRIATE OPPORTUNITY FOR PUBLIC PARTICIPATION IN DECISIONS THAT MAY AFFECT THE ENVIRONMENT WERE PROVIDED; (E) CONSIDERATION WAS PROVIDED FOR THE ENVIRONMENTAL ATTRIBUTES IN MANAGEMENT AND DECISION-MAKING WHICH MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT; AND (F) MODES OF ENVIRONMENTAL MANAGEMENT BEST SUITED TO ENSURING THAT A PARTICULAR ACTIVITY IS PURSUED IN ACCORDANCE WITH THE PRINCIPLES OF ENVIRONMENTAL MANAGEMENT SET OUT IN SECTION 2 WAS IDENTIFIED AND EMPLOYED.	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

THE PRINCIPLES SET OUT IN SECTION 2 OF NEMA WERE APPLIED AND INCORPORATED. THEY INCLUDED:

(A) RELEVANT CONSIDERATIONS, INCLUDING THE STATE'S RESPONSIBILITY TO RESPECT, PROTECT, PROMOTE AND FULFIL THE SOCIAL AND ECONOMIC RIGHTS IN CHAPTER 2 OF THE CONSTITUTION AND IN PARTICULAR THE BASIC NEEDS OF CATEGORIES OF PERSONS DISADVANTAGED BY UNFAIR DISCRIMINATION;
(B) SERVED AS THE GENERAL FRAMEWORK WITHIN WHICH THIS EIA AND EMP WERE FORMULATED;
(2) THE EIA AND EMP PLACED PEOPLE AND THEIR NEEDS AT THE FOREFRONT OF ITS CONCERN, AND SERVED THEIR PHYSICAL, PSYCHOLOGICAL, DEVELOPMENTAL, CULTURAL AND SOCIAL INTERESTS EQUITABLY.
(3) DEVELOPMENT MUST BE SOCIALLY, ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE.
(4) (A) ALL RELEVANT FACTORS OF SUSTAINABLE DEVELOPMENT WERE CONSIDERED INCLUDING THE FOLLOWING:
(I) THAT THE DISTURBANCE OF ECOSYSTEMS AND LOSS OF BIOLOGICAL DIVERSITY ARE AVOIDED, OR, WHERE THEY CANNOT BE ALTOGETHER AVOIDED, ARE MINIMISED AND REMEDIED;
(II) THAT POLLUTION AND DEGRADATION OF THE ENVIRONMENT ARE AVOIDED, OR, WHERE THEY CANNOT BE ALTOGETHER AVOIDED, ARE MINIMISED AND REMEDIED;
(III) THAT THE DISTURBANCE OF LANDSCAPES AND SITES THAT CONSTITUTE THE NATION'S CULTURAL HERITAGE IS AVOIDED, OR WHERE IT CANNOT BE ALTOGETHER AVOIDED, IS MINIMISED AND REMEDIED;
(IV) THAT WASTE IS AVOIDED, OR WHERE IT CANNOT BE ALTOGETHER AVOIDED, MINIMISED AND RE-USED OR RECYCLED WHERE POSSIBLE AND OTHERWISE DISPOSED OF IN A RESPONSIBLE MANNER;
(V) THAT THE USE AND EXPLOITATION OF NON-RENEWABLE NATURAL RESOURCES IS RESPONSIBLE AND EQUITABLE, AND TAKES INTO ACCOUNT THE CONSEQUENCES OF THE DEPLETION OF THE RESOURCE;
(VI) THAT THE DEVELOPMENT, USE AND EXPLOITATION OF RENEWABLE RESOURCES AND THE ECOSYSTEMS OF WHICH THEY ARE PART DO NOT EXCEED THE LEVEL BEYOND WHICH THEIR INTEGRITY IS JEOPARDISED;
(VII) THAT A RISK-AVERSE AND CAUTIOUS APPROACH IS APPLIED, WHICH TAKES INTO ACCOUNT THE LIMITS OF CURRENT KNOWLEDGE ABOUT THE CONSEQUENCES OF DECISIONS AND ACTIONS; AND
(VIII) THAT NEGATIVE IMPACTS ON THE ENVIRONMENT AND ON PEOPLE'S ENVIRONMENTAL RIGHTS BE ANTICIPATED AND PREVENTED, AND WHERE THEY CANNOT BE ALTOGETHER PREVENTED, ARE MINIMISED AND REMEDIED.
(B) INTEGRATED ENVIRONMENTAL MANAGEMENT WAS APPLIED IN THIS STUDY, ACKNOWLEDGING THAT ALL ELEMENTS OF THE ENVIRONMENT ARE LINKED AND INTERRELATED, AND IT MUST TAKE INTO ACCOUNT THE EFFECTS OF DECISIONS ON ALL ASPECTS OF THE ENVIRONMENT AND ALL PEOPLE IN THE ENVIRONMENT BY PURSUING THE SELECTION OF THE BEST PRACTICABLE ENVIRONMENTAL OPTION.
(C) ENVIRONMENTAL JUSTICE MUST BE PURSUED SO THAT ADVERSE ENVIRONMENTAL IMPACTS SHALL NOT BE DISTRIBUTED IN SUCH A MANNER AS TO UNFAIRLY DISCRIMINATE AGAINST ANY PERSON, PARTICULARLY VULNERABLE AND DISADVANTAGED PERSONS.
(D) EQUITABLE ACCESS TO ENVIRONMENTAL RESOURCES, BENEFITS AND SERVICES TO MEET BASIC HUMAN NEEDS AND ENSURE HUMAN WELL-BEING MUST BE PURSUED AND SPECIAL MEASURES MAY BE TAKEN TO ENSURE ACCESS THERETO BY CATEGORIES OF PERSONS DISADVANTAGED BY UNFAIR DISCRIMINATION.
(E) RESPONSIBILITY FOR THE ENVIRONMENTAL HEALTH AND SAFETY CONSEQUENCES OF A POLICY, PROGRAMME, PROJECT, PRODUCT, PROCESS, SERVICE OR ACTIVITY EXISTS THROUGHOUT ITS LIFE CYCLE.
(F) THE PARTICIPATION OF ALL INTERESTED AND AFFECTED PARTIES IN ENVIRONMENTAL GOVERNANCE WERE PROMOTED, AND ALL HAD THE OPPORTUNITY TO DEVELOP THE UNDERSTANDING, SKILLS AND CAPACITY NECESSARY FOR ACHIEVING EQUITABLE AND EFFECTIVE PARTICIPATION, AND PARTICIPATION BY VULNERABLE AND DISADVANTAGED PERSONS WERE ENSURED.
(G) DECISIONS TOOK INTO ACCOUNT THE INTERESTS, NEEDS AND VALUES OF ALL INTERESTED AND AFFECTED PARTIES, INCLUDING RECOGNISING ALL FORMS OF KNOWLEDGE, INCLUDING TRADITIONAL AND ORDINARY KNOWLEDGE.
(H) COMMUNITY WELLBEING AND EMPOWERMENT WERE PROMOTED THROUGH ENVIRONMENTAL EDUCATION, THE RAISING OF ENVIRONMENTAL AWARENESS, THE SHARING OF KNOWLEDGE AND EXPERIENCE AND OTHER APPROPRIATE MEANS.

(I) THE SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF ACTIVITIES, INCLUDING DISADVANTAGES AND BENEFITS, WERE CONSIDERED, ASSESSED AND EVALUATED, AND DECISIONS WERE APPROPRIATE IN THE LIGHT OF SUCH CONSIDERATION AND ASSESSMENT.
(J) THE RIGHT OF WORKERS TO REFUSE WORK THAT IS HARMFUL TO HUMAN HEALTH OR THE ENVIRONMENT AND TO BE INFORMED OF DANGERS MUST BE RESPECTED AND PROTECTED.
(K) DECISIONS WERE TAKEN IN AN OPEN AND TRANSPARENT MANNER AND ACCESS TO INFORMATION WERE PROVIDED IN ACCORDANCE WITH THE LAW.
(L) THERE MUST BE INTERGOVERNMENTAL CO-ORDINATION AND HARMONISATION OF POLICIES, LEGISLATION AND ACTIONS RELATING TO THE ENVIRONMENT.
(M) ACTUAL OR POTENTIAL CONFLICTS OF INTEREST BETWEEN ORGANS OF STATE SHOULD BE RESOLVED THROUGH CONFLICT RESOLUTION PROCEDURES.
(N) GLOBAL AND INTERNATIONAL RESPONSIBILITIES RELATING TO THE ENVIRONMENT MUST BE DISCHARGED IN THE NATIONAL INTEREST.
(O) THE ENVIRONMENT IS HELD IN PUBLIC TRUST FOR THE PEOPLE, THE BENEFICIAL USE OF ENVIRONMENTAL RESOURCES MUST SERVE THE PUBLIC INTEREST AND THE ENVIRONMENT MUST BE PROTECTED AS THE PEOPLE'S COMMON HERITAGE.
(P) THE COSTS OF REMEDYING POLLUTION, ENVIRONMENTAL DEGRADATION AND CONSEQUENT ADVERSE HEALTH EFFECTS AND OF PREVENTING, CONTROLLING OR MINIMISING FURTHER POLLUTION, ENVIRONMENTAL DAMAGE OR ADVERSE HEALTH EFFECTS MUST BE PAID FOR BY THOSE RESPONSIBLE FOR HARMING THE ENVIRONMENT.
(Q) THE VITAL ROLE OF WOMEN AND YOUTH IN ENVIRONMENTAL MANAGEMENT AND DEVELOPMENT WERE RECOGNISED AND THEIR FULL PARTICIPATION THEREIN WHERE PROMOTED.
(R) SENSITIVE, VULNERABLE, HIGHLY DYNAMIC OR STRESSED ECOSYSTEMS, SUCH AS COASTAL SHORES, ESTUARIES, WETLANDS, AND SIMILAR SYSTEMS REQUIRE SPECIFIC ATTENTION IN MANAGEMENT AND PLANNING PROCEDURES, ESPECIALLY WHERE THEY ARE SUBJECT TO SIGNIFICANT HUMAN RESOURCE USAGE AND DEVELOPMENT PRESSURE.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)	GNR543, 544, 545 AND 546 – LISTED DEVELOPMENT ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION – THE PROPOSED DEVELOPMENT COMPRISES LISTED DEVELOPMENT ACTIVITIES UNDER LISTING NOTICES 1 AND 3. NEMA PRINCIPLES AND OBJECTIVES HAVE BEEN TAKEN INTO CONSIDERATION IN RESPECT OF: THE IDENTIFICATION OF ENVIRONMENTAL IMPACTS, THE ASSESSMENT OF THEIR SIGNIFICANCE AND NEED TO MITIGATE; PUBLIC CONSULTATION PROCESSES FOLLOWED AS PART OF THE BASIC ASSESSMENT.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2014

ENVIRONMENT CONSERVATION ACT 1989 (ACT NO. 73 OF 1989)	CONSERVATION OF THE ENVIRONMENT WHERE THE MAST IS PLANNED.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	1989
EIA REGULATIONS 2014	GN 983 ITEM 27:THE CLEARANCE OF AN AREA OF 1 HA OR MORE, BUT LESS THAN 20HA OF INDIGENOUS VEGETATION LISTED ACTIVITY ACCORDING TO DESTEA. MORE THAN 1 HA OF INDIGENOUS VEGETATION WILL BE REMOVED.	DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2014
NATIONAL WATER ACT (ACT 36 OF 1998)	THE PROPOSED CONSTRUCTION OF DAMS, STORAGE OF WATER, TREATMENT AND RELEASE OF WASTEWATER EFFLUENT, IRRIGATION, CROSSING AND INFILLING OF WETLANDS REQUIRES AUTHORISATION FROM THE COMPETENT AUTHORITY	DEPARTMENT OF WATER AFFAIRS	1998
CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)	LISTED INVASIVE ALIEN PLANTS IN TERMS OF THIS ACT MUST BE REMOVED FROM THE DEVELOPMENT PROPERTY.	DEPARTMENT OF AGRICULTURE	1983
NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT 10 OF 2004): AMENDMENTS 2014	LISTED INVASIVE ALIEN SPECIES IN THE REGULATIONS (GNR 506, 507, 508, 509 OF 2013) PROMULGATED IN TERMS OF THIS ACT THAT MAY OCCUR ON THE PROPERTY MUST BE CONTROLLED / ERADICATED AS SPECIFIED. PROTECTED SPECIES MAY OCCUR ON THE SITE.	NATIONAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS	2014
NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)	LISTS DEVELOPMENT ACTIVITIES THAT REQUIRE AUTHORISATION FROM RELEVANT HERITAGE AUTHORITIES.	SAHRA	1999
REMOVAL OF RESTRICTIONS ACT 84 OF 1967	AN APPLICATION IS ALSO BEING SUBMITTED IN TERMS SECTION 2(1)(A) OF THE REMOVAL OF RESTRICTIONS ACT 84 OF 1967 FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS (A); (C); AND (E) ON PAGE 2 OF THE DEED OF TRANSFER NUMBER T029634/2000.		1967
FREE STATE NATURE ORDINANCE 8 OF 1969	PROTECTED SPECIES COULD OCCUR ON THE SITE.	DESTEA	1969

MORE DETAILED DESCRIPTION OF APPLICABLE LEGISLATION:

NEMA AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

THE PROPOSED DEVELOPMENT WILL POSSIBLY INVOLVE THE FOLLOWING LISTED ACTIVITIES AS STIPULATED IN THE EIA REGULATIONS OF 4 DECEMBER 2014:

AS PER GOVERNMENT NOTICE NUMBER R. 983 OF 2014, THE FOLLOWING LISTED ACTIVITIES ARE INCLUDED FOR THE PROPOSED DEVELOPMENT:

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 A LINEAR ACTIVITY; OR
(II) MAINTENANCE PURPOSES UNDERTAKEN IN ACCORDANCE WITH A MAINTENANCE MANAGEMENT PLAN.

CONSTITUTION OF SOUTH AFRICA (ACT 108 OF 1996)

IN THE SIMPLEST TERMS, THE REGULATIONS AIM TO MEET THE REQUIREMENTS OF THE CONSTITUTION (ACT NO. 108 OF 1996), MOST SPECIFICALLY SECTION 24, WHICH INDICATE THAT ALL CITIZENS OF SOUTH AFRICA HAVE THE RIGHT:

a) TO AN ENVIRONMENT THAT IS NOT HARMFUL TO THEIR HEALTH OR WELL-BEING; AND;
b) TO HAVE THE ENVIRONMENT PROTECTED, FOR THE BENEFIT OF PRESENT AND FUTURE GENERATIONS, THROUGH REASONABLE LEGISLATIVE AND OTHER MEASURES THAT:

i. PREVENT POLLUTION AND ECOLOGICAL DEGRADATION;
ii. PROMOTE CONSERVATION; AND;
iii. SECURE ECOLOGICALLY SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES WHILE PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT."

ENVIRONMENTAL CONSERVATION ACT (ECA), 1989 (ACT 73 OF 1989)

THE CONSTITUTION AS AN OVER-ARCHING LAW WAS BOLSTERED BY THE PREVIOUS ENVIRONMENT CONSERVATION ACT (ACT NO. 73 OF 1989) AND ITS RELATED ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS (GOVERNMENT NOTICE NO. R. 1182 & 1183 OF 5TH SEPTEMBER 1997; AMENDMENT: GN NO. R. 670 & 672 OF 10TH MAY 2002). THE AIM OF THE ECA WAS:

"TO PROVIDE FOR THE EFFECTIVE PROTECTION AND CONTROLLED UTILISATION OF THE ENVIRONMENT AND FOR MATTERS INCIDENTAL THERETO."

THE ECA AND ITS RELATED REGULATIONS, THEREFORE, PROVIDED SPECIFIC MEASURES BY WHICH THE ABOVE AIM OF THE ECA COULD BE MET, INCLUDING PROVISION OF THE SO-CALLED "LISTED ACTIVITIES" LINKED TO AN ADMINISTRATIVE PROCESS TO ENSURE THAT DEVELOPMENT WAS CONTROLLED IN A SUSTAINABLE MANNER.

NOTE THAT WITH THE COMMENCEMENT OF THE NEW NEMA REGULATIONS THE PREVIOUS ECA REGULATIONS HAVE BEEN REPEALED.

INTEGRATED ENVIRONMENTAL MANAGEMENT

INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM) IS A PHILOSOPHY, WHICH PRESCRIBES A CODE OF PRACTICE FOR ENSURING THAT ENVIRONMENTAL CONSIDERATIONS ARE FULLY INTEGRATED INTO ALL STAGES OF THE DEVELOPMENT

PROCESS. THIS PHILOSOPHY AIMS TO ACHIEVE A DESIRABLE BALANCE BETWEEN CONSERVATION AND DEVELOPMENT (DEPARTMENT OF ENVIRONMENTAL AFFAIRS, AND TOURISM (DEAT),1992). THE IEM GUIDELINES INTEND ENDEARING A PRO-ACTIVE APPROACH TO SOURCING, COLLATING AND PRESENTING INFORMATION AT A LEVEL THAT CAN BE INTERPRETED AT ALL LEVELS.

NATIONAL WATER ACT, 1998 (ACT 36 OF 1998)

THE NATIONAL WATER ACT AIMS TO PROVIDE MANAGEMENT OF THE NATIONAL WATER RESOURCES TO ACHIEVE SUSTAINABLE USE OF WATER FOR THE BENEFIT OF ALL WATER USERS. THIS REQUIRES THAT THE QUALITY OF WATER RESOURCES IS PROTECTED AS WELL AS INTEGRATED MANAGEMENT OF WATER RESOURCES WITH THE DELEGATION OF POWERS TO INSTITUTIONS AT THE REGIONAL OR CATCHMENT LEVEL. THE PURPOSE OF THE ACT IS TO ENSURE THAT THE NATION'S WATER RESOURCES ARE PROTECTED, USED, DEVELOPED, CONSERVED, MANAGED AND CONTROLLED IN WAYS, WHICH TAKE INTO ACCOUNT:

- MEETING THE BASIC HUMAN NEEDS OF PRESENT AND FUTURE GENERATION;
- PROMOTING THE EFFICIENT, SUSTAINABLE AND BENEFICIAL USE OF WATER IN THE PUBLIC INTEREST;
- FACILITATING SOCIAL AND ECONOMIC DEVELOPMENT;
- PROTECTING AQUATIC AND ASSOCIATED ECOSYSTEMS AND THEIR BIOLOGICAL DIVERSITY;
- REDUCING AND PREVENTING POLLUTION AND DEGRADATION OF WATER RESOURCES; AND
- MEETING INTERNATIONAL OBLIGATIONS.

THE APPLICANT SHOULD, AT ALL TIMES TAKE NOTE OF THE POLLUTION CONTROL PROVISIONS OF SECTION 19(1) OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998), WHICH STATES THAT; 19(1) AN OWNER OF LAND, A PERSON IN CONTROL OF LAND OR A PERSON WHO OCCUPIES OR USES THE LAND ON WHICH – (A) ANY ACTIVITY OR PROCESS IS OR PERFORMED OR UNDERTAKEN; OR (B) ANY OTHER SITUATION EXISTS WHICH CAUSES, HAS CAUSED OR IS LIKELY TO CAUSE POLLUTION OF A WATER RESOURCE, MUST TAKE ALL REASONABLE MEASURES TO PREVENT ANY SUCH POLLUTION OF A WATER RESOURCE, FROM OCCURRING, CONTINUING OR RECURRING.

THE ACT FURTHER DESCRIBES A NUMBER OF WATER USES AND REQUIRES THAT A WATER USE LICENSE HAVE TO BE OBTAINED FOR THE SPECIFIED WATER USES.

THE PURPOSES OF ENSURING THAT ALL PERSONS WHO MIGHT BE AFFECTED HAVE ACCESS TO INFORMATION REGARDING POTENTIAL FLOOD HAZARDS, NO PERSON MAY ESTABLISH A TOWNSHIP UNLESS THE LAYOUT PLAN SHOWS, IN A FORM ACCEPTABLE TO THE LOCAL AUTHORITY CONCERNED, LINES INDICATING THE MAXIMUM LEVEL LIKELY TO BE REACHED BY FLOODWATER ON AVERAGE ONCE IN EVERY 100 YEARS. A STUDY MUST BE CONDUCTED TO ENSURE THAT FLOOD LINES ARE INDICATED.

IT MUST BE NOTED THAT THE NATIONAL WATER ACT (ACT 36 OF 1998) STATES THE FOLLOWING REGARDING DEVELOPMENT WITHIN THE 1:100 YEAR-FLOOD LINE OF ANY STREAM OR RIVER (THOMPSON, 2006):

- SECTION 21(C): IMPEDING OR DIVERTING THE FLOW OF WATER IN WATERCOURSES (INCLUDING ALTERATION OF THE HYDRAULIC CHARACTERISTICS OF FLOOD EVENTS) REQUIRES LICENSING ACCORDING TO THE ACT.
- SECTION 21(I): ANY ACTION THAT MAY ALTER THE BED, BANKS, COURSES OR CHARACTERISTICS OF WATERCOURSES (INCLUDING FLOOD EVENTS) REQUIRES LICENSING ACCORDING TO THE ACT, INCLUDING:
    - WIDENING OR STRAIGHTENING OF THE BED OR BANKS OF A RIVER TO ALLOW FOR THE CONSTRUCTION OF A BRIDGE, SPORTS GROUND OR HOUSING DEVELOPMENT.
    - ALTERING THE COURSE OF A RIVER PARTIALLY OR COMPLETELY (I.E.: RIVER DIVERSION) TO BE ABLE TO USE OR DEVELOP THE AREA WHERE THE WATERCOURSE ORIGINALLY WAS.

WATER SERVICES ACT (ACT 108 OF 1997)

NO PERSON MAY OBTAIN WATER FOR INDUSTRIAL USE FROM ANY SOURCE OTHER THAN A WATER SERVICES PROVIDER NOMINATED BY THE WATER SERVICES AUTHORITY. APPLICABLE TO DEVELOPMENTS WHERE THE WATER REQUIRED FOR THE PROJECT WILL BE OBTAINED FROM A SOURCE OTHER THAN FROM AN ESTABLISHED MUNICIPAL SUPPLY SYSTEM.

NATIONAL ENVIRONMENTAL BIODIVERSITY ACT (ACT 10 OF 2004): AMENDED 2014

THE NATIONAL ENVIRONMENTAL MANAGEMENT BIODIVERSITY ACT (ACT NO. 10 OF 2004), AIMS TO PROVIDE FOR THE MANAGEMENT AND CONSERVATION OF SOUTH AFRICA'S BIODIVERSITY WITHIN THE FRAMEWORK OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998; THE PROTECTION OF SPECIES AND ECOSYSTEMS THAT WARRANT NATIONAL PROTECTION; THE SUSTAINABLE USE OF INDIGENOUS BIOLOGICAL RESOURCES; THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING FROM BIO PROSPECTING INVOLVING INDIGENOUS BIOLOGICAL RESOURCES; THE ESTABLISHMENT AND FUNCTIONS OF A SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE; AND FOR MATTERS CONNECTED THEREWITH.

ACCORDING TO THE NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (10/2004): ALIEN AND INVASIVE SPECIES REGULATIONS, 2014, ALL DECLARED ALIENS MUST BE EFFECTIVELY CONTROLLED. IN TERMS OF THIS ACT 198 ALIEN SPECIES WERE LISTED AS DECLARED WEEDS AND INVADERS.

THE DIVERSITY OF ECOLOGICAL PROCESSES FOR THE PROPOSED SITE IS TO BE DETERMINED THROUGH THE SPECIALIST STUDIES TO BE CONDUCTED. THE OUTCOME/RECOMMENDATIONS OF THE SPECIALIST STUDIES WILL DETERMINE THE MANNER IN WHICH THE BIODIVERSITY ON SITE IS TO BE MANAGED, AND WHETHER THE ECOLOGICAL ELEMENTS ON SITE NEED TO FORM PART OF A GREATER ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE REGION.

NATIONAL HERITAGE RESOURCES ACT 1999 (ACT 25 OF 1999)

THE NATIONAL HERITAGE RESOURCES ACT LEGISLATES THE NECESSITY FOR CULTURAL AND HERITAGE IMPACT ASSESSMENT IN AREAS EARMARKED FOR DEVELOPMENT, WHICH EXCEED 0.5 HA. THE ACT MAKES PROVISION FOR THE POTENTIAL DESTRUCTION TO EXISTING SITES, PENDING THE ARCHAEOLOGIST'S RECOMMENDATIONS THROUGH PERMITTING PROCEDURES. SECTION 38 OF THE NHRA MAKES PROVISION FOR DEVELOPERS TO APPLY FOR A PERMIT BEFORE ANY HERITAGE RESOURCE MAY BE DAMAGED OR DESTROYED. PERMITS ARE ADMINISTERED BY THE SOUTH AFRICAN HERITAGE RESOURCES AGENCY (SAHRA).

THE ACT DEFINES CULTURAL SIGNIFICANCE, ARCHAEOLOGICAL AND PALEONTOLOGICAL SITES AND MATERIAL (SECTION 35), HISTORICAL SITES AND STRUCTURES (SECTION 34), GRAVES AND BURIAL SITES (SECTION 36) THAT FALLS UNDER ITS JURISDICTION. ARCHAEOLOGICAL SITES AND MATERIAL ARE GENERALLY THOSE RESOURCES OLDER THAN A HUNDRED YEARS, WHILE SECTION 34 ALSO PROTECTS STRUCTURES AND CULTURAL LANDSCAPES OLDER THAN 60 YEARS, INCLUDING GRAVESTONES. PROCEDURES FOR MANAGING GRAVE AND BURIAL GROUNDS ARE CLEARLY SET OUT IN SECTION 36 OF THE NHRA. GRAVES OLDER THAN 100 YEARS ARE LEGISLATED AS ARCHAEOLOGICAL SITES AND MUST BE DEALT WITH ACCORDINGLY.

THE SIZE OF THE APPLICATION SITE WARRANTS THAT A SPECIALIST HERITAGE ASSESSMENT BE CONDUCTED. DR L ROSSOUW HAS BEEN APPOINTED BY THE CLIENT TO CONDUCT THE HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED SITE. THIS REPORT WILL FORM PART OF THE EIA REPORT, AND THE FINDINGS OF THE SPECIALIST INPUT WILL BE REPORTED UPON IN DETAIL.

NATIONAL ENVIRONMENTAL MANAGEMENT PROTECTED AREAS ACT, 2003 (ACT NO. 57 OF 2003)

THE PURPOSE OF THIS ACT IS TO PROVIDE FOR THE PROTECTION, CONSERVATION AND MANAGEMENT OF ECOLOGICALLY VIABLE AREAS REPRESENTATIVE OF SOUTH AFRICA'S BIOLOGICAL DIVERSITY AND ITS NATURAL LANDSCAPES.

THE DIVERSITY OF ECOLOGICAL PROCESSES FOR THE APPLICATION SITES IS TO BE DETERMINED THROUGH THE SPECIALIST STUDIES TO BE CONDUCTED. THE OUTCOME/RECOMMENDATIONS OF THE SPECIALIST STUDIES WILL DETERMINE THE MANNER IN WHICH THE BIODIVERSITY ON SITE IS TO BE MANAGED, AND WHETHER THE ECOLOGICAL ELEMENTS ON SITE NEED TO FORM PART OF A GREATER ENVIRONMENTAL MANAGEMENT FRAMEWORK FOR THE REGION.

ATMOSPHERIC POLLUTION PREVENTION ACT, 1965 (ACT NO. 45 OF 1965)

THE PURPOSE OF THIS ACT IS TO PROVIDE FOR THE PREVENTION OF THE POLLUTION OF THE ATMOSPHERE, FOR THE ESTABLISHMENT OF A NATIONAL AIR POLLUTION ADVISORY COMMITTEE, AND FOR MATTERS INCIDENTAL THERETO.

NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT 103 OF 1997

PROVIDES TO THE PROMOTION OF UNIFORMITY IN THE LAW RELATING TO THE ERECTION OF BUILDINGS IN THE AREAS OF LOCAL AUTHORITIES AND PRESCRIBES BUILDING STANDARDS. ALSO PROVIDES THAT THE OWNER OF LAND ON WHICH ANY EXCAVATION WORK IS IN PROGRESS MUST TAKE PRECAUTIONS TO LIMIT THE AMOUNT OF DUST GENERATED IN THE AREA. ALSO PROHIBITS THE GENERATION OF NOISE ON CERTAIN DAYS THAT WOULD UNREASONABLY DISTURB THE NEIGHBOURHOOD.

HAZARDOUS SUBSTANCES ACT 15 OF 1973

THE HAZARDOUS SUBSTANCES ACT 15 OF 1973 PROVIDES FOR THE CONTROL OF SUBSTANCES WHICH MAY CAUSE INJURY OR ILL-HEALTH TO OR DEATH OF HUMAN BEINGS BY REASON OF THEIR TOXIC, CORROSIVE, IRRITANT, STRONGLY SENSITISING OR FLAMMABLE NATURE OR THE GENERATION OF PRESSURE THEREBY IN CERTAIN CIRCUMSTANCES, AND FOR THE CONTROL OF CERTAIN ELECTRONIC PRODUCTS; TO PROVIDE FOR THE DIVISION OF SUCH SUBSTANCES OR PRODUCTS INTO GROUPS IN RELATION TO THE DEGREE OF DANGER; TO PROVIDE FOR THE PROHIBITION AND CONTROL OF THE IMPORTATION, MANUFACTURE, SALE, USE, OPERATION, APPLICATION, MODIFICATION, DISPOSAL OR DUMPING OF SUCH SUBSTANCES AND PRODUCTS; AND TO PROVIDE FOR MATTERS CONNECTED THEREWITH (HENDERSON, 1996).

WHERE HAZARDOUS SUBSTANCES ARE USED DURING CONSTRUCTION AND OPERATION, THE HAZARDOUS SUBSTANCES ACT MUST BE STRICTLY APPLIED. INCIDENT MANAGEMENT PLANS MUST INCLUDE MEASURES OF LIMITING DANGERS OF HAZARDOUS SUBSTANCES IN THE EVENT OF TRANSPORT VEHICLE SPILLAGES ALONG THE ROUTE.

CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)

THIS ACT PROVIDE FOR THE CONTROL OVER THE UTILIZATION OF THE NATURAL AGRICULTURAL RESOURCES OF THE REPUBLIC IN ORDER TO PROMOTE THE CONSERVATION OF THE SOIL, THE WATER SOURCES AND THE VEGETATION AND THE COMBATING OF WEEDS AND INVADER PLANTS. THE FOLLOWING IMPACTS OF DEVELOPMENTS ARE ALL SUBJECT TO THE CONTROL MEASURES PRESCRIBED BY THE MINISTER IN TERMS OF THE ACT.

- SOIL SURFACE EROSION AND DETERIORATION OF SOIL QUALITY AND PRODUCTIVITY;
- FLOODING POTENTIAL;
- SOIL POLLUTION;
- SUBSIDENCE, WATER LOGGING AND MASS MOVEMENTS SUCH AS LANDSLIDES AND ROCK FALLS;
- DEGRADATION, DESTRUCTION OR ELIMINATION OF ECOSYSTEMS;
- INTRODUCTION OF ELEMENTS THAT IS UNCHARACTERISTIC WITH THE AESTHETICS AND LANDSCAPE CHARACTER OF THE AREA.

WITH REGARD TO THE POTENTIAL FOR THE DEVELOPMENT TO INTRODUCE NEW SPECIES TO AN AREA, OR WHERE DEVELOPMENTS TAKE PLACE ON LAND WHERE WEEDS AND INVASIVE PLANTS OCCUR, REGULATIONS RELATING TO WEEDS AND INVASIVE PLANTS MAY BE APPLICABLE.

ALSO SEE THE REVISED TARIFFS FOR SERVICES RENDERED IN TERMS OF THE SUB DIVISION OF AGRICULTURAL LAND ACT, ACT NO 70 OF 1970 AND CONSERVATION OF AGRICULTURAL RESOURCES ACT, ACT NO. 43 OF 1983.

NATIONAL VELD AND FIRES ACT (ACT 101 OF 1998)

THIS ACT PROVIDES FOR THE CONTROL OF VELD FIRES. THE REGULATIONS IN TERMS OF THIS ACT SET CERTAIN CONDITIONS FOR THE OWNER OF A PROPERTY FOR EMERGENCY PREPAREDNESS FOR THE CONTROL OF VELD FIRES. IT ALSO DESCRIBES THE COMPULSORY MAKING OF FIREBREAKS TO CONTROL VELDT FIRES THAT ORIGINATES ON THE OWNER'S PROPERTY AS WELL AS ON ADJACENT PROPERTIES.

OTHER IMPORTANT LEGISLATION, FRAMEWORK PLANS, REGULATIONS

THIS INCLUDES THE FOLLOWING:

- SPATIAL PLANNING AND LAND USE MANAGEMENT ACT OF 2013;
- MMM URBAN OPEN SPACE POLICY AND FRAMEWORK PLAN;
- MMM SPATIAL DEVELOPMENT FRAMEWORK;
- MANUAL FOR TRAFFIC IMPACT STUDIES", NATIONAL DEPARTMENT OF TRANSPORT, (1995).
- SOUTH AFRICAN TRIP GENERATION MANUAL (2ND EDITION, 1995);
- THE GUIDELINES SET OUT BY THE NATIONAL DEPARTMENT OF HOUSING; GEOTECHNICAL SITE INVESTIGATIONS FOR HOUSING DEVELOPMENTS, PROJECT LINKED TO GREENFIELD SUBSIDY PROJECT DEVELOPMENTS, GENERIC SPECIFICATION GFSH-2, SEPTEMBER 2002, SECTION 5.2: PRELIMINARY GEOTECHNICAL SITE INVESTIGATIONS.
- OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993);
- SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL (SAMOAC);
- ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 1940 (ACT 21 OF 1940);
- ROADS ORDINANCE, 1968 (ORDINANCE 4 OF 1968)
- LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT 32 OF 2000;
- COMMON LAW PRINCIPLES FORM THE BASIS OF CURRENT NEIGHBOUR LAW AND THE LAW OF NUISANCE DELICT, NUISANCE & NEIGHBOUR LAW;
- DEVELOPMENT FACILITATION ACT 67 OF 1995;
- BASIC CONDITIONS OF EMPLOYMENT ACT 75 OF 1997.
- THE DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF THE ELECTRICAL INSTALLATIONS MUST COMPLY WITH ALL RELEVANT STATUTORY REGULATIONS AND DIRECTIVES INCLUDING:
    - OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) INCLUDING THE WIRING OF PREMISES, SANS 10142-1:2003;
    - CONSTRUCTION REGULATIONS 2003 ISSUED IN TERMS OF SECTION 43 OF THE ACT;
    - LOCAL FIRE REGULATIONS; AND
    - REGULATIONS OF THE LOCAL SUPPLY AUTHORITY; AND
    - THE LATEST EDITIONS (CURRENT AT THE TIME OF TENDER) OF ALL RELEVANT SANS, BRITISH STANDARDS AND INTERNATIONAL STANDARDS.
- THE PLANNING AND DESIGN OF THE ELECTRICAL INSTALLATIONS MUST COMPLY WITH NATIONAL BUILDING REGULATIONS IN PURSUIT OF ENERGY EFFICIENT POWER CONSUMPTION. EQUIPMENT AND MATERIAL MUST BE SELECTED AND THE INSTALLATION DESIGNED FOR OPTIMUM ENERGY EFFICIENCY.

APART FROM THE ABOVE, COGNISANCE MUST ALSO BE TAKEN OF LOCAL AND PROVINCIAL GOVERNMENT RDINANCES, WHICH MAY BE APPLICABLE TO THE PROPOSED DEVELOPMENT. FOR EXAMPLE:

PROTECTED SPECIES – PROVINCIAL ORDINANCES

PROVINCIAL ORDINANCES WERE DEVELOPED TO PROTECTED PARTICULAR PLANT SPECIES WITHIN SPECIFIC PROVINCES. THE PROTECTION OF THESE SPECIES IS ENFORCED THROUGH PERMITTING REQUIREMENTS ASSOCIATED WITH PROVINCIAL LISTS OF PROTECTED SPECIES. PERMITS ARE ADMINISTERED BY THE PROVINCIAL DEPARTMENTS OF ENVIRONMENTAL AFFAIRS.

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

IN ORDER TO JUSTIFY THE PROPOSED DEVELOPMENT, IT BECAME IMPORTANT TO INVESTIGATE THE AVAILABILITY OF CIVIL SERVICES AND TO THIS EFFECT, A REPORT FROM THUSABATHO CONSULTING ENGINEERS IS ATTACHED AS APPENDIX D TO THIS REPORT. IN TERMS OF THE SERVICES REPORT, THE SERVICES ARE DEEMED TO BE ADEQUATE TO SUSTAIN THE NEW DEVELOPMENT.

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES
If YES, what estimated quantity will be produced per month?	10 m^3

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

LIMITED CONSTRUCTION WASTE WILL BE GENERATED DURING THE CONSTRUCTION PHASE. CONSTRUCTION WASTE WILL BE TRANSPORTED TO THE NEAREST SUITABLE WASTE DISPOSAL SITE.

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

CONSTRUCTION WASTE WILL BE TRANSPORTED TO THE NEAREST REGISTERED WASTE DISPOSAL SITE.

Will the activity produce solid waste during its operational phase?	YES
If YES, what estimated quantity will be produced per month?	m^3

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

THE REFUSE GENERATED BY THE DEVELOPMENT MAY NOT BE DUMPED OR TREATED ON THE SITE. THE OWNER SHOULD MAKE ARRANGEMENTS WITH THE MANGAUNG METRO MUNICIPALITY TO HAVE THE REFUSE REMOVED TO A REGISTERED DUMP SITE AS THE AREA IS CURRENTLY SERVICED BY MMM.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

MMM NORTHERN LANDFILL SITE

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?		NO
If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.		
Is the activity that is being applied for a solid waste handling or treatment facility?		NO
If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.		

b) Liquid effluent

SEE THE ATTACHED SERVICES REPORT. ACCORDING TO THE SERVICES REPORT THE EXISTING SEWERAGE RETICULATION IS ADEQUATE.

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		NO
If YES, what estimated quantity will be produced per month?		m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?		NO

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

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	

If YES, provide the particulars of the facility:

Facility name:	SEWER TREATMENT WORKS - MMM		
Contact person:	MR WAGENAAR		
Postal address:	P O BOX 3704, BLOEMFONTEIN		
Postal code:	9300		
Telephone:	051 - 410 6605	**Cell:**	-
E-mail:	GERHARD.FRITZ@MANGAUNG.CO.ZA	**Fax:**	-

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

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		NO
If YES, is it controlled by any legislation of any sphere of government? N/A	YES	NO
If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. N/A		
If NO, describe the emissions in terms of type and concentration:		

CONSTRUCTION ACTIVITIES WILL RESULT IN EMISSIONS IN THE FORM OF DUST AND FUEL. HOWEVER THE IMPACT(S) ASSOCIATED WITH SUCH EMISSIONS WILL BE LIMITED TO THE SURROUNDING AREA. FURTHER SUCH IMPACTS ARE CONSIDERED TO BE OF SHORT TERM AND WILL BE LIMITED TO ONLY THE CONSTRUCTION PHASE. APPROPRIATE MITIGATION OF THE ANTICIPATED IMPACTS HAVE INCLUDED IN THE ENVIRONMENTAL MANAGEMENT PLAN.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?		NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority. N/A

e) Generation of noise

Will the activity generate noise?	YES	
If YES, is it controlled by any legislation of any sphere of government?	YES	

Describe the noise in terms of type and level:

CONSTRUCTION ACTIVITIES MAY LEAD TO NOISE POLLUTION IN THE AREA. USE OF HEAVY VEHICLES AND MACHINERY MAY GENERATE NOISE FOR THE DURATION OF THE CONSTRUCTION PERIOD. NOISE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL BE TYPICALLY THAT FOUND IN RESIDENTIAL NEIGHBOURHOODS.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

MUNICIPAL	~~Water board~~	~~Groundwater~~	~~River, stream, dam or lake~~	~~Other~~	~~The activity will not use water~~

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:		-
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?		NO

If YES, please provide proof that the application has been submitted to the Department of Water Affairs. N/A

14. ENERGY EFFICIENCY

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

APPROPRIATE STRUCTURAL DESIGNS, ENERGY EFFECTIVE BUILDING CONSTRUCTION AND ORIENTATION, HAVE NOT BEEN CONSIDERED TO DATE DUE TO THE SMALL SCALE OF CONSTRUCTION THAT IS NEEDED. A COMPREHENSIVE ENVIRONMENTAL MANAGEMENT PLAN (EMP) IS INCLUDED (PLEASE REFER TO APPENDIX G) AND WILL FORM PART OF THE PRE-CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT. THE FOLLOWING RECOMMENDATIONS REGARDING STRUCTURAL DESIGNS ARE HOWEVER MADE:

THE BUILDING STRUCTURE SHOULD BE NORTH-FACING TO OPTIMIZE THE USE OF SOLAR ENERGY. BUILDING MATERIAL SHOULD BE LEGALLY OBTAINED BY THE SUPPLIER, E.G. WOOD MUST HAVE BEEN LEGALLY HARVESTED, AND SAND SHOULD BE OBTAINED ONLY FROM LEGAL BORROW PITS AND FROM COMMERCIAL SOURCES. BUILDING MATERIAL THAT CAN BE RECYCLED / REUSED SHOULD BE USED RATHER THAN BUILDING MATERIAL THAT CANNOT.

USE HIGHLY DURABLE BUILDING MATERIAL FOR PARTS OF THE BUILDING THAT ARE UNLIKELY TO BE CHANGED DURING THE LIFE OF THE BUILDING (UNLIKELY TO CHANGE DUE TO E.G. RENOVATION, FASHION, CHANGES IN FAMILY LIFE CYCLE) IS HIGHLY RECOMMENDED. LOCALLY-AVAILABLE BUILDING MATERIAL INSTEAD OF IMPORTED BUILDING MATERIAL SHOULD BE USED AS MUCH AS POSSIBLE (THIS WILL REDUCE TRANSPORTATION IMPACTS AND ENHANCE LOCAL JOB CREATION).

SOLAR GEYSERS AND ENERGY SAVING LIGHTS WILL BE USED. RESIDENTS WILL BE ASKED TO SWITCH LIGHTS OFF IF THEY ARE NOT BEING USED. STREETLIGHTS WILL WORK ON TIMERS OR LIGHT SENSITIVE SENSORS, WHICH WILL AUTOMATICALLY SWITCH OFF WHEN THE SUN RISES.

THE PROPOSED DEVELOPMENT WILL COMPLY WITH THE ENERGY RESTRICTIONS IMPOSED BY ESKOM AND SANS 204. IN ADDITION THE DESIGNS AND ELECTRICAL WORK WILL COMPLY WITH SANS 204. WHERE NECESSARY, MAXIMUM ENERGY DEMAND AND MAXIMUM ENERGY CONSUMPTION WILL BE MANAGED.

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

WHERE POSSIBLE, THE USE OF ALTERNATIVE ENERGY SUPPLY WILL BE PROMOTED AND USED. THIS COULD INCLUDE:

- SOLAR LIGHTING.
- SOLAR WATER HEATING.
- THE USE OF LIGHT EMITTING DIODE (LED) BULBS.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? [ ] NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	FREE STATE
District Municipality	-
Local Municipality	MANGAUNG METRO MUNICIPALITY
Ward Number(s)	WARD 21
Farm name and number	REMAINDER AND PORTION 1 OF THE FARM CHARLTON 1395
Portion number	REMAINDER AND PORTION 1
SG Code	F00300000000139500000 F00300000000139500001

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

THE MAJORITY OF PROPERTIES IN THIS AREA WERE ZONED "HOLDINGS" IN TERMS OF THE BAINSVLEI TOWN PLANNING SCHEME NO.1 OF 1984. THIS MEANS THAT THEIR PRIMARY LAND USE IS RESIDENTIAL AND AGRICULTURAL PURPOSES. FOUR OF THE SMALLHOLDINGS WITHIN 300M OF THE PROPOSED SITE HAVE ALREADY BEEN REZONED TO ACCOMMODATE TOWNHOUSE COMPLEXES.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	

TOWNSHIP ESTABLISHMENT IN TERMS OF SECTION 16 (2) (A) (I) OF THE MANGAUNG, MUNICIPAL LAND USE PLANNING BY-LAW AS READ TOGETHER WITH THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, ACT 16 OF 2013 (SPLUMA). THE APPLICATION WILL BE FOR A PROPOSED TOWNSHIP CONSISTING OUT OF 3 ERVEN, 2 ERVEN ZONED "STREET" (MEASURING APPROX 0.07 HA) AND 1 ERF ZONED "GENERAL RESIDENTIAL" MEASURING APPROXIMATELY 3HA) AS PER THE BAINSVLEI TOWN PLANNING SCHEME NO 1 OF 1986 AND ALSO SUBJECT TO A SERVITUDE AS INDICATED ON THE LAYOUT PLAN NO:2018/11 CHARLTON IN FAVOUR OF CENTLEC.

1. GRADIENT OF THE SITE

THE SITE IS SITUATED ON A TERRAIN WITH A MODERATE UPWARD SLOPE FROM SOUTH TO NORTH-WEST. THE LOWEST POINT BEING IN THE SOUTH AND THE HIGHEST POINT BEING IN THE NORTH-WEST. THE SITE IS COVERED IN LONG TYPICAL INDIGENOUS GRASS WITH FEW MEDIUM SIZED TREES TO THE SOUTH.

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any): N/A

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

Alternative S3 (if any): N/A

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	X	2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

SUMMARY OF THE GEOTECHNICAL INVESTIGATION

A GEOTECHNICAL INVESTIGATION WAS CONDUCTED ON 15TH OF AUGUST 2017 FOR THE PROPOSED NEW TOWN HOUSE DEVELOPMENT ON STANDS 1&R, 1395 CHARLTON, BAINSVLEI, BLOEMFONTEIN, FREE STATE PROVINCE AS PER INSTRUCTION RECEIVED FROM THE CLIENT THUSABATHO CONSULTING ENGINEERS CC (BLOEMFONTEIN).

THE APPROXIMATE SIZE OF THE INVESTIGATED SITE IS 2.989HA.

THE SAMPLING OF THE MATERIALS WAS DONE IN ACCORDANCE TO THE TMH 5:1981 AND AS SPECIFIED BY THE CLIENT. EIGHT (8) TEST PITS WERE EXCAVATED USING AN 8TON TLB (KOMATSU, WB93R) WITH 600MM BACKHOE. SEVENTEEN (17) FOUNDATION INDICATOR SAMPLES ALONG WITH EIGHT (8) MAXIMUM DRY DENSITY (MOD AASHTO) AND CALIFORNIA BEARING RATIO (CBR) SAMPLES WERE SAMPLED ON SITE TO DETERMINE THE ENGINEERING PROPERTIES OF THE MATERIALS.

THE GEOLOGY OF THE BLOEMFONTEIN AREA IS UNDERLAIN BY THE LOWER STAGE OF THE BEAUFORT GROUP WHICH IS PART OF THE KAROO SUPER GROUP. THE SEDIMENTARY ROCKS THAT ARE PRESENT IN THIS GROUP CONSIST OF FINE-GRAINED GREY SANDSTONE AND COARSE ARKOSE ALTERNATING WITH GREEN AND MAROON-COLOURED MUDSTONE

BEDS. THE TYPICAL MATERIALS / ROCK TYPE FOUND IN THE AREA OF BLOEMFONTEIN ARE MUDSTONE AND DOLERITE AS PER TABLE 3 AND FIGURE 2 OF THE ATTACHED GEOTECHNICAL REPORT.

BLOEMFONTEIN IS IN THE SEMI-ARID TO SUB-TROPICAL CLIMATIC REGION WITH WEINERT'S N – VALUE OF BETWEEN 2 AND 4, WHERE CHEMICAL DECOMPOSITION IS THE PREDOMINANT ROCK WEATHERING MODE.

NO GROUND-WATER SEEPAGE WAS ENCOUNTERED AT THE TIME OF THE INVESTIGATION.

DETERMINING A FLOOD LINE IS NOT PART OF THIS REPORT SCOPE AND THUS, NO FLOOD LINE OF ANY KIND WAS DETERMINED. PROVISION SHOULD BE MADE FOR DRAINAGE STRUCTURES UNDERGROUND OR ON THE SURFACE WHERE APPLICABLE.

THE MATERIALS OCCURRING ON SITE HAS A MODERATELY CORROSIVE TO VERY CORROSIVE NATURE. FULL CHEMICAL TESTING FOR THE PRESENCE OF SULPHATES AND CHLORIDES HAS NOT BEEN CONDUCTED.

TYPICAL MATERIALS THAT WERE FOUND ON SITE ARE: SC - CLAYEY SAND WITH GRAVEL, CL – SANDY LEAN CLAY, SC-SM - SILTY, CLAYEY SAND WITH GRAVEL, GW-GM - WELL-GRADED GRAVEL WITH SILT AND SAND, SM - SILTY SAND WITH GRAVEL, GC - CLAYEY GRAVEL WITH SAND, GP-GC – POORLY GRADED GRAVEL WITH CLAY AND SAND

REFUSAL LAYERS / BEDROCK WERE ENCOUNTERED DURING THE INVESTIGATION IN ALL THE TEST PITS. THE BEDROCK DEPTH RANGES FROM 0.800M TO 1.500M FROM THE SURFACE WITH AN AVERAGE DEPTH OF 0.98M.

THE PLASTICITY INDEX (PI) OF THE MATERIALS RANGES FROM 23% TO 4%, THE LINEAR SHRINKAGE (LS) RANGES FROM 11.0% TO 1.5% AND THE PERCENTAGE OF CLAY FRACTION IN THE SOILS SAMPLE (<0.002MM) RANGES FROM 31% TO 1%.

IN GENERAL, THE MATERIALS WHICH OCCUR ON SITE ARE LOW TO MEDIUM (11.1MM) POTENTIALLY EXPANSIVE ACCORDING TO VAN DER MERWE'S METHOD WITH HIGH PROBABILITY OF COLLAPSING NATURE ACCORDING TO HANDY (1973) AND PRIKLONSKI (1952) CRITERIA THEREFORE IT IS CLASSIFIED AS S / C / H1.

THE GENERAL MATERIALS ON SITE HAVE A COLTO CLASSIFICATION OF NO CLASSIFICATION AND BETWEEN G6 AND G7.

THE GENERAL FOUNDATION IS CONSIDERED TO BE: NORMAL TO MODIFIED NORMAL (LIGHTLY REINFORCED STRIP FOOTINGS. ARTICULATION JOINTS AT ALL INTERNAL/EXTERNAL DOORS AND OPENINGS. LIGHT REINFORCEMENT IN MASONRY. SITE DRAINAGE AND PLUMBING/SERVICE PRECAUTIONS.

RECOMMENDATIONS OF THE GEOTECHNICAL REPORT

IN GENERAL, THE MATERIALS OCCURING ON SITE HAVE A LOW TO MEDIUM (11.1MM) POTENTIALLY EXPANSIVENESS ACCORDING TO VAN DER MERWE'S METHOD WITH HIGH PROBABILITY OF COLLAPSING NATURE ACCORDING TO HANDY (1973) AND PRIKLONSKI (1952). THE MATERIALS ON SITE ARE IN GENERAL CLASSIFIED AS S / C / H1 (NHBRC, PART1, SECTION2, TABLE 1 : RESIDENTIAL SITE CLASS DESIGNATIONS). IF POSSIBLE, EXPANSIVE MATERIALS MUST BE AVOIDED OR PRE-COLLAPSE BEFORE CONSTRUCTION OF THE FOUNDATIONS.

THE GENERAL FOUNDATION IS CONSIDERED TO BE NORMAL TO MODIFIED NORMAL (LIGHTLY REINFORCED STRIP FOOTINGS. ARTICULATION JOINTS AT ALL INTERNAL/EXTERNAL DOORS AND OPENINGS. LIGHT REINFORCEMENT IN MASONRY. SITE DRAINAGE AND PLUMBING/SERVICE PRECAUTIONS.

IT WILL BE ADVISABLE TO REMOVE ALL THE OVERBURDEN MATERIALS RANGING FROM 0.800M TO 1.500M WITH AN AVERAGE DEPTH OF 0.98M IN THE SPECIFIC LOCATIONS OF FOOTINGS AND CONSTRUCT THE FOOTINGS DIRECTLY ON TOP OF THE BEDROCK FOUND ON SITE. THE FOUNDING DEPTH CAN BE RAISED BY TRENCH FILLING WITH COMPETENT

MATERIALS (MATERIAL WITH NO LESS THAN G6 CLASSIFICATION COMPACTED TO 93% MOD AASHTO DENSITY AT -1% TO +2% OF OPTIMUM MOISTURE CONTENT) TO A REQUIRED FOUNDING LEVEL. THE GENERAL FOUNDATION TO BE CONSIDERED IF THIS OPTION IS USED IS NORMAL CONSTRUCTION (STRIP FOOTINGS OR SLAB-ON-THE-GROUND) FOUNDATION.

NOTE: THE FINAL DECISION ON THE TYPE OF FOUNDATION USED FOR THE APPLICABLE STRUCTURE SHOULD BE MADE AND DESIGNED BY A STRUCTURAL ENGINEER.

IT IS RECOMMENDED THAT THE SITE DRAINAGE BE IMPROVED FOR SURFACE FLOODING. DRAINAGE CANALS MUST BE CONSTRUCTED TO CHANNEL THE WATER FROM STRUCTURES AFTER CONSTRUCTION.

THE GENERAL MATERIALS ON CONSIST OF A HAVE COLTO CLASSIFICATION OF NO CLASSIFICATION AND BETWEEN G6 AND G7.

THE MATERIALS WITH A G5 OR G6 CLASSIFICATION CAN BE STABILISED TO A C4/3 AND THEN BE USED IN SUBBASE LAYERS FOR ROAD CONSTRUCTION. THE MATERIALS WITH A G7 OR G8 CLASSIFICATION CAN BE IMPROVED BY MODIFICATION: BY MIXING THE IN SITU MATERIALS WITH G6/7 MATERIALS (WEATHERED DOLERITE). AFTER MODIFICATION OF THE MATERIALS IT CAN BE STABILISED WITH LIME OR CEMENT TO IMPROVE THE MATERIALS FURTHER. IF THESE MATERIALS ARE TO BE CONSIDERED IN BACKFILLING, IT SHOULD BE STOCKPILED AND SAMPLED AGAIN TO CONFIRM ITS CLASSIFICATION.

THE MATERIALS WITH A NO CLASSIFICATION CANNOT BE USED IN BACKFILL AND/OR ROAD CONSTRUCTION.

CONDITIONS CAN VARY ON SITE. RECOMMENDATIONS SHOULD BE RE-EVALUATED IF THIS BECOMES APPARENT DURING THE EXCAVATION.

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)		NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas		NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)		NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)		NO	YES	NO	YES	NO
Any other unstable soil or geological feature		NO	YES	NO	YES	NO
An area sensitive to erosion		NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

THE MOST RECENT DESCRIPTION OF THE BROADER STUDY AREA'S VEGETATION IS THE GENERAL DESCRIPTION BY MUCINA & RUTHERFORD (2006) RELATING TO THE VEGETATION WHICH IS CONSIDERED TO BE THE "VEGETATION OF SOUTH AFRICA, LESOTHO AND SWAZILAND" AS WELL AS ITS ACCOMPANYING MAP OF THE COUNTRY BY (MUCINA ET AL., 2005). THIS MEMOIR CONTAINS SPECIES INFORMATION AND A COMPREHENSIVE CONSERVATION ASSESSMENT OF ALL VEGETATION TYPES.

THE WINBURG GRASSY SHRUBLAND (GH7) DOMINATES THE VEGETATION OF THE PROJECT SITE, AS WELL AS THE AREAS SURROUNDING THE SITE. ACCORDING TO MUCINA & RUTHERFORD (2006), THE VEGETATION TYPE HAS A CONSERVATION STATUS OF "LEAST THEREATENED". THE VEGETATION OF THE PROJECT SITE IS SHRUBS AND THE GROUND LAYER IS COVERED BY GRASSES AND A FEW FORBS. THE IMPORTANT GRASSES INCLUDE ARISTIDA CONGESTA, THEMEDA TRIANDRA, CYMBOPOGON POSPISCHILLII, ERAGROSTIS LEHMANNIANA, E. TRICHOPHORA, ENNEAPOGON SCOPARIUS, ARISTIDA ADSCENSIONIS, HETEROPOGON CONTORTUS. DWARF SHRUBS SUCH AS FELICIA MURICATA, HERTIA PALLENS, BERKHEYA ONOPORDIFOLIA, LYCIUM CINERIUM. THE DOMINANT SHRUBS ARE OLEA EUROPAEA SUBSP. AFRICANA, BUDDLEJA SALIGNA, ZIZIPHUS MUCRONATA, DIOSPYROS LYCIOIDES, D. AUSTRO-AFRICANA, SEARSIA BURCHELLII, S. LANCEA AND S. CILIATA.

THE LARGEST CONCENTRATION OF ALIEN PLANT SPECIES IS CAN BE FOUND ALL OVER THE PROJECT SITE, WHERE SPECIES SUCH AS ARGEMONE MEXICANA, DATURA STRAMONIUM, TAGETES MINUTA, BIDENS BIPINNATA, AGAVE AMERICANA, CEREUS JAMACARU, SCHKUHRIA PINNATA, EUCALYPTUS CAMULDULENSIS, CESTRUM LAEVIGATUM AND SALSOLA KALI OCCUR.

THE FOLLOWING TREES CAN ALSO BE FOUND ON THE SITE NAMELY: KAREE, ACACIA AND PEPPER TREES.

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

~~NATURAL VELD – GOOD CONDITION~~[E]	~~NATURAL VELD WITH SCATTERED ALIENS~~[E]	NATURAL VELD WITH HEAVY ALIEN INFESTATION[E]	~~VELD DOMINATED BY ALIEN SPECIES~~[E]	~~GARDENS~~
~~SPORT FIELD~~	~~CULTIVATED LAND~~	~~PAVED SURFACE~~	~~BUILDING OR OTHER STRUCTURE~~	BARE SOIL

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO	UNSURE
Non-Perennial River		NO	UNSURE
Permanent Wetland		NO	UNSURE
Seasonal Wetland		NO	UNSURE

Artificial Wetland		NO	UNSURE
Estuarine / Lagoonal wetland		NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

N/A

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

~~NATURAL AREA~~	~~DAM OR RESERVOIR~~	~~POLO FIELDS~~
LOW DENSITY RESIDENTIAL	~~HOSPITAL/MEDICAL CENTRE~~	FILLING STATION [H]
~~MEDIUM DENSITY RESIDENTIAL~~	~~SCHOOL~~	~~LANDFILL OR WASTE TREATMENT SITE~~
HIGH DENSITY RESIDENTIAL	~~TERTIARY EDUCATION FACILITY~~	~~PLANTATION~~
~~INFORMAL RESIDENTIAL~~ [A]	~~CHURCH~~	~~AGRICULTURE~~
RETAIL COMMERCIAL & WAREHOUSING	~~OLD AGE HOME~~	~~RIVER, STREAM OR WETLAND~~
LIGHT INDUSTRIAL	~~SEWAGE TREATMENT PLANT~~ [A]	~~NATURE CONSERVATION AREA~~
~~MEDIUM INDUSTRIAL~~ [AN]	~~TRAIN STATION OR SHUNTING YARD~~ [N]	~~MOUNTAIN, KOPPIE OR RIDGE~~
~~HEAVY INDUSTRIAL~~ [AN]	~~RAILWAY LINE~~ [N]	MUSEUM
~~POWER STATION~~	MAJOR ROAD (4 LANES OR MORE) [N]	~~HISTORICAL BUILDING~~
~~OFFICE/CONSULTING ROOM~~	~~AIRPORT~~ [N]	~~PROTECTED AREA~~
MILITARY OR POLICE BASE/STATION/COMPOUND	~~HARBOUR~~	~~GRAVEYARD~~
~~SPOIL HEAP OR SLIMES DAM~~ [A]	SPORT FACILITIES	~~ARCHAEOLOGICAL SITE~~
~~QUARRY, SAND OR BORROW PIT~~	~~GOLF COURSE~~	OTHER LAND USES (DESCRIBE)

If any of the boxes marked with an "N "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO

Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		NO
	Uncertain	
N/A		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

SEE THE ATTACHED HERITAGE IMPACT ASSESSMENT DONE FOR THE SITE IN APPENDIX D.

FINDINGS OF THE REPORT: AS FAR AS THE PALAEONTOLOGICAL HERITAGE IS CONCERNED, THE PROPOSED DEVELOPMENT MAY PROCEED WITH NO ADDITIONAL HERITAGE ASSESSMENTS NECESSARY. POTENTIAL ARCHAEOLOGICAL IMPACT AT THE SITE IS CONSIDERED TO BE NON-EXISTENT. THE AFFECTED AREA IS ASSIGNED A SITE RATING OF LOW SIGNIFICANCE (GENERALLY PROTECTED C, TABLE 1).

Will any building or structure older than 60 years be affected in any way?		NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		NO

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

OF THE 292 971 ECONOMICALLY ACTIVE (EMPLOYED OR UNEMPLOYED BUT LOOKING OR WORK) PEOPLE IN MANGAUNG, 27,7% ARE UNEMPLOYED. 37,2% OF THE 150 128 ECONOMICALLY ACTIVE YOUTH (15 – 34 YEARS) IN THE AREA ARE UNEMPLOYED. THIS IS ACCORDING TO STATS SA IN 2011.

Economic profile of local municipality:

THE MANGAUNG METROPOLITAN MUNICIPALITY IS LOCATED IN THE FREE STATE PROVINCE, IN THE CENTRE OF SOUTH AFRICA. THE FREE STATE IS BORDERED BY SIX PROVINCES, NAMELY GAUTENG, THE EASTERN CAPE,

NORTHERN CAPE, KWAZULU-NATAL AND NORTH WEST PROVINCES, AS WELL AS THE NEIGHBOURING COUNTRY OF LESOTHO.

THE MUNICIPALITY WAS FORMED AFTER THE LOCAL GOVERNMENT ELECTIONS IN MAY 2011, AND HAS BEEN A LOCAL MUNICIPALITY SINCE 2000 BY AMALGAMATING THE TRANSITIONAL LOCAL COUNCILS OF BLOEMFONTEIN, BOTSHABELO, THABA NCHU AND TWO RURAL COUNCILS. THE MUNICIPALITY IS WORKING TO INTEGRATE THE CITY AND ENSURE THAT PREVIOUSLY DISADVANTAGED COMMUNITIES ARE SPATIALLY LINKED TO THE REST OF THE CITY.

BEING THE SIXTH LARGEST CITY IN THE COUNTRY, THE MANGAUNG MUNICIPAL AREA COVERS MORE THAN 6 263KM² AND HOSTS A POPULATION OF ABOUT 850 000 PEOPLE. THE LANGUAGES SPOKEN IN THE AREA ARE MAINLY SESOTHO, AFRIKAANS, ENGLISH AND SETSWANA.

MANGAUNG, MEANING "PLACE OF THE CHEETAH", ACCENTUATES THE VIBRANT, DYNAMIC AND ENERGETIC CHARACTER OF THE TOURISM INDUSTRY IN THE "CITY ON THE MOVE".

BLOEMFONTEIN IS THE ECONOMIC HUB AND THE PROVINCIAL CAPITAL OF THE FREE STATE. THE CITY, FONDLY KNOWN AS "THE CITY OF ROSES", IS ALSO THE COMMERCIAL CAPITAL OF THE FREE STATE AND THE JUDICIAL CAPITAL OF SOUTH AFRICA.

BLOEMFONTEIN'S ECONOMY IS MAINLY BASED ON THE SERVICES AND GOVERNMENT SECTORS. IT IS ALSO IDEALLY EQUIPPED TO SUPPORT DEMANDING INDUSTRIAL ACTIVITIES AND IS THE BASE OF A HUGE AGRICULTURAL AREA. IT IS INCOMPARABLE IN TERMS OF LOCALITY, FACILITIES, VIABILITY AND ACCESSIBILITY, AND DISPLAYS A PROUD TRADITION OF HOSPITALITY.

RELATIVE IMPORTANCE OF THE MANGAUNG ECONOMY

THE ECONOMY OF THE MANGAUNG MUNICIPALITY PLAYS A SIGNIFICANT ROLE IN THE MOTHEO DISTRICT ECONOMY (92,5%) AS WELL AS THE FREE STATE ECONOMY (25,5%), BUT IT IS RELATIVELY SMALL WHEN COMPARED TO THE NATIONAL ECONOMY (1,6%).

OF IMPORTANCE IS THE RELATIVELY SMALL SHARE OF THE LOCAL AGRICULTURE, MINING AND MANUFACTURING SECTORS COMPARED TO THE PROVINCE AND THE COUNTRY. MINING'S SMALL SHARE IS UNDERSTANDABLE AS MANGAUNG COMPETES WITH THE GOLDFIELDS AREA, WHICH IS VERY STRONG IN MINING, HOWEVER THE SHARE OF AGRICULTURE AND MANUFACTURING IS DISTURBINGLY LOW. ON THE OTHER HAND, THE TERTIARY SECTOR OF THE LOCAL ECONOMY IS VERY SIGNIFICANT WITHIN THE CONTEXT OF THE PROVINCE.

GROSS GEOGRAPHIC PRODUCT (GGP) PER CAPITA

ANOTHER MEANS OF GAUGING THE RELATIVE SIZE OF THE LOCAL ECONOMY IS BY ANALYSING THE GGP. THE GGP PER CAPITA PROVIDES AN INDICATION OF THE AMOUNT OF PRODUCTION THAT TAKES PLACE IN AN AREA IN RELATION TO THE POPULATION OF THAT AREA. ALTHOUGH BOTSHABELO AND THABA NCHU HAVE RELATIVELY MORE PEOPLE THAN ECONOMIC ACTIVITY, BLOEMFONTEIN HAS A STRONG GGP PER CAPITA.

SECTOR PROFILE COMPARISON

APPROXIMATELY 87% OF ECONOMIC PRODUCTION IN MANGAUNG OCCURS IN BLOEMFONTEIN WHILE ONLY 7% AND 6% RESPECTIVELY OCCUR IN BOTSHABELO AND THABA NCHU.

MANGAUNG ECONOMIC GROWTH

THE MANGAUNG ECONOMY GREW AT 1,8% PER ANNUM FROM 1990-1996 FOLLOWED BY A PERIOD OF LOWER

GROWTH FROM 1996-2001. A HIGHER GROWTH RATE OF 1,8% IS FORECAST FOR THE PERIOD 2001-2006.

WHEN COMPARED TO GROWTH IN THE PROVINCE, THE LOCAL ECONOMY OUTPERFORMED THE PROVINCE IN ALL SECTORS EXCEPT FOR AGRICULTURE. NATIONAL GROWTH FOR THE PERIOD 1996-2001 WAS 2,3% PER ANNUM, THE STUDY AREAS THEREFORE DID NOT PERFORM AS WELL AS THE REMAINDER OF THE NATIONAL ECONOMY.

SECTORS SHOWING STRONG GROWTH IN GENERAL ARE TRANSPORT AND FINANCE WHILE THE CONSTRUCTION AND MANUFACTURING SECTORS ARE EXPERIENCING NEGATIVE GROWTH.

SMALL MEDIUM AND MICRO ENTERPRISES (SMME)

SMALL BUSINESSES HAVE A MAJOR ROLE TO PLAY IN THE SOUTH AFRICAN, AND ESPECIALLY THE MANGAUNG ECONOMY IN TERMS OF EMPLOYMENT CREATION, INCOME GENERATION AND OUTPUT GROWTH. IT IS ESTIMATED THAT MORE THAN 12 MILLION PEOPLE IN SOUTH AFRICA ARE ACTIVELY INVOLVED IN THE SMME SECTOR AND ACCOUNT FOR APPROXIMATELY 60% OF ALL EMPLOYMENT IN THE ECONOMY AND 40% OF OUTPUT.

IN AN AREA SUCH AS MANGAUNG, WITH ITS RELATIVELY HIGH LEVELS OF UNEMPLOYMENT AND POVERTY, IT CAN BE EXPECTED THAT THE SMME SECTOR WILL PLAY AN EVEN MORE IMPORTANT ROLE IN JOB CREATION AND POVERTY ALLEVIATION.

IT IS ESSENTIAL TO STRENGTHEN THE SUPPORT SYSTEMS AVAILABLE FOR SMMES IN THE REGION IN ORDER TO CREATE A SMALL BUSINESS SECTOR THAT WILL INCREASE THE SUSTAINABILITY OF THE LOCAL ECONOMY, INCREASE THE COMPETITIVENESS OF LOCAL BUSINESSES, GENERATE JOBS AND BROADEN THE TAX BASE OF THE MUNICIPALITY.

AS A RESULT, THE MANGAUNG MUNICIPALITY ESTABLISHED A SMME SERVICE CENTRE WITH THE AIM OF CO-ORDINATING QUALITY BUSINESS DEVELOPMENT SUPPORT SERVICES TO LOCAL SMME'S.

Level of education:

NO SCHOOLING AGED 20+	4,3%
HIGHER EDUCATION AGED 20+	14,1%
MATRIC AGED 20+	30,1%

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	UNKNOWN AT THIS STAGE	
What is the expected yearly income that will be generated by or as a result of the activity?	UNKNOWN AT THIS STAGE	
Will the activity contribute to service infrastructure?	YES	
Is the activity a public amenity?	YES	
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	UNKNOWN AT THIS STAGE	
What is the expected value of the employment opportunities during the development and construction phase?	UNKNOWN AT THIS STAGE	
What percentage of this will accrue to previously disadvantaged individuals?	UNKNOWN AT THIS STAGE	
How many permanent new employment opportunities will be created during the operational phase of the activity?	UNKNOWN AT THIS STAGE	
What is the expected current value of the employment opportunities during the first 10 years?	UNKNOWN AT THIS STAGE	
What percentage of this will accrue to previously disadvantaged individuals?	UNKNOWN AT THIS STAGE	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
~~Critical Biodiversity Area (CBA)~~	~~Ecological Support Area (ESA)~~	~~Other Natural Area (ONA)~~	NO NATURAL AREA REMAINING (NNR)	THE MOST RECENT DESCRIPTION OF THE BROADER STUDY AREA'S VEGETATION IS THE GENERAL DESCRIPTION BY MUCINA & RUTHERFORD (2006) RELATING TO THE VEGETATION WHICH IS CONSIDERED TO BE THE "VEGETATION OF SOUTH AFRICA, LESOTHO AND SWAZILAND" AS WELL AS ITS ACCOMPANYING MAP OF THE COUNTRY BY (MUCINA ET AL., 2005). THIS MEMOIR CONTAINS SPECIES INFORMATION AND A COMPREHENSIVE CONSERVATION ASSESSMENT OF ALL VEGETATION TYPES. THE WINBURG GRASSY SHRUBLAND (GH7) DOMINATES THE VEGETATION OF THE PROJECT SITE, AS WELL AS THE AREAS SURROUNDING THE SITE. ACCORDING TO MUCINA & RUTHERFORD (2006), THE VEGETATION TYPE HAS A CONSERVATION STATUS OF "LEAST THREATENED". THE VEGETATION OF THE PROJECT SITE IS SHRUBS AND THE GROUND LAYER IS COVERED BY GRASSES AND A FEW FORBS. THE IMPORTANT GRASSES INCLUDE ARISTIDA CONGESTA, THEMEDA TRIANDRA, CYMBOPOGON POSPISCHILLII, ERAGROSTIS LEHMANNIANA, E. TRICHOPHORA, ENNEAPOGON SCOPARIUS, ARISTIDA ADSCENSIONIS, HETEROPOGON CONTORTUS. DWARF SHRUBS SUCH AS FELICIA MURICATA, HERTIA PALLENS, BERKHEYA ONOPORDIFOLIA, LYCIUM CINERIUM. THE DOMINANT SHRUBS ARE OLEA EUROPAEA SUBSP. AFRICANA, BUDDLEJA SALIGNA, ZIZIPHUS MUCRONATA, DIOSPYROS LYCIOIDES, D. AUSTRO-AFRICANA, SEARSIA BURCHELLII, S. LANCEA AND S. CILIATA.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).

Natural	0%	NO NATURAL VEGETATION WITHOUT ANY ALIEN VEGETATION OCCURS ON THE PROPOSED SITE. SITE IS MOSTLY DISTURBED.
Near Natural (includes areas with low to moderate level of alien invasive plants)	40%	THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN ON A BARE SMALLHOLDING WITH LOTS OF BUILDING RUBBLE ETC THAT WAS DUMPED THEREON. SEE PHOTOGRAPHS IN APPENDIX B.
Degraded (includes areas heavily invaded by alien plants)	50%	THE PROPOSED SITE IS SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN ON A BARE SMALLHOLDING WITH LOTS OF BUILDING RUBBLE ETC THAT WAS DUMPED THEREON. SEE PHOTOGRAPHS IN APPENDIX B.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	10%	BARE SMALLHOLDING WITH LOTS OF BUILDING RUBBLE ON IT. ALSO BARE AREAS WHERE VEGETATION WAS CLEARED FOR GRAVEL ROAD ETC.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and
(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	~~CRITICAL~~	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	~~ENDANGERED~~							
	VULNERABLE							
	LEAST THREATENED	~~YES~~	NO	~~UNSURE~~	~~YES~~	NO	~~YES~~	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

THE PROJECT SITE AND THE SURROUNDING AREA WERE ASSESSED FOR ANY SENSITIVE ECOSYSTEMS INCLUDING DRAINAGE LINES AND WETLANDS. IT WAS FOUND THAT THERE ARE NO WETLANDS OR DRAINAGE LINES ON THE PROJECT SITE. THE PROJECT SITE IS SITUATED ON WINBURG GRASSY SHRUBLAND (GH7). AACCORDING TO MUCINA & RUTHERFORD (2006), THE VEGETATION TYPE HAS A CONSERVATION STATUS OF "LEAST THEREATENED".

RECOMMENDATIONS:

GENERAL

- AN ENVIRONMENTAL CONTROL OFFICER (ECO) MUST BE APPOINTED TO OVERSEE THAT THE ASPECTS STIPULATED IN THE ENVIRONMENTAL PERMIT BE CARRIED OUT PROPERLY;
- PRECONSTRUCTION ENVIRONMENTAL INDUCTION FOR ALL CONSTRUCTION STAFF ON SITE TO ENSURE THAT BASIC ENVIRONMENTAL PRINCIPLES ARE ADHERED TO;
- THE AREAS TO BE CLEARED AS WELL AS THE CONSTRUCTION AREA SHOULD BE CLEARLY DEMARCATED;
- ALL CONSTRUCTION VEHICLES SHOULD ADHERE TO CLEARLY DEFINED AND DEMARCATED ROADS;
- DUST SUPPRESSION AND EROSION MANAGEMENT SHOULD BE AN INTEGRATED COMPONENT OF THE CONSTRUCTION APPROACH;
- NO DUMPING OF BUILDING WASTE OR SPOIL MATERIAL FROM THE DEVELOPMENT SHOULD TAKE PLACE ON AREAS OTHER THAN A LICENCED LANDFILL SITE;
- ALL HAZARDOUS MATERIALS SHOULD BE STORED APPROPRIATELY TO PREVENT CONTAMINATION OF THE PROJECT SITE. ANY ACCIDENTAL CHEMICAL, FUEL AND OIL SPILLS THAT OCCUR AT THE PROJECT SITE SHOULD BE CLEANED UP APPROPRIATELY AS RELATED TO THE NATURE OF THE SPILL.

FLORA

- WEED CONTROL MEASURES MUST BE APPLIED TO ERADICATE THE NOXIOUS WEEDS (CATEGORY 1A &1B SPECIES) ON DISTURBED AREAS;
- A SEARCH AND RESCUE OPERATION MUST BE CONDUCTED BEFORE ANY CONSTRUCTION ACTIVITIES COMMENCE IN ORDER TO COLLECT ALL PROTECTED SPECIES WHICH CAN BE TRANSLOCATED TO A SUITABLE HABITAT NEARBY

FAUNA

- ANY FAUNA THREATENED BY THE CONSTRUCTION AND OPERATION ACTIVITIES SHOULD BE REMOVED TO SAFETY BY THE ECO OR APPROPRIATELY QUALIFIED ENVIRONMENTAL OFFICER.
- ALL CONSTRUCTION VEHICLES SHOULD ADHERE TO A LOW SPEED LIMIT (<30KM/H) TO AVOID COLLISIONS WITH SUSCEPTIBLE SPECIES SUCH AS SNAKES AND TORTOISES.
- IF TRENCHES NEED TO BE DUG FOR ELECTRICAL CABLING OR OTHER PURPOSE, THESE SHOULD NOT BE LEFT OPEN FOR EXTENDED PERIODS OF TIME AS FAUNA MAY FALL IN AND BECOME TRAPPED IN THEM.
- TRENCHES WHICH ARE STANDING OPEN SHOULD HAVE PLACES WHERE THERE ARE SOIL RAMPS ALLOWING FAUNA TO ESCAPE THE TRENCH.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	VOLKSBLAD – OFFICIAL NOTICE COLUMN	
Date published	13 AUGUST 2018	
Site notice positions	**Latitude**	**Longitude**
	S 29°04' 33.6 S 29°04' 40.09	E 26° 11' 30.63 E 26° 11' 14.85
Date placed	13 AUGUST 2018	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 982

MAIL DROP (INFORMATION DOCUMENT AND COMMENTS AND CONCERNS FORM) WAS CONDUCTED TO ALL DIRECTLY ADJACENT LANDOWNERS SURROUNDING THE PROPOSED SITE. A SITE NOTICE BOARD WAS ALSO PLACED AT THE PROPOSED SITE.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 982

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
COUNCILLOR – PROF F VAN DER MERWE	WARD COUNCILLOR WARD 21	082 921 5891

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
MMM WARD COUNCILLOR – JOHAN PRETORIUS • AS THE RELEVANT WARD COUNCILLOR OF WARD 48 HE CANNOT SUPPORT THE PROPOSE DEVELOPMENT AS HE HAS RECEIVED NUMEROUS COMPLAINTS FROM RESIDENTS IN THE AREA AND IN SPECIFIC FELLOWS STREET. THE DEVELOPERS IN THE PAST HAS DAMAGED FELLOWS STREET IN SUCH A MANNER THAT IT IS NOW LIVE THREATENING. THE AREA AND RESIDENTS HAS SUFFERED FOR A VERY LONG TIME NOW WITH CONTRACTORS IN THE LAST TWO YEARS AND THEY WILL NOT APPROVE THIS DEVELOPMENT. THE ROADS AND INFRASTRUCTURE CANNOT HANDLE ANOTHER DEVELOPMENT LIKE THIS. SURROUNDING ROADS AND INFRASTRUCTURE AND IN PARTICULAR FRANS KLEYNHANS ROAD HAVE TO BE UPGRADED BY MMM BEFORE THE COMMUNITY WILL ALLOW MORE DEVELOPMENT. YOUR COMPANY NEED TO ARRANGE A PUBLIC MEETING AND INVITE RESIDENTS IN THE	• THIS IS TAKEN NOTE OFF. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR FELLOWS ROAD AND HE WILL BE RESPONSIBLE MAINTAIN AND REPAIR FELLOWS ROAD FROM LUCAS STEYN UP TO HIS DEVELOPMENT SITE AS AN MINIMUM EVERY 2 WEEKS. THIS WILL BE INCLUDED AS A STANDARD CONDITION WITH THE ENVIRONMENTAL AUTHORIZATION AND EMP. IF NOT ADHERED TO DESTEA CAN AND WILL STOP CONSTRUCTION OF THE DEVELOPMENT IF THIS IS NOT ADHERED TO. ACCESS TO THE SITE MUST BE FROM THE TARRED REYNECKE AVENUE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT. IT IS NOT ALLOWED THAT ANY CONSTRUCTION VEHICLE USES REYNECKE AVENUE AS THIS ROAD IS ALREADY BUSY ESPECIALLY DURING PEAK TIME TRAFFIC. A FURTHER CONDITION WILL BE SET THAT NO HEAVY VEHICLES AND MACHINERY WILL BE ALLOWED TO TRAVEL TO AND FROM THE PROPOSED SITE IN

SURROUNDING AREA AND IN PARTICULAR FROM FELLOWS STREET AND REYNECKE AVENUE.	MORNING AND AFTERNOON PEAK TRAFFIC HOURS (NONE BEFORE 08:30 AND AFTER 16:00). • ACCORDING TO THE ATTACHED TRAFFIC IMPACT ASSESSMENT (TIS) THE FOLLOWING CONCLUSIONS WERE MADE FROM THE STUDY: ○ A) THE DEVELOPMENT COULD GENERATE 80 TRIPS DURING THE MORNING - AND AFTERNOON PEAK. ○ B) IT WAS PREVIOUSLY ALREADY DETERMINED THAT THE RAY CHAMPION AVENUE / REYNECKE AVENUE INTERSECTION SHOULD BE UPGRADED AND SIGNALISED. THE PREVIOUSLY IDENTIFIED UPGRADING SHOULD SUFFICE. THIS MUST BE DONE BY THE DEVELOPER BEFORE CONSTRUCTION MAY COMMENCE. ○ C) THE FRANS KLEYNHANS ROAD CORRIDOR WILL BE UNDER PRESSURE IF ALL THE PLANNED DEVELOPMENTS ARE IMPLEMENTED. PREVIOUSLY IDENTIFIED IMPROVEMENTS MUST BE IMPLEMENTED. ○ D) ALTHOUGH THE APPLICATION IS FOR TOWNSHIP ESTABLISHMENT PROVISION WILL ONLY BE MADE FOR ONE ERF AND A STREET PORTION. LIMITED TOWNSHIP ESTABLISHMENT ASPECTS ARE INVOLVED IN THE APPLICATION. ○ E) IT SHOULD BE POSSIBLE TO EFFECTIVELY DEVELOP THE SITE AS APPLIED FOR. ○ BASED ON THE FINDINGS OF THE STUDY THE CHANGE IN LAND USE CAN BE APPROVED FROM A TRAFFIC POINT OF VIEW.
• PLEASE ADD MY EMAIL TO YOUR REPORT AND INFORM ME OF ALL THE MEETINGS IN FUTURE REGARDING THIS PROJECT. PUBLIC MEETING REQUESTED	• HI PLEASE NOTE THAT WE DO NOT INTEND IN HAVING A PUBLIC MEETING AS WE FEEL THAT ALL COMMENTS AND CONCERNS RECEIVED WAS SUCCESSFULLY ADDRESSED IN THIS FINAL BASIC ASSESSMENT REPORT, EMP, SPECIALIST REPORTS AND WRITTEN LETTERS FROM RELEVANT AUTHORITIES. THIS FINAL REPORT WILL BE MADE AVAILABLE TO ALL REGISTERED AND AFFECTED PARTIES FROM 13 DECEMBER 2018 FOR A PERIOD OF 7 WORKING DAYS. DUE TO THE HOLIDAYS THIS PERIOD IS EXTENDED UNTIL 10 JANUARY 2019. OUR DEADLINE FOR SUBMISSION OF THE FINAL BAR AND EMP APPLICATION TO DESTEA IS 28 JANUARY 2018. IF ANYBODY DOES NOT AGREE WITH OUR FINDINGS/RECOMMENDATIONS THEY MUST PROVIDE US WITH THEIR FURTHER COMMENTS/CONCERNS BEFORE END OF BUSINESS ON 10 JANUARY 2019.

	ALSO NOTE THAT ALL ADJACENT LANDOWNERS WILL ALSO BE INVITED TO COMMENT ON THE TOWN PLANNING APPLICATION FOR TOWNSHIP ESTABLISHMENT. FURTHERMORE ALL REGISTERED AND AFFECTED PARTIES WILL BE NOTIFIED OF THE ENVIRONMENTAL AUTHORIZATION (POSITIVE OR NEGATIVE) ISSUED BY DESTEA AND PROVIDED WITH A COPY TO MAKE SURE THAT ALL CONDITIONS AND REQUIREMENTS MENTIONED IN THIS REPORT AND OTHERS ATTACHED IS INCLUDED. INTERESTED AND AFFECTED PARTIES WILL BE PROVIDED WITH AN OPPORTUNITY TO APPEAL THE DECISION TAKEN BY DESTEA ON THE PROPOSED DEVELOPMENT.
MMM WARD COUNCILLOR – FIEF VAN DER MERWE • AS THE RELEVANT WARD COUNCILLOR OF WARD 20 HE HIS BIGGEST CONCERN IS TRAFFIC CONGESTION WHICH WILL FOLLOW AFTER MORE DEVELOPMENTS. LIKE THIS MAGNITUDE DEVELOPMENT IS FINISHED AT THE T-JUNCTION AT REYNECKE AVENUE AND LUCAS STEYN STREET. AT THE MOMENT IT IS VERY DIFFICULT AND DANGEROUS TO ENTER LUCAS STEYN STREET FROM REYNECKE AVENUE. A SPECIAL REQUEST IS THAT THE DEVELOPER AND OTHER PREVIOUS DEVELOPERS TAKE HANDS AND PAY FOR ERECTING OF TRAFFIC LIGHTS AT THE T JUNCTION LIKE OTHER DEVELOPMENTS WERE TRAFFIC LIGHTS WERE REQUIRED BEFORE THE DEVELOPERS COULD START.	• SEE ABOVE MENTIONED. ALSO NOTE THAT THE DEPARTMENT OF POLICE, ROADS AND TRANSPORT SUPPORTS THE PROPOSED DEVELOPMENT WITH THE FOLLOWING CONDITIONS THAT WILL BE MADE CONDITIONS AS PART OF THIS BAR AND EMP AS WELL AS ENVIRONMENTAL AUTHORIZATION (EA) TO BE ISSUED BY DESTEA. THE CONDITIONS INCLUDE THE FOLLOWING: ○ THE INTERSECTION BETWEEN LUCAS STEYN STREET, RAY CHAMPION STREET, REYNECKE AVENUE AND SECONDARY ROAD S850 (FRANS KLEINHANS ROAD) AND A 75M SECTION OF THE PROVINCIAL ROAD WILL BE TRANSFERRED TO MMM AS AN EXTENSION OF LUCAS STEYN STREET. ○ THE DEVELOPER MUST UPGRADE AND SIGNALIZE THE INTERSECTION BETWEEN RAY CHAMPION/REYNECKE STREET FRANS KLEYNHANS STREET (S850 SECONDARY ROAD) IN LINE WITH THE RECOMMENDATION OF THE TRAFFIC IMPACT STUDY AT THE DEVELOPERS OWN EXPENSE. ○ GEOMETRIC DESIGN DRAWINGS OF THE INTERSECTION MUST BE APPROVED BY THIS DEPARTMENT PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED DEVELOPMENT. ○ MMM MUST CONDUCT THE GENERAL; OPERATIONAL AND MAINTENANCE OF THE TRAFFIC SIGNALS. ○ THE CONSTRUCTION OF THE INTERSECTION MUST BE DONE PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED TOWNSHIP.

• ANOTHER SERIOUS CONCERN IS THAT THE CURRENTS SEWER SYSTEM IS NOT BUILT FOR SO MANY DEVELOPMENTS WHICH TOOK PLACE ESPECIALLY IN REYNECKE AVENUE THE LAST FEW YEARS. BEFORE THE SEWER SYSTEM IS NOT IMPROVED TO HANDLE THE SEWER NO FURTHER DEVELOPMENT CAN TAKE PLACE NOT EVEN IN HEUWELSIG BUT ALSO IN THE WHOLE MANGAUNG.	• SEE THE ATTACHED SERVICES REPORT THAT WAS DONE BY A PROFESSIONAL CIVIL ENGINEER. ACCORDING TO THIS STUDY THE EXISTING SEWERAGE SYSTEM CAN HANDLE THE ADDITIONAL LOAD FROM THE PLANNED DEVELOPMENT. THE SEWERAGE WORKS HAS ALSO BEEN RECENTLY UPGRADED AND CAN ALSO ACCOMMODATE THE EXTRA FLOW. SEE THE LETTER FROM MMM REGARDING WATER AND SANITATION IN WHICH THIS IS CONFIRMED AND IN WHICH MMM STATES THAT THE DEVELOPMENT CAN BE CONSIDERED SUBJECT TO COMPLYING WITH THE STANDARD CONDITIONS OF WATER AND SANITATION FOR DEVELOPMENTS. SEE APPENDIX E. IT ALSO FORMS PART IF THIS BAR THAT WILL BE SUBMITTED TO DESTEA FOR REVIEW BEFORE DECIDING TO ISSUE THE EA OR NOT.
• ALSO THE ROAD TO THE PROPOSED DEVELOPMENT SHOULD BE UPGRADED TO CARRY THE TRAFFIC IN REYNECKE AVENUE.	• SEE THE TIS. THERE IS PLANNING TO EXTEND REYNECKE AVENUE TO LINK WITH A NEW ARTERIAL THAT WILL RUN PARALLEL TO NELSON MANDELA DRIVE. IT IS ALSO PLANNED THAT FELLOWS STREET SHOULD LINK WITH REYNECKE AVENUE. THESE CHANGES WILL NOT DIRECTLY AFFECT THE DEVELOPMENT AS PROVISION IS ALREADY MADE FOR THE ROAD RESERVES. THIS WILL BE A PROJECT BY MMM.
• THIS IS IN SHORT HIS OBJECTIONS. HE IS HOWEVER SURE THAT THERE WILL BE MORE OBJECTIONS FROM SPECIALISTS ON DEVELOPMENT.	• PLEASE NOTE THAT THE FOLLOWING SPECIALISTS FORMED PART OF THE PROJECT TEAM AND NONE OF THEM IDENTIFIED MORE OBJECTIONS/CONCERNS THAT THOSE IDENTIFIED BY THE INTERESTED AD AFFECTED PARTIES. ○ GEOTECHNICAL REPORT - ENGINEER ○ SERVICES REPORT – CIVIL ENGINEER ○ ELECTRICAL REPORT – ELECTRICAL ENGINEER. ○ PROFESSIONAL OWN PLANNER ○ TRAFFIC IMPACT ASSESSMENT – TRAFFIC ENGINEER. ○ ENVIRONMENTAL IMPACT ASSESSMENT – PROFESSIONAL ENVIRONMENTAL MANAGER/CONSULTANT. ○ HERITAGE IMPACT ASSESSMENT – PROFESSIONAL HERITAGE SPECIALIST. NO ADDITIONAL COMMENTS/CONCERNS WERE RAISED BY ANY OF THE DEPARTMENTS TO WHOM THE DRAFT BAR AND EMP WAS CIRCULATED DURING THE PUBLIC PARTICIPATION PROCESS. NO OTHER DEVELOPMENT SPECIALISTS SUBMITTED ANY COMMENTS OR CONCERNS.

MMM HEALTH SECTION - JACO LAMPRECHT	
• NO FEEDBACK RECEIVED.	• NONE REQUIRED
MMM - G FRITZ; NELSON MOFOKENG; BILLY BARNES; GEORGE MUSUABI; JEFF LETSIE; SONNET PIECHACZEK	
• NO FEEDBACK RECEIVED.	• NONE REQUIRED
DEPARTMENT OF POLICE, ROADS AND TRANSPORT	
THE TRAFFIC IMPACT STUDY REFERS:	
• WITH DUE COGNIZANCE OF THE ABOVE, THE DEPARTMENT SUPPORTS THE APPLICATION FOR THE PROPOSED LAND DEVELOPMENT SUBJECT TO THE FOLLOWING CONDITIONS:	• WE TAKE NOTE OF THESE CONDITIONS. THEY WILL BE INCLUDED AS CONDITIONS/REQUIREMENTS IN THE EA SHOULD DESTEA DECIDE TO APPROVE THE PROJECT. THE EA WILL ALSO BE MADE AVAILABLE FOR AN APPEAL PERIOD SO THAT REGISTERED INTERESTED AD AFFECTED PARTIES CAN MAKE SURE THAT ALL CONDITIONS ARE INCLUDED THEREIN.
○ THE INTERSECTION BETWEEN LUCAS STEYN STREET, RAY CHAMPION STREET, REYNECKE AVENUE AND SECONDARY ROAD S850 (FRANS KLEINHANS ROAD) AND A 75M SECTION OF THE PROVINCIAL ROAD WILL BE TRANSFERRED TO MMM AS AN EXTENSION OF LUCAS STEYN STREET.	• WE TAKE NOTE OF THIS.
○ THE DEVELOPER MUST UPGRADE AND SIGNALIZE THE INTERSECTION BETWEEN RAY CHAMPION/REYNECKE STREET FRANS KLEYNHANS STREET (S850 SECONDARY ROAD) IN LINE WITH THE RECOMMENDATION OF THE TRAFFIC IMPACT STUDY AT THE DEVELOPERS OWN EXPENSE.	• WE TAKE NOTE OF THIS. NO DEVELOPMENT MAY START PRIOR TO THE INTERSECTION BEING UPGRADED BY THE DEVELOPER AND TO THE SPECIFICATIONS AND REQUIREMENTS OF MMM.
○ GEOMETRIC DESIGN DRAWINGS OF THE INTERSECTION MUST BE APPROVED BY THIS DEPARTMENT PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED DEVELOPMENT.	• WE TAKE NOTE OF THIS. THIS WILL BE DONE PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED DEVELOPMENT.
○ MMM MUST CONDUCT THE GENERAL; OPERATIONAL AND MAINTENANCE OF THE TRAFFIC SIGNALS.	• ONCE THE DEVELOPER HAS UPGRADED THE INTERSECTION IT WILL BE MMM TASK TO CONDUCT GENERAL OPERATIONAL AND MAINTENANCE OF THE TRAFFIC SIGNALS.
○ THE CONSTRUCTION OF THE INTERSECTION MUST BE DONE PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED TOWNSHIP.	• WE TAKE NOTE OF THIS. IT WILL ALSO BE INCLUDED WITHIN THE EA AS A CONDITION.
• THE DEPARTMENTS SUPPORT FOR THE PROPOSED	• WE TAKE NOTE OF THIS.

DEVELOPMENT IS GRANTED IN TERMS OF THE ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT 1940 (ACT 21 OF 1940) AND THE ROADS ORDINANCE, (ORDINANCE 4 OF 1968). SUCH PERMISSION HOWEVER DOES NOT EXEMPT THE DEVELOPER FROM COMPLYING WITH OTHER LEGAL PROVISIONS THAT MAY BE APPLICABLE.	
DESTEA EIA SECTION – D MOKOENA :	
• THE DEPARTMENT HAS RECEIVED AND APPROVED THE DRAFT BAR AND WOULD LIKE YOU TO INCLUDE THE FOLLOWING IN THE FINAL BAR; ○ THE LAYOUT MAP MUST BE ACCORDING TO THE REQUIREMENTS AS STIPULATED IN SECTION A NUMBER 6 – LOCALITY MAP OF THE BAR TEMPLATE.	• THE LAYOUT MAP WAS AMENDED AS PER REQUIREMENTS OF DESTEA.
DESTEA – DR NACELLE COLLINS	
• NO FEEDBACK RECEIVED.	• NONE REQUIRED
MANGAUNG METRO MUNICIPALITY – PLANNING DIRECTORATE – M KOLOBE	
• NO OBJECTIONS AGAINST THE PLANNED TOWN HOUSE DEVELOPMENT ON CONDITIONS THAT: ○ ENVIRONMENTAL AWARENESS POSTERS MUST BE MADE AVAILABLE BY THE ECO AND BE DISPLAYED ON SITE. THE POSTERS MUST USE PICTURES TO CONVEY THE INTENDED MESSAGE AND ANY EXPLANATORY TEXT MUST BE IN SOTHO, ENGLISH AND AFRIKAANS. ○ THE PROPOSED TRENCHES THAT WILL BE DUG TO BURY SEWAGE LINES AND ELECTRICAL CABLES SHOULD NOT BE LEFT OPEN FOR EXTENDED PERIODS OF TIME AS FAUNA MAY FALL IN AND BECOME TRAPPED IN THEM. TRENCHES WHICH ARE LEFT EXPOSED SHOULD CONTAIN SOIL RAMPS ALLOWING FAUNA TO ESCAPE. ○ A TRAFFIC MANAGEMENT PLAN FOR THE SITE ACCESS TO ENSURE THAT NO HAZARDS WOULD RESULT FROM INCREASED TRUCK TRAFFIC FLOW. THIS PLAN MUST INCLUDE MEASURES TO MINIMIZE IMPACTS ON LOCAL COMMUTER E.G. LIMITING CONSTRUCTION VEHICLES TRAVELLING ON PUBLIC ROADWAY DURING	• NONE REQUIRED • WILL BE INCLUDED AS A CONDITION WITHIN THE FINAL BAR AND EMP. • WILL BE INCLUDED AS A CONDITION WITHIN THE FINAL BAR AND EMP. • WILL BE INCLUDED AS A CONDITION WITHIN THE FINAL BAR AND EMP.

THE MORNING AND LATE IN THE AFTERNOON COMMUTE TIME AND AVOID USING ROADS THROUGH DENSELY POPULATED BUILT UP AREA SO AS NOT TO DISTURB EXISTING RETAIL AND COMMERCIAL OPERATIONS. ○ THE PROPOSED DEVELOPMENT MUST COMPLY WITH THE PRINCIPLES OF ENVIRONMENTAL MANAGEMENT AS SET OUT IN SECTION 2 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998 WHICH REQUIRES THAT DEVELOPMENT MUST PLACE PEOPLE NEEDS AT THE FOREFRONT OF ITS CONCERN, AND SERVE THEIR PHYSICAL, PSYCHOLOGICAL AND THAT DEVELOPMENT MUST BE SOCIALLY, ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE.	• WILL BE INCLUDED AS A CONDITION WITHIN THE FINAL BAR AND EMP.
MANGAUNG METRO MUNICIPALITY – N SHAPU AT AIR POLLUTION • NO FEEDBACK RECEIVED.	• NONE REQUIRED.
MANGAUNG METRO MUNICIPALITY – ATTIE VAN HEERDEN AT TOWN PLANNING • NO FEEDBACK RECEIVED.	• NONE REQUIRED.
CENTLEC • THE EXISTING ELECTRICAL NETWORK IN THE AREA IS CURRENTLY BEING UPGRADED WHEREBY THE CONSTRUCTION OF THE GROENVLEI DISTRIBUTION CENTER HAS BEEN COMPLETED. IT HAS RECENTLY BEEN ENERGIZED AND CENTLEC LTD WILL BE ABLE TO SUPPLY THE PROPOSED DEVELOPMENT WITH ELECTRICITY. THE DEVELOPER SHALL BE REQUIRED TO SURVEY AND REGISTER THE EXISTING 132KV POWER LINE TRAVERSING OVER THE PROPERTY. • CENTLEC HAS NO OBJECTION AGAINST THE PROPOSED DEVELOPMENT.	• WE TAKE NOTE OF THIS AND WILL BE INCLUDED AS A CONDITION IN THIS REPORT AND EMP. • NONE REQUIRED
DEPARTMENT OF AGRICULTURE – JACK MORTON • NO FEEDBACK RECEIVED.	• NONE REQUIRED
DWS – MR G JANSE VAN NOORDWYK • NO FEEDBACK RECEIVED.	• NONE REQUIRED

DEPARTMENT OF HEALTH	
• NO FEEDBACK RECEIVED.	• NONE REQUIRED
SAHRA	
• NO FEEDBACK RECEIVED AS YET.	• NONE REQUIRED
IAN GAITSKILL	
• HE IS PRO DEVELOPMENT AS IT INCREASES THE VALUE OF HIS PROPERTY.	• NONE REQUIRED.
• HIS MAJOR CONCERN IS FALLOWS ROAD THAT GETS USED FOR ALL THE MATERIALS NEEDED FOR DEVELOPMENTS.	• THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR FELLOWS ROAD AND HE WILL BE RESPONSIBLE MAINTAIN AND REPAIR FELLOWS ROAD FROM LUCAS STEYN UP TO HIS DEVELOPMENT SITE AS AN MINIMUM EVERY 2 WEEKS. THIS WILL BE INCLUDED AS A STANDARD CONDITION WITH THE ENVIRONMENTAL AUTHORIZATION AND EMP. IF NOT ADHERED TO DESTEA CAN AND WILL STOP CONSTRUCTION OF THE DEVELOPMENT IF THIS IS NOT ADHERED TO. ACCESS TO THE SITE MUST BE FROM THE TARRED REYNECKE AVENUE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT. IT IS NOT ALLOWED THAT ANY CONSTRUCTION VEHICLE USES REYNECKE AVENUE AS THIS ROAD IS ALREADY BUSY ESPECIALLY DURING PEAK TIME TRAFFIC. A FURTHER CONDITION WILL BE SET THAT NO HEAVY VEHICLES AND MACHINERY WILL BE ALLOWED TO TRAVEL TO AND FROM THE PROPOSED SITE IN MORNING AND AFTERNOON PEAK TRAFFIC HOURS (NONE BEFORE 08:30 AND AFTER 16:00).
• STORMWATER DRAINAGE RUNS OUT THE DEVELOPMENTS ONTO FALLOWS ROAD THAT LEADS TO FLOODING IN THE RAINY SEASON. PLEASE MAKE SURE THE NEW SITE CONFORMS.	• SEE THE ATTACHED SERVICES REPORT AS WELL AS LETTER FROM MMM INDICATING THAT THEY DO NOT HAVE ANY OBJECTIONS REGARDING THE PROPOSED DEVELOPMENT, SUBJECT TO THE STANDARD CONDITIONS FOR ROADS AND STORMWATER FOR DEVELOPMENTS OF OCTOBER 2015. THE DEVELOPER MUST AT ALL TIME ABIDE TO THESE CONDITIONS AND THE ATTACHED SERVICES REPORT. IN THIS LETTER FROM MMM THEY SAY THAT THE STORMWATER IS ADEQUATELY ADDRESSED IN THE SERVICES REPORT AND THAT THE DEVELOPER WILL BE RESPONSIBLE TO PROVIDE ATTENUATION FACILITIES (DAM) TO ADDRESS THE INCREASED STORMWATER PEAK.
• CAN YOU PLEASE GET A WRITTEN AGREEMENT THAT THE ROAD WILL BE REPAIRED TO A GOOD CONDITION	• SEE ABOVE MENTIONED REGARDING THIS ISSUE. A FURTHER CONDITION WILL ALSO BE INCLUDED

ONCE THE CONTRACT HAS BEEN COMPLETED?	WITHIN THE ENVIRONMENTAL AUTHORIZATION AND EMP THAT THE ROAD BETWEEN LUCAS STEYN AND THE DEVELOPMENT SITE BE REHABILITATED TO ACCEPTABLE STANDARDS ONCE CONSTRUCTION IS COMPLETED. THE CLIENT WILL HAVE TO APPOINT AN INDEPENDENT ENVIRONMENTAL CONTROL OFFICER (ECO) TO DO A POST CONSTRUCTION AUDIT TO BE HANDED IN TO DESTEA. ACCESS WILL ONLY BE OBTAINED FROM THE DEVELOPMENT DURING OPERATION THEREOF FROM REYNECKE AVENUE.
FRANCIS VAN HEERDEN	
• HER BIGGEST CONCERN IS AGAIN FELLOWS ROAD. WITH THE BUILDING OF THE PRECIOUS TOWNHOUSES (MOUNT JOY AND MOUNT SOPHIA) FELLOWS ROAD WAS USED FOR ALL THE CONTRACTOR VEHICLES. THE ROAD WAS LEFT IN A CHAOTIC STATE, FULL OF POTHOLES ETC. THEY HAVE TRIED TO REPAIR THE ROAD, BUT TILL TODAY THE ROAD IS STILL IN A TERRIBLE STATE. SHE IS JUST CONCERNED THAT "THEIR" ROAD WILL AGAIN BE USED AS ACCESS TO THE BUILDING SITE, LEAVING IT IN A TERRIBLE STATE, NOT SUITABLE FOR THEIR VEHICLES.	• ALREADY COVERED IN THE ABOVE MENTIONED RESPONSES.
• SECURITY WILL ALWAYS BE A CONCERN.	• THIS IS TRUE. WE HOWEVER FEEL THAT BY DEVELOPING THIS PIECE OF LAND SECURITY TO ADJACENT SURROUNDINGS WILL BE IMPROVED. CURRENTLY THERE IS EVIDENCE OF HOMELESS PEOPLE BEING ON SITE SOME TIMES. THE SITE IS CURRENTLY ALSO HIGHLY POLLUTED BY BUILDING AND OTHER HOUSEHOLD RUBBLE THAT CAN LEAD TO INCREASED VERMIN IN THE AREA. AS WE ALL KNOW THEY CARRY PESTS SO BY DEVELOPING THE SITE THIS POTENTIAL PROBLEM WILL ALSO BE AVOIDED.
• THE RAINY SEASON IS COMING NEARER THAT WILL CONTRIBUTE TO THE CONDITION OF THE ROAD.	• ALREADY COVERED IN THE ABOVE MENTIONED RESPONSES.
CORNE DU PREEZ	
• HE WANTED TO FIND OUT WHETHER OUR CLIENT REQUIRES A SURVEYOR FOR THE SITE.	• NONE REQUIRED. WAS GIVEN THROUGH TO DEVELOPER.
JOHAN DU PREEZ	

• He has a big problem and says the developer will not make use of "their" Ground Road for any trucks or heavy deliveries on "their" road. The developer will make use of the tar road (Reynecke Avenue) for that.	• Already covered in responses above.
• Also Stormwater will not exit onto the gravel road… and developer must prevent that from damaging the road.	• Already covered in responses above.
• It will be taken up at DA office in this area as well as local papers if the developer does not adhere to the problems that may occur. It's already a problem with previous builders and on the way to obtain court orders to solve this problem.	• Taken note off. The developer will have to implement all requirements, conditions and mitigation measure as identified in this Final BAR & EMP, Specialist Reports, MMM's Standard Conditions for Services, roads and Stormwater as well as the EA if issued by DESTEA. Furthermore the developer must appoint an Independent Environmental Control Officer (ECO) that will monitor activities during construction. Any transgressions will be taken up with developer/contractor and forwarded to DESTEA as well as other relevant authorities to take action on. The developer will also be Required to appoint an Independent Environmental Specialist like myself to compile a Post Construction Audit as well as yearly Operational Audits to be submitted to DESTEA for monitoring and record keeping purposes.
Johan van Wyngaard – Chairman Oude Westhof Council of Trustees	
• He supplied us with all of his correspondence with MMM until now regarding the intersection at Lucas Steyn and Reynecke Avenue.	• Taken note off. As mentioned the developer will be responsible to upgrade this dangerous intersection before he will be allowed to start with construction on the said property.
• A critical factor is that this unsafe intersection will only get worse with increase in traffic. MMM indicated that they planning to upgrade this intersection and must form part of this planned development as well as that of the planned shopping centre Elrido Guesthouse. MMM does not have the funding for this. MMM also have plans to upgrade Reynecke Avenue to link up with Nelson Mandel Street.	• Already discussed in responses above. Also see the approval letters attached in Appendix E from MMM and the Department of Police, Roads and Transport.
• Attached is a Petition that we drafted from the surroundings in regards the issues of the unsafe intersection. See Appendix E.	• Taken note off. It is also attached to this report that will be submitted to DESTEA for review. We however don't see this as a

	PROBLEM ANYMORE AS THE DEVELOPER WILL BE RESPONSIBLE TO UPGRADE THIS DANGEROUS INTERSECTION BEFORE HE WILL BE ALLOWED TO START WITH CONSTRUCTION ON THE SAID PROPERTY.

Figure 5: Map showing the erven within yellow circle (430m radius) were public participation were conducted through maildrop, email etc.

The site notices were placed as indicated on map as site notice 1 at the site and site notice 2 at the intersection of Reyneke Avenue and Lucas Steyn Street.

All comments received as well as the project team's reaction on it are included within this Final BAR to be submitted for review.

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
MANGAUNG METRO MUNICIPALITY	ENVIRONMENTAL - M KOLOBE TOWN PLANNING – ATTIE VAN HEERDEN INFRASTRUCTURE – G FRITZ AIR POLLUTION – NEO SHAPU HEALTH – JACO LAMBERCHT	051 – 405 8577	051 - 405 8882	MPOLOKENG.KOLOBE @MANGAUNG.CO.ZA ATTIE.VANHEERDEN@ MANGAUNG.CO.ZA GERHARD.FRITZ@MAN GAUNG.CO.ZA NEO.SHAPU@MANGAU NG.CO.ZA JACO.LAMPRECHT@MA NGAUNG.CO.ZA	P O BOX 3704, BLOEMFONTEIN, 9300
DEPARTMENT OF WATER AND SANITATION	G JANSE VAN NOORDWYK	051 – 405 9000		JANSEVANN@DWS.GO V.ZA	P O BOX 528 BLOEMFONTEIN 9300
DEPARTMENT OF HEALTH	MR TL LESHABANE	078 223 7678 051 408 1540	-	LESHABANTL@FSHEAL TH.GOV.ZA	P O BOX 277, BLOEMFONTEIN, 9300
DESTEA	GRACE MKHOSANA NACELLE COLLINS	051 - 400 4812	051 - 400 4842	MKHOSANA@DETEA.FS GOV.ZA COLLINSN@DETEA.FS. GOV.ZA	PRIVATE BAG X20801 BLOEMFONTEIN 9301
DEPARTMENT OF AGRICULTURE	J MORTON NOSISA NDUMO	051 – 861 8369	086 2346 758	JACK@FS.AGRIC.ZA NOSISA@FS.AGRIC.ZA	PRIVATE BAG X01 GLEN 9360
SAHRA	RAGNA REDELSTORFF,	021 - 202 8651	021- 202 4509	RREDELSTORFF@SAH RA.ORG.ZA	PO BOX 4637, CAPE TOWN 8000

DEPARTMENT OF POLICE, ROADS AND TRANSPORT	MR MAREE	051 - 409 8275 082 0599 725	086 2757 396	MAREEH@FREETRANS.GOV.ZA	P.O. BOX 119, BLOEMFONTEIN, 9300
CENTLEC	KOBUS BOOYSEN CENTLEC PLANNING	051 409 2252	-	KOBUS.BOOYSEN@CENTLEC.CO.ZA	195 NELSON MANDELA DRIVE COLLEGE SQUARE, TELKOM BUILDING.

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

THIS SECTION OF THE REPORT IDENTIFIES THE POTENTIAL IMPACTS THAT CAN EMANATE FROM THE PLANNING, CONSTRUCTION, OPERATION AND POSSIBLE DECOMMISSIONING OF THE PROPOSED DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON THE BIOPHYSICAL, SOCIO-ECONOMIC AND CULTURAL AND HERITAGE RESOURCES ENVIRONMENT.

THE IDENTIFICATION OF THE IMPACTS WAS BASED ON THE NATURE, EXTENT, DURATION AND SIGNIFICANCE OF THE CONSEQUENCES OF THE ACTIVITIES AND PROCESSES ON VARIOUS COMPONENTS AND ASPECTS OF THE NATURAL AND HUMAN ENVIRONMENTS. FURTHERMORE, THE ENVIRONMENTAL IMPACTS IDENTIFICATION TOOK COGNISANCE OF POTENTIAL IMPACTS CAUSED BY THE CONSTRUCTION OF FACILITIES OR INFRASTRUCTURE, INCLUDING ASSOCIATED STRUCTURES FOR THE ACTIVITIES AND CUMULATIVE IMPACTS ON THE RECEIVING ENVIRONMENT, FOR THE CONSTRUCTION, OPERATIONAL AND CLOSURE PHASES OF THE ACTIVITIES; INCLUDING RECOMMENDED MITIGATION MEASURES.

FOLLOWING IN THE REPORT BELOW IS THE POTENTIAL ENVIRONMENTAL IMPACTS THAT HAVE BEEN IDENTIFIED. THE POTENTIAL IMPACTS TOOK COGNISANCE OF BOTH CONTINUATION AND CESSATION OF THE ACTIVITIES; AND IN EACH INSTANCE, THE PRACTICABLE MITIGATION MEASURES ARE IDENTIFIED.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

PLANNING AND DESIGN PHASE OF THE DEVELOPMENT

Alternative 1 (preferred alternative)			
POTENTIAL IMPACTS	***SIGNIFICANCE RATING***	***SIGNIFICANCE RATING AFTER MITIGATION***	**MITIGATION MEASURES**
Direct Impacts			
ECOLOGY THERE WILL BE NO IMPACTS THAT WILL RESULT ON ECOLOGICAL FEATURES DURING THE PLANNING PHASE.	N/A	N/A	N/A
HERITAGE THERE WILL BE NO IMPACTS THAT WILL RESULT ON HERITAGE FEATURES, OBJECTS AND SITES DURING THE PLANNING PHASE.	N/A	N/A	N/A
SURFACE WATER AND WETLANDS THERE WILL BE NO IMPACTS THAT WILL RESULT ON SURFACE WATER FEATURES DURING THE PLANNING PHASE.	N/A	N/A	N/A
EROSION ON SITE AND DOWNSTREAM THERE WILL BE NO IMPACTS THAT WILL RESULT IN EROSION ON SITE AND DOWNSTREAM DURING THE PLANNING PHASE.	N/A	N/A	N/A
SERVICE INFRASTRUCTURE AND SERVICE PROVISION. NUMBER OF UNITS AND ABILITY OF LOCAL BULK INFRASTRUCTURE TO SUPPLY DEMAND.	N/A	N/A	COMPILE CIVIL SERVICES AND ELECTRICAL REPORTS.
GEOTECHNICAL CONDITIONS GEOTECHNICAL STUDY MUST BE CONDUCTED TO DETERMINE THE SUB-SURFACE FEATURES, TO IDENTIFY THE SOIL AND ROCK CONDITIONS.	N/A	N/A	COMPILE GEOTECHNICAL REPORT.

HERITAGE IDENTIFY ANY SIGNS OF CULTURALLY OR HISTORICALLY SIGNIFICANT ELEMENTS, AS DEFINED IN SECTION 2 OF THE NATIONAL HERITAGE RESOURCES ACT, 1999, (ACT NO. 25 OF 1999), INCLUDING ARCHAEOLOGICAL OR PALAEONTOLOGICAL SITES, ON OR CLOSE (WITHIN 20M) TO THE SITE.	N/A	N/A	COMPILE A FIRST PHASE HERITAGE IMPACT ASSESSMENT REPORT AND SUBMIT TO SAHRA FOR COMMENT.
Indirect Impacts			
THE LOCATION OF THE SITE IS SUITABLE IN TERMS OF PROVIDING RESIDENTIAL DEVELOPMENT WITHIN THE AREA EARMARKED BY MMM IN THEIR SPATIAL DEVELOPMENT FRAMEWORK. THE RESULTANT DEVELOPMENT WILL CONTRIBUTE TO THE LOCAL ECONOMY (RATES AND TAXES TO MMM) AS WELL AS CREATING ADDITIONAL EMPLOYMENT IN THE LOCAL AREA.	MAJOR +	MAJOR +	NONE REQUIRED
Cumulative Impacts			
THE POSSIBILITY OF MORE LANDOWNERS IN THE SURROUNDING AREA WANTING TO DEVELOP THEIR PROPERTIES.	N/A	N/A	N/A
THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE CONSTRUCTION AND OPERATIONAL PHASE. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) DURING THE PLANNING PHASE, THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT POTENTIAL IMPACTS.			
Alternative 2 - N/A – APPLIED FOR EXEMPTION			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			
Cumulative Impacts			

NONE			
Alternative 3 N/A – APPLIED FOR EXEMPTION			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			
Cumulative Impacts			
NONE			
No-go Option			
Direct Impacts			
NONE			
Indirect Impacts			
NONE			
Cumulative Impacts			
NONE			
ONE OF THE OPTIONS TO BE CONSIDERED FOR THIS REPORT IS ONE OF NO DEVELOPMENT AT ALL. THIS WOULD ENTAIL LEAVING THE SITE IN ITS PRESENT STATE. BUILDING AND OTHER RUBBLE CAN BE FOUND ON THE PROPERTY. THIS IS THE IDEAL AREAS FOR VERMIN POPULATIONS TO INFESTATE AND BECOMING A HUGE PROBLEM TO THE SURROUNDING AREAS. THIS WILL BE ERADICATED DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT AS LAND WILL BE COVERED WITH BUILDINGS, ROADS, PAVED AREAS AND GARDENS. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL AREAS SINCE THE DEVELOPMENT IS CLASSIFIED AS AN ACTIVITY, WHICH MAY HAVE SIGNIFICANT DETRIMENTAL EFFECTS ON THE ENVIRONMENT AN ENVIRONMENTAL IMPACT ASSESSMENT IS BEING DONE THEREFORE.			

A complete impact assessment in terms of Regulation 19(3) of GN 982 must be included as Appendix F.

MITIGATION MEASURES THAT MAY ELIMINATE OR REDUCE THE POTENTIAL IMPACTS DURING THE PLANNING PHASE OF THE PROPOSED DEVELOPMENT:

THE MANAGEMENT RESPONSES CONTAINED IN THE MITIGATION MEASURES IN THIS BAR, ARE MEASURES PRESCRIBED TO MINIMISE THE IMPACTS ASSOCIATED WITH THE PROJECT. THE MANAGEMENT RESPONSES CONTAINED IN THE MITIGATION MEASURES IN THIS BAR HAVE BEEN FORMULATED WITH THE HOLISTIC VIEW TO MINIMISING ANY POTENTIAL IMPACTS TO ADJOINING HABITATS AND ECOSYSTEMS LINKED TO THIS SITE. THESE MEASURES MUST BE USED ON SITE DURING THE PLANNING AND CONSTRUCTION PHASES OF THE PROPOSED DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE.

THE POINT OF DEPARTURE FOR THESE MEASURES IS TO TAKE A PRO-ACTIVE ROUTE BY ADDRESSING POTENTIAL PROBLEMS BEFORE THEY OCCUR. THIS SHOULD LIMIT CORRECTIVE MEASURES REQUIRED DURING THE CONSTRUCTION PHASE OF THE PROJECT. ADDITIONAL MITIGATION WILL BE INCLUDED THROUGHOUT THE PROJECT'S VARIOUS PHASES, AS REQUIRED AND IF NECESSARY. ALTHOUGH THERE ARE FEW IMPACTS ASSOCIATED WITH THE PLANNING AND DESIGN PHASE THE IMPORTANCE OF THE BASIC ASSESSMENT AS PART OF THIS MUST BE INCORPORATED. THUS THE FOLLOWING ARE CONSIDERED MITIGATION MEASURES PRIOR TO CONSTRUCTION.

- THE COMPILATION OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR).
- ALL THE REQUIREMENTS OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998) AND OTHER REGULATIONS MUST BE TAKEN INTO CONSIDERATION. ALL CORRESPONDENCE REGARDING THE PROPOSED ACTIVITY SHOULD BE SEND TO DWS.
- ANY DEVELOPMENT WITHIN 500M FROM THE BOUNDARY OF ANY WETLAND REQUIRES A WATER USE LICENSE ACCORDING TO DWS REGULATIONS.
- SOLID WASTE MUST BE MANAGED IN ACCORDANCE TO DWS REQUIREMENTS.
- A SERVICES REPORT MUST PROVIDE PROOF THAT THE WASTE WATER AND WATER TREATMENT WORKS THAT WILL SERVE THIS DEVELOPMENT HAS SUFFICIENT CAPACITY TO HANDLE THE ADDITIONAL LOAD PLUS DEMAND FROM THE PROPOSED DEVELOPMENT.
- ANY DEVELOPMENT WITHIN THE 1:100 YEAR FLOOD LINE OR WITHIN THE RIPARIAN HABITAT CONSTITUTES A WATER USE LICENSE IN TERMS OF SECTION 21(C) AND (I) OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 F 1998) AND WILL REQUIRE AUTHORIZATION BEFORE ANY DEVELOPMENT MAY COMMENCE.
- ARCHITECTURAL AND TOWN PLANNING GUIDELINES (E.G. COVERAGE, HEIGHT RESTRICTIONS, BUILDING MATERIALS ETC.) TO HELP MITIGATE AGAINST POTENTIAL VISUAL IMPACT ON SURROUNDING PROPERTIES.
- GEOTECHNICAL STUDY MUST BE CONDUCTED TO DETERMINE THE SUB-SURFACE FEATURES, TO IDENTIFY THE SOIL AND ROCK CONDITIONS.
- A CIVIL SERVICES REPORT AND GEOTECHNICAL REPORT MUST BE CONDUCTED.
- A FIRST PHASE HERITAGE IMPACT ASSESSMENT MUST BE CONDUCTED.
- AN ELECTRICAL REPORT MUST BE COMPILED.
- STORM WATER RUNOFF NEEDS TO BE TAKEN INTO ACCOUNT.
- EMP MUST CONSIDER AND PROVIDE FOR HAZARDOUS MATERIAL RUN-OFF. EG FUEL SPILLS.
- THE EMP MUST INCLUDE A LITTER MANAGEMENT REQUIREMENT ALONG THE BOUNDARY FENCES.
- THE EMP MUST BE SIGNED BY THE DEVELOPER AND THE CONTRACTOR STATING THAT THEY UNDERSTAND THE CONDITIONS AND REQUIREMENTS OF THE EMP.
- THE CONDITIONS IN THE ENVIRONMENTAL AUTHORIZATION MUST BE COMPLIED WITH BY THE DEVELOPER AND THE CONTRACTOR.
- A PHOTOGRAPHIC RECORD OF THE SITE MUST BE TAKEN PRIOR TO CONSTRUCTION AND REGULARLY UPDATED DURING THE CONSTRUCTION PHASE.
- ALL RECORDS WITH RESPECT TO THE CONSTRUCTION (MATERIALS, SUPPLIERS) MUST BE KEPT AS WELL AS COMPLIANCE AND NON-COMPLIANCE WITH THE ENVIRONMENTAL AUTHORIZATION CONDITIONS, ENVIRONMENTAL INCIDENTS AND COMPLAINTS. THESE DOCUMENTS MUST BE AVAILABLE TO THE DEPARTMENT OF ENVIRONMENT ON REQUEST.

- AN ENVIRONMENTAL CONTROL OFFICER (ECO) MUST BE APPOINTED BEFORE CONSTRUCTION IS ALLOWED TO START.
- WHERE POSSIBLE SKILLED AND UNSKILLED LABOUR SHOULD BE SOURCED FROM THE LOCAL COMMUNITY.
- TRAINING OF STAFF WORKING ON THE CONSTRUCTION SITE WITH RESPECT TO ENVIRONMENTAL AWARENESS AND THE EMP IS ESSENTIAL AND THE RESPONSIBILITY OF THE DEVELOPER AND THE CONTRACTOR. AN INDUCTION COURSE OF ENVIRONMENTAL AWARENESS MUST BE CONDUCTED FOR THE CONTRACTOR BEFORE COMMENCEMENT OF THE ACTIVITY TO ENSURE THAT THEY ARE FULLY AWARE OF THE EMP AND THEIR RESPONSIBILITIES.
- ONLY TRAINED STAFF MAY OPERATE PLANT, MACHINERY AND EXPLOSIVES ON SITE. ALL PERSONNEL MUST BE AWARE OF THE IMPACTS AND HAZARDS ASSOCIATED WITH THE TASKS THEY PERFORM AND HOW BEST TO MITIGATE AGAINST THESE.
- THE SITE MUST HAVE OBTAINED ALL REQUIRED TOWN PLANNING AUTHORIZATIONS.
- THE DEVELOPER MUST PROVIDE ALL CONTRACTORS AND SUB-CONTRACTORS WITH A COPY OF THE MITIGATION MEASURES IN THIS BAR.
- THE ECO MUST FORM PART OF THE PROJECT MANAGEMENT TEAM AND ATTEND ALL RELEVANT PROJECT MEETINGS.
- THE CONTRACTOR MUST APPOINT AN ENVIRONMENTAL LIAISON OFFICER (ELO). THIS PERSON WILL BE REQUIRED TO MONITOR THE DEVELOPMENT WITH A DIRECT HANDS-ON APPROACH, AND ENSURE COMPLIANCE AND CO-OPERATION OF ALL PERSONNEL. HE SHOULD PREFERABLY BE FLUENT IN THE LANGUAGES OF THE EMPLOYEES.
- THE MITIGATION MEASURES IN THIS BAR MUST BE MADE BINDING TO THE MAIN CONTRACTOR AS WELL AS INDIVIDUAL CONTRACTORS AND SHOULD BE INCLUDED IN TENDER DOCUMENTATION FOR THE CONSTRUCTION CONTRACT.
- PRIOR TO ESTABLISHMENT OF THE SITE CAMP(S), THE CONTRACTOR SHALL PRODUCE A PLAN SHOWING THE POSITIONS OF ALL BUILDINGS, LAYDOWN YARDS, AND OTHER INFRASTRUCTURE FOR APPROVAL BY THE ECO.
- NO CONSTRUCTION ACTIVITIES MUST COMMENCE ON SITE PRIOR TO OBTAINING ALL THE NECESSARY APPROVALS.
- THE PLANNING OF CONSTRUCTION ACTIVITIES (CONSTRUCTION SITE) MUST ENDEAVOR TO MINIMISE THE NOISE IMPACT ON ADJACENT LANDOWNERS.
- CONSULTATION WITH THE SURROUNDING LANDOWNERS AND BROADER PUBLIC MUST BE COMPLETED AS PART OF THE EIA AND TOWN PLANNING APPLICATIONS.
- OBTAIN THE COMMENTS FROM THE MUNICIPALITY, THE DEPARTMENTS OF HEALTH, AGRICULTURE, DWS ETC – PUBLIC PARTICIPATION PROCESS.
- THE ENVIRONMENTAL AUTHORISATION MUST HAVE BEEN ISSUED BY DESTEA AND THE APPEAL PERIOD MUST HAVE BEEN COMPLETED SUCCESSFULLY.
- THE DEVELOPMENT MUST BE DESIGNED IN AN ENERGY EFFICIENT MANNER, IN TERMS OF IT'S CONSTRUCTION AND DURING OPERATIONAL PHASES;
- ALL DOCUMENTS ILLUSTRATING COMPLIANCE TO THE CONDITIONS SHOULD BE FORWARDED TO DESTEA & THE MUNICIPALITY ENVIRONMENTAL SECTION FOR RECORD KEEPING AND COMPLIANCE MONITORING.

METHODOLOGY OF ASSESSING THE IMPACTS

THE SIGNIFICANCE (QUANTIFICATION) OF CURRENT AND POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED DURING THE ASSESSMENT WAS DETERMINED USING A RANKING SCALE, BASED ON THE FOLLOWING (TERMINOLOGY HAS BEEN ADOPTED FROM THE GUIDELINE DOCUMENTATION ON EIA REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS, APRIL 1998):

TERMINOLOGY	DEFINITION	RANKING
DURATION (D)	IN ORDER TO ACCURATELY DESCRIBE THE IMPACT IT IS NECESSARY TO UNDERSTAND THE DURATION AND PERSISTENCE OF AN IMPACT IN THE ENVIRONMENT.	5 – PERMANENT. 4 - LONG-TERM. 3 - MEDIUM-TERM (5-15 YEARS). 2 - SHORT-TERM (0-5 YEARS). 1 – IMMEDIATE.
MAGNITUDE (M)	A DESCRIPTION MUST BE GIVEN AS TO WHETHER AN IMPACT IS DESTRUCTIVE, OR BENIGN. IT DETERMINES WHETHER THE INTENSITY OF THE IMPACT ON THE NATURAL ENVIRONMENT OR SOCIETY IS PERMANENTLY, SIGNIFICANTLY CHANGES ITS FUNCTIONALITY, OR SLIGHTLY ALTERS IT.	5 - VERY HIGH. 4 – HIGH. 3 – MODERATE. 2 – LOW. 1 – MINOR.
EXTENT (E)	THE EXTENT OF THE IMPACT REFERS TO THE SPATIAL DIMENSION TO WHICH AN IMPACT WILL BE FELT (I.E. SITE, STUDY AREA, LOCAL, REGIONAL, OR NATIONAL SCALE).	5 – INTERNATIONAL. 4 – NATIONAL. 3 – REGIONAL. 2 – LOCAL. 1 – SITE ONLY.
PROBABILITY (P)	THE CRITERIA USED FOR RATING THE LIKELIHOOD OF IMPACT OCCURRENCE	5 – DEFINITE. 4 – HIGHLY PROBABLE. 3 – MEDIUM PROBABILITY. 2 – LOW PROBABILITY. 1 – IMPROBABLE.

THE ENVIRONMENTAL SIGNIFICANCE OF EACH POTENTIAL IMPACT WAS ASSESSED USING THE FOLLOWING FORMULA:

SIGNIFICANCE POINTS (SP) = (MAGNITUDE + DURATION + SCALE) X PROBABILITY

THE MAXIMUM VALUE IS 75 SIGNIFICANCE POINTS (SP).

THE RATING OF THE ENVIRONMENTAL EFFECTS IS DONE AS FOLLOWS:

- HIGH (>50 SP),
- MODERATE (25 - 50 SP) OR
- LOW (<25 SP) SIGNIFICANCE.

THIS IS DONE WITH AND WITHOUT MITIGATION MEASURES AND FOR BOTH OCCURRENCE AND SEVERITY, ON THE FOLLOWING BASIS:

ENVIRONMENTAL IMPACT RATING

SP >50	INDICATES HIGH ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT COULD INFLUENCE THE DECISION REGARDLESS OF ANY POSSIBLE MITIGATION. AN IMPACT WHICH COULD INFLUENCE THE DECISION ABOUT WHETHER OR NOT TO PROCEED WITH THE PROJECT.
SP 25 - 50	INDICATES MODERATE ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT COULD HAVE AN INFLUENCE ON THE DECISION UNLESS IT IS MITIGATED. AN IMPACT OR BENEFIT WHICH IS SUFFICIENTLY IMPORTANT TO REQUIRE MANAGEMENT. OF MODERATE SIGNIFICANCE - COULD INFLUENCE THE DECISIONS ABOUT THE PROJECT IF LEFT UNMANAGED.
SP <25	INDICATES LOW ENVIRONMENTAL SIGNIFICANCE.	THE IMPACT WILL NOT HAVE AN INFLUENCE ON THE DECISION. IMPACTS WILL HAVE LITTLE REAL EFFECT AND WHICH SHOULD NOT HAVE AN INFLUENCE ON OR REQUIRE MODIFICATION OF THE PROJECT DESIGN OR ALTERNATIVE MITIGATION.

THIS FOLLOWING SECTION OF THE BAR LIST ALL THE IMPACTS FROM THE PROPOSED DEVELOPMENT TOGETHER WITH THEIR SIGNIFICANCE DETERMINED IN ACCORDANCE WITH THE CRITERIA MENTIONED ABOVE, WITH AND WITHOUT MITIGATION.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

CONSTRUCTION RELATED ACTIVITIES WHICH COULD IMPACT ON THE BIO-PHYSICAL ENVIRONMENT INCLUDE:

- LAND CLEARING;
- CONSTRUCTION OF ACCESS ROADS, BUILDINGS ETC;
- ESTABLISHMENT OF STOCKPILING AND SPOIL AREAS;
- CHEMICAL CONTAMINATION OF THE SOIL BY CONSTRUCTION VEHICLES AND MACHINERY;
- OPERATION OF TEMPORARY CONSTRUCTION CAMPS AND STORAGE OF MATERIALS REQUIRED FOR CONSTRUCTION.

CONSTRUCTION RELATED ACTIVITIES WHICH COULD IMPACT ON THE SOCIAL ENVIRONMENT INCLUDE:

- LAND CLEARING;
- CONSTRUCTION OF ACCESS ROADS;
- VEHICULAR MOVEMENT;
- ESTABLISHMENT OF STOCKPILING AND SPOIL AREAS;
- OPERATION OF TEMPORARY CONSTRUCTION CAMPS AND STORAGE OF MATERIALS REQUIRED FOR CONSTRUCTION;
- NOISE FOR CONSTRUCTION ACTIVITIES AND VEHICLES ETC.,
- VISUAL IMPACT DUE TO CONSTRUCTION ACTIVITIES AND MACHINERY ETC. ON THE PROPOSED SITE.

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

Alternative S1 (preferred alternative)

Direct impacts:

THE CONSTRUCTION PHASE OF THE DEVELOPMENT WILL RESULT IN THE GREATEST IMPACT ON THE ENVIRONMENT. THESE IMPACTS WILL OCCUR ON ANY POTENTIAL SITE. THE SEVERITY OF THESE IMPACTS CAN BE REDUCED BY EFFECTIVELY IMPLEMENTED MITIGATION MEASURES.

A. IMPACTS ON EPHEMERAL STREAMS AND DRAINAGE LINES

NO EPHEMERAL STREAMS AND DRAINAGE LINE HABITATS OCCUR WITHIN THE PROPOSED SITE. INDIRECT IMPACTS ON THESE HABITATS SURROUNDING THE AREA ARE EXPECTED TO BE UNLIKELY. IMPACTS ARE THEREFORE EXPECTED TO BE UNLIKELY AND OF LOW SIGNIFICANCE.

*** IMPACTS ON EPHEMERAL DRAINAGE LINES.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: NFEPA MAPS ALONG WITH AVAILABLE GOOGLE IMAGERY SHOW THAT NO STREAMS ARE PRESENT IN THE CLOSE PROXIMITY OF THE SITE.

EXTEND OF THE IMPACT: N/A

NO GO AREAS: AS NONE OF THESE HABITAT TYPES COULD BE IDENTIFIED WITHIN THE STUDY AREA, NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: THERE IS A SLIGHT LIKELIHOOD FOR SOME IMPACTS SUCH AS AN INCREASE IN SURFACE RUNOFF INTO THE DRAINAGE SYSTEM AND THE SPREAD OF EROSION INTO THE SYSTEM. HOWEVER, THE POSSIBILITY AND EXTENT OF THESE IMPACTS ARE STILL REGARDED AS LOW AND WITH THE NECESSARY MONITORING AND MITIGATION MEASURES IN PLACE, THESE IMPACTS ON THE EPHEMERAL DRAINAGE LINE CAN BE AVOIDED.

B. SOIL AND WATER RESOURCE POLLUTION

- LOSS OR DAMAGE TO AQUATIC RESOURCES – NONE IDENTIFIED;
- THE CONSTRUCTION PHASE MIGHT RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL.
- SOIL COMPACTION DUE TO MOVEMENT OF VEHICLES AND MACHINERY.
- THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION, CREATION OF DUST AND SEDIMENTATION OF STREAMS.
- SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER. FLORA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.
- CEMENT MIXING AND THE STORAGE OF FUEL CAN LEAD TO CONTAMINATION OF THE SOIL AND WATER RESOURCES.
- STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION ON STREAMS IF NOT CONTROLLED.

C. VISUAL INTRUSION & LIGHT POLLUTION

- LITTERING AND ILLEGAL DUMPING ON THE SITE MAY RESULT IN AN ALTERATION OF THE VISUAL CHARACTER OF THE SITE.
- THE DEVELOPMENT WILL RESULT IN THE REMOVAL OF VEGETATION; THE ERECTION OF CONSTRUCTION CAMPS; CONSTRUCTION OF BUILDINGS AS WELL AS THE PRESENCE OF CONSTRUCTION VEHICLES ETC. WHICH MAY ALL BE VISUALLY INTRUSIVE.
- LIGHTS FROM THE CONTRACTOR'S CAMP AND THE CONSTRUCTION SITE MAY BE VISUALLY INTRUSIVE.

D. IMPACT ON THE NATURAL VEGETATION.

THE DEVELOPMENT OF THE PROJECT SITE WILL RESULT IN THE COMPLETE CLEARANCE OF THE VEGETATION. THE

CONSEQUENCES OF THIS IMPACT ARE:

- HABITAT LOSS FOR PLANTS AND ANIMAL SPECIES;
- TOTAL DESTRUCTION IN BIODIVERSITY OF THE SITE DEPENDING ON THE EXTENT OF THE DEVELOPMENT;
- INCREASED POTENTIAL FOR FRAGMENTATION (DEPENDING ON THE LOCATION OF THE IMPACT);
- DISTURBANCE TO PROCESSES MAINTAINING BIODIVERSITY AND ECOSYSTEM GOODS AND SERVICES; AND
- A LOSS OF ECOSYSTEM GOODS AND SERVICES.

PROTECTED SPECIES OCCUR WITHIN THE QUARTER DEGREE GRID SQUARES (2926AA) WHICH INCLUDES THE SITE. THERE IS A POTENTIAL FOR THESE SPECIES AS WELL AS SPECIES PROTECTED WITHIN THE RELEVANT PROVINCIAL AND NATIONAL LEGISLATIONS TO OCCUR WITHIN THE SITE. PLANT SPECIES ARE ESPECIALLY VULNERABLE TO INFRASTRUCTURE DEVELOPMENT DUE TO THE FACT THAT THEY CANNOT MOVE OUT OF THE WAY OF THE CONSTRUCTION ACTIVITIES AND ARE ALSO AFFECTED BY AN OVERALL LOSS OF HABITAT. THREATENED SPECIES (RED DATA SPECIES) INCLUDE THOSE LISTED AS CRITICALLY ENDANGERED, ENDANGERED OR VULNERABLE. FOR ANY OTHER SPECIES A LOSS OF INDIVIDUALS OR LOCALISED POPULATIONS IS UNLIKELY TO LEAD TO A CHANGE IN THE CONSERVATION STATUS OF THE SPECIES. HOWEVER, IN THE CASE OF THREATENED PLANT SPECIES, LOSS OF A POPULATION OR INDIVIDUALS COULD LEAD TO A DIRECT CHANGE IN THE CONSERVATION STATUS OF THE SPECIES AND POSSIBLE EXTINCTION. THIS MAY ARISE IF THE PROPOSED INFRASTRUCTURE IS LOCATED WHERE IT WILL IMPACT ON SUCH INDIVIDUALS OR POPULATIONS.

CONSEQUENCES MAY INCLUDE:

- FRAGMENTATION OF POPULATIONS OF THE AFFECTED SPECIES;
- REDUCTION IN THE AREA OF OCCUPANCY OF THE AFFECTED SPECIES; AND
- A LOSS OF GENETIC VARIATION WITHIN THE AFFECTED SPECIES.

THESE MAY ALL LEAD TO A NEGATIVE CHANGE IN THE CONSERVATION STATUS OF THE AFFECTED SPECIES, WHICH IMPLIES A REDUCTION IN THE CHANCES OF THE SPECIES' OVERALL SURVIVAL. THE MOST RECENT DESCRIPTION OF THE BROADER STUDY AREA'S VEGETATION IS THE GENERAL DESCRIPTION BY MUCINA & RUTHERFORD (2006) RELATING TO THE VEGETATION WHICH IS CONSIDERED TO BE THE "VEGETATION OF SOUTH AFRICA, LESOTHO AND SWAZILAND" AS WELL AS ITS ACCOMPANYING MAP OF THE COUNTRY BY (MUCINA ET AL., 2005). THIS MEMOIR CONTAINS SPECIES INFORMATION AND A COMPREHENSIVE CONSERVATION ASSESSMENT OF ALL VEGETATION TYPES.

THE WINBURG GRASSY SHRUBLAND (GH7) DOMINATES THE VEGETATION OF THE PROJECT SITE, AS WELL AS THE AREAS SURROUNDING THE SITE. ACCORDING TO MUCINA & RUTHERFORD (2006), THE VEGETATION TYPE HAS A CONSERVATION STATUS OF "LEAST THEREATENED".

*** DISTURBANCE TO AND LOSS OF INDIGENOUS NATURAL VEGETATION.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: CONSTRUCTION WILL RESULT IN TRANSFORMATION OF THE SITE, AND LEAD TO DIRECT LOSS OF VEGETATION. CONSEQUENCES OF CLEARING AND LOSS OF INDIGENOUS NATURAL VEGETATION MAY INCLUDE:

- INCREASED VULNERABILITY OF THE REMAINING VEGETATION TO FUTURE DISTURBANCE, INCLUDING EXTREME CLIMATIC EVENTS;
- GENERAL LOSS OF HABITAT FOR SENSITIVE FAUNA AND FLORA SPECIES;
- GENERAL REDUCTION IN BIODIVERSITY;
- INCREASED FRAGMENTATION (DEPENDING ON THE LOCATION OF THE IMPACT) AND ASSOCIATED REDUCED VIABILITY OF SPECIES POPULATIONS;
- ALTERATION OF THE HABITATS SUITABLE FOR PLANT POPULATIONS BY ALTERING THE SURFACE STRUCTURE.

THIS WILL CHANGE SPECIES COMPOSITION AND ASSOCIATED SPECIES INTERACTIONS;

- DISTURBANCE TO PROCESSES MAINTAINING BIODIVERSITY AND ECOSYSTEM GOODS AND SERVICES; AND
- A LOSS OF ECOSYSTEM GOODS AND SERVICES.

EXTEND OF THE IMPACT: LOCAL

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED TO DATE.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: THE AREA IS GENERALLY HOMOGENOUS AND GIVEN THE EXTENSIVE AMOUNT OF POTENTIALLY INTACT VEGETATION IN THE AREA, THERE IS LIKELY TO BE LITTLE OVERALL DISRUPTION TO THE BROAD-SCALE CONNECTIVITY OF THE LANDSCAPE. A SIGNIFICANT LOCAL IMPACT IS LIKELY TO OCCUR, BUT IT IS EXPECTED THAT THERE WOULD REMAIN SUFFICIENT INTACT HABITAT IN THE BROADER AREA TO RETAIN THE OVERALL ECOLOGICAL FUNCTIONING OF THE LANDSCAPE. THE IMPACTS CAN BE LARGELY MITIGATED THROUGH AVOIDANCE OF POTENTIAL SENSITIVE AREAS AND LISTED SPECIES, BY ALLOWING A MINIMUM CLEARANCE OF VEGETATION (RESTRICTED TO THE ABSOLUTE NECESSARY AREAS) ETC.

*** DISTURBANCE OR LOSS OF THREATENED / PROTECTED PLANTS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: THE STUDY AREA. FLORA IS AFFECTED BY OVERALL LOSS OR ALTERATION OF HABITAT AND DUE TO ITS LIMITED ABILITY TO EXTEND OR CHANGE ITS DISTRIBUTION RANGE.

IN THE CASE OF THREATENED PLANT SPECIES, A LOSS OF A POPULATION OR INDIVIDUALS COULD LEAD TO A DIRECT CHANGE IN THE CONSERVATION STATUS OF THE SPECIES AND POSSIBLY EXTINCTION. THIS MAY ARISE IF THE PROPOSED INFRASTRUCTURE IS LOCATED WHERE IT WILL IMPACT ON SUCH INDIVIDUALS OR POPULATIONS. CONSEQUENCES OF THIS MAY INCLUDE:

- FRAGMENTATION AND DECLINE OF POPULATIONS OF THE AFFECTED SPECIES;
- REDUCTION IN THE AREA OF OCCUPANCY OF AFFECTED SPECIES;
- LOSS OF GENETIC VARIATION WITHIN THE AFFECTED SPECIES;
- ALTERATION OF THE HABITAT SUITABLE FOR PLANT ASSOCIATIONS THROUGH ALTERING OF THE SURFACE STRUCTURE. THIS WILL CHANGE THE SPECIES COMPOSITION AND ASSOCIATED SPECIES INTERACTIONS AND THE SPECIES ABILITY TO PERSIST;
- FUTURE EXTINCTION DEBT OF PARTICULAR SPECIES OF FLORA AND FAUNA.

THESE MAY ALL LEAD TO A NEGATIVE CHANGE IN CONSERVATION STATUS OF THE AFFECTED SPECIES, WHICH IMPLIES A REDUCTION IN THE CHANCE OF SURVIVAL OF THE SPECIES.

EXTEND OF THE IMPACT: LOCAL

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED TO DATE. SEVERAL RED-DATA SPECIES HAVE THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA BUT NONE WAS OBSERVED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: THE EXTENT OF THE LOCAL IMPACT ON PROTECTED AND LISTED PLANTS OR TREE SPECIES MAY BE REGARDED AS SIGNIFICANT DUE TO THE NATURE OF THE DEVELOPMENT WHICH WILL ENTAIL THE CLEARANCE OF THE WHOLE SITE, LEADING TO A LOCALISED LOSS OF HABITAT. THE EXTENT, NATURE AND SUBSEQUENTLY THE SIGNIFICANCE OF THIS IMPACT CAN BE REDUCED WITH THE IMPLEMENTATION OF MITIGATION MEASURES, INCLUDING A VEGETATION REHABILITATION PLAN, A PLAN FOR SEARCH AND RESCUE OF PROTECTED AND LISTED PLANTS PRIOR TO CONSTRUCTION, AND AVOIDANCE WHERE POSSIBLE. FURTHERMORE, DUE TO THE EXTENT AND AVAILABILITY OF HABITAT SURROUNDING THE PROPOSED SITE, THIS LOCALISED IMPACT WILL MOST LIKELY NOT HAVE A SIGNIFICANT IMPACT ON THE GREATER AREA OF OCCUPANCY OF AFFECTED SPECIES AS

WELL AS A LOSS OF GENETIC VARIATION. THEREFORE THE SIGNIFICANCE REGARDING A POTENTIAL CHANGE IN STATUS AND/OR THE OVERALL SURVIVAL OF THE SPECIES CAN BE REGARDED AS LOW AND UNLIKELY.

*** LOSS OF PROTECTED PLANTS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: ACCORDING TO THE FREE STATE NATURE CONSERVATION ORDINANCE, NO PERSON MAY CUT, DISTURB, DAMAGE OR DESTROY ANY LISTED PROTECTED SPECIES. AT THIS STAGE, IT IS EXPECTED THAT THE PRESENCE OF PROTECTED TREES WITHIN THE SITE WILL BE LOW.

EXTEND OF THE IMPACT: LOCAL- SITE

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED TO DATE.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: THE EXTENT, NATURE AND SUBSEQUENTLY THE SIGNIFICANCE OF THIS IMPACT CAN BE REDUCED WITH MITIGATION MEASURES, INCLUDING THE IMPLEMENTATION OF A VEGETATION REHABILITATION PLAN AND AVOIDANCE WHERE POSSIBLE. FURTHERMORE, DUE TO THE EXTENT AND AVAILABILITY OF HABITAT SURROUNDING THE PROPOSED SITE, AND WITH A PROTECTED TREE SEARCH AND RESCUE PLAN IN PLACE WHERE APPLICABLE, THIS LOCALISED IMPACT WILL MOST LIKELY NOT HAVE A SIGNIFICANT IMPACT ON THE GREATER AREA OF OCCUPANCY OF AFFECTED SPECIES AS WELL AS A LOSS OF GENETIC VARIATION. THUS THE SIGNIFICANCE REGARDING A POTENTIAL CHANGE IN STATUS AND/OR THE OVERALL SURVIVAL OF THE SPECIES CAN BE REGARDED AS LOW.

E. DIRECT FAUNAL IMPACTS.

FAUNAL SPECIES WILL PRIMARILY BE AFFECTED BY TRANSFORMATION AND AN OVERALL LOSS OF HABITAT. INCREASED LEVELS OF NOISE, POLLUTION, DISTURBANCE AND HUMAN PRESENCE WILL HAVE A NEGATIVE IMPACT ON FAUNA. SENSITIVE AND SHY FAUNA WILL MOVE AWAY FROM THE AREA DURING THE CONSTRUCTION PHASE AS A RESULT OF THE NOISE AND HUMAN ACTIVITIES PRESENT, WHILE SOME SLOW-MOVING SPECIES AND SPECIES CONFINED AND DEPENDANT ON SPECIFIED HABITATS WOULD NOT BE ABLE TO AVOID THE CONSTRUCTION ACTIVITIES AND MIGHT BE KILLED DURING THE CONSTRUCTION PERIOD. SOME MAMMALS AND REPTILES WOULD BE VULNERABLE TO ILLEGAL COLLECTION OR POACHING DURING THE CONSTRUCTION PHASE AS A RESULT OF THE LARGE NUMBER OF CONSTRUCTION PERSONNEL THAT ARE LIKELY TO BE PRESENT.

THREATENED SPECIES (RED DATA SPECIES) INCLUDE THOSE LISTED AS CRITICALLY ENDANGERED, ENDANGERED OR VULNERABLE. FOR ANY OTHER SPECIES A LOSS OF INDIVIDUALS OR LOCALISED POPULATIONS IS UNLIKELY TO LEAD TO A CHANGE IN THE CONSERVATION STATUS OF THE SPECIES. HOWEVER, IN THE CASE OF THREATENED FAUNAL SPECIES, LOSS OF A POPULATION OR INDIVIDUALS COULD LEAD TO A DIRECT CHANGE IN THE CONSERVATION STATUS OF THE SPECIES AND POSSIBLE EXTINCTION. THIS MAY ARISE IF THE PROPOSED INFRASTRUCTURE IS LOCATED WHERE IT WILL IMPACT ON SUCH INDIVIDUAL OR POPULATIONS. CONSEQUENCES MAY INCLUDE:

- FRAGMENTATION OF POPULATIONS OF AFFECTED SPECIES;
- REDUCTION IN THE AREA OF OCCUPANCY OF THE AFFECTED SPECIES; AND
- A LOSS OF GENETIC VARIATION WITHIN THE AFFECTED SPECIES.

THESE MAY ALL LEAD TO A NEGATIVE CHANGE IN THE CONSERVATION STATUS OF THE AFFECTED SPECIES, WHICH IMPLIES A REDUCTION IN THE CHANCES OF THE SPECIES' OVERALL SURVIVAL.

DISTURBANCE OF FAUNAL SPECIES CAN BE MAINTAINED TO A MINIMUM AND LOW SIGNIFICANCE BY IMPLEMENTING EFFECTIVE MITIGATION MEASURES SUCH AS THE RELOCATION OF AFFECTED FAUNA AND AVOIDANCE OF HABITATS.

*** LOSS OF HABITAT FOR FAUNA SPECIES OF CONSERVATION CONCERN.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: FAUNA SPECIES OF CONSERVATION CONCERN MAY BE INDIRECTLY AFFECTED BY A LOSS OF OR ALTERATION OF HABITAT AND ASSOCIATED RESOURCES. ANIMALS ARE MOBILE AND, IN MOST CASES, CAN MOVE AWAY FROM A POTENTIAL THREAT, UNLESS THEY ARE BOUND TO A SPECIFIC HABITAT THAT IS ALSO SPATIALLY LIMITED AND WILL BE NEGATIVELY IMPACTED BY A DEVELOPMENT. NEVERTHELESS, THE PROPOSED DEVELOPMENT WILL REDUCE THE EXTENT OF HABITAT AVAILABLE TO FAUNA.

FOR ANY SPECIES, A LOSS OF INDIVIDUALS OR LOCALISED POPULATIONS IS UNLIKELY TO LEAD TO A CHANGE IN THE CONSERVATION STATUS OF THE SPECIES.

THERE ARE A NUMBER OF RED DATA SPECIES THAT HAVE BEEN RECORDED FOR THE WIDER AREA WITHIN WHICH THE STUDY AREA IS LOCATED. THEIR PRESENCE AND THE NECESSITY TO KEEP THEIR HABITATS INTACT IN THE STUDY AREA NEED TO BE CONFIRMED DURING A FIELD SURVEY.

EXTEND OF THE IMPACT: LOCAL- SITE

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED TO DATE.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: SOME HABITAT LOSS FOR FAUNAL SPECIES IS AN INEVITABLE CONSEQUENCE OF THE DEVELOPMENT BUT IS NOT LIKELY TO BE OF BROADER SIGNIFICANCE. DIRECT FAUNAL DISTURBANCE WOULD BE GREATEST DURING THE CONSTRUCTION PHASE.

F. SOIL EROSION AND ASSOCIATED DEGRADATION OF ECOSYSTEMS

SOIL EROSION IS A FREQUENT RISK ASSOCIATED WITH DEVELOPMENT ON ACCOUNT OF THE VEGETATION CLEARING AND DISTURBANCE AND MAY CONTINUE TO OCCUR THROUGHOUT THE OPERATION PHASE. THE VEGETATION CLEARANCE DURING WILL RESULT IN AN INCREASE IN RUNOFF DURING INTENSE RAINFALL EVENTS AND MAY EXAGGERATE THE EFFECTS OF EROSION.

WITH EFFECTIVE MITIGATION MEASURES IN PLACE, INCLUDING IMPLEMENTATION OF AN APPROPRIATE STORM WATER MANAGEMENT PLAN, AS WELL AS REGULAR MONITORING OF THE OCCURRENCE, SPREAD AND POTENTIAL CUMULATIVE EFFECTS OF EROSION MAY BE LIMITED TO AN ABSOLUTE MINIMUM.

G. TRAFFIC & ACCESS

- INCREASED TRAFFIC CONGESTION COULD POSSIBLY OCCUR AS A RESULT OF CONSTRUCTION VEHICLES MOVING ONTO AND OFF THE SITE DURING CONSTRUCTION.

H. NOISE POLLUTION

- THERE WILL BE AN INCREASE IN NOISE DURING THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT DUE TO WORKING OF MACHINERY, EQUIPMENT AND VEHICLES AS WELL AS HAMMERING AND BLASTING IF REQUIRED.

I. ATMOSPHERE POLLUTION AND ODOURS

- THE INCREASED DUST, SMOKE AND EMISSIONS RESULTING FROM CONSTRUCTION ACTIVITIES (VEGETATION CLEARING, SITE PREPARATION, EARTHWORKS, BLASTING, UNCOVERED TOPSOIL STOCKPILES AND SAND PILES, LOADS ON VEHICLES AND THE BURNING OF WASTE); VEHICLES, PLANT AND MACHINERY POSES A HEALTH HAZARD

TO CONSTRUCTION STAFF AND PEOPLE LIVING AND WORKING IN THE VICINITY OF THE SITE.

- AIR POLLUTION SHOULD ANY CLEARED VEGETATION BE BURNED ON SITE.

J. SAFETY & SECURITY

- A CONSTRUCTION SITE CAN BE A DANGEROUS PLACE AND THUS COULD RESULT IN HARM TO PEOPLE AND PROPERTY.

K. HYGIENE

- THE HEALTH OF WORKERS MAY BE ADVERSELY AFFECTED BY UNHYGIENIC AND DANGEROUS WORKING CONDITIONS ON THE CONSTRUCTION SITE.
- WORKERS MAY BE EXPOSED TO DISEASES SUCH AS TICK BITE FEVER & HIV-AIDS ETC.

Indirect impacts:

A. CONSTRUCTION TRAFFIC

- CONSTRUCTION VEHICLES WILL RESULT IN INCREASED TRAFFIC ON ADJACENT ROADS.

B. SECURITY

CONSTRUCTION SITES BY THEIR NATURE ACT AS A MAGNET TO THE UNEMPLOYED, SO LARGE NUMBERS OF PEOPLE MAY GATHER ON OR AROUND THE SITE. THESE PEOPLE MUST BE KEPT OF THE SITE FOR SAFETY REASONS. INCREASE IN CRIME MIGHT BE POSSIBLE DURING THE CONSTRUCTION PHASE SHOULD THE DEVELOPER NOT IMPLEMENT GOOD MANAGEMENT PRACTICES ETC. CRIMINALS MAY ALSO UTILISE THE OPPORTUNITY TO STEAL ITEMS FROM THE SITE AND SURROUNDING PROPERTIES.

C. ALIEN PLANT INVASION

MAJOR FACTORS CONTRIBUTING TO INVASION BY ALIEN INVADER PLANTS INCLUDES HABITAT DISTURBANCE AND ASSOCIATED DESTRUCTION OF INDIGENOUS VEGETATION. CONSEQUENCES OF THIS MAY INCLUDE:

- FURTHER LOSS AND DISPLACEMENT OF INDIGENOUS VEGETATION, EVEN OUTSIDE OF THE DEVELOPMENT FOOTPRINT;
- CHANGE IN VEGETATION STRUCTURE LEADING TO CHANGE IN VARIOUS HABITAT CHARACTERISTICS;
- CHANGE IN PLANT SPECIES COMPOSITION;
- CHANGE IN SOIL CHEMISTRY PROPERTIES; AND
- CHANGE IN THE FLAMMABILITY OF VEGETATION, DEPENDING ON ALIEN SPECIES.

ALTHOUGH THE POTENTIAL SEVERITY OF THIS IMPACT MAY BE HIGH, IT CAN BE EASILY MITIGATED THROUGH REGULAR ALIEN CONTROL. IMPACTS ARE THEREFORE EXPECTED TO BE OF LOW SIGNIFICANCE WITH APPROPRIATE MITIGATION.

*** SPREAD OF DECLARED WEEDS AND ALIEN INVADER PLANTS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: MAJOR FACTORS CONTRIBUTING TO INVASION BY ALIEN INVADER PLANTS INCLUDE EXCESSIVE DISTURBANCE TO VEGETATION, CREATING A WINDOW OF OPPORTUNITY FOR THE ESTABLISHMENT OF ALIEN INVASIVE SPECIES. THE POTENTIAL FOR ALIEN INVASIVE SPECIES TO BE PRESENT IN AND AROUND THE STUDY AREA IS REGARDED AS HIGH. A HIGH NUMBER OF ALIEN INVASIVE SPECIES HAVE BEEN RECORDED IN THE WIDER AREA ACCORDING TO THE SANBI DATABASE. THE EXTENT TO WHICH THE SITE ALREADY

CONTAINS ALIEN PLANTS WILL BE DETERMINED IN THE EIA PHASE. CONSEQUENCES OF THE ESTABLISHMENT AND SPREAD OF INVASIVE PLANTS INCLUDE:

- LOSS OF INDIGENOUS VEGETATION;
- CHANGE IN VEGETATION STRUCTURE LEADING TO CHANGE IN OR LOSS OF VARIOUS HABITAT CHARACTERISTICS;
- CHANGE IN PLANT SPECIES COMPOSITION;
- CHANGE IN FLAMMABILITY OF VEGETATION, DEPENDING ON ALIEN SPECIES;
- HYDROLOGICAL IMPACTS DUE TO INCREASED TRANSPIRATION AND RUNOFF.

EXTEND OF THE IMPACT: LOCAL

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: WITH MITIGATION MEASURES, INCLUDING REGULAR MONITORING, EFFECTIVE ERADICATION AND MANAGEMENT METHODS IN PLACE THE SIGNIFICANCE OF IMPACTS ASSOCIATED WITH INVASIVE ALIEN PLANTS IS EXPECTED TO BE LOW AND LOCAL TO THE SITE.

D. SOCIO ECONOMIC

- CONSTRUCTING THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE VARIOUS RESIDENTIAL UNITS. INDIRECTLY, JOBS WILL ALSO BE CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES. FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT IN THE AREAS SURROUNDING THE DEVELOPMENT SITE. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.

Cumulative impacts:

A. SURFACE WATER POLLUTION

- SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE WATER RESOURCES. THIS SURFACE WATER WILL FLOW INTO THE DRAINAGE LINES POLLUTING DOWNSTREAM WATER RESOURCES. FLORA AND FAUNA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.

B. INCREASED RUN OFF OF WATER

- THE INCREASE IN PAVED AREAS SUCH AS THE CONSTRUCTION CAMP, ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN EROSION OF AREAS THAT ARE NOT PAVED.
- STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.

C. GROUND WATER POLLUTION

- THE CONSTRUCTION PHASE MIGHT RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL.
- THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION AND SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.
- SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY

HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER RESOURCES.

D. SOCIO ECONOMIC

- THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. INDIRECTLY, JOBS ARE ALSO CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES. FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT IN THE AREAS SURROUNDING THE DEVELOPMENT SITE. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.

E. FAUNAL DISPLACEMENT

- THE DISPLACEMENT OF FAUNA ON SITE AND SURROUNDINGS AS A RESULT OF AN INCREASE IN AMBIENT NOISES AND VIBRATIONS IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE CONSTRUCTION PHASE. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) DURING THE PLANNING PHASE, THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE.

No-go alternative (compulsory)

Direct impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING POTENTIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- NO ADDED POSSIBILITY OF SOIL AND GROUND WATER POLLUTION.
- NO ADDED INCREASE IN TRAFFIC VOLUMES DUE TO CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED NOISE POLLUTION THAT CAN BE ASSOCIATED WITH CONSTRUCTION RELATED ACTIVITIES, MACHINERY AND CONSTRUCTION VEHICLES ACCESSING THE SITE.
- NO ADDED IMPACT ON ATMOSPHERE POLLUTION AND ODOURS FROM CONSTRUCTION ACTIVITIES AND VEHICLES.
- NO ADDED VISUAL INTRUSION & LIGHT POLLUTION ON SURROUNDING AREAS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS. NO ADDED IMPACT ON THE LIMITED FAUNA THAT CURRENTLY EXISTS ON THE SITE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND LOCATED DIRECTLY ADJACENT TO EXISTING RESIDENTIAL AREA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING APPROVED:

- NO JOBS WILL BE CREATED. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL STAY IN ITS CURRENT STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.

- ADDITIONAL RESIDENTIAL UNITS WILL NOT BE PROVIDED. THE PROPOSED SITE THAT IS SITUATED WITHIN THE EARMARKED AREA FOR FUTURE RESIDENTIAL DEVELOPMENT WILL NOT GIVE EFFECT TO MANGAUNG METRO MUNICIPALITY'S SDF.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE WILL NOT OCCUR:

- INCREASE IN CONSTRUCTION TRAFFIC VOLUMES.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- POSSIBLE CRIME FROM MORE PEOPLE ACCESSING THE AREA DURING CONSTRUCTION PHASE WILL NOT BE A PROBLEM.
- MMM WILL NOT GET MORE IN RATES AND TAXES FROM DEVELOPING THE PROPOSED SITE.

THE INDIRECT IMPACTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT NO TACKING PLACE INCLUDE:

- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE, ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.

IMPACT CLASSIFICATION - CONSTRUCTION PHASE OF DEVELOPMENT

IMPACT	ASSESSMENT				POINTS	SIGNIFICANCE		STATUS
	DURATION	MAGNITUDE	EXTENT	PROBABILITY		WITH MITIGATION	WITHOUT MITIGATION	
BIOPHYSICAL ENVIRONMENT:								
FAUNA & FLORA								
POTENTIAL LOSS OF INDIGENOUS FLORA AND HABITAT DUE TO VEGETATION CLEARANCE OR DISTURBANCE.	5	5	2	5	60	LOW	HIGH	NEGATIVE
LOSS OF THREATENED OR PROTECTED FLORA OR FAUNA SPECIES.	5	5	2	5	60	LOW	HIGH	NEGATIVE
LOSS OF HABITAT, HABITAT FRAGMENTATION AND POSSIBLE LOSS OF IMPORTANT SPECIES ON SITE	5	5	2	5	60	LOW	HIGH	NEGATIVE
THERE IS A POTENTIAL FOR AN INCREASED RISK TO ANIMALS FALLING INTO THE OPEN TRENCHES DURING CONSTRUCTION.	2	2	1	2	10	LOW	LOW	NEGATIVE
THE NOISES AND VIBRATIONS RESULTING FROM MACHINERY AND BLASTING IF REQUIRED COULD IMPACT ON FAUNAL SPECIES OUTSIDE THE SITE.	2	3	2	3	21	LOW	LOW	NEGATIVE
INJURY OR EVEN LOSS OF FAUNA IN THE AREA THROUGH POACHING AND HUNTING.	2	2	2	2	12	LOW	LOW	NEGATIVE
POLLUTION RESULTING FROM THE CONSTRUCTION SITE SUCH AS LITTER, SOLID WASTE, SEWERAGE AND SPILLS OF OIL, LUBRICANTS AND FUEL COULD REDUCE THE QUALITY OF THE HABITATS IN THE SURROUNDING AREA AND DIRECTLY IMPACT ON THE HEALTH AND WELFARE OF THE FAUNA AND FLORA SURROUNDING THE SITE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE
INCREASE IN VERMIN POPULATIONS.	2	2	2	3	18	LOW	LOW	NEGATIVE
SPREAD OF DECLARED WEEDS AND ALIEN INVADER PLANTS.	2	3	2	4	28	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- PRECONSTRUCTION ENVIRONMENTAL INDUCTION FOR ALL CONSTRUCTION STAFF ON SITE TO ENSURE THAT BASIC ENVIRONMENTAL PRINCIPLES ARE ADHERED TO;
- THE AREAS TO BE CLEARED AS WELL AS THE CONSTRUCTION AREA SHOULD BE CLEARLY DEMARCATED;
- ALL CONSTRUCTION VEHICLES SHOULD ADHERE TO CLEARLY DEFINED AND DEMARCATED ROADS;
- DUST SUPPRESSION AND EROSION MANAGEMENT SHOULD BE AN INTEGRATED COMPONENT OF THE CONSTRUCTION APPROACH;
- NO DUMPING OF BUILDING WASTE OR SPOIL MATERIAL FROM THE DEVELOPMENT SHOULD TAKE PLACE ON AREAS OTHER THAN A LICENCED LANDFILL SITE;
- ALL HAZARDOUS MATERIALS SHOULD BE STORED APPROPRIATELY TO PREVENT CONTAMINATION OF THE PROJECT SITE. ANY ACCIDENTAL CHEMICAL, FUEL AND OIL SPILLS THAT OCCUR AT THE PROJECT SITE SHOULD BE CLEANED UP APPROPRIATELY AS RELATED TO THE NATURE OF THE SPILL.
- WEED CONTROL MEASURES MUST BE APPLIED TO ERADICATE THE NOXIOUS WEEDS (CATEGORY 1A &1B SPECIES) ON DISTURBED AREAS;
- A SEARCH AND RESCUE OPERATION MUST BE CONDUCTED BEFORE ANY CONSTRUCTION ACTIVITIES COMMENCE IN ORDER TO COLLECT ALL PROTECTED SPECIES WHICH CAN BE TRANSLOCATED TO A SUITABLE HABITAT NEARBY
- ANY FAUNA THREATENED BY THE CONSTRUCTION AND OPERATION ACTIVITIES SHOULD BE REMOVED TO SAFETY BY THE ECO OR APPROPRIATELY QUALIFIED ENVIRONMENTAL OFFICER.
- ALL CONSTRUCTION VEHICLES SHOULD ADHERE TO A LOW SPEED LIMIT (<30KM/H) TO AVOID COLLISIONS WITH SUSCEPTIBLE SPECIES SUCH AS SNAKES AND TORTOISES.
- IF TRENCHES NEED TO BE DUG FOR ELECTRICAL CABLING OR OTHER PURPOSE, THESE SHOULD NOT BE LEFT OPEN FOR EXTENDED PERIODS OF TIME AS FAUNA MAY FALL IN AND BECOME TRAPPED IN THEM.
- TRENCHES WHICH ARE STANDING OPEN SHOULD HAVE PLACES WHERE THERE ARE SOIL RAMPS ALLOWING FAUNA TO ESCAPE THE TRENCH.
- THE REMOVAL OF VEGETATION SHOULD BE CONFINED TO CONSTRUCTION SITES. CARE MUST BE TAKEN THAT UNNECESSARY CLEARANCE OF VEGETATION DOES NOT TAKE PLACE. WHERE POSSIBLE, NATURAL VEGETATION MUST BE RETAINED OR PRUNED ESPECIALLY THE WILD OLIVE AND KAREE TREES. A PERMIT NEEDS TO BE OBTAINED FROM DESTEA IF ANY PROTECTED, THREATENED OR NEAR THREATENED TREE SPECIES NEEDS TO BE REMOVED. VARIOUS SPECIES OF INDIGENOUS TREES AND BUSH ON PRIVATE LAND ARE PROTECTED BY LAW (NATIONAL FOREST ACT, 1998 (ACT 84 OF 1998)) IN TERMS OF WHICH IT IS NECESSARY TO OBTAIN A PERMIT FROM THE RELEVANT AUTHORITY IN ORDER TO CUT THEM.
- NO LITTERING BY CONSTRUCTION WORKERS IS PERMITTED. ANY LITTER WILL BE COLLECTED AND REMOVED OFF-SITE TO A REGISTERED WASTE SITE.
- CLEARED INDIGENOUS VEGETATION CAN BE STOCKPILED FOR POSSIBLE REUSE IN LATER REHABILITATION OR LANDSCAPING, OR AS A BRUSH PACK FOR EROSION PREVENTION.
- STOCKPILES OF VEGETATION ARE ONLY TO BE LOCATED IN AREAS APPROVED BY THE ECO, AND MAY NOT EXCEED 2 M IN HEIGHT. METHODS OF STACKING MUST TAKE COGNISANCE OF THE POSSIBLE CREATION OF A FIRE HAZARD.
- TABLE 3 FROM THE CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT NO. 43 OF 1983) (CARA) REGULATION 15 LISTS ALL ALIEN PLANTS THAT OCCUR IN SOUTH AFRICA. NONE OF THESE SPECIES MAY BE INTRODUCED AND THEY MUST ALL BE CONTROLLED AND REMOVED FROM THE PROPOSED SITE AS WELL AS THE SITE TO BE SUBDIVIDED.
- CARE MUST BE TAKEN TO AVOID THE INTRODUCTION OF ALIEN PLANT SPECIES TO THE SITE AND SURROUNDING AREAS.
- ALIEN VEGETATION RE-GROWTH MUST BE CONTROLLED THROUGHOUT THE ENTIRE SITE DURING THE CONSTRUCTION PERIOD.
- THE ILLEGAL HUNTING OR CAPTURE OF WILDLIFE WILL NOT BE TOLERATED. SUCH MATTERS WILL BE HANDED OVER TO THE RELEVANT AUTHORITIES FOR PROSECUTION.
- CONSTRUCTION TIME MUST BE KEPT TO A MINIMUM FOLLOWED BY SPEEDY REHABILITATION TO RESTORE HABITAT AND BIODIVERSITY INTEGRITY WHERE REQUIRED.
- ALL REASONABLE MEASURES SHOULD BE TAKEN TO ENSURE THAT TREES ARE NOT DAMAGED. NO UNCONTROLLED

COLLECTION OF FIREWOOD MAY BE ALLOWED ON THE PROPERTY AND SURROUNDINGS.

- THE SPREADING OF EXOTIC INVASIVE PLANT SPECIES AT DISTURBED AREAS SHOULD BE PREVENTED. THE PLANT SPECIES SHOULD ONLY BE REMOVED THROUGH TREE CUTTING AND THE MANUAL REMOVAL OF WEEDS. THE USE OF HERBICIDES TO TREAT THE REMAINING STUMPS SHOULD ONLY BE UNDERTAKEN AFTER CONSULTING AN ECOLOGIST.
- NO OPEN FIRES ARE ALLOWED OUTSIDE DESIGNATED COOKING AREAS.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF.
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).
- THE CLEARED VEGETATION SHOULD NOT BE BURNED, BUT TAKEN TO THE NEAREST AVAILABLE MUNICIPAL DISPOSAL SITE OR MADE AVAILABLE FOR USE IN A CONTROLLED MANNER.
- SOLID WASTE MUST BE KEPT IN ADEQUATE ANIMAL PROOF WASTE. BUILDING RUBBLE AND DOMESTIC WASTE SHOULD BE REMOVED ON A REGULAR BASIS TO THE CLOSEST AVAILABLE MUNICIPAL DUMPING SITE.
- NO POISON SHOULD BE USED TO CONTROL ANY ANIMALS WITHOUT THE INPUT OF AN ECOLOGIST/ZOOLOGIST.
- REGULAR CLEAN-UP PROGRAMS SHOULD BE PUT INTO EFFECT ALONG THE ACCESS ROAD AND THROUGHOUT THE PREMISES TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.
- THE REMOVAL AND CLEARING OF VEGETATION WILL NOT BE ALLOWED UNTIL AN APPROVAL IS OBTAINED FROM THE ENVIRONMENTAL CONTROL OFFICER.
- THE IMPORTED SAND USED FOR BEDDING MATERIALS WILL BE FREE OF ALIEN SEEDS AND WILL NOT BE TAKEN FROM ALIEN INFESTED RIVERBEDS.

AIR QUALITY								
INCREASED DUST, SMOKE AND EMISSIONS RESULTING FROM CONSTRUCTION ACTIVITIES.	2	3	2	4	28	LOW	MODERATE	NEGATIVE
AIR POLLUTION FROM VELD FIRES AND BURNING OF WASTE ON SITE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE CONSTRUCTION AREA IS TO BE PHYSICALLY SCREENED OFF WITH A SOLID BOUNDARY WALL AT LEAST 1.8M IN HEIGHT, TO PREVENT DUST FROM BEING BLOWN ONTO THE ROAD OR NEIGHBOURING PROPERTIES.
- DUST GENERATION SHOULD BE KEPT TO A MINIMUM. DUST MUST BE SUPPRESSED ON ACCESS ROADS AND CONSTRUCTION AREAS DURING DRY PERIODS BY THE REGULAR APPLICATION OF WATER OR A BIODEGRADABLE SOIL STABILIZATION AGENT.
- SPEED LIMITS MUST BE IMPLEMENTED IN ALL AREAS, INCLUDING PUBLIC ROADS AND PRIVATE PROPERTY TO LIMIT THE LEVELS OF DUST POLLUTION.
- IT IS RECOMMENDED THAT THE CLEARING OF VEGETATION FROM THE SITE SHOULD BE SELECTIVE AND DONE JUST BEFORE CONSTRUCTION SO AS TO MINIMIZE EROSION AND DUST.
- SHOULD CONSTRUCTION IN AREAS THAT HAVE BEEN STRIPPED NOT BE COMMENCING WITHIN A SHORT PERIOD OF TIME THE EXPOSED AREAS SHALL BE RE-VEGETATED OR STABILIZED. SOIL STABILIZING MEASURES COULD INCLUDE ROTOVATING IN STRAW BALES (AT A RATE OF 1 BALE/20 M^2), APPLYING MULCHING OR BRUSH PACKING, OR CREATING WINDBREAKS USING BRUSH OR BALES.
- SAND STOCKPILES ARE TO BE COVERED WITH HESSIAN, SHADE CLOTH OR DPC PLASTIC.
- WHERE POSSIBLE STOCKPILES ARE TO BE LOCATED IN SHELTERED AREAS AND THE USABLE/CUT FACE ORIENTATED AWAY FROM THE DIRECTION OF THE PREVAILING WIND FOR THAT SEASON.
- EXCAVATING, HANDLING OR TRANSPORTING ERODIBLE MATERIALS IN HIGH WIND OR WHEN DUST PLUMES ARE VISIBLE SHALL BE AVOIDED.

- ALL MATERIALS TRANSPORTED TO SITE MUST BE TRANSPORTED IN SUCH A MANNER THAT THEY DO NOT FLY OR FALL OFF THE VEHICLE. THIS MAY NECESSITATE COVERING OR WETTING FRIABLE MATERIALS.
- NO BURNING OF REFUSE OR VEGETATION IS PERMITTED.
- VEHICLES AND CONSTRUCTION EQUIPMENT MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE SMOKE. THE NUMBER OF TRIPS MADE BY CONSTRUCTION VEHICLES WILL BE MINIMIZED TO REDUCE AIR POLLUTION.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF; AND
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).
- THE CLEARED VEGETATION SHOULD NOT BE BURNED ALONG THE DIFFERENT CONSTRUCTION AREAS, BUT TAKEN TO THE NEAREST AVAILABLE MUNICIPAL DISPOSAL SITE OR MADE AVAILABLE FOR USE IN A CONTROLLED MANNER.

NOISE								
ELEVATED NOISE LEVELS IN THE AREA AS A RESULT OF CONSTRUCTION AND BLASTING ACTIVITIES IF REQUIRED.	2	3	2	5	35	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- NOISE LEVELS SHALL BE KEPT WITHIN ACCEPTABLE LIMITS, AND CONSTRUCTION CREW MUST ABIDE BY NATIONAL NOISE LAWS AND MMM'S BY-LAWS REGARDING NOISE.
- IF WORK IS TO BE UNDERTAKEN OUTSIDE OF NORMAL WORK HOURS PERMISSION, MUST BE OBTAINED. PRIOR TO COMMENCING ANY SUCH ACTIVITY. THE CONTRACTOR IS ALSO TO ADVISE THE POTENTIALLY AFFECTED NEIGHBOURING RESIDENTS. NOTIFICATION COULD INCLUDE LETTER-DROPS.
- NO SOUND AMPLIFICATION EQUIPMENT SUCH AS SIRENS, LOUD HAILERS OR HOOTERS ARE TO BE USED ON SITE EXCEPT IN EMERGENCIES AND NO AMPLIFIED MUSIC IS PERMITTED ON SITE.
- CONSTRUCTION/MANAGEMENT ACTIVITIES INVOLVING USE OF THE SERVICE VEHICLE, MACHINERY, HAMMERING ETC., MUST BE LIMITED TO THE HOURS BETWEEN 8:00AM AND 5:00PM WEEKDAYS; 7:00AM AND 1:30PM ON SATURDAYS; NO NOISY ACTIVITIES MAY TAKE PLACE ON SUNDAYS OR PUBLIC HOLIDAYS.
- ACTIVITIES THAT MAY DISRUPT NEIGHBOURS (E.G. DELIVERY TRUCKS, EXCESSIVELY NOISY ACTIVITIES ETC.) MUST BE PRECEDED BY NOTICE BEING GIVEN TO THE AFFECTED NEIGHBOURS AT LEAST 24 HOURS IN ADVANCE.
- EQUIPMENT THAT IS FITTED WITH NOISE REDUCTION FACILITIES (E.G. SIDE FLAPS, SILENCERS ETC.) MUST BE USED AS PER OPERATING INSTRUCTIONS AND MAINTAINED PROPERLY DURING SITE OPERATIONS.
- VEHICLES AND CONSTRUCTION EQUIPMENT MUST BE WELL SERVICED SO THAT IT DOES NOT PRODUCE EXCESSIVE NOISE.
- IT SHOULD BE ENSURED THAT THE CONSTRUCTION PERSONNEL COMPLY WITH SPEED RESTRICTIONS OF 20-30 KM PER HOUR ON THE ACCESS ROAD AND WITHIN THE SITE BOUNDARIES TO REDUCE THE GENERATION OF NOISE.

AESTHETIC ENVIRONMENT								
VISUAL DISTURBANCE TO SURROUNDING RESIDENTS AS A RESULT OF THE TEMPORARY STRUCTURES AND ACTIVITIES REQUIRED LIKE VEGETATION REMOVAL AND PRESENCE OF ASSOCIATED CONSTRUCTION	2	3	3	5	40	LOW	MODERATE	NEGATIVE

MATERIAL AND VEHICLES/MACHINERY ETC.								
LITTERING AND ILLEGAL DUMPING ON SITE MAY RESULT IN AN ALTERATION OF THE VISUAL CHARACTER OF THE SITE.	2	3	1	4	24	LOW	LOW	NEGATIVE
VISUAL IMPACT FROM LIGHTS AT THE CONTRACTOR'S CAMP AND CONSTRUCTION SITE.	2	3	3	2	16	LOW	LOW	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED AT AND AROUND THE CONSTRUCTION SITE. THE SITE MUST BE MANAGED APPROPRIATELY AND ALL RUBBISH AND RUBBLE REMOVED TO A RECOGNIZED WASTE FACILITY. • THE CONSTRUCTION CAMP AND STOCKPILED MATERIAL MUST BE POSITIONED AND MANAGED IN AN ECOLOGICAL SOUND MANNER, MINIMIZING THE POTENTIAL NEGATIVELY IMPACTS ON THE SURROUNDING ENVIRONMENT. • THE PROPOSED SITE IS TO BE PHYSICALLY SCREENED OFF WITH A SOLID WALL OF AT LEAST 1.8M IN HEIGHT. • EXCESS SOIL AND BEDROCK SHOULD BE DISPOSED OF AT AN APPROPRIATE FACILITY. • WASTE MUST NOT REMAIN ON SITE FOR MORE THAN 2 WEEKS. • REFUSE BINS MUST BE PROVIDED BY THE CONTRACTOR FOR RUBBISH TO BE PLACE IN BY STAFF. • EXCESS CONCRETE MUST BE DISPOSED OF CORRECTLY AND AT AN APPROPRIATE FACILITY. • NO WASTE MAY BE PLACED IN ANY EXCAVATIONS ON SITE. • THE CONSTRUCTION CAMP MUST BE LOCATED AS FAR FROM OTHER PROPERTIES AS POSSIBLE. • INDIGENOUS PLANTS OR TREES SHOULD BE PLANTED NEXT TO BUILDINGS TO BREAK THE LINES OF THE BUILDINGS MAKING THEM LESS VISUALLY INTRUSIVE. • ADVERTISING SIGNS SHOULD BLEND IN WITH THE ENVIRONMENT. • LIGHTING ON SITE IS TO BE SUFFICIENT FOR SAFETY AND SECURITY PURPOSES, BUT SHALL NOT BE INTRUSIVE TO NEIGHBOURING RESIDENTS, DISTURB WILDLIFE, OR INTERFERE WITH ROAD TRAFFIC. • CONSTRUCTION / MANAGEMENT ACTIVITIES MUST BE LIMITED TO THE DAYLIGHT HOURS BETWEEN 7:00AM AND 5:00PM WEEKDAYS; 7:00AM AND 1:30PM ON SATURDAYS. • SHOULD OVERTIME/NIGHT WORK BE AUTHORIZED, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT LIGHTING DOES NOT CAUSE UNDUE DISTURBANCE TO NEIGHBOURING RESIDENTS. IN THIS SITUATION LOW FLUX AND FREQUENCY LIGHTING SHALL BE UTILIZED.								
SOILS								
THE SOIL PROFILE WILL BE DISTURBED DURING EXCAVATION AND CONSTRUCTION OF THE DEVELOPMENT AND ITS ASSOCIATED INFRASTRUCTURE.	2	2	1	5	25	LOW	MODERATE	NEGATIVE
EROSION OF STOCKPILES AND TOPSOIL CAN LEAD TO THE SEDIMENTATION OF STREAMS IF NOT CONTROLLED.	2	4	3	4	36	LOW	MODERATE	NEGATIVE
SOIL COMPACTION DUE TO MOVEMENT OF VEHICLES AND MACHINERY.	2	2	1	5	25	LOW	MODERATE	NEGATIVE
SOIL CONTAMINATION CAUSED	2	4	2	4	32	LOW	MODERATE	NEGATIVE

BY CEMENT, HYDROCARBON LEAKS AND SPILLAGES FROM CONSTRUCTION VEHICLES AND MACHINERY.								

MITIGATION OR MANAGEMENT MEASURES:

- THE TOP SOIL WILL BE REMOVED AND STOCKPILED SEPARATELY FROM THE SUBSOIL. AFTER CONSTRUCTION THE INTEGRITY OF THE SOIL PROFILE WILL BE RESTORED BY FIRST FILLING WITH SUBSOIL, FOLLOWED BY TOPSOIL.
- STOCKPILES WILL BE MONITORED FOR EXCESSIVE EROSION AND WHERE NECESSARY MEASURES (E.G. SAND BAGGING) IMPLEMENTED TO CONTROL EROSION. STEEP SLOPES WILL BE STABILISED WITH APPROPRIATE MEASURES SUCH AS GABION BASKETS. ALL AREAS WILL BE REHABILITATED AND GRASSED TO MINIMIZE SOIL EROSION.
- OPEN EXCAVATION WILL BE MARKED WITH DANGER TAPE.
- ANY ELECTRICAL OR PETROL DRIVEN PUMP, USED FOR DISPENSING PURPOSES, MUST BE EQUIPPED AND POSITIONED SO AS NOT TO PRESENT DANGER OF IGNITION OF THE PRODUCT. IF FUEL IS TO BE DISPENSED FROM 200 ℓ (OR BIGGER) DRUMS, PROPER DISPENSING EQUIPMENT WILL NEED TO BE USED (E.G. DRUMS MUST NOT BE TIPPED TO DISPENSE FUEL).
- DRIP PANS MUST BE USED WHEN REFUELLING AND SERVICING CONSTRUCTION VEHICLES OR EQUIPMENT. DRIP PANS MUST BE PLACED UNDERNEATH STATIONARY CONSTRUCTION VEHICLES AND THE HAZARDOUS WASTE (E.G. FUEL, OILS ETC.) TAKEN TO THE NEAREST APPROVED OIL REFINER OR FUEL RECYCLING POINT FOR RECYCLING. SOLID WASTE MUST BE KEPT IN BINS AT THE STAFF HOUSING AND CONSTRUCTION AREAS.
- TOPSOIL MUST ONLY BE USED FOR REHABILITATION PURPOSES AND NOT FOR ANY OTHER USE EXAMPLE I.E. CONSTRUCTION OF ROADS.
- ALL STOCKPILES SHOULD BE KEPT <1.5 M WITH SLOPES NOT EXCEEDING 18 DEGREES.
- THE DURATION OF STORAGE OF THE TOPSOIL SHOULD BE MINIMIZED AS MUCH AS POSSIBLE. STORING TOPSOIL FOR LONG PERIODS LEADS TO SEED BANK DEPLETION FOLLOWING GERMINATION DURING STORAGE AND ANOXIC CONDITIONS.
- THE TOPSOIL MUST BE UNIFORMLY REDISTRIBUTED IN A MANNER THAT ASSURES PLACEMENT AND COMPACTION COMPATIBLE WITH THE NEEDS OF THE SPECIES THAT WILL BE USED TO RESTORE THE DISTURBED AREA.
- AFTER REDISTRIBUTION OF THE TOPSOIL LAYER DURING REHABILITATION, IT IS IMPORTANT TO ENSURE THAT THE AREA IS PROTECTED AGAINST WIND EROSION SUCH THAT THE TOPSOIL IS NOT BLOWN AWAY.
- WIND NETS CAN EFFECTIVELY MINIMIZE THE LOSS OF TOPSOIL THROUGH WIND EROSION.
- STOCKPILES/REDISTRIBUTED TOPSOIL CAN ALSO BE KEPT WET TO PREVENT FINE PARTICLES BEING REMOVED BY WIND.
- THE STOCK PILES THAT START TO ERODE SIGNIFICANTLY OR CAUSE DUST PROBLEMS WILL BE COVERED WITH HESSIAN OR A PLASTIC COVER.
- THE CONTRACTOR MUST REHABILITATE THE CONSTRUCTION CAMP/SITE ONCE CONSTRUCTION ACTIVITIES HAVE TERMINATED. COMPACTED AREAS WILL BE RIPPED AND MULCHED IN ORDER TO ENSURE RECOVERY OF THE NATURAL VEGETATION COVER.
- THE EXISTING ROAD INFRASTRUCTURE SHOULD BE USED DURING CONSTRUCTION. THE UNCONTROLLED MOVEMENT OF CONSTRUCTION VEHICLES ON SITE WILL NOT BE PERMITTED.
- REGULAR CLEAN-UP PROGRAMS MUST BE PUT INTO EFFECT THROUGHOUT THE SITE TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.
- RUBBLE MUST BE RE-USED IF POSSIBLE OR REMOVED TO THE MUNICIPAL WASTE DISPOSAL SITE AFTER CONSTRUCTION.
- SOLID WASTE MUST BE KEPT IN ADEQUATE ANIMAL PROOF WASTE BINS. GENERAL WASTE SHOULD BE REMOVED ON A REGULAR BASIS TO THE CLOSEST AVAILABLE LANDFILL SITE.

WASTE								
CONSTRUCTION WASTE OR SPOIL MATERIAL WILL BE GENERATED DURING THE CONSTRUCTION PHASE.	2	3	1	5	30	LOW	MODERATE	NEGATIVE
SEWAGE/EFFLUENT WILL BE GENERATED BY THE CONSTRUCTION WORKERS.	2	4	2	5	40	LOW	MODERATE	NEGATIVE
LITTER. THERE WILL BE AN INCREASED RISK OF LITTER THAT COULD ARISE DURING THE CONSTRUCTION PHASE AT THE CONSTRUCTION SITES.	2	3	2	4	28	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED AT AND AROUND THE CONSTRUCTION SITE. • SUITABLE WASTE DISPOSAL FACILITIES WILL BE PROVIDED INCLUDING BINS AND REGULAR COLLECTION AND REMOVAL OF WASTE TO AN APPROVED WASTE DISPOSAL SITE. • ADEQUATE NUMBER OF CHEMICAL TOILETS MUST BE SUPPLIED AND MUST BE WELL MAINTAINED. • THE CONSTRUCTION PHASE OF THE PROJECT WILL BE MONITORED BY THE ECO TO ENSURE COMPLIANCE WITH EMP REQUIREMENTS.								
WATER								
IMPACTS ON EPHEMERAL STREAMS AND DRAINAGE LINES.	2	1	3	2	12	LOW	LOW	NEGATIVE
CHEMICAL POLLUTION OF WATER RESOURCES AS A RESULT OF LEAKS OR SPILLS FROM VEHICLES, MACHINERY AND CONSTRUCTION ACTIVITIES (CEMENT).	2	4	3	3	36	LOW	MODERATE	NEGATIVE
DECREASE IN WATER QUALITY AS A RESULT OF EROSION OF BARES SURFACES AND FROM STOCKPILES DURING WIND AND RAIN (SEDIMENTATION).	2	4	2	4	32	LOW	MODERATE	NEGATIVE
CONTAMINATION OF SURFACE WATER CAUSED BY THE STORAGE AND DISPOSAL OF CONSTRUCTION AND DOMESTIC WASTE.	2	4	3	3	27	LOW	MODERATE	NEGATIVE
INCREASE IN STORM WATER RUNOFF LEADING TO REDUCED INFILTRATION OF WATER INTO THE GROUNDWATER.	2	3	3	4	32	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• ANY DEVELOPMENT WITHIN 500M FROM THE BOUNDARY OF ANY WETLAND REQUIRES A WATER USE LICENSE ACCORDING TO DWS REGULATIONS – NONE IDENTIFIED TO EXIST WITHIN 500M FROM THE DEVELOPMENT SITE. • SOLID WASTE MUST BE MANAGED IN ACCORDANCE TO DWS REQUIREMENTS.								

- MANGAUNG METRO MUNICIPALITY MUST PROVIDE PROOF THAT THE WASTE WATER AND WATER TREATMENT WORKS THAT WILL SERVE THIS DEVELOPMENT HAS SUFFICIENT CAPACITY TO HANDLE THE ADDITIONAL LOAD PLUS DEMAND FROM THE PROPOSED DEVELOPMENT BEFORE CONSTRUCTION MAY COMMENCE.
- ANY DEVELOPMENT WITHIN THE 1:100 YEAR FLOOD LINE OR WITHIN THE RIPARIAN HABITAT CONSTITUTES A WATER USE LICENSE IN TERMS OF SECTION 21(C) AND (I) OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 F 1998) AND WILL REQUIRE AUTHORIZATION BEFORE ANY DEVELOPMENT MAY COMMENCE – NONE IDENTIFIED.
- ALL THE REQUIREMENTS OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998) AND OTHER REGULATIONS MUST BE TAKEN INTO CONSIDERATION.
- APPROPRIATE EROSION AND STORM WATER MANAGEMENT STRUCTURES MUST BE INSTALLED AROUND THE CONSTRUCTION SITE. THE STORM WATER SERVITUDE AREAS MUST BE KEPT CLEAN AND FREE FROM ANY MATERIAL THAT WILL OBSTRUCT THE FLOW OF STORM WATER.
- ALL CONSTRUCTION VEHICLES, PLANT, MACHINERY AND EQUIPMENT MUST BE PROPERLY MAINTAINED TO PREVENT OIL OR PETROCHEMICAL LEAKS. CONSTRUCTION VEHICLES/MACHINES ARE TO BE REPAIRED IMMEDIATELY UPON DEVELOPING LEAKS. DRIP TRAYS SHALL BE SUPPLIED FOR ALL REPAIR WORK UNDERTAKEN ON MACHINERY ON SITE OR CAMPSITE AREA. DRIP TRAYS ARE TO BE UTILIZED DURING DAILY GREASING AND RE-FUELLING OF MACHINERY AND TO CATCH INCIDENTAL SPILLS AND POLLUTANTS. DRIP TRAYS ARE TO BE INSPECTED DAILY FOR LEAKS AND EFFECTIVENESS, AND EMPTIED WHEN NECESSARY. THIS IS TO BE CLOSELY MONITORED DURING RAIN EVENTS TO PREVENT OVERFLOW.
- FUELS AND CHEMICALS MUST BE STORED IN ADEQUATE STORAGE FACILITIES THAT ARE SECURE, ENCLOSED AND BUNDED.
- ALL REQUIREMENTS AS GIVEN IN THE GEOTECHNICAL REPORT AND OTHER SPECIALIST REPORTS MUST BE FOLLOWED AT ALL TIMES.
- ALL EXCAVATIONS AND FOUNDATIONS MUST BE INSPECTED REGULARLY.
- ONCE EARTHWORKS ARE COMPLETE, DISTURBED AREAS ARE TO BE STABILIZED WITH MULCH, STRAW OR OTHER APPROVED METHODS AS REQUIRED.
- THE PROPOSED DEVELOPMENT MUST CONNECT TO MUNICIPAL SEWERAGE SYSTEM AS PER THE CIVIL SERVICES REPORT.
- ALL HAZARDOUS SUBSTANCES MUST BE STORED IN SUITABLE CONTAINERS. THE CONTAINERS WILL BE CLEARLY MARKED TO INDICATE CONTENTS, QUANTITIES AND SAFETY REQUIREMENTS. ALL STORAGE AREAS MUST BE BUNDED. THE BUNDED AREA WILL BE OF SUFFICIENT CAPACITY TO CONTAIN A SPILL / LEAK FROM THE STORED CONTAINERS. AN ALPHABETICAL HAZARDOUS CHEMICAL SUBSTANCE (HCS) CONTROL SHEET WILL BE DRAWN UP AND KEPT UP TO DATE ON A CONTINUOUS BASIS. ALL HAZARDOUS CHEMICALS THAT WILL BE USED ON SITE WILL HAVE MATERIAL SAFETY DATA SHEETS (MSDS). ALL EMPLOYEES WORKING WITH HCS WILL BE TRAINED IN THE SAFE USE OF THE SUBSTANCE AND ACCORDING TO THE SAFETY DATA SHEET.
- THE CLEANING OF CEMENT HANDLING EQUIPMENT SHALL BE DONE USING PROPER CLEANING TRAYS. THE VISIBLE REMAINS OF CONCRETE, EITHER SOLID OR FROM WASHING MUST BE REMOVED AND TAKEN TO THE MUNICIPAL LANDFILL SITE.
- IN THE EVENT OF OIL/FUEL SPILLAGES SPILL KITS OR ABSORBENTS MUST BE KEPT AT THE SITE.
- SOLID WASTE MUST BE KEPT IN ADEQUATE BINS AT CONSTRUCTION SITE. REGULAR CLEAN-UP PROGRAMS MUST BE PUT INTO EFFECT THROUGHOUT THE SITE TO LIMIT THE IMPACT OF LITTERING CAUSED BY CONSTRUCTION ACTIVITIES.
- RUBBLE MUST BE RE-USED IF POSSIBLE OR REMOVED TO CLOSEST AVAILABLE MUNICIPAL WASTE DISPOSAL SITE.
- THE CONSTRUCTION MATERIAL (E.G. INFILL MATERIAL) MUST BE MANAGED IN SUCH A WAY THAT THE MATERIAL IS NOT TRANSPORTED TO THE STORM WATER SYSTEM BY WIND OR RAIN.
- WATER SHOULD BE USED SPARINGLY AND IT SHOULD BE ENSURED THAT NO WATER IS WASTED.

SOCIO-ECONOMIC IMPACT ASSESSMENT:								
CREATION OF DIRECT EMPLOYMENT OPPORTUNITIES FOR LOCAL COMMUNITY DURING CONSTRUCTION PHASE.	2	3	3	5	40	MODERATE	MODERATE	POSITIVE

CREATION OF INDIRECT EMPLOYMENT OPPORTUNITIES DUE TO CONSTRUCTION MATERIALS ETC. BEING BOUGHT FROM LOCAL BUSINESSES AND SERVICES REQUIRED FROM INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.	2	3	3	5	40	MODERATE	MODERATE	POSITIVE
IMPACT ON BLOEMFONTEIN'S ECONOMY DUE TO CONSTRUCTION MATERIALS ETC. BEING BOUGHT FROM LOCAL BUSINESSES AND SERVICES REQUIRED FROM INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.	2	4	3	4	36	MODERATE	MODERATE	POSITIVE
LABOUR INFLUX.	2	3	5	3	30	LOW	MODERATE	NEGATIVE
HEALTH RISK CAUSED BY THE ILLEGAL DISPOSAL OF WASTE ON THE CONSTRUCTION SITE AND SURROUNDINGS.	2	4	3	2	18	LOW	LOW	NEGATIVE
DISTURBANCE TO TRAFFIC IN THE AREA.	2	3	2	5	35	LOW	MODERATE	NEGATIVE
SKILLS DEVELOPMENT OF LOCAL WORKFORCE.	2	4	3	5	45	MODERATE	MODERATE	POSITIVE
LOSS OF HUMAN LIVES AS A RESULT OF CONSTRUCTION ACTIVITIES AND THE MOVEMENT OF CONSTRUCTION VEHICLES ON SITE AS WELL AS INJURIES TO RESIDENTS, ROAD USERS AND CONSTRUCTION WORKERS AS A RESULT OF CONSTRUCTION ACTIVITIES AND THE MOVEMENT OF CONSTRUCTION VEHICLES.	2	5	3	2	20	LOW	LOW	NEGATIVE
THERE IS A POTENTIAL FOR AN INCREASED RISK TO ANIMALS/PEOPLE FALLING INTO THE OPEN TRENCHES DURING CONSTRUCTION.	2	5	2	4	36	LOW	MODERATE	NEGATIVE
SOCIAL CONFLICTS AND COMPLAINTS, CRIME INCIDENTS, PROSTITUTION, ILLEGAL TRAFFICKING, SPREAD OF INFECTIOUS DISEASES.	2	4	3	4	36	LOW	MODERATE	NEGATIVE
DAMAGE TO ADJACENT PROPERTIES DUE TO VELD FIRES.	2	5	3	4	40	LOW	MODERATE	NEGATIVE
LOSS OF AVAILABLE AGRICULTURAL LAND (I.E.	5	2	1	2	16	LOW	LOW	NEGATIVE

GRAZING).								

MITIGATION OR MANAGEMENT MEASURES:

- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR FELLOWS ROAD AND HE WILL BE RESPONSIBLE MAINTAIN AND REPAIR FELLOWS ROAD FROM LUCAS STEYN UP TO HIS DEVELOPMENT SITE AS AN MINIMUM EVERY 2 WEEKS. THIS WILL BE INCLUDED AS A STANDARD CONDITION WITH THE ENVIRONMENTAL AUTHORIZATION AND EMP. IF NOT ADHERED TO DESTEA CAN AND WILL STOP CONSTRUCTION OF THE DEVELOPMENT IF THIS IS NOT ADHERED TO. ACCESS TO THE SITE MUST BE FROM THE TARRED REYNECKE AVENUE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT. IT IS NOT ALLOWED THAT ANY CONSTRUCTION VEHICLE USES REYNECKE AVENUE AS THIS ROAD IS ALREADY BUSY ESPECIALLY DURING PEAK TIME TRAFFIC. A FURTHER CONDITION WILL BE SET THAT NO HEAVY VEHICLES AND MACHINERY WILL BE ALLOWED TO TRAVEL TO AND FROM THE PROPOSED SITE IN MORNING AND AFTERNOON PEAK TRAFFIC HOURS (NONE BEFORE 08:30 AND AFTER 16:00).
- WORKERS MUST NOT BE ALLOWED TO OVERNIGHT ON THE PROPOSED SITE. 24 HOUR SECURITY MUST BE APPOINTED DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT TO HELP PREVENT CRIME/THEFT FROM THE PROPOSED CONSTRUCTION SITE AND SURROUNDING PROPERTIES.
- BOUNDARY FENCE OF AT LEAST 1.8M MUST BE ERECTED BEFORE ANY CONSTRUCTION MAY START ON THE PROPOSED SITE.
- SIGNS SHOULD BE ERECTED ON ALL ENTRANCE GATES INDICATING THAT NO TEMPORARY JOBS ARE AVAILABLE, THEREBY LIMITING OPPORTUNISTIC LABOURERS AND CRIME.
- THE SITE AND CREW ARE TO BE MANAGED IN STRICT ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993) AND THE NATIONAL BUILDING REGULATIONS.
- ALL STRUCTURES THAT ARE VULNERABLE TO HIGH WINDS MUST BE SECURED (INCLUDING SCAFFOLDS AND TOILETS).
- ALL MANHOLE OPENINGS ARE TO BE COVERED AND CLEARLY DEMARCATED WITH DANGER TAPE.
- POTENTIALLY HAZARDOUS AREAS SUCH AS TRENCHES ARE TO BE CORDONED OFF AND CLEARLY MARKED AT ALL TIMES.
- THE CONTRACTOR IS TO ENSURE TRAFFIC SAFETY AT ALL TIMES, AND SHALL IMPLEMENT ROAD SAFETY PRECAUTIONS FOR THIS PURPOSE WHEN WORKS ARE UNDERTAKEN ON OR NEAR PUBLIC ROADS.
- NECESSARY PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SAFETY GEAR APPROPRIATE TO THE TASK BEING UNDERTAKEN IS TO BE PROVIDED TO ALL SITE PERSONNEL (E.G. HARD HATS, SAFETY BOOTS, MASKS ETC.).
- ALL VEHICLES AND EQUIPMENT USED ON SITE MUST BE OPERATED BY APPROPRIATELY TRAINED AND / OR LICENSED
- INDIVIDUALS PRESENT ON CONSTRUCTION SITE MUST COMPLY WITH ALL SAFETY MEASURES AS LAID OUT IN THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993) (OHSA).
- AN ENVIRONMENTAL AWARENESS TRAINING PROGRAMME FOR ALL STAFF MEMBERS SHALL BE PUT IN PLACE BY THE CONTRACTOR. BEFORE COMMENCING WITH ANY WORK, ALL STAFF MEMBERS SHALL BE APPROPRIATELY BRIEFED ABOUT THE EMP AND RELEVANT OCCUPATIONAL HEALTH AND SAFETY ISSUES.
- ALL CONSTRUCTION WORKERS SHALL BE ISSUED WITH ID BADGES AND CLEARLY IDENTIFIABLE UNIFORMS.
- ACCESS TO FUEL AND OTHER EQUIPMENT STORES IS TO BE STRICTLY CONTROLLED.
- NO UNAUTHORIZED FIREARMS ARE PERMITTED ON SITE.
- EMERGENCY PROCEDURES MUST BE PRODUCED AND COMMUNICATED TO ALL THE EMPLOYEES ON SITE. THIS WILL ENSURE THAT ACCIDENTS ARE RESPONDED TO APPROPRIATELY AND THE IMPACTS THEREOF ARE MINIMIZED. THIS WILL ALSO ENSURE THAT POTENTIAL LIABILITIES AND DAMAGE TO LIFE AND THE ENVIRONMENT ARE AVOIDED.
- ADEQUATE EMERGENCY FACILITIES MUST BE PROVIDED FOR THE TREATMENT OF ANY EMERGENCY ON THE SITE.
- THE NEAREST EMERGENCY SERVICE PROVIDER MUST BE IDENTIFIED DURING ALL PHASES OF THE PROJECT AS WELL AS ITS CAPACITY AND THE MAGNITUDE OF ACCIDENTS IT WILL BE ABLE TO HANDLE. EMERGENCY CONTACT NUMBERS ARE TO BE DISPLAYED CONSPICUOUSLY AT PROMINENT LOCATIONS AROUND THE CONSTRUCTION SITE AND THE CONSTRUCTION CREW CAMPS AT ALL TIMES.
- THE CONTRACTOR MUST HAVE A BASIC SPILL CONTROL KIT AVAILABLE AT THE CONSTRUCTION CREW CAMP AND AROUND THE CONSTRUCTION SITE. THE SPILL CONTROL KITS MUST INCLUDE ABSORPTIVE MATERIAL THAT CAN HANDLE ALL FORMS OF HYDROCARBON AS WELL AS FLOATING BLANKETS / PILLOWS THAT CAN BE PLACED ON WATER

COURSES.

- OPEN EXCAVATIONS MUST BE MARKED WITH DANGER TAPE.
- EMPLOYMENT OF LOCAL LABOUR WILL BE A POSITIVE IMPACT OF THE PROJECT AND MUST BE ENCOURAGED. DURING THE CONSTRUCTION PHASE, JOBS MUST BE CREATED FOR UNEMPLOYED LOCAL PEOPLE AND SKILLS MUST BE TRANSFERRED TO THEM. WHERE VIABLE, THE WORK MUST BE EXECUTED IN A LABOUR INTENSIVE MANNER TO CREATE AS MANY JOBS AS POSSIBLE.
- IT IS THE EMPLOYER'S RESPONSIBILITY TO ADHERE TO THE MUNICIPALITY'S GUIDELINES, PRINCIPLES AND POLICIES REGARDING EMPLOYMENT.
- THE CONSTRUCTION SITES MUST BE CLEARLY MARKED WITH DANGER TAPE.
- STRICT ACCESS CONTROL MUST BE EXERCISED TO ENSURE THAT NO UNAUTHORIZED PERSONS ENTER THE PROPERTY.
- DESIGNATED EATING AREAS SHOULD BE ESTABLISHED. ADEQUATE REFUSE BINS SHOULD BE PROVIDED AND CLEANED ON A DAILY BASIS.
- NO OPEN FIRES MUST BE ALLOWED OUTSIDE DESIGNATED COOKING AREAS.
- NO SMOKING IS TO BE ALLOWED IN THE VICINITY OF FUEL DISPENSING AREAS (SMOKING IS ONLY TO BE ALLOWED IN DESIGNATED "SAFE" AREAS);
- ADEQUATE FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE ONSITE AT ALL TIMES AND AT LEAST ONE PERSON PRESENT ON THE SITE MUST BE TRAINED IN THE USE THEREOF.
- FIREBREAKS SHOULD COMPLY WITH THE NATIONAL VELD AND FOREST FIRE ACT, 1998 (CHAPTER 4: DUTY TO PREPARE AND MAINTAIN FIREBREAKS).
- THE LANDOWNER/OCCUPIER WILL BE NOTIFIED OF CONSTRUCTION ACTIVITIES THAT WOULD IMPEDE ACCESS. IN CONSULTATION, ALTERNATIVE ACCESS WILL BE PROVIDED.
- THE CONTRACTOR SHALL MAKE AVAILABLE SAFE DRINKING WATER FIT FOR HUMAN CONSUMPTION AT THE SITE OFFICES AND ALL OTHER WORKING AREAS.
- WASHING AND TOILET FACILITIES MUST BE PROVIDED ON SITE AND IN THE CONTRACTORS CAMP.
- ADEQUATE NUMBERS OF CHEMICAL TOILETS MUST BE MAINTAINED IN THE CONTRACTORS CAMP TO SERVICE THE STAFF USING THIS AREA. AT LEAST 1 TOILET MUST BE AVAILABLE PER 20 WORKERS USING THE CAMP. TOILET PAPER MUST BE PROVIDED. THE CHEMICAL TOILETS SERVICING THE CAMP MUST BE MAINTAINED IN A GOOD STATE, AND ANY SPILLS OR OVERFLOWS MUST BE ATTENDED TO IMMEDIATELY. THE CHEMICAL TOILETS MUST BE EMPTIED ON A REGULAR BASIS. THE CHEMICAL TOILETS MUST BE SITED TAKING INTO ACCOUNT THE POSSIBILITY OF THE PREVAILING WIND DISPERSING UNPLEASANT ODOURS.
- THE CONTRACTORS SITE MUST BE LOCATED ON THE HIGH SIDE OF THE SITE SO ANY LEAKAGES OR SPILLAGES WILL BE CONTAINED ON SITE.
- TICK REPELLENT MUST ALSO BE PROVIDED (BAYTICOL IS AVAILABLE FROM CERTAIN PHARMACIES AND SHOULD BE SPRAYED ON THE CLOTHING IN CONTACT WITH GRASS, ETC.).
- HIV AIDS AWARENESS AND EDUCATION SHOULD BE UNDERTAKEN BY ALL CONTRACTOR STAFF.
- CARE SHOULD BE TAKEN TO ADEQUATELY DRAIN AREAS SURROUNDING WATER POINTS IN ORDER TO AVOID THE DEVELOPMENT OF POOLS OF STANDING WATER, AS THESE TEND TO BE A BREEDING SOURCE OF FLIES, MOSQUITOES AND OTHER VECTORS.

CULTURAL & HERITAGE IMPACT ASSESSMENT:

DAMAGE OR LOSS TO CULTURAL AND HISTORIC RESOURCES.	5	4	2	2	22	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- IN THE EVENT THAT ANY NEW EVIDENCE OF ARCHAEOLOGICAL SITES OR ARTEFACTS, PALEONTOLOGICAL FOSSILS, GRAVES OR OTHER HERITAGE RESOURCES ARE FOUND DURING THE COURSE OF PROJECT ACTIVITIES, CONSTRUCTION ACTIVITIES MUST IMMEDIATELY STOP AND A QUALIFIED ARCHAEOLOGIST MUST BE INFORMED OF THE FIND.
- ANY PERSON WHO CAUSES INTENTIONAL DAMAGE TO ARCHAEOLOGICAL OR HISTORICAL SITES OR ARTEFACTS COULD

BE PENALISED OR LEGALLY PROSECUTED IN TERMS OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999). ALL ARCHAEOLOGICAL OR HISTORICAL ARTEFACTS THAT ARE UNCOVERED MUST BE REPORTED TO THE SOUTH AFRICAN HERITAGE RESOURCE AGENCY (SAHRA).

ENVIRONMENTAL AWARENESS:								
INCREASING ENVIRONMENTAL AWARENESS BY EDUCATING COMMUNITY AND CONTRACTORS ON THE ENVIRONMENTAL ASPECTS OF THE PROPOSED SITE AS IDENTIFIED WITHIN THE BAR AND EMP.	2	5	2	5	45	MODERATE	MODERATE	POSITIVE
PROMOTING CONSERVATION OF SENSITIVE RESOURCES.	2	5	3	5	50	HIGH	HIGH	POSITIVE

MITIGATION OR MANAGEMENT MEASURES:

- THE SITE MANAGER MUST ENSURE THAT ADEQUATE ENVIRONMENTAL TRAINING TAKES PLACE. ALL EMPLOYEES SHALL HAVE BEEN GIVEN AN INDUCTION PRESENTATION ON ENVIRONMENTAL AWARENESS. WHERE POSSIBLE, THE PRESENTATION NEEDS TO BE CONDUCTED IN THE LANGUAGE OF THE EMPLOYEES. THE ENVIRONMENTAL TRAINING SHOULD, AS A MINIMUM, INCLUDE THE FOLLOWING:
  - THE CONSTRUCTION MUST TAKE PLACE IN ECOLOGICAL SOUND MANNER;
  - THE NEED TO PROTECT AND PRESERVE THE HISTORICAL AND ARCHAEOLOGICAL HERITAGE OF THE SITE, IF ANYTHING IS UNCOVERED;
  - THE IMPORTANCE OF CONFORMANCE WITH ALL ENVIRONMENTAL POLICIES AND PROCEDURES;
  - THE SIGNIFICANT ENVIRONMENTAL IMPACTS, ACTUAL OR POTENTIAL, AS A RESULT OF THEIR ACTIVITIES;
  - THE ENVIRONMENTAL BENEFITS OF IMPROVED PERSONAL PERFORMANCE;
  - THEIR ROLES AND RESPONSIBILITIES IN ACHIEVING CONFORMANCE WITH THE MANAGEMENT AND MITIGATION MEASURES INCLUDED IN THIS REPORT, INCLUDING EMERGENCY PREPAREDNESS AND RESPONSE REQUIREMENTS;
  - THE MITIGATION MEASURES REQUIRED TO BE IMPLEMENTED WHEN CARRYING OUT THEIR SPECIFIC ACTIVITIES AND OPERATING PROCEDURES;
  - THE IMPORTANCE OF NOT LITTERING;
  - THE NEED TO USE WATER SPARINGLY.

No-go alternative (compulsory)

Direct impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING DIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL NOT OCCUR:

- THE POSSIBILITY OF SOIL AND GROUND WATER POLLUTION BY ACCIDENTAL SPILLS.
- ADDED VISUAL INTRUSION & LIGHT POLLUTION.
- NOISE POLLUTION.
- ATMOSPHERE POLLUTION AND ODOURS.
- REMOVAL OF FLORA AND DISTURBANCE OF FAUNA.
- CONSTRUCTION SITE HYGIENE WILL NOT BE A FACTOR AS THERE WILL BE NO STAFF ON THE SITE.
- THE SAFETY AND SECURITY OF THE STAFF AND THE SITE WILL NOT BE A PROBLEM.
- NO JOBS CREATION. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE COMPANY WILL NOT BE ABLE TO INCREASE PROFITABILITY.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE WILL NOT OCCUR:

- NO ADDED RESIDENTIAL UNITS IN THE AREA AND THE PROPOSED SITE WILL NOT GIVE EFFECT TO MMM'S SPATIAL DEVELOPMENT FRAMEWORK. NO ADDED INCOME FOR MMM IN THE FORM OF RATES AND TAXES.
- NO INCREASE IN TRAFFIC VOLUMES.
- NO ADDED POSSIBILITY OF CRIME TAKING PLACE IN THE SURROUNDINGS DUE TO MORE PEOPLE ACCESSING THE AREA DURING THE CONSTRUCTION PHASE OF THE PROJECT.
- INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES WILL NOT BENEFIT FROM THE CONSTRUCTION. RESULTING IN FURTHER LOSS OF INCOME IN THE LOCAL ECONOMY.

Cumulative impacts:

- THE CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE PROPOSED SITE ARE A LOSS OF REVENUE TO THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS.

THE DEVELOPMENT IS CLASSIFIED AS AN ACTIVITY, WHICH MAY HAVE SIGNIFICANT DETRIMENTAL EFFECTS ON THE ENVIRONMENT. HOWEVER, IN THIS PARTICULAR CASE, IF ALL THE MITIGATION MEASURES INCLUDED IN SECTION E OF THIS REPORT ARE ADHERED TO, THE RISK OF NEGATIVE ENVIRONMENTAL IMPACTS WILL BE GREATLY REDUCED AND MANAGED TO ACCEPTABLE LEVELS. THEREFORE THE CONSIDERATION OF THE NO-GO OPTION DURING THE CONSTRUCTION PHASE CAN BE JUSTIFIABLY DISMISSED AS AN ALTERNATIVE.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

- SEE THE ABOVE SECTION FOR THE MITIGATION MEASURES FOR EACH OF THE ASPECTS IDENTIFIED FOR THE CONSTRUCTION PHASE OF THE PROJECT. ALSO SEE THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

Alternative A1 (preferred alternative)

Direct impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indirect impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Cumulative impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

No-go alternative (compulsory)

Direct impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indirect impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Cumulative impacts:

- THERE WILL BE NO TECHNOLOGICAL OR ACTIVITY RELATED ALTERNATIVES AS A RESULT OF THE CONSTRUCTION PHASE OF THE PROJECT.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1:	**Alternative A2:**	**Alternative A3:**
NONE REQUIRED	N/A – APPLIED FOR EXEMPTION	N/A – APPLIED FOR EXEMPTION

3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

A. SOIL AND GROUND WATER POLLUTION

- POSSIBILITY OF CONTAMINATION OF THE SOIL, SURFACE AND GROUND WATER AS A RESULT OF PEOPLE ACCIDENTAL SPILLAGES, PETROCHEMICAL LEAKS FROM VEHICLES AND MAINTENANCE EQUIPMENT ETC.
- POSSIBLE POLLUTION OF STORM WATER AND SUBSEQUENT DOWNSTREAM WATER RESOURCES SHOULD THE SEWERAGE INFRASTRUCTURE (BLOCKED PIPES) NOT BE MAINTAINED.

B. IMPACTS ON EPHEMERAL STREAMS AND DRAINAGE LINES.

*** IMPACTS ON EPHEMERAL STREAMS AND DRAINAGE LINES.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: NFEPA MAPS ALONG WITH AVAILABLE GOOGLE IMAGERY SHOW THAT NO EPHEMERAL WATER BODIES ARE LOCATED ON THE SITE.

EXTEND OF THE IMPACT: N/A

NO GO AREAS: AS NONE OF THESE HABITAT TYPES COULD BE IDENTIFIED WITHIN THE STUDY AREA, NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: THE SITE IS SITUATED ON A TERRAIN WITH A MODERATE UPWARD SLOPE FROM SOUTH TO NORTH-WEST. THE LOWEST POINT BEING IN THE SOUTH AND THE HIGHEST POINT BEING IN THE NORTH-WEST. THE SITE IS COVERED IN LONG TYPICAL INDIGENOUS GRASS WITH FEW MEDIUM SIZED TREES TO THE SOUTH. THERE IS A SLIGHT LIKELIHOOD FOR SOME IMPACTS SUCH AS AN INCREASE OF SURFACE RUNOFF INTO THE DRAINAGE SYSTEM AND SPREAD OF EROSION INTO THE SYSTEM. HOWEVER, THE POSSIBILITY AND EXTENT OF THESE IMPACTS ARE STILL REGARDED AS LOW AND WITH THE NECESSARY MONITORING AND MITIGATION MEASURES IN PLACE, THESE IMPACTS CAN BE AVOIDED.

C. FLORA & FAUNA

- POSSIBLE INCREASE IN VERMIN POPULATIONS.

*** DISTURBANCE TO MIGRATION ROUTES AND ASSOCIATED IMPACTS TO SPECIES POPULATIONS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: ALL COMPONENTS OF THE PROPOSED DEVELOPMENT MAY INTERFERE WITH CURRENT MIGRATION ROUTES OF ESPECIALLY FAUNA SPECIES. THIS MAY LEAD TO:

- REDUCED ABILITY OF SPECIES TO MOVE BETWEEN BREEDING AND FORAGING GROUNDS, REDUCING BREEDING SUCCESS RATES;
- INCREASED MORTALITY RATES DUE TO FATAL COLLISIONS WITH INFRASTRUCTURE.

EXTEND OF THE IMPACT: SITE AND SURROUNDINGS

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: FROM THE SITE AND DESKTOP SURVEY, NO IMPORTANT FAUNAL MIGRATORY ROUTES (USUALLY ALONG EXTENSIVE AND WELL WOODED VALLEY FLOORS AND EPHEMERAL STREAMS) APPEAR TO BE PRESENT.

D. WASTE GENERATION & DISPOSAL

- WASTE HAS THE POTENTIAL TO MAKE ANY DEVELOPMENT LOOK UNTIDY AND UNHYGIENIC.
- POSSIBILITY OF LITTER SPREADING BY WIND TO ADJACENT AREAS. ESPECIALLY IF HOUSEHOLD REFUSE BAGS IS PUT OUT FOR DELIVERY BEFORE THE DAY SCHEDULED FOR PICKUP BY MMM. STRAY DOGS WILL MOST LIKELY RIP THE BAGS LEADING TO LITTER BEING BLOWN INTO SURROUNDING AREAS.

Indirect impacts:

A. ATMOSPHERE POLLUTION AND ODOURS

- INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED DEVELOPMENT.
- AIR POLLUTION FROM BURNING OF GARDEN WASTE.

B. NOISE POLLUTION

- INCREASE IN AMBIENT NOISE OF THE AREA DUE TO MORE PEOPLE LIVING IN THE AREA. ADDITIONAL NOISE SOURCES WILL INCLUDE NOISE FROM MAINTENANCE ACTIVITIES AND VEHICLES ACCESSING AND LEAVING THE DEVELOPED AREA AS WELL AS NOISE FROM CHILDREN PLAYING ETC. THEREFORE NORMAL NOISE SOURCES AS CAN BE FOUND IN DIRECTLY ADJACENT RESIDENTIAL (TOWNHOUSE COMPLEXES) AREA.

C. VISUAL INTRUSION & LIGHT POLLUTION

- THE OPERATIONAL PHASE OF THE DEVELOPMENT (BUILDINGS) WILL ALTER THE VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS.
- POSSIBLE LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE WILL BE VISUALLY INTRUSIVE.
- LIGHTS FROM THE DEVELOPMENT MAY BE VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS.

D. TRAFFIC & ACCESS

- MOVEMENT OF VEHICLES TO AND FROM THE DEVELOPMENT WILL INCREASE TRAFFIC.

E. SAFETY & SECURITY

- POSSIBILITY OF AN INCREASE IN CRIME IN THE AREA DUE TO MORE PEOPLE LIVING AND WORKING IN THE AREA.

F. SPREAD OF ALIEN VEGETATION

- DUE TO THE DISTURBANCE OF THE SITE, ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH, AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND.

*** ESTABLISHMENT AND SPREAD OF DECLARED WEEDS AND ALIEN INVADER PLANTS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: THE ENVISAGED ALTERED VEGETATION COVER AFTER CONSTRUCTION AND DURING THE OPERATION PHASE OF THE PROPOSED DEVELOPMENT WILL CREATE A WINDOW OF OPPORTUNITY FOR THE ESTABLISHMENT OF ALIEN INVASIVE SPECIES. THE POTENTIAL FOR ALIEN INVASIVE SPECIES TO BE PRESENT IN OR AROUND THE STUDY AREA IS REGARDED AS HIGH. A HIGH NUMBER OF ALIEN INVASIVE SPECIES HAVE BEEN RECORDED IN THE WIDER AREA ACCORDING TO THE SANBI DATABASE. THE EXTENT TO WHICH THE SITE ALREADY CONTAINS ALIEN PLANTS WILL BE DETERMINED IN THE EIA PHASE. CONSEQUENCES OF THE ESTABLISHMENT AND SPREAD OF INVASIVE PLANTS INCLUDE:

- LOSS OF INDIGENOUS VEGETATION OR CHANGE IN VEGETATION STRUCTURE LEADING TO AN EVEN MORE SIGNIFICANT CHANGE IN OR LOSS OF VARIOUS HABITAT CHARACTERISTICS;
- LOSS OF PLANT RESOURCES AVAILABLE TO FAUNA;
- CHANGE IN SOIL CHEMICAL PROPERTIES;
- CHANGE IN THE FLAMMABILITY OF THE VEGETATION, DEPENDING ON THE ALIEN SPECIES;
- HYDROLOGICAL IMPACTS DUE TO INCREASED TRANSPIRATION AND RUNOFF.

EXTEND OF THE IMPACT: LOCAL

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: WITH MITIGATION MEASURES INCLUDING, REGULAR MONITORING, EFFECTIVE ERADICATION AND MANAGEMENT METHODS IN PLACE THE SIGNIFICANCE OF IMPACTS ASSOCIATED WITH INVASIVE ALIEN PLANTS IS EXPECTED TO BE LOW AND LOCAL TO THE SITE.

G. SOCIO ECONOMIC

- JOB CREATION. THE PROPOSED DEVELOPMENT WILL LEAD TO THE INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.
- THE DEVELOPMENT WILL LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- AVAILABILITY OF NEW RESIDENTIAL UNITS AND THEREFORE THE ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS OF THE PROPOSED DEVELOPMENT ETC.

Cumulative impacts:

A. SURFACE WATER POLLUTION

- SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES.
- POTENTIAL POLLUTION OF SURFACE WATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.

B. GROUND WATER POLLUTION

- THE OPERATIONAL PHASE CAN RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL RESOURCES. SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER.
- POTENTIAL POLLUTION OF GROUNDWATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.

C. INCREASED RUN OFF OF WATER

- THE INCREASE IN DEVELOPED AREAS AS WELL AS PAVED AREAS SUCH AS THE ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN LOWER RECHARGE RATE OF GROUNDWATER RESOURCES AS WELL AS EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF THEREFORE HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES IF NOT CONTROLLED.

*** ALTERED RUNOFF PATTERNS DUE TO RAINFALL INTERCEPTION BY IMPENETRABLE HARD SURFACES AND COMPACTED AREAS.**

NATURE OF THE IMPACT DURING THE CONSTRUCTION SITE: IMPENETRABLE, HARD AND COMPACTED AREAS CREATE LARGE SURFACES OF RAINFALL INTERCEPTION, WHERE RAINFALL IS COLLECTED AND CONCENTRATED AT THE EDGES FROM WHERE IT THEN MOVES ONTO THE GROUND IN LARGER, CONCENTRATED QUANTITIES AS OPPOSED TO SMALL DROPS BEING DIRECTLY INTERCEPTED AND RAINDROP IMPACT DISPERSED BY VEGETATION, THEN ABSORBED BY THE GROUND. THIS MAY LEAD TO A LOCALISED INCREASE IN RUNOFF DURING RAINFALL EVENTS, WHICH MAY RESULT IN LOCALISED ACCELERATED EROSION. LIKEWISE, ACCESS ROADS AND AREAS WHERE SOILS HAVE BEEN COMPACTED WILL HAVE A LOW RAINFALL INFILTRATION RATE, AND THEREFORE CREATING MORE LOCALISED RUNOFF FROM THOSE SURFACES. THIS RUNOFF WILL BE REQUIRE TO BE MONITORED AND CONTROLLED AND DEVIATED WHERE NECESSARY TO PREVENT EROSION.

EXTEND OF THE IMPACT: SITE AND SURROUNDINGS

NO GO AREAS: NO NO-GO AREAS HAVE BEEN IDENTIFIED.

DESCRIPTION OF EXPECTED SIGNIFICANCE OF IMPACT: WITH EFFECTIVE MITIGATION MEASURES IN PLACE, INCLUDING IMPLEMENTATION OF AN APPROPRIATE STORM WATER MANAGEMENT PLAN, AS WELL AS REGULAR MONITORING, POTENTIAL EFFECTS OF EROSION MAY BE LIMITED TO AN ABSOLUTE MINIMUM.

D. SOCIO ECONOMIC

- THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LOCAL EMPLOYMENT LEVEL OF SURROUNDING

AREAS. THE DEVELOPMENT WILL ALSO HAVE A POSITIVE ECONOMIC IMPACT ON LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO PEOPLE RESIDING AND WORKING IN THE PROPOSED DEVELOPMENT. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED IN THIS CASE.

E. DISTURBANCE OF FAUNA

- THE DISTURBANCE OF FAUNA IN SURROUNDING AREAS DUE TO AN INCREASE IN AMBIENT NOISES AND VIBRATIONS RESULTING FROM THE PROPOSED DEVELOPMENT. DISTURBANCE IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE MITIGATION MEASURES IN THIS BAR OFFER AN IDEAL OPPORTUNITY TO INCORPORATE PRO-ACTIVE ENVIRONMENTAL MANAGEMENT MEASURES WITH THE GOAL OF ATTAINING SUSTAINABLE DEVELOPMENT. PRO-ACTIVE ENVIRONMENTAL MEASURES MINIMIZE THE CHANCE OF IMPACTS TAKING PLACE DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. THERE IS STILL THE CHANCE OF ACCIDENTAL IMPACTS TAKING PLACE; HOWEVER, THROUGH THE INCORPORATION OF CONTINGENCY PLANS (I.E. THE MITIGATION MEASURES IN THIS BAR) THE NECESSARY CORRECTIVE ACTION CAN BE TAKEN TO FURTHER LIMIT OR PREVENT POTENTIAL IMPACTS.

No-go alternative (compulsory)

Direct impacts:

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF CONTAMINATION OF STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES FROM THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- NO ADDED POSSIBILITY OF LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE.
- NO POSSIBLE INCREASE IN VERMIN POPULATIONS.
- THE SITE WILL STAY IN ITS CURRENT STATE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL AREA. FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL NOT OCCUR:

- NO ALTERATION OF THE EXISTING VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS.
- NO ADDED POSSIBILITY OF LIGHTS FROM THE DEVELOPMENT BEING VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS.
- NO INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED DEVELOPMENT.
- NO ADDED POSSIBILITY OF AIR POLLUTION FROM RESIDENTS BURNING THEIR GARDEN WASTE.
- NO ADDITIONAL JOBS CREATION IN THE AREA. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL NOT LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- NO CREATION OF NEW RESIDENTIAL UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.
- NO INCREASE IN TRAFFIC VOLUMES AS A RESULT OF THE PROPOSED DEVELOPMENT.
- NO INCREASE IN EXISTING AMBIENT NOISE LEVELS OF THE AREA DUE TO THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT NOT TAKING PLACE. IT MUST BE SAID THAT THE SURROUNDING AREAS IS ALREADY SUBJECTED TO CERTAIN NOISE LEVELS, ESPECIALLY THOSE ASSOCIATED FROM RESIDENTS LIVING IN THE

AREA, MAINTENANCE ACTIVITIES TAKING PLACE, AS WELL AS NOISE ORIGINATING FROM VEHICLES USING THE ROADS IN THE AREA.

- NO ADDED POSSIBILITY THAT THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN CRIME RATES OF THE SURROUNDING AREA.
- LOCAL BUSINESSES AND INDUSTRIES THAT PROVIDE GOODS AND MAINTENANCE SERVICES WILL NOT BENEFIT FROM THE PROPOSED DEVELOPMENT. RESULTING IN FURTHER LOSS OF POTENTIAL INCOME TO THE LOCAL ECONOMY. THE PROPOSED SITE WILL STAY IN ITS CURRENT STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- NO ADDED POSSIBILITY DUE TO THE DISTURBANCE OF THE SITE, THAT ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE CURRENT CONDITION OF LARGE PARTS OF THE PROPOSED SITE IS THAT OF BEING HEAVILY DISTURBED WITH LARGE AMOUNTS OF ALIEN PLANTS AND WEEDS OCCURRING ON THE SITE. THE PROBLEM OF ALIEN PLANTS SPREADING TO ADJACENT LAND IS THEREFORE ALREADY A BIG PROBLEM THAT CAN BE RESOLVED BY ALLOWING THE SITE TO BE DEVELOPED.

Cumulative impacts:

- NO ADDED POSSIBILITY OF WATER POLLUTION OF DOWNSTREAM WATER RESOURCES AS WELL AS AN INCREASE STORM WATER RUNOFF. NO ADDED DISTURBANCE TO FAUNA PRESENT ON SURROUNDING AREAS. FURTHER CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE ARE A LOSS OF REVENUE IN THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS CREATION.

IMPACT CLASSIFICATION - OPERATIONAL PHASE OF DEVELOPMENT

IMPACT	ASSESSMENT				POINTS	SIGNIFICANCE		
	DURATION	MAGNITUDE	EXTENT	PROBABILITY		WITH MITIGATION	WITHOUT MITIGATION	STATUS
BIOPHYSICAL ENVIRONMENT:								
FAUNA & FLORA								
THE DISTURBANCE OF FAUNA PRESENT IN SURROUNDING AREAS DUE TO NOISE AND VIBRATIONS.	4	2	2	2	16	LOW	LOW	NEGATIVE
DISTURBANCE TO MIGRATION ROUTES AND ASSOCIATED IMPACTS TO SPECIES POPULATIONS.	4	2	2	2	16	LOW	LOW	NEGATIVE
SPILLAGES OF PETROCHEMICALS, PESTICIDES AND HERBICIDES MIGHT LEAD TO POLLUTED SOIL AND WATER RESOURCES. FAUNA AND FLORA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.	4	4	3	3	33	LOW	MODERATE	NEGATIVE

Injury or even loss of fauna in the area through poaching and hunting.	4	4	2	2	20	Low	Low	Negative
Establishment and spread of declared weeds and alien invader plants.	4	4	3	2	22	Low	Low	Negative
The increase in vermin populations as a result of illegal waste dumping.	4	4	2	3	30	Low	Moderate	Negative
Mitigation or Management Measures:								
• Weed control measures must be applied to eradicate the noxious weeds (category 1a &1b species) on disturbed areas; • Any fauna threatened by the operation activities should be removed to safety by the ECO or appropriately qualified environmental officer. • An ecologist should be consulted on the use of herbicides/eco-friendly products to control the exotic tree and shrub species that might establish itself on site as a result of the construction activities. • All the staff must be adequately trained to assist with the controlling of fires. • The disturbed areas should be rehabilitated and monitored afterwards to inspect the succession of the vegetation where required, until it is self-sustainable. • Limited knowledge exists on the potential and ease with which vegetation can be re-established after construction as a result of the variable rainfall regime of the region; unknown species persistence in the altered environment on and around the proposed site; and what effect this altered species composition and –density will have on ecosystem intactness and functionality. • Regular monitoring of a minimum set of environmental parameters throughout the operation phase, coupled with an adaptive environmental management program, will be required to prevent any environmental degradation.								
Air Quality								
Increased levels of gas emissions from vehicles accessing or leaving the proposed development.	4	2	3	2	18	Low	Low	Negative
Air pollution due to burning of garden waste by residents of the proposed development.	4	4	3	3	33	Low	Moderate	Negative
Mitigation or Management Measures:								
• The release of emissions from vehicles is controlled under the Air Quality Act (Act No 39 of 1998). • Residents are not allowed to burn any waste as per MMM bylaws and Air Quality legislation. All garden waste must be removed and disposed of at the registered landfill site. • No smoking is to be allowed by maintenance personal in order to prevent accidental veldt fires. • The disturbed areas should be rehabilitated where required and monitored afterwards to inspect the succession of the vegetation, until it is self-sustainable.								
Noise								

INCREASE IN NOISE LEVELS CAUSED BY OPERATIONAL & MAINTENANCE ACTIVITIES OF THE DEVELOPMENT.	4	4	3	4	44	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• NOISE LEVELS MUST BE KEPT WITHIN ACCEPTABLE LIMITS AND RESIDENTS ETC MUST ABIDE BY NATIONAL NOISE LAWS AND MMM'S BY-LAWS REGARDING NOISE.								
AESTHETIC ENVIRONMENT								
VISUAL DISTURBANCE TO SURROUNDING RESIDENTS AS A RESULT OF THE DEVELOPMENT.	4	3	2	5	45	MODERATE	MODERATE	NEGATIVE
VISUAL DISTURBANCE DUE TO LITTERING FROM BAD WASTE REMOVAL PRACTICES.	4	3	3	3	22	LOW	LOW	NEGATIVE
LIGHT POLLUTION FROM PROPOSED DEVELOPMENT.	4	3	2	3	27	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• LIGHT POLLUTION SHOULD BE MINIMIZED AS FAR AS POSSIBLE. • LIGHTING ON SITE IS TO BE SUFFICIENT FOR SAFETY AND SECURITY PURPOSES, BUT SHALL NOT BE INTRUSIVE TO NEIGHBOURING RESIDENTS, DISTURB WILDLIFE, OR INTERFERE WITH ROAD TRAFFIC. • LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE IS NOT ALLOWED AD SHOULD BE WELL MANAGED. • REFUSE MUST BE CONTAINED AND DISPOSED OF AT THE MUNICIPAL LAND FILL SITE. • THE BUILDINGS PLANNED MAY NOT BE VISUALLY INTRUSIVE. • ALL LIGHTS USED FOR NON-SECURITY PURPOSES SHOULD BE ENERGY EFFICIENT FOR EXAMPLE COMPACT FLUORESCENT LIGHTS (CFL). • OUTSIDE LIGHTS WILL HAVE TO BE DOWNWARD SHINING (EYELID TYPE) AND LOW WATTAGE. FLUORESCENT LAMPS GIVE FIVE TIMES THE LIGHT AND LAST UP TO 10 TIMES AS LONG AS ORDINARY BULBS. • SIGNS MUST CONFORM TO THE STANDARDS OF SOUTH AFRICAN MANUAL FOR OUTDOOR ADVERTISING CONTROL (SAMOAC). • THE DEVELOPMENT AS WELL AS AREAS THAT HAVE BEEN LANDSCAPED MUST BE WELL MAINTAINED. • THE DISTURBED AREAS SHOULD BE REHABILITATED AND MONITORED AFTERWARDS TO INSPECT THE SUCCESSION OF THE VEGETATION, UNTIL IT IS SELF-SUSTAINABLE. • REGULAR CLEAN-UP PROGRAMS MUST BE APPLIED.								
SOILS								
CONTAMINATION OF THE SOIL A RESULT OF MINOR SPILLAGES DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
WIND AND WATER EROSION OF BARES SOIL SURFACES.	4	4	1	2	18	LOW	LOW	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• THE REHABILITATION AND MAINTENANCE OF CLEARED AREAS MUST BE CONTINUED (E.G. STABILIZED) TO LIMIT								

EROSION. AREAS WITH BARE SOIL SHOULD BE VEGETATED OR PAVED. • THE SURFACE DRAINAGE SYSTEM MUST BE REGULARLY INSPECTED, CLEANED AND DAMAGE REPORTED AND REPAIRED, ESPECIALLY AFTER HEAVY PRECIPITATION EVENTS.								
WATER								
IMPACTS ON EPHEMERAL STREAMS AND DRAINAGE LINES.	2	1	3	2	12	LOW	LOW	NEGATIVE
GROUNDWATER USAGE DURING THE OPERATIONAL PHASE.	4	4	1	2	18	LOW	LOW	NEGATIVE
POLLUTION OF STORM WATER BY SPILLAGES OF OIL, LUBRICATIONS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
POLLUTION OF WATER RESOURCES FROM MAKING USE OF PESTICIDES AND HERBICIDES.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
THE INCREASE IN DEVELOPED AREAS AS WELL AS PAVED AREAS SUCH AS THE ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE RECHARGE OF GROUNDWATER.	4	4	3	2	22	LOW	LOW	NEGATIVE
ALTERED RUNOFF PATTERNS DUE TO RAINFALL INTERCEPTION BY IMPENETRABLE HARD SURFACES AND COMPACTED AREAS.	4	4	3	3	33	LOW	MODERATE	NEGATIVE
STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.	4	3	2	3	27	LOW	MODERATE	NEGATIVE
MITIGATION OR MANAGEMENT MEASURES:								
• IF CONTAMINATION OR LEAKAGE IS DETECTED A REHABILITATION PLAN MUST BE COMPILED AND EXECUTED. • INFORM AUTHORITIES OF ANY LEAKS OR SPILLAGES. • THE SURFACE DRAINAGE SYSTEM MUST BE REGULARLY INSPECTED AND DAMAGE REPORTED AND REPAIRED, ESPECIALLY AFTER HEAVY PRECIPITATION EVENTS. • ALL HAZARDOUS SUBSTANCES MUST BE STORED IN SUITABLE CONTAINERS. THE CONTAINERS WILL BE CLEARLY MARKED TO INDICATE CONTENTS, QUANTITIES AND SAFETY REQUIREMENTS.								

- SERVICING OF VEHICLES AND MACHINERY SHOULD NOT BE ALLOWED WITHIN THE RESIDENTIAL AREA.
- WATER SHOULD BE USED SPARINGLY AND IT SHOULD BE ENSURED THAT NO WATER IS WASTED.
- GROUNDWATER RESOURCES MAY NOT BE USED AS POTABLE WATER RESOURCE FOR THE PROPOSED DEVELOPMENT.

SOCIO-ECONOMIC IMPACT ASSESSMENT:								
PROVISION OF RESIDENTIAL UNITS THEREBY GIVING EFFECT TO MMM SPATIAL DEVELOPMENT FRAMEWORK IF APPROVED.	4	4	2	5	50	HIGH	HIGH	POSITIVE
INCREASE IN MMM'S RATES AND TAXES IF DEVELOPMENT IS APPROVED.	4	4	2	5	50	HIGH	HIGH	POSITIVE
INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS AND WORKERS OF THE PROPOSED DEVELOPMENT.	4	3	3	4	40	MODERATE	MODERATE	POSITIVE
JOB CREATION	4	4	3	4	44	MODERATE	MODERATE	POSITIVE
DISTURBANCE TO ADJACENT LANDOWNERS DUE TO OPERATIONAL PHASE OF DEVELOPMENT, MAINTENANCE ACTIVITIES AND VEHICLES ACCESSING AND LEAVING THE DEVELOPMENT.	4	3	2	4	36	LOW	MODERATE	NEGATIVE
INCREASE IN CRIME DUE TO THE EXISTENCE OF THE PROPOSED DEVELOPMENT.	4	3	2	3	27	LOW	MODERATE	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- A COMPLAINT REGISTER THAT RECORDS ALL COMPLAINTS RAISED BY LANDOWNERS, COMMUNITIES OR THE GENERAL PUBLIC ABOUT THE OPERATION ACTIVITIES SHOULD BE RECORDED. THE REGISTER SHALL BE UPDATED REGULARLY, RECORDING NAMES OF THE COMPLAINANTS, THEIR DOMICILE AND CONTACT DETAILS, INCLUDING ACTIONS TAKEN TO RECTIFY THE COMPLAINT.
- ACCESS TO THE SITE MUST BE FROM THE TARRED REYNECKE AVENUE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT. IT IS NOT ALLOWED THAT ANY CONSTRUCTION VEHICLE USES REYNECKE AVENUE AS THIS ROAD IS ALREADY BUSY ESPECIALLY DURING PEAK TIME TRAFFIC. A FURTHER CONDITION WILL BE SET THAT NO HEAVY VEHICLES AND MACHINERY WILL BE ALLOWED TO TRAVEL TO AND FROM THE PROPOSED SITE IN MORNING AND AFTERNOON PEAK TRAFFIC HOURS (NONE BEFORE 08:30 AND AFTER 16:00).
- NO WASTE MAY BE BURNED ON SITE, THE WASTE GENERATED ON SITE, MUST BE MANAGED IN ACCORDANCE WITH THE MEASURES PROVIDED IN THE SECTION ABOVE.
- TRAFFIC:
    - ACCESS ROADS SHOULD BE KEPT IN A GOOD CONDITION.
    - ROAD SURFACES IN THE IMMEDIATE VICINITY OF THE SITE SHOULD BE MONITORED. IF THE ROAD IS DAMAGED THE RELEVANT AUTHORITY MUST BE NOTIFIED.

- ADVERTISING BOARDS MUST NOT BLOCK THE VISIBILITY OF ANY ROAD USERS.

- WASTE GENERATION & DISPOSAL:
  - SOLID WASTE MUST BE DISPOSED OF ON A WEEKLY BASIS AT A REGISTERED LANDFILL SITE. MMM WILL BE COLLECTING THE WASTE ON A WEEKLY BASIS.
  - RESIDENTS MUST PUT ON THEIR REFUSE ONLY ON THE DAY MMM IS TO COLLECT IT TO AVOID STRAY DOGS RIPPING THE BAGS LEADING TO LITTERING OF THE SURROUNDINGS.
  - THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT (ACT NO. 59 OF 2008) COVERS ALL ASPECTS RELATING TO WASTE MANAGEMENT AND MUST BE ADHERED TO AT ALL TIMES. ANY OTHER RELEVANT LEGISLATION MUST ALSO BE ADHERED TO.
  - NO BURNING, ON-SITE BURYING OR DUMPING OF WASTE MUST BE ALLOWED.

CULTURAL & HERITAGE IMPACT ASSESSMENT:								
DAMAGE OR LOSS TO CULTURAL AND HISTORIC RESOURCES.	4	2	1	2	14	LOW	LOW	NEGATIVE

MITIGATION OR MANAGEMENT MEASURES:

- ANY PERSON WHO CAUSES INTENTIONAL DAMAGE TO ARCHAEOLOGICAL OR HISTORICAL SITES OR ARTEFACTS COULD BE PENALISED OR LEGALLY PROSECUTED IN TERMS OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999). ALL ARCHAEOLOGICAL OR HISTORICAL ARTEFACTS THAT ARE UNCOVERED MUST BE REPORTED TO THE SOUTH AFRICAN HERITAGE RESOURCE AGENCY (SAHRA).
- ALL KNOWN AND IDENTIFIED ARCHAEOLOGICAL AND HISTORICAL SITES MUST BE LEFT UNTOUCHED.

ENVIRONMENTAL AWARENESS:								
INCREASING ENVIRONMENTAL AWARENESS BY EDUCATING FUTURE RESIDENTS IN A WAY TO PROTECT OUR RESOURCES AND THEIR ENVIRONMENT.	4	4	2	4	40	MODERATE	MODERATE	POSITIVE
PROMOTING CONSERVATION OF SENSITIVE RESOURCES E.G. WATER.	4	4	4	4	48	MODERATE	MODERATE	POSITIVE

MITIGATION OR MANAGEMENT MEASURES:

- AN ENVIRONMENTAL AWARENESS EDUCATION PROGRAMME NEEDS TO BE COMPILED.
  - THE IMPORTANCE OF PRESERVING AND PROTECTING INDIGENOUS VEGETATION SPECIES;
  - THE SIGNIFICANCE OF GEOLOGICAL, ARCHAEOLOGICAL AND HISTORICAL FEATURES OF THE SITE AND SURROUNDINGS;
  - THE IMPORTANCE OF NOT LITTERING.
  - THE IMPORTANCE OF USING WATER SPARINGLY.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

SEE THE ABOVE SECTION FOR THE MITIGATION MEASURES FOR EACH OF THE ASPECTS IDENTIFIED FOR THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. ALSO SEE THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

Alternative A1 (preferred alternative)

Direct impacts:

NONE IDENTIFIED

Indirect impacts:

NONE IDENTIFIED

Cumulative impacts:

NONE IDENTIFIED

No-go alternative (compulsory)

Direct impacts:

THE DIRECT IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF CONTAMINATION OF STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES FROM THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. AS MENTIONED EARLIER IN THIS REPORT, THE EXISTING SITE IS CURRENTLY PRONE TO EROSION DUE TO LARGE AREAS THAT EXISTS WITHOUT ANY. IT IS OUR OPINION THAT THE PROPOSED DEVELOPMENT WILL MITIGATE THIS EXISTING EROSION AND SEDIMENTATION IMPACT THAT IS CURRENTLY TAKING PLACE ON SITE DURING RAINFALL EVENTS.
- NO ADDED POSSIBILITY OF LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE.
- NO POSSIBLE INCREASE IN VERMIN POPULATIONS.
- THE SITE WILL STAY IN ITS CURRENT STATE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL DEVELOPMENT. FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS.

Indirect impacts:

SHOULD THE SITE NOT BE DEVELOPED THE FOLLOWING INDIRECT IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE DEVELOPMENT WILL NOT OCCUR:

- NO ALTERATION OF THE EXISTING VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS.
- NO ADDED POSSIBILITY OF LIGHTS FROM THE DEVELOPMENT BEING VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- NO INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED DEVELOPMENT.
- NO ADDED POSSIBILITY OF AIR POLLUTION FROM RESIDENTS BURNING THEIR GARDEN WASTE.
- NO ADDITIONAL JOBS CREATION IN THE AREA. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL NOT LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- NO CREATION OF NEW RESIDENTIAL UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.
- NO INCREASE IN TRAFFIC VOLUMES AS A RESULT OF THE PROPOSED DEVELOPMENT.
- NO INCREASE IN EXISTING AMBIENT NOISE LEVELS OF THE AREA DUE TO THE OPERATIONAL PHASE OF THE

PROPOSED DEVELOPMENT NOT TAKING PLACE. IT MUST BE SAID THAT THE SURROUNDING AREAS IS ALREADY SUBJECTED TO CERTAIN NOISE LEVELS, ESPECIALLY THOSE ASSOCIATED FROM RESIDENTS LIVING IN THE AREA, MAINTENANCE ACTIVITIES TAKING PLACE, AS WELL AS NOISE ORIGINATING FROM VEHICLES USING THE ROADS IN THE AREA.

- NO ADDED POSSIBILITY THAT THE PROPOSED DEVELOPMENT MIGHT LEAD TO AN INCREASE IN CRIME RATES OF THE SURROUNDING AREA.
- LOCAL BUSINESSES AND INDUSTRIES THAT PROVIDE GOODS AND MAINTENANCE SERVICES WILL NOT BENEFIT FROM THE PROPOSED DEVELOPMENT. RESULTING IN FURTHER LOSS OF POTENTIAL INCOME TO THE LOCAL ECONOMY. THE PROPOSED SITE WILL STAY IN ITS CURRENT STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- NO ADDED POSSIBILITY DUE TO THE DISTURBANCE OF THE SITE, THAT ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE CURRENT CONDITION OF LARGE PARTS OF THE PROPOSED SITE IS THAT OF BEING HEAVILY DISTURBED WITH LARGE AMOUNTS OF ALIEN PLANTS AND WEEDS OCCURRING ON THE SITE. THE PROBLEM OF ALIEN PLANTS SPREADING TO ADJACENT LAND IS THEREFORE ALREADY A PROBLEM THAT CAN BE RESOLVED BY ALLOWING THE SITE TO BE DEVELOPED.

Cumulative impacts:

NO ADDED POSSIBILITY OF WATER POLLUTION OF DOWNSTREAM WATER RESOURCES AS WELL AS AN INCREASE STORM WATER RUNOFF. NO ADDED DISTURBANCE TO FAUNA PRESENT ON SURROUNDING AREAS. FURTHER CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE ARE A LOSS OF REVENUE IN THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS CREATION.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1

- NO REQUIRED.

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

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning or closure phase:

Alternative S1 (preferred alternative)

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1

THE SITE WILL ONLY BE DECOMMISSIONED IF IT IS NO LONGER NEEDED. SINCE THIS DEVELOPMENT WILL BE SITUATED WITHIN THE URBAN EDGE OF BLOEMFONTEIN AND ALSO SINCE THE PROPOSED DEVELOPMENT IS IN LINE WITH THE MMM'S SDF NO DECOMMISSIONING OF THE DEVELOPMENT IS EXPECTED.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning and closure phase:

Alternative A1 (preferred alternative)

Direct impacts:

NONE IDENTIFIED

Indirect impacts:

NONE IDENTIFIED

Cumulative impacts:

NONE IDENTIFIED

No-go alternative (compulsory)

Direct impacts:

NONE IDENTIFIED

Indirect impacts:

NONE IDENTIFIED

Cumulative impacts:

NONE IDENTIFIED

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1	Alternative A2	Alternative A3
NONE REQUIRED	NONE REQUIRED	NONE REQUIRED

5. CUMULATIVE IMPACTS IDENTIFIED FOR THE PROPOSED DEVELOPMENT

CUMULATIVE IMPACTS REFERS TO THE TOTAL IMPACT THAT A SERIES OF ACTIVITIES OR DEVELOPMENTS, EITHER PRESENT, PAST OR FUTURE, WILL HAVE ON THE ENVIRONMENT WITHIN A SPECIFIC LOCALITY OR REGION OVER A PARTICULAR PERIOD OF TIME. CUMULATIVE IMPACTS ASSOCIATED WITH THE ACTIVITY, AND INCLUDE SPACE CROWDING, FRAGMENTATION, TRIGGERS AND THRESHOLDS.

A NUMBER OF CUMULATIVE NEGATIVE IMPACTS HAVE BEEN IDENTIFIED IN EARLIER SECTIONS OF THIS REPORT. THEY INCLUDE AMONGST OTHERS FOR EXAMPLE SURFACE WATER POLLUTION; INCREASED RUN OFF OF WATER ETC. SEE THE ENVIRONMENTAL IMPACT ASSESSMENT CLASSIFICATION IN BOTH THE CONSTRUCTION AND OPERATIONAL PHASES EARLIER IN THIS REPORT. IF THE MITIGATION MEASURES OUTLINED IN THE REPORT ARE IMPLEMENTED THE CUMULATIVE IMPACTS SHOULD BE MITIGATED TO ACCEPTABLE LEVELS WITH THE EXCEPTION BEING THE FAUNAL DISPLACEMENT.

6. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION

Indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

THE DEVELOPER AND THE CONTRACTORS MUST SIGN THAT THEY HAVE READ AND UNDERSTAND THE ATTACHED ENVIRONMENTAL MANAGEMENT PLAN.

ENVIRONMENTAL CONTROL OFFICER (ECO)

AN INDEPENDENT ENVIRONMENTAL CONTROL OFFICER (ECO) MUST BE APPOINTED. THE ECO IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE EMP DURING THE CONSTRUCTION PHASE. THE ECO'S RESPONSIBILITIES INCLUDE THE FOLLOWING:

1. COMPLIANCE MONITORING

ENVIRONMENTAL MONITORING OF THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL BE UNDERTAKEN BY THE ECO ON A WEEKLY BASIS DURING THE FIRST MONTH WHERE AFTER MONTHLY AUDITS WILL BE CONDUCTED BY THE ECO. THESE AUDITS CAN BE CONDUCTED RANDOMLY AND DO NOT REQUIRE PRIOR ARRANGEMENT WITH THE PROJECT MANAGER. THE ECO IS RESPONSIBLE FOR THE COMPLIANCE MONITORING ON THE SITE, SPECIFICALLY:

- UNDERTAKING ROUTINE MONITORING AND APPOINTING A COMPETENT PERSON/INSTITUTION TO BE RESPONSIBLE FOR SPECIALIST MONITORING, IF NECESSARY.
- ENSURING COMPLIANCE WITH THE EMP, ENVIRONMENTAL AUTHORISATION, SPECIALIST REPORTS AND ANY OTHER CONDITIONS WHICH MAY BE IMPOSED FROM TIME TO TIME.
- COMPILATION OF AN AUDIT REPORT WITH A RATING OF COMPLIANCE WITH THE EMP. THIS REPORT WILL BE SUBMITTED TO DESTEA.
- REPORTING ON ANY TRANSGRESSIONS BY THE CONTRACTOR.
- COMPLETING START-UP, WEEKLY, MONTHLY AND SITE CLOSURE CHECKLISTS.
- MONITORING AND VERIFYING THAT ENVIRONMENTAL IMPACTS ARE KEPT TO A MINIMUM.
- MONITORING THE UNDERTAKING BY THE CONTRACTOR OF ENVIRONMENTAL AWARENESS TRAINING FOR ALL NEW PERSONNEL COMING ONTO SITE.
- MONITORING THE REMOVAL OF PERSON(S) AND/OR EQUIPMENT NOT COMPLYING WITH THE SPECIFICATIONS.
- ENSURING THAT ACTIVITIES ON SITE COMPLY WITH LEGISLATION OF RELEVANCE TO THE ENVIRONMENT.
- CHECK THAT THE ENVIRONMENTAL DAILY CHECKLISTS ARE FILLED OUT ON A DAILY BASIS.
- ENSURE THAT THE INCIDENT AND ENVIRONMENTAL LOG ARE UP TO DATE AND ALL INCIDENCES HAVE BEEN DEALT WITH CORRECTLY AND TIMEOUSLY.
- ENSURE THAT THE ENVIRONMENTAL COMPLAINTS REGISTER IS UP TO DATE AND ALL COMPLAINTS HAVE BEEN DEALT WITH CORRECTLY AND TIMEOUSLY.
- UNDERTAKING A CONTINUAL INTERNAL REVIEW OF THE EMP AND SUBMITTING A REPORT TO THE DEVELOPER AND DESTEA ENVIRONMENTAL OFFICIAL AT THE END OF THE PROJECT.

2. EMP MONITORING

THE MAIN OBJECTIVE OF THE EMP IS TO ENSURE THAT THE ACTIVITIES CARRIED OUT DURING THE VARIOUS PHASES OF THE DEVELOPMENT HAVE A MINIMAL NEGATIVE EFFECT ON THE NATURAL ENVIRONMENT. IT IS THEREFORE IMPORTANT TO ENSURE THAT THE EMP IS REACHING THAT OBJECTIVE. THIS CAN BE DONE THROUGH VARIOUS MONITORING PROGRAMS DESIGNED FOR SUCH A PURPOSE. THE ECO IS RESPONSIBLE FOR THESE MONITORING PROGRAMMES:

- THE EMP MUST BE CONTINUALLY MONITORED TO DETERMINE ITS EFFECTIVENESS AND EFFICIENCY.
- RECORDS OF ALL ACTIVITIES DISCUSSED IN THE EMP SHOULD BE KEPT. THESE RECORDS SHOULD INCLUDE ANY EXCEPTIONS THAT MAY HAVE BEEN MADE (UNDER PERMISSION OF THE ECO AND APPROPRIATE AUTHORITIES), PROBLEMS THAT WERE EXPERIENCED, METHODS USED TO RECTIFY PROBLEMS AS WELL AS THE FINAL OUTCOME. THIS INFORMATION CAN THEN BE USED TO DETERMINE FLAWS IN THE EMP. THESE FLAWS WOULD BE GUIDELINES OR RECOMMENDATIONS THAT ARE INEFFECTIVE AND INEFFICIENT. THEY WOULD THEN NEED TO BE REMOVED OR CHANGED/ADAPTED UNTIL THEY ARE EFFECTIVE AND EFFICIENT.
- RECORDS OF NON-COMPLIANCE MUST BE KEPT. THESE RECORDS MUST INCLUDE DETAILS OF THE OFFENCE, OFFENDER AND PENALTY.
- ALL ASPECTS OF THE EMP NEED TO BE MONITORED/AUDITED TO ENSURE COMPLIANCE AND IN ORDER TO REMEDY ANY PROBLEMS WITH EITHER THE IMPLEMENTATION OR INTERPRETATION OF THE EMP. THESE AUDITS WILL ASSIST IN STREAMLINING METHODS TO AVOID FUTURE CONFLICT SITUATIONS.

3. CONSTRUCTION PLANNING

THE ECO WILL BE RESPONSIBLE FOR:

- ENSURING THAT METHOD STATEMENT'S ARE SUBMITTED FOR THE ACTIVITIES OCCURRING ON THE SITE.
- INFORMING THE CONTRACTORS OF ANY DECISIONS THAT ARE TAKEN CONCERNING THE NATURAL AND SOCIAL ENVIRONMENT DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT.
- INFORMING THE CONTRACTORS OF THE NECESSARY CORRECTIVE ACTIONS TO BE TAKEN AGAINST EMPLOYEES TRANSGRESSING THE MANAGEMENT ACTIVITIES STIPULATED IN THIS EMP.
- LIAISON WITH CONTRACTORS REGARDING ENVIRONMENTAL MANAGEMENT.
- ASSISTING THE CONTRACTOR IN FINDING ENVIRONMENTALLY RESPONSIBLE SOLUTIONS TO PROBLEMS.

4. METHOD STATEMENT (MS)

MS'S ARE TO BE COMPLETED BY THE PERSON UNDERTAKING THE WORK, THE CONTRACTOR. THE ECO WILL USE THE MS TO AUDIT COMPLIANCE BY THE CONTRACTOR WITH THE REQUIREMENTS OF THE APPROVED MS.

5. SITE HANDOVER

THE ECO WILL ATTEND THE SITE HANDOVER MEETING, WHERE THE EMP WILL FORM PART OF THE AGENDA. KEY ENVIRONMENTAL MATTERS DISCUSSED AT THIS MEETING WILL BE MINUTED AND SUBMITTED AS PART OF THE ENVIRONMENTAL REPORTING. THE CONSTRUCTION SITE LAYOUT PLAN IS A KEY COMPONENT OF SITE HANDOVER AND MUST BE FINALIZED BEFORE SITE HANDOVER CAN BE COMPLETED. THE APPROVED PLAN MUST BE ATTACHED TO THE SITE HANDOVER MEETING MINUTES. AMENDMENTS TO THIS PLAN MUST BE DISCUSSED AND APPROVED AT SUBSEQUENT SITE MEETINGS.

6. SITE INSPECTIONS AND MEETINGS

THE ECO WILL CONDUCT REGULAR COMPLIANCE INSPECTIONS AND MUST ATTEND KEY SITE MEETINGS. THE EMP WILL BE AN AGENDA ITEM OF THE MONTHLY SITE MEETINGS, AND THE RESPONSIBLE DESTEA ENVIRONMENTAL OFFICIAL MAY ATTEND THESE MEETINGS IN ORDER TO PROVIDE INPUT WITH RESPECT TO COMPLIANCE WITH THE EMP. THE ECO IS RESPONSIBLE FOR:

- GIVING A REPORT BACK ON THE ENVIRONMENTAL ISSUES AT THE MONTHLY SITE MEETINGS AND OTHER MEETINGS THAT MAY BE CALLED REGARDING ENVIRONMENTAL MATTERS.
- VISITING THE SITE ON A REGULAR BASIS TO DETERMINE WHETHER COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION AND THE EMP ARE BEING MAINTAINED.
- INSPECTING THE SITE AND SURROUNDING AREAS REGULARLY WITH REGARD TO COMPLIANCE WITH THE EMP AND WILL RECORD THE FINDINGS OF THE SITE INSPECTION IN A SITE INSPECTION CHECKLIST, WHICH WILL SERVE AS THE ENVIRONMENTAL COMPLIANCE REPORT.
- IF ANY ENVIRONMENTAL MATTERS OCCUR AT OR IN BETWEEN THE SITE MEETINGS THEY MUST BE REFLECTED IN WRITTEN CORRESPONDENCE (EMAIL/FAX/LETTER) DIRECTED OR COPIED TO THE ECO. A COPY OF THIS CORRESPONDENCE MUST BE PLACED IN THE ENVIRONMENTAL MANAGEMENT FILES. SHOULD IT BE DEEMED NECESSARY THE ECO MUST CONDUCT A SITE VISIT AND THE MATTER MUST BE RECORDED IN THE NEXT INSPECTION CHECKLIST.

7. **SUBSTANTIAL COMPLETION**

THE ECO WILL ATTEND THE SUBSTANTIAL COMPLETION INSPECTIONS.

8. FINAL COMPLETION AND ENVIRONMENTAL PERFORMANCE CERTIFICATE

ONCE THE ENVIRONMENTAL ITEMS ON THE PROBLEM LIST HAVE BEEN ADDRESSED TO THE SATISFACTION OF THE ECO, THE ECO WILL PROVIDE WRITTEN SIGNOFF CONFIRMING THAT THE ENVIRONMENTAL SPECIFICATIONS APPLICABLE TO THE CONTRACTOR(S) HAVE BEEN MET. THIS WILL BE SUBMITTED TO THE PROJECT MANAGER PRIOR TO THE FINAL CERTIFICATE OF COMPLETION BEING ISSUED.

Alternative A1

NONE REQUIRED.

6. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

THE CONSTRUCTION PHASE HAS THE GREATEST IMPACT ON THE ENVIRONMENT EVEN WITH MITIGATION. CLASSIFICATION OF THESE IMPACTS CAN BE FOUND IN THE SECTIONS EARLIER IN OF THIS REPORT. THE NEGATIVE IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE INCLUDE:

- SOIL AND GROUND WATER POLLUTION.
- EROSION.
- SURFACE WATER POLLUTION.
- INCREASED STORM WATER RUNOFF.
- VISUAL INTRUSION & LIGHT POLLUTION.
- DISTURBANCE AND LOSS OF FAUNA.
- DISTURBANCE AND LOSS OF INDIGENOUS VEGETATION.
- DISTURBANCE OR LOSS OF THREATENED/PROTECTED PLANTS.
- CONSTRUCTION TRAFFIC & ACCESS.
- NOISE POLLUTION.
- ATMOSPHERE POLLUTION AND ODOURS RESULTING FROM DUST AND CONSTRUCTION EQUIPMENT.
- SAFETY & SECURITY ON THE SITE.
- HYGIENE.
- SPREAD OF DECLARED WEEDS AND ALIEN INVADER PLANTS.

A NUMBER OF MITIGATION MEASURES TO REDUCE OR IMPROVE THESE IMPACTS HAVE BEEN IDENTIFIED AND ARE PRESENTED IN THE TABLES ABOVE. A KEY ENVIRONMENTAL IMPERATIVE OF THE CONSTRUCTION PHASE WOULD BE TO PREVENT LOSS OF THE PROTECTED PLANTS AS WELL AS TO PREVENT SOIL, AIR, WATER AND NOISE POLLUTION AND EROSION ON THE SITE.

THE CONSTRUCTION PHASE WILL BE ASSOCIATED WITH SOME POSITIVE SOCIO-ECONOMIC IMPACTS IN TERMS OF JOB CREATION AS WELL AS AN INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT.

A NUMBER OF CUMULATIVE IMPACTS HAVE BEEN IDENTIFIED IN THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT. THEY INCLUDE THE FOLLOWING:

- SURFACE WATER POLLUTION - SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE WATER RESOURCES. THIS SURFACE WATER WILL FLOW INTO THE DRAINAGE LINES POLLUTING DOWNSTREAM WATER RESOURCES. FLORA AND FAUNA IN THESE AREAS WHERE CONTAMINATION OCCURS WILL DIE.
- INCREASED RUN OFF OF WATER - THE INCREASE IN PAVED AREAS SUCH AS THE CONSTRUCTION CAMP, ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES.
- GROUND WATER POLLUTION - THE CONSTRUCTION PHASE WILL RESULT IN INCREASED POSSIBILITY OF INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL. THE CLEARING OF THE SITE WILL RESULT IN EXPOSED SOIL SURFACES WHICH MAY BE PRONE TO EROSION AND SEDIMENTATION OF DOWNSTREAM WATER RESOURCES. SPILLAGES OF CEMENT, OIL, LUBRICANTS AND FUEL FROM CONSTRUCTION VEHICLES, PLANT AND MACHINERY HAS THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER RESOURCES.
- SOCIO ECONOMIC - THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT WILL RESULT IN DIRECT JOBS BEING CREATED FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. INDIRECTLY, JOBS ARE ALSO CREATED IN INDUSTRIES THAT PROVIDE GOODS, MATERIALS AND SERVICES, FOR EXAMPLE, AN ADDITIONAL AMOUNT OF GOODS USED IN CONSTRUCTION WILL BE REQUIRED FROM BUSINESS AND INDUSTRIES RELATED TO THE CONSTRUCTION SECTOR.
- FAUNAL DISPLACEMENT - THE DISPLACEMENT OF FAUNA ON SITE AND SURROUNDINGS AS A RESULT OF AN INCREASE IN AMBIENT NOISES AND VIBRATIONS IS LIKELY TO REMAIN EVEN WITH MITIGATION.

THE NEGATIVE IMPACTS RELATING TO THE OPERATIONAL PHASE INCLUDE THE FOLLOWING (CLASSIFICATION OF THESE IMPACTS CAN BE FOUND EARLIER IN THIS REPORT):

- SOIL AND GROUND WATER POLLUTION.
- EROSION.
- ALTERED RUNOFF PATTERNS DUE TO RAINFALL INTERCEPTION BY IMPENETRABLE HARD SURFACES AND COMPACTED AREAS.
- POSSIBLE INCREASE IN VERMIN POPULATIONS.
- DISTURBANCE OF FLORA & FAUNA.
- DISTURBANCE TO MIGRATION ROUTES AND ASSOCIATED IMPACTS TO SPECIES POPULATIONS.
- WASTE GENERATION AND DISPOSAL - LITTERING.
- ATMOSPHERE POLLUTION AND ODOURS RESULTING FROM DUST, VEHICLE ENGINES AND BURNING OF GARDEN WASTE ON SITE.
- NOISE POLLUTION.
- VISUAL INTRUSION & LIGHT POLLUTION.
- TRAFFIC & ACCESS.
- CRIME AND SAFETY & SECURITY.
- ESTABLISHMENT AND SPREAD OF WEEDS AND ALIEN INVADER PLANTS.
- IMPACT ON BULK SERVICES.

A NUMBER OF MITIGATION MEASURE HAVE BEEN IDENTIFIED TO REDUCE THE POTENTIAL NEGATIVE IMPACTS DURING THE OPERATIONAL PHASE TO ACCEPTABLE LEVELS SHOULD THEY BE IMPLEMENTED.

POSITIVE IMPACTS RELATED TO THE PROPOSED OPERATIONAL PHASE OF THE DEVELOPMENT INCLUDE:

- JOB CREATION. THE PROPOSED DEVELOPMENT WILL LEAD TO THE INCREASE IN THE LEVEL OF LOCAL EMPLOYMENT. BOTH SHORT-TERM AND LONG-TERM EMPLOYMENT WILL BE CREATED.

- THE DEVELOPMENT WILL LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- AVAILABILITY OF NEW RESIDENTIAL UNITS AND THEREFORE THE ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM.
- INCREASE IN THE ECONOMIC POTENTIAL OF LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO RESIDENTS OF THE PROPOSED DEVELOPMENT.

A NUMBER OF CUMULATIVE IMPACTS HAVE BEEN IDENTIFIED IN THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT. THEY INCLUDE THE FOLLOWING:

- SURFACE WATER POLLUTION - SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES. POTENTIAL POLLUTION OF SURFACE WATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.
- INCREASED RUN OFF OF WATER - THE INCREASE IN DEVELOPED AREAS (HOUSES) AS WELL AS PAVED AREAS SUCH AS THE ROADS AND DRIVEWAYS WILL INCREASE THE AMOUNT OF STORM WATER RUNOFF AND THUS REDUCE THE INFILTRATION OF WATER INTO THE GROUNDWATER. THIS MAY RESULT IN LOWER RECHARGE RATE OF GROUNDWATER RESOURCES AS WELL AS EROSION OF AREAS THAT ARE NOT PAVED. STORM WATER RUN-OFF THEREFORE HAS THE POTENTIAL TO ERODE THE TOPSOIL AND RESULT IN SEDIMENTATION OF DOWNSTREAM WATER RESOURCES IF NOT CONTROLLED.
- GROUND WATER POLLUTION - THE OPERATIONAL PHASE CAN RESULT IN INCREASED INFILTRATION OF CONTAMINANTS INTO THE GROUND WATER AND SOIL RESOURCES. SPILLAGES OF OIL, LUBRICANTS AND FUEL FROM VEHICLES AND MAINTENANCE EQUIPMENT HAVE THE POTENTIAL TO CONTAMINATE THE SOIL AND GROUNDWATER. POTENTIAL POLLUTION OF GROUNDWATER FROM PESTICIDES AND HERBICIDES USED DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.
- SOCIO ECONOMIC - THE PROPOSED DEVELOPMENT WILL LEAD TO AN INCREASE IN THE LOCAL EMPLOYMENT LEVEL OF SURROUNDING AREAS. THE DEVELOPMENT WILL ALSO HAVE A POSITIVE ECONOMIC IMPACT ON LOCAL INDUSTRIES AND BUSINESSES PROVIDING SERVICES AND GOODS TO PEOPLE RESIDING IN THE PROPOSED DEVELOPMENT.
- DISTURBANCE OF FAUNA - THE DISTURBANCE OF FAUNA IN SURROUNDING AREAS DUE TO AN INCREASE IN AMBIENT NOISES AND VIBRATIONS RESULTING FROM THE PROPOSED DEVELOPMENT. DISTURBANCE IS LIKELY TO REMAIN EVEN WITH MITIGATION.

IF THE MITIGATION MEASURES OUTLINED IN THE REPORT ARE IMPLEMENTED THE CUMULATIVE IMPACTS SHOULD BE MITIGATED TO ACCEPTABLE LEVELS DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES OF THE PROPOSED DEVELOPMENT.

THE CONSTRUCTION PHASE WILL BE OF SHORT DURATION AND OPERATIONAL PHASE WILL HAVE LIMITED ENVIRONMENTAL IMPACTS IF DEVELOPED ACCORDING TO THE CONDITIONS OUTLINED IN THIS AND OTHER ATTACHED SPECIALIST REPORTS. IT IS THEREFORE CONCLUDED THAT THE PROJECT WILL NOT HAVE ANY MAJOR NEGATIVE IMPACTS ON THE RECEIVING ENVIRONMENT DURING BOTH THE CONSTRUCTION AND OPERATIONAL PHASES OF THE PROPOSED DEVELOPMENT, SHOULD THE MITIGATIONS MEASURES PROPOSED BE IMPLEMENTED.

Alternative B

NONE IDENTIFIED

Alternative C

NONE IDENTIFIED

No-go alternative (compulsory)

THE IMPACTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF CONTAMINATION OF STORM WATER AND SUBSEQUENTLY DOWNSTREAM WATER RESOURCES FROM THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- NO ADDED POSSIBILITY OF LITTERING, RUBBISH AND ILLEGAL DUMPING ON THE SITE.
- NO POSSIBLE INCREASE IN VERMIN POPULATIONS.
- THE SITE WILL STAY IN ITS CURRENT STATE. VERY LIMITED FAUNA IS FOUND ON THE SITE DUE TO THE PROPOSED SITE BEING SMALL IN SIZE, FRAGMENTED AND SITUATED DIRECTLY NEXT TO EXISTING RESIDENTIAL AREA. FAUNA ON THE PROPOSED SITE IS MAINLY LIMITED TO RODENTS AND SOME AVIFAUNA LIKE NORMAL GARDEN BIRDS.
- NO ALTERATION OF THE EXISTING VISUAL CHARACTERISTICS OF THE SITE AND THE SURROUNDINGS. NO ADDED POSSIBILITY OF LIGHTS FROM THE DEVELOPMENT BEING VISUALLY INTRUSIVE TO SURROUNDING RESIDENTS. IT IS OUR OPINION THAT THE SITE IN ITS CURRENT STATE HAS A MUCH LARGER VISUAL IMPACT ON THE SURROUNDINGS AREAS THAN WHAT IT WILL HAVE DURING THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.
- NO INCREASED LEVELS OF GAS EMISSIONS FROM VEHICLES ACCESSING AND LEAVING THE PROPOSED DEVELOPMENT.
- NO ADDED POSSIBILITY OF AIR POLLUTION FROM RESIDENTS BURNING THEIR GARDEN WASTE.
- NO ADDITIONAL JOBS CREATION IN THE AREA. THUS THERE WILL BE A LOSS OF INCOME IN THE LOCAL ECONOMY.
- THE PROPOSED SITE WILL NOT LEAD TO AN INCREASE IN MMM'S INCOME FROM RATES AND TAXES.
- NO CREATION OF NEW RESIDENTIAL UNITS AND THEREFORE NO ENFORCEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK PLAN OF MMM ON THE SAID SITE.
- NO INCREASE IN TRAFFIC VOLUMES AS A RESULT OF THE PROPOSED DEVELOPMENT.
- NO INCREASE IN EXISTING AMBIENT NOISE LEVELS OF THE AREA DUE TO THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT NOT TAKING PLACE. IT MUST BE SAID THAT THE SURROUNDING AREAS IS ALREADY SUBJECTED TO NOISE LEVELS, ESPECIALLY THOSE ASSOCIATED FROM RESIDENTS LIVING IN THE AREA, MAINTENANCE ACTIVITIES TAKING PLACE, AS WELL AS NOISE ORIGINATING FROM VEHICLES USING THE ROADS IN THE AREA.
- NO ADDED POSSIBILITY THAT THE PROPOSED DEVELOPMENT MIGHT LEAD TO AN INCREASE IN CRIME RATES OF THE SURROUNDING AREA.
- LOCAL BUSINESSES AND INDUSTRIES THAT PROVIDE GOODS AND MAINTENANCE SERVICES WILL NOT BENEFIT FROM THE PROPOSED DEVELOPMENT. RESULTING IN FURTHER LOSS OF POTENTIAL INCOME TO THE LOCAL ECONOMY. THE PROPOSED SITE WILL STAY IN ITS CURRENT STATE AND WILL NOT CONTRIBUTE ANYTHING TO THE LOCAL ECONOMY AS IT IS TOO SMALL TO USE FOR AGRICULTURAL PURPOSES.
- NO ADDED POSSIBILITY DUE TO THE DISTURBANCE OF THE SITE, THAT ALIEN PLANTS MIGHT BE ABLE TO ESTABLISH AND COULD BECOME A PROBLEM BY INFESTING NEIGHBOURING LAND. THE CURRENT CONDITION OF LARGE PARTS OF THE PROPOSED SITE IS THAT OF BEING HEAVILY DISTURBED WITH LARGE AMOUNTS OF ALIEN PLANTS AND WEEDS OCCURRING ON THE SITE. THE PROBLEM OF ALIEN PLANTS SPREADING TO ADJACENT LAND IS THEREFORE ALREADY A BIG PROBLEM THAT CAN BE RESOLVED BY ALLOWING THE SITE TO BE DEVELOPED.

THE CUMULATIVE IMPACTS ASSOCIATED WITH THE DEVELOPMENT NOT BEING ALLOWED INCLUDE:

- NO ADDED POSSIBILITY OF WATER POLLUTION OF DOWNSTREAM WATER RESOURCES AS WELL AS AN INCREASE STORM WATER RUNOFF. NO ADDED DISTURBANCE TO FAUNA PRESENT ON SURROUNDING AREAS. FURTHER CUMULATIVE IMPACTS ASSOCIATED WITH NOT DEVELOPING THE SITE ARE A LOSS OF REVENUE IN THE LOCAL ECONOMY AND THE LOSS OF POTENTIAL JOBS CREATION.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

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

THE PROPOSED DEVELOPMENT TRIGGERS A NUMBER OF LISTED ACTIVITIES AS INCLUDED IN THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS (08 DECEMBER 2014), GN R 982 – 985, IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, NO. 107 OF 1998 (NEMA), AS AMENDED.

THE PROJECT SITE AND THE SURROUNDING AREA WERE ASSESSED FOR ANY SENSITIVE ECOSYSTEMS INCLUDING DRAINAGE LINES AND WETLANDS ETC. IT WAS FOUND THAT THERE ARE NO WETLANDS OR DRAINAGE LINES ON THE PROJECT SITE. THE PROPOSED SITE IS SITUATED IN THE WINBURG GRASSY SHRUBLAND (GH7) THAT IS CLASSIFIED AS BEING LEAST THREATENED. THE SITE HAS BEEN ISOLATED BY RESIDENTIAL DEVELOPMENTS, AND SMALL HOLDINGS WHERE THE VEGETATION HAS BEEN SEVERELY TRANSFORMED. THE SITE HAS ALSO BEEN SUBJECTED TO DISTURBANCE DUE TO ILLEGAL DUMPING OF BUILDING RUBBLE ETC IN THE PAST AS INDICATED BY THE RELATIVELY HIGH COVER OF PIONEER SPECIES SUCH AS ARISTIDA CONGESTA, CYNODON DACTYLON AND *SCHKUHRIA PINNATA. FROM AN ENVIRONMENTAL PERSPECTIVE THE SITE IS NOT SENSITIVE THAT THE PROPOSED DEVELOPMENT CANNOT TAKE PLACE.

OUR RECOMMENDATION, THEREFORE BASED ON THE ASSESSMENT OF THE AVAILABLE INFORMATION, IS THAT APPLICATION FOR THE PROPOSED DEVELOPMENT SHOULD BE AUTHORISED PROVIDED THAT SENSITIVE PLANNING, DESIGN AND GOOD ENVIRONMENTAL MANAGEMENT BE CARRIED OUT BY THE PROPONENT DURING ALL PHASES OF DEVELOPMENT. A VARIETY OF MITIGATION MEASURES HAVE BEEN IDENTIFIED THAT WILL SERVE TO MITIGATE THE SCALE, INTENSITY, DURATION OR SIGNIFICANCE OF THE IMPACTS IDENTIFIED. THESE INCLUDE GUIDELINES TO BE APPLIED DURING THE CONSTRUCTION AND OPERATIONAL PHASES OF THE PROJECT.

IT IS SUBMITTED THAT THE PROPOSED MITIGATORY MEASURES, IF IMPLEMENTED, WILL REDUCE THE SIGNIFICANCE OF THE IDENTIFIED IMPACTS TO "LOW", AND THAT THE PROPOSED PROJECT SHOULD PROCEED. THE RECOMMENDATIONS MADE IN THE FOLLOWING SPECIALIST STUDIES MUST BE ADHERED TO.

- SERVICES REPORTS;
- HERITAGE IMPACT ASSESSMENT;
- GEOTECHNICAL REPORT;
- ELECTRICAL SERVICES AGREEMENT
- TRAFFIC IMPACT ASSESSMENT.
- CONDITIONS AND REQUIREMENTS OF MMM AND THE DEPARTMENT OF POLICE ROADS AND TRANSPORT.

THE FOLLOWING AMONGST MANY OTHERS MUST BE INCLUDED AS CONDITIONS WITHIN THE ENVIRONMENTAL AUTHORIZATION SHOULD DESTEA DECIDE TO APPROVE THE PROPOSED DEVELOPMENT. THEY INCLUDE:

- THE CONTRACTOR MUST BE HELD RESPONSIBLE FOR THE CONDITION OF FELLOWS ROAD AND HE WILL BE

RESPONSIBLE MAINTAIN AND REPAIR FELLOWS ROAD FROM LUCAS STEYN UP TO HIS DEVELOPMENT SITE AS AN MINIMUM EVERY 2 WEEKS.

- THE CLIENT MUST REHABILITATE FELLOWS ROAD ONCE CONSTRUCTION HAS COMPLETED.
- ACCESS TO THE SITE MUST BE FROM THE TARRED REYNECKE AVENUE DURING THE OPERATIONAL PHASE OF THE DEVELOPMENT.
- IT MUST NOT BE ALLOWED THAT ANY CONSTRUCTION VEHICLE USES REYNECKE AVENUE AS THIS ROAD IS ALREADY BUSY ESPECIALLY DURING PEAK TIME TRAFFIC.
- HEAVY VEHICLES AND MACHINERY WILL BE ALLOWED TO TRAVEL TO AND FROM THE PROPOSED SITE IN MORNING AND AFTERNOON PEAK TRAFFIC HOURS (NONE BEFORE 08:30 AND AFTER 16:00).
- A TRAFFIC MANAGEMENT PLAN FOR THE SITE ACCESS TO ENSURE THAT NO HAZARDS WOULD RESULT FROM INCREASED TRUCK TRAFFIC FLOW. THIS PLAN MUST INCLUDE MEASURES TO MINIMIZE IMPACTS ON LOCAL COMMUTER E.G. LIMITING CONSTRUCTION VEHICLES TRAVELLING ON PUBLIC ROADWAY DURING THE MORNING AND LATE IN THE AFTERNOON COMMUTE TIME AND AVOID USING ROADS THROUGH DENSELY POPULATED BUILT UP AREA SO AS NOT TO DISTURB EXISTING RETAIL AND COMMERCIAL OPERATIONS.
- THE INTERSECTION BETWEEN LUCAS STEYN STREET, RAY CHAMPION STREET, REYNECKE AVENUE AND SECONDARY ROAD S850 (FRANS KLEINHANS ROAD) AND A 75M SECTION OF THE PROVINCIAL ROAD WILL BE TRANSFERRED TO MMM AS AN EXTENSION OF LUCAS STEYN STREET.
- THE DEVELOPER MUST UPGRADE AND SIGNALIZE THE INTERSECTION BETWEEN RAY CHAMPION/REYNECKE STREET FRANS KLEYNHANS STREET (S850 SECONDARY ROAD) IN LINE WITH THE RECOMMENDATION OF THE TRAFFIC IMPACT STUDY AT THE DEVELOPERS OWN EXPENSE.
- GEOMETRIC DESIGN DRAWINGS OF THE INTERSECTION MUST BE APPROVED BY THIS DEPARTMENT OF POLICE, ROADS AND TRANSPORT PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED DEVELOPMENT.
- MMM MUST CONDUCT THE GENERAL; OPERATIONAL AND MAINTENANCE OF THE TRAFFIC SIGNALS.
- THE CONSTRUCTION OF THE INTERSECTION MUST BE DONE PRIOR TO THE DEVELOPMENT OF ANY ERVEN WITHIN THE PROPOSED TOWNSHIP.
- COMPLIANCE TO MMM 'S CONDITIONS AS INDICATED IN LETTERS RECEIVED AS WELL AS COMPLIANCE TO ALL THEIR STANDARD CONDITIONS ON ROADS AND STORMWATER AS WELL AS ON WATER AND SANITATION.
- THE DEVELOPER MUST AT ALL TIME ABIDE TO THE CONDITIONS OF THE SPECIALIST REPORTS AND EMP.
- THE DEVELOPER WILL BE RESPONSIBLE TO PROVIDE ATTENUATION FACILITIES (DAM) TO ADDRESS THE INCREASED STORMWATER PEAK.
- THE DEVELOPMENT MUST PROVIDE ADEQUATE WATER BY ERECTING 1M³ STORAGE CAPACITY IN THE DEVELOPMENT TO EVERY RESIDENTIAL UNIT. THE TOTAL STORAGE CAPACITY PLANNED, AMOUNTS TO 73KL. THIS MUST BE DONE BY MEANS OF WATER TANKS AND PRESSURE PUMPS ON THE SITE/ERVEN OF EVERY UNIT AND FACILITY TO BE CONSTRUCTED. THIS WILL REDUCE THE LOAD ON THE SYSTEM DURING PEAK HOURS.
- THE DEVELOPER MUST APPOINT AN INDEPENDENT ENVIRONMENTAL CONTROL OFFICER (ECO) THAT WILL MONITOR ACTIVITIES DURING CONSTRUCTION. ANY TRANSGRESSIONS MUST BE TAKEN UP WITH DEVELOPER/CONTRACTOR AND FORWARDED TO DESTEA AS WELL AS OTHER RELEVANT AUTHORITIES TO TAKE ACTION ON.
- THE DEVELOPER MUST ALSO APPOINT AN INDEPENDENT ENVIRONMENTAL SPECIALIST TO COMPILE A POST CONSTRUCTION AUDIT AS WELL AS YEARLY OPERATIONAL AUDITS TO BE SUBMITTED TO DESTEA FOR MONITORING AND RECORD KEEPING PURPOSES.

THE DEVELOPMENT MUST COMPLY WITH ALL OTHER ENVIRONMENTAL LEGISLATION AND REQUIREMENTS THAT ARE RELATED TO ISSUES SUCH AS NOISE AND LIGHT POLLUTION, AIR QUALITY, WATER USE AND MANAGEMENT, SOLID WASTE MANAGEMENT, SEWAGE AND STORM WATER MANAGEMENT.

IN THE LIGHT OF THE FINDINGS OF THE SPECIALIST REPORTS ABOVE, IT IS OUR SUBMISSION THAT A SUSTAINABLE ENVIRONMENT CAN BE CREATED CONTAINING INDIRECT BENEFITS TO THE LARGER AREA THAT OUTWEIGHS THE POTENTIAL LIMITED AND SHORT-LIVED ENVIRONMENTAL DISRUPTION DURING CONSTRUCTION. THE DEVELOPMENT IS FINANCIALLY FEASIBLE, PHYSICALLY POSSIBLE AND LEGALLY PERMISSIBLE – AND THEREFORE PASSES THE THREE

TESTS TO DETERMINE IMPLEMENTATION POSSIBILITY, DEVELOPMENT AND MAINTENANCE POTENTIAL AND SUSTAINABILITY.		
IS AN EMPR ATTACHED?	YES	

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.
Any other information relevant to this application and not previously included must be attached in Appendix J.

_____
NAME OF EAP

_____ _____
SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information