

FINAL BASIC ASSESSMENT REPORT

MAKANA HUMAN SETTLEMENT PROJECT, ALICEDALE, MAKANA MUNICIPALITY (DEDEAT Ref: EC04/LN1&3/M/12-38)

December 2012



Cover Photo: View of the site from the south facing north.

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Abbreviations:

BAR	Basic Assessment Report
CARA	Conservation of Agricultural Resources Act
DAFF	Department of Agriculture, Forestry and Fisheries
DBAR	Draft Basic Assessment Report
DEDEAT	Department of Economic Development Environmental Affairs & Tourism
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EA	Environmental Authorisation
EMPr	Environmental Management Programme
EMP	Environmental Management Plan
FBAR	Final Basic Assessment Report
I&APs	Interested and Affected Parties
SAHRA	South African Heritage Resources Agency



**PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ECONOMIC DEVELOPMENT AND
ENVIRONMENTAL AFFAIRS**

BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:
Application Number:
Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, 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, 2010 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. 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.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. 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.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. 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.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
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If YES, please complete form XX for each specialist thus appointed:
Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail

INTRODUCTION

The Makana Municipality (the Applicant) is proposing the construction of approximately 338 single detached residential dwellings (The standard house approved by Makana Municipality for subsidy housing provision), a church (religious) site, as well as the provision of associated bulk services infrastructure, on approximately 15.92 hectares of the Remainder of Portion 1 of the Farm 276, Alicedale. It is anticipated that the development will provide formal housing for approximately 1900 individuals from the local area.

In order to provide water to the proposed housing development it is proposed that a water reservoir with a storage capacity of approximately 750kL is constructed to the south of the proposed development footprint, from where water will be reticulated into the residential area. Sewage from the development will be gravity fed via a new 160 mm underground sewer main to the existing sewage pump station located immediately to the north of Transriviere township, from where it will be pumped through an existing 160mm sewer main to the town's sewage treatment works located to the east of the Kwanonzwakazi township.

The site under assessment is currently zoned Agriculture Zone 1 and will have to be rezoned to Residential, Open Space, Community and Transport. Other properties affected by the proposed development include:

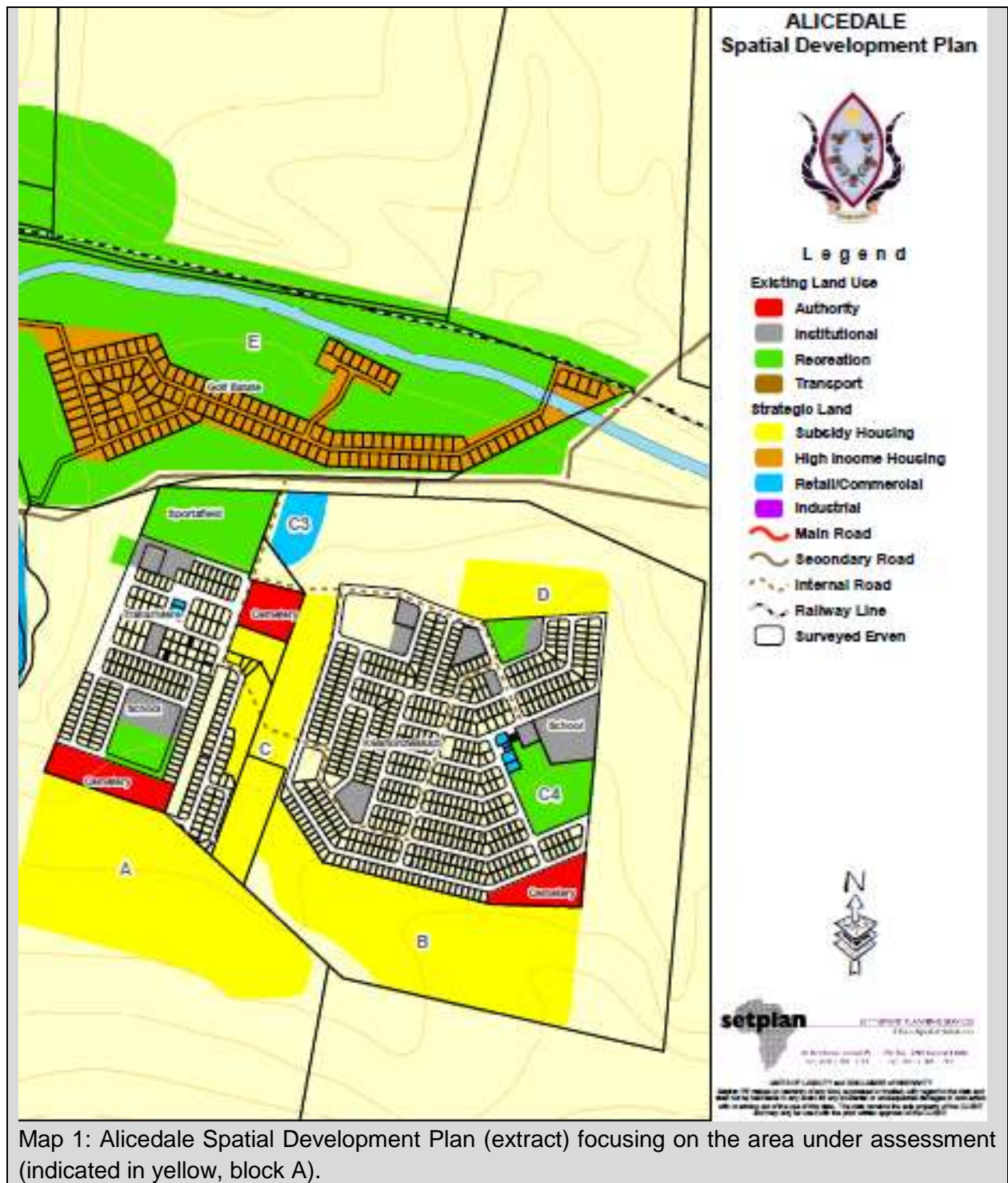
- Erf 1410, 1411 and 1370 (existing residential dwellings), and
- the Remainder of Farm 277 and erf 1363 for stormwater infrastructure

TOWN PLANNING & SURROUNDING LAND-USE

The proposed site is situated immediately south of the existing formal settlement of Transriviere and thus is bordered by residential development and the graveyard to the north. It is bordered by indigenous Thicket vegetation to the east, west and south.

The site falls within the urban edge of Alicedale, as outlined in the Makana Municipality SDF, 2008 and has been designated for High Density Residential Use (See excerpt from Alicedale SDF map below). The site is zoned for agricultural use and the northern half is used as communal grazing for livestock from the local community. The site will require rezoning in order for the development to proceed.

There are a number of informal dwellings in the northern part of the site which will be formalised as part of the proposed development. An Eskom powerline and servitude runs down the centre of the site, in a north to south direction with its associated service road.



Map 1: Alicedale Spatial Development Plan (extract) focusing on the area under assessment (indicated in yellow, block A).



Photo 1. The northern half of the site is currently used for grazing and a portion thereof is occupied by informal dwellings.



Photo 2. The southern half of the site is largely intact apart from a few footpaths and an Eskom powerline servitude and associated service road.

The town of Alicedale and the Bushmans Sands Golf Estate are located approximately 600 metres to the north west and north of the proposed site respectively. The recently upgraded sewage treatment works is about 1,5kms to the north east of the site.

The site can be accessed via Mandela Park settlement, the entrance is off the MR00476 between Alicedale and Grahamstown, approximately 50 kilometres to the west of Grahamstown.

OVERVIEW OF THE EXISTING ENVIRONMENT

The northern half of the site is largely transformed and is currently used for grazing with portions occupied by informal dwellings. This portion of the site is largely transformed from the indigenous Thicket vegetation that would have occurred and that is still present on the southern portion of the site. The western portion of the site is dominated by grass species and one or two succulent species and Aloes.

Other structures on the site include a disused farm dam which currently holds no water, an animal enclosure and power line infrastructure in the Eskom servitude.

The site slopes northwards from approximately 360masl to 320masl, with the north western corner being the lowest point on the site. Two drainage lines currently drain the site; one from the north western corner and one from the north east corner.

PROJECT DESCRIPTION

The project entails the provision of approximately 338 residential erven, the standard house approved by Makana Municipality for subsidy, 1 religious site and associated bulk infrastructure (stormwater, roads, electricity, sewer reticulation and water).

Residential Dwellings

It is proposed that approximately 338 single detached residential dwellings will be constructed on the proposed site; providing housing for approximately 1900 individuals from the local communities of Transriviere and Kwanonzwakazi. The proposed average erf size is approximately 322.2 m².

A design drawing for a standard house built in the Makana Municipal area as part of human

settlement projects has been included in Appendix C of this report.

Religious Site

One religious site of approximately 1000m², is provided in the north eastern corner of the development footprint.

Open Space

The portion of the site that accommodates the Eskom powerline servitude will not be developed but will be retained as Public Open Space.

Service Infrastructure

Information regarding the provision of services to the proposed development has been obtained from the Civil Services Feasibility Report prepared by MBB Consulting Services (EC) Inc. A copy of the full report is included in Appendix G(x) of this report.

Proposed Access and Internal Roads

Access to the new housing scheme will be an extension of the existing bitumen surfaced 5m wide road linking the Mandela Park and Transriviere townships to the R346 (MR0476) road. The existing road will be adequate to service the expected vehicular traffic to the new housing scheme.

The preferred width of the internal roads is 4.5m wide. These roads will be bitumen surfaced on designed and constructed layerworks.

Stormwater

The stormwater emanating from the scheme will collect in stormwater channels constructed along the roads and will be piped and discharged at four separate points, into watercourses northwest and northeast of the site, which eventuate into the Bushmans River. The discharge pipes will be 450mm in diameter, with associated headwalls, two of which are proposed northeast of the site and two to the northwest of the site.

The preliminary design drawings for the proposed roads and stormwater for the development have been included in the Civil Services Feasibility Report included in Appendix G (x).

Should the installation of the stormwater discharge outfalls and their headwalls fall within the 1:100 year floodline of the watercourses northeast and northwest of the site, this component of the project will require a water use authorisation in terms of the National Water Act from the Department of Water Affairs.

The estimated cost for the installation of roads and stormwater is approximately R2.74 million.

Water

The source of raw water supply to Alicedale is the New Years Dam built on the New Yearsday River. The raw water is gravity fed from the dam to the water treatment plant located to the west of the town where it is treated and pumped to various storage reservoirs located at various sites within the town from where it is then reticulated to the different supply zones.

The average annual daily water demand for the new 338 houses have an annual daily demand of 205 m³ per day of water. The Department of Water Affairs has confirmed that the raw water source is adequate to meet the water demand required by the new housing project.

Written confirmation is included as Annexure A of the *Civil Services Feasibility Report*.

The Makana Municipality has confirmed that the existing water treatment plant with a design capacity of 2Ml/day and has a current throughput of 1Ml/day has enough capacity to meet the water demand expected to be generated by the new housing scheme without any upgrading required to the existing water treatment plant.

Due to the elevation of the new housing site in relation to the existing water storage reservoirs it will be necessary to construct a new water storage reservoir at an elevation that is high enough to gravity feed the new housing site. Water will be pumped from the existing pumping station on the banks of the Bushman's River adjacent to the road MR0476 to a new reservoir south of the site.

A site for the new reservoir was identified in 2008 but is located on state land that needs to be transferred to the Makana Municipality prior to the construction of the reservoir. The capacity of the reservoir will be 750Kl to allow for current water demand, growth in water demand as well as for fire fighting. The cost of the new reservoir, pumping plant and pumping mains is estimated at R1.2m. This proposed upgrade is not yet on the Municipality's IDP.

The preliminary design drawings showing the layout of the proposed water provision infrastructure have been included in the Civil Services Feasibility Report included in Appendix G (x).

Sanitation

The average dry weather sewage expected to be generated by the new housing scheme is estimated at 205 m³ per day (or 2.4 litres per second). The sewage from the new housing site will collect from the erven into a new underground 160mm diameter sewer main and will be gravity fed to the existing sewage pump station located immediately to the north of Transriviere township where from it will be pumped through an existing 160mm diameter sewage pumping main to the town's sewage treatment works located to the east of the Kwanonzwakazi township.

The ponding system currently used to treat the sewage is presently being upgraded to an extended aeration system. The upgraded works were designed and built to accommodate the sewage from the new housing scheme, Refer to Worley Parsons Technical Report, Annexure B of the Civil Services Feasibility Report. It is expected that the upgrading of the sewage treatment works will be completed and commissioned by the end of August 2012. The costs associated with the installation of the sanitation for the site is estimated to be approximately R700 000.

The preliminary design drawings showing the layout of the proposed sewerage infrastructure have been included in the Civil Services Feasibility Report included in Appendix G (x).

Electricity

The electricity demand for the new housing scheme is estimated at 600kVA. Eskom, who currently supply electricity to Alicedale, were approached for information regarding the adequacy of the existing electricity network to meet the electricity demand generated by the new housing scheme and have confirmed that there is enough electricity to supply the new 338 houses. Refer to **Annexure C** of the Civil Feasibility Report. As noted by Eskom in their correspondence dated 16 July 2012 (see Attached as Appendix G(iv)), there is a 9m building

and tree restriction on either side on the centre line of the 22kV powerline. The project layout has taken this restriction into account. The costs associated with the installation of the electrical infrastructure for the project is estimated to be approximately R1.5 million.

Solid Waste Disposal

The domestic solid waste generated from the new housing scheme is estimated at 7m³ per day. Currently the domestic solid waste from Alicedale is collected by the Makana Municipality for disposal at the solid waste facility located at an old disused quarry situated about 1km to the west of Alicedale. The waste disposal site is licensed as a Class G:C:B and has an estimated remaining operational lifespan of 30 years. The domestic waste generated by the new housing scheme can therefore be accommodated at the existing waste disposal facility.

Construction Activities

- The construction footprints will be surveyed and demarcated based on the project design drawings.
- Levelling and shaping of the site will be carried out by means of earth moving machinery.
- Construction footprints will be cleared of vegetation and topsoil as well as the existing structures occurring in the proposed development footprints.
- Access to the site will have to be controlled during construction. It is anticipated that a boundary fence or similar barricade will be erected prior to construction.
- A site camp and materials lay-down area will be established and suitably enclosed on site.
- The roads, storm water, water-supply, sanitation and electricity infrastructure will be installed.
- Construction will take place with the aid of an on-site labour force and heavy earth moving equipment.
- No labourer's accommodation will be provided on the site.
- Equipment and materials will be delivered to the site as and when required.
- Some construction materials and equipment will be stored on site.
- Construction will as far as possible be limited to normal working hours (7am to 6 pm, weekdays, excluding weekends and public holidays). Should after hours work be required, neighbours will be notified.

Project Timing

Should authorisation for the project be granted it is anticipated that the detailed planning and design phase will commence soon after the issuing of Environmental Authorisation. Finalisation of town planning, rezoning and permitting will take place over **two (2) years**, with construction commencing once all the necessary authorisations have been secured. It is anticipated that the installation of services infrastructure on the site will take place over **two (2) years** commencing once the detailed planning and design phase has been completed and all the necessary permitting, rezoning etc has been obtained. The construction of individual dwellings will take place in parallel to the installation of services over a **three (3) year** period. It is anticipated that occupation of the dwellings units will occur in parallel to the completion of various stages of the construction process. The project timing can thus be summarised as follows:

Stage 1: Rezoning and Permit approvals (two years)

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. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity 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.

Layout Alternative 1 (not preferred)

The initial proposed layout contained 229 Residential erven arranged as shown in layout 1 below. Subsequent to the initiation of the Basic Assessment Process the Makana Municipality requested that the scope of the assessment be expanded, in order to maximise the project and the available space to meet the housing demand needs of the Alicedale community. An additional 99 residential units were required.

In order to accommodate the new layout for the project the specialist assessments for the Basic Assessment were reviewed. This report includes the findings of the reviewed specialist assessments – Biophysical, Archaeological, Socio-Economic and Engineering Feasibility Assessment.

The layout option presented below is not assessed in detail or discussed further in this report as it is not the preferred alternative in order to meet the housing demand needs of the Alicedale community by the Makana Local Municipality.



Layout 1: Initial proposed layout for the Alicedale Housing Development

Layout Alternative 2 (Preferred Layout)

The preferred layout for the development is indicated in the map below and has been amended to accommodate the housing demand needs of the Alicedale community. It includes 338 residential site, 1 religious site, internal roads, open space and bulk infrastructure on approximately 15.92 hectares of the Remainder of Portion 1 of the Farm 276, Alicedale.

An area to the east, west and south of the original development footprint was considered the most suitable to accommodate the additional 99 units. The majority of the additional units are confined to an area east of the original development footprint. This configuration was confined by the area allocated by the state for development, which will not accommodate additional houses on the western side of the footprint, in addition the western area was excluded due to rock and slope.

The revised layout has also been amended to take into account a 32 metre buffer around the eastern drainage line, which is considered a no-go area for development, as well as steep slopes in this area. See map below.



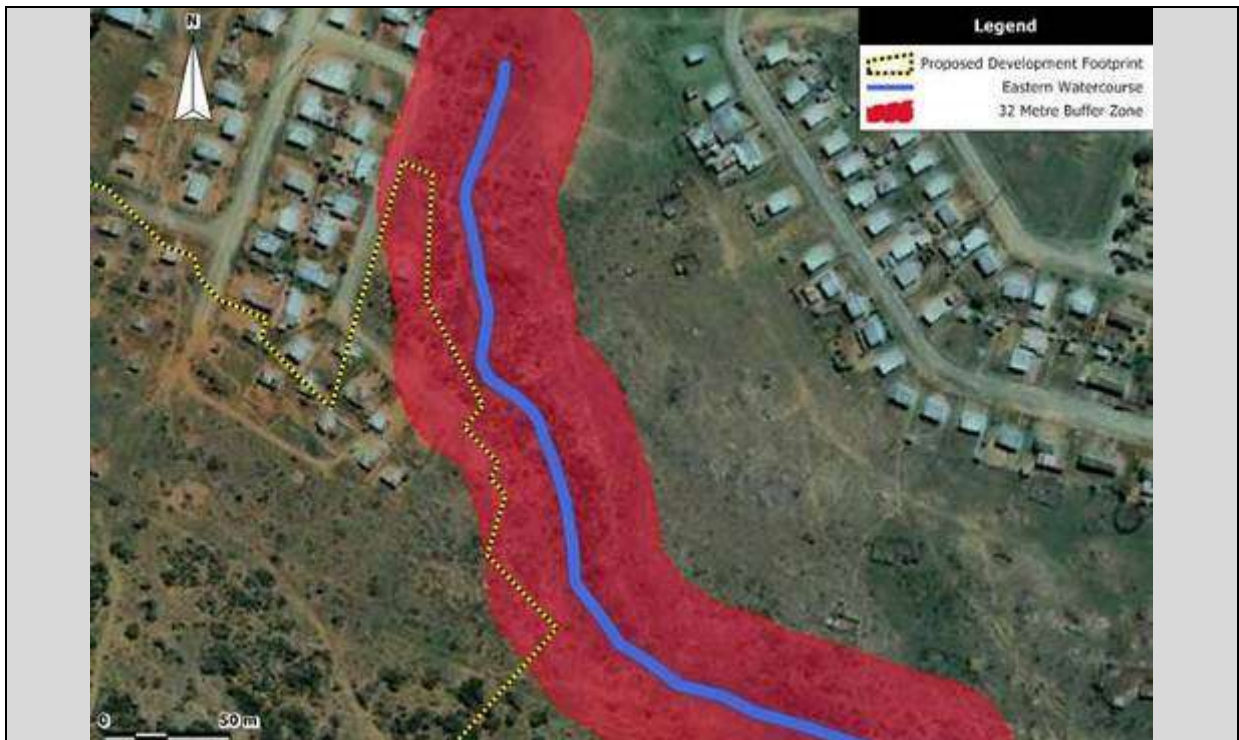
Layout 2: Preferred layout for the Alicedale Housing Development (Setplan Drawing Number 11-12-10-1b)

The new layout includes additional row of erven on the western portion of the development, two additional rows on the southern boundary of the development and the remainder are located east of the original development footprint. This is the preferred layout for the project and has been assessed in detail in this Basic Assessment process.

Wetland Limitations to the Layout

The Eastern Cape Biodiversity Conservation Plan Handbook (2007) contains guidelines for riverine, wetland and estuarine buffers. The buffer proposed therein for all 1:50 000 streams¹ is 32 metres. As the watercourses that flow to the east and west of the site are both classified as 1:50 000 watercourses, the proposed development is required to adhere to this criterion. The erven to the west of the development fall outside of this 32 metre buffer. However, the initial proposed layout included the construction of approximately 13 erven along the edge of the eastern drainage line that would fall within this 32 metre buffer area.

¹ Indicated as river or stream in the 1:50 000 topomap for the area.



Map 1: Eastern drainage line and 32 metre buffer zone in relation to the initial proposed development footprint.

The layout was therefore amended to ensure that no residential units would be constructed within 32 metres of the drainage line.

Should the installation of the stormwater discharge outfalls and their headwalls fall within the 1:100 year floodline of the watercourses northeast and northwest of the site, this component of the project will require a water use authorisation in terms of the National Water Act from the Department of Water Affairs.

No-go Alternative

The No-Go alternative is considered the baseline against which all potential project-related impacts are assessed, and was assessed in full in this report. As per the socio-economic impact assessment report undertaken for this project, attached in Appendix D of this report, there is a large working age population in the area which is predominantly unemployed. The no-go option will result in a loss of additional income and temporary employment opportunities. The Makana Local Municipality has a housing waiting list of individuals in this area, the no-go option would result in the loss of formal housing for these individuals and the loss of access to basic services.

Reasonable and feasible alternatives as raised by I&APs would have been considered for inclusion in the Basic Assessment Report. However, no alternatives have been raised by I&APs.

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

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in 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.

List alternative sites if applicable.

Alternative:

Alternative S1² (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

Latitude (S):

Longitude (E):

33°	19.418'S	26°	5.391'E
o	'	o	'
o	'	o	'

In the case of linear activities:

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

o	'	o	'
o	'	o	'
o	'	o	'

o	'	o	'
o	'	o	'
o	'	o	'

o	'	o	'
o	'	o	'
o	'	o	'

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.

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1³ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

Approx 159 200 m²
m ²
m ²

Length of the activity:

m
m
m

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

Alternative:

Size of the site/servitude:

² "Alternative S.." refer to site alternatives.

³ "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative A1 (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Approx 1 166 700 m²
m ²
m ²

5. SITE ACCESS

Does ready access to the site exist?

YES	NO
------------	-----------

If NO, what is the distance over which a new access road will be built

m

Describe the type of access road planned:

Access to the new housing scheme will be an extension of the existing bitumen surfaced 5m wide road linking the Mandela Park and Transriviere townships to the R346 (MR0476) road. The existing road will be adequate to service the expected vehicular traffic to the new housing scheme.

The preferred width of the internal roads is 4.5m wide. These roads will be bitumen surfaced on designed and constructed layerworks.

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.

6. SITE OR 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:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.

7. 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 form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 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.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R80 500 000
What is the expected yearly income that will be generated by or as a result of the activity?	None
Will the activity contribute to service infrastructure?	YES NO
Is the activity a public amenity?	YES NO
How many new employment opportunities will be created in the development phase of the activity?	Approx. 234 Temporary
What is the expected value of the employment opportunities during the development phase? (estimated at 25% of project value)	R20 125 000
What percentage of this will accrue to previously disadvantaged individuals?	70 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown (Indirect and induced employment)
What is the expected current value of the employment opportunities during the first 10 years?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown

9(b) Need and desirability of the activity

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

The fact that there is a waiting list for housing in the Transriviere / Kwanonzwakazi area is evidence of the need for housing in this area. The proposed development has been highlighted in both the SDF and the IDP for the Makana Municipality as development priorities.

The Makana Municipality Spatial Development Framework (SDF, 2008) specifically mentions the proposed housing development in Alicedale. At the time of the formulation of the SDF the land to be allocated for the development had been identified but had not yet been set aside. This development would assist Makana Municipality to attain its goal of eradicating the housing backlog by 2015 as outlined in the SDF.

The proposed housing project is also one of the Municipality's key development strategies according to the Integrated Development Plan (IDP, 2011).

Indicate any benefits that the activity will have for society in general:

The development is not expected to create specific direct benefits for society in general.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The proposed development will create a number of temporary employment and skills development activities in the construction phase. It is anticipated that a significant proportion of the labour to be used during construction will be sourced from the local community.

The facility will also generate a limited number of employment opportunities in the operational phase through the increased infrastructure maintenance requirement that will be created by the development.

E.g. additional roads, stormwater, sanitation and water provision infrastructure will require servicing and maintenance; as well as an increased area to service for domestic refuse removal. It is anticipated that these positions will be filled predominantly from the communities in the Makana Municipality.

The proposed development will also provide formal housing for approximately 1900 individuals from the Transriviere and Kwanonzwakazi who currently don't own a house. This will improve the standard of living and possibly the quality of life of many in the local community.

It is also anticipated that construction goods and service may be sourced from local businesses and service providers. The procurement of goods and services from the local area will make a positive contribution to the local economy of Alicedale. This will in turn stimulate local income generation.

10. 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:	Administering authority:	Date:
<p>Regulations GN R 543, 544 and 546 promulgated under Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998) in Government Gazette 33306 on 18 June 2010.</p> <p><u>GN R544</u></p> <p>9. "The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water – (i) with an internal diameter of 0,36 metres or more;..."</p> <p>11. "The construction of: (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse..."</p> <p>18. "The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: (i) a watercourse;"</p> <p>23. "The transformation of undeveloped, vacant or derelict land to – (ii) residential, retail, commercial, recreational,</p>	<p>Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) - Cacadu Region</p>	<p>2010</p>

<p><i>industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares;”</i></p> <p><u>GN R546</u></p> <p>2. “The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. (a) In Eastern Cape... lii Outside urban areas, in: (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;”</p> <p>4. “The construction of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Eastern Cape... ii Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;”</p> <p>13. “The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, (a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.”</p> <p>14. “The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, (a) In Eastern Cape... i. All areas outside urban areas.”</p> <p>16. “The construction of: (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, (a) In Eastern Cape... ii Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;”</p>		
National Water Act 36 of 1998	Department of Water Affairs	1998
DEAT Guideline 4: Public Participation	Department of Environmental Affairs	June 2006
DEAT Guideline 5: Assessment of Alternatives and Impacts	Department of Environmental Affairs	June 2006
National Forests Act 84 of 1998 with Amendments	Department of Agriculture, Forestry and Fisheries	1998
Conservation of Agricultural Resources Act 43 of 1983	Department of Agriculture, Forestry and Fisheries	1983
National Heritage Resources Act 25 of 1999	South African Heritage Resources Agency	1999
Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974	Department of Economic	1974

	Development and Environmental Affairs (DEDEA) - Eastern Region	
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11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

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

YES	NO
-----	----

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

<7m ³

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

- Construction phase packaging materials, containers and similar construction waste will be sorted into recyclable and non-recyclable waste.
- Where possible waste will be reused or recycled.
- Unrecyclable waste will be disposed off at an appropriately registered and licensed waste disposal facility.
- Litter receptacles will be provided and maintained on site for construction phase litter waste.
- Suitable portable sanitation systems for construction personnel will be provided and maintained on site for the duration of construction.
- Excavated material from site levelling and landscaping activities will as far as possible be used on-site as fill material. Excess excavated material that cannot be used in this way will be exported from the site used in construction activities elsewhere or disposed of at a suitably licensed waste disposal facility.
- Small amounts of hazardous waste such as discarded oil or grease may be generated on site. Hazardous waste will be disposed of at an appropriately licensed and registered hazardous waste disposal facility.

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

- Non-recyclable general waste will be disposed of at the nearest licensed general waste disposal facility (Alicedale Waste Disposal Site).
- The small amounts of hazardous waste that may be generated on site will be disposed off at the nearest licensed hazardous waste disposal facility.

Will the activity produce solid waste during its operational phase?

YES	NO
-----	----

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

210m ³

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

The waste will be collected by the Makana Municipality, once a week and be disposed at a licensed landfill site unless otherwise directed by the Makana Municipality Waste Management Division.

Where will the solid waste be disposed 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 relevant legislation?

YES	NO
-----	----

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

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	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.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	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?

Yes	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	NO
------------	----

If yes, provide the particulars of the facility:

Facility name:	Alicedale Wastewater Treatment Works		
Contact person:	Technical and Infrastructure Services Director		
Postal address:	Makana Local Municipality PO Box 176, Grahamstown		
Postal code:	6140		
Telephone:	046 603 6136	Cell:	-
E-mail:		Fax:	046 622 5268

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

N/A

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
-----	-----------

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

YES	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.

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

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11(d) Generation of noise

Will the activity generate noise?

YES	NO
------------	----

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

YES	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.

If no, describe the noise in terms of type and level:

- Noise associated with normal construction activities can be anticipated during the construction phase. This would include noise generated by earth moving equipment and other general construction activities. Construction activities, however, will, as far as possible, be limited to normal working hours (Monday to Friday, 7am to 5pm).
- Noise levels are to be kept within legislated limits for the area, in accordance with the requirements of the relevant national and local noise control statutes.
- No noise is expected to be generated during the operational phase of the development (occupation for residential use).

12. 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
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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 permit from the Department of Water Affairs?

litres	
YES	NO

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

The construction of the stormwater discharge infrastructure in or adjacent to the watercourses to the north west and north east of the proposed development may require authorisation in terms of Section 21 of the National Water Act. This will be determined through liaison with the Department of Water Affairs, if Environmental Authorisation is granted for the proposed development.

13. ENERGY EFFICIENCY

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

Due to the unreliability of the current nationwide electricity supply it has been recommended that energy saving measures be implemented in the development. To accomplish this provision should be made for passive solar gain, super insulation, effective ventilation and air tightness in the design of the units so as to reduce energy requirements for heating or cooling of buildings.

The following aspects should be considered in the design of the units:

- The intelligent orientation and layout of the building
- Innovative choice of building materials regarding insulation and radiation capacity
- Placement and type of doors, windows, open areas, shade walls etc.

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

- Solar heating and energy systems for lighting, low watt electrical appliances and hot water supply

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- 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 C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

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

- Has a specialist been consulted to assist with the completion of this section?

YES	NO
-----	-----------

If YES, please complete form XX for each specialist thus appointed:
All specialist reports must be contained in Appendix D.

1. GRADIENT OF THE SITE

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
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Alternative S2 (if any):

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):

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
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2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

The proposed stormwater discharge point to the west of the site is at the head of a drainage line that drains into the Bushman's River. This drainage line is relatively steep and is sensitive to erosion as is already evident on the slope. Suitable flow dissipation and erosion protection measures will need to be employed at the stormwater discharge points.

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

Indicate the types of groundcover present on the site:

4.1 Natural veld – good condition ^E

4.2 Natural veld – scattered aliens ^E

4.3 Natural veld with heavy alien infestation ^E

4.4 Veld dominated by alien species ^E

4.5 Gardens

4.6 Sport field

4.7 Cultivated land

4.8 Paved surface

4.9 Building or other structure

4.10 Bare soil

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.

A specialist was not required to assist in the completion of this section as the EAP has the necessary expertise.

A site visit was undertaken on 5 July 2012 in order to ascertain the current condition of the vegetation as well as the presence of Species of Special Concern within the proposed development footprint. This visit focused on the initial proposed development footprint of 11 ha (Layout Alternative 1). An additional site visit was undertaken on 17 September 2012 which focused on the vegetation within the additional area included in the amended layout proposal (Layout Alternative 2 -Preferred Layout). No additional SSCs were found to occur in this area nor were any sensitive ecological features (eg. Wetlands) found in this additional portion. The description of the vegetation below focuses on the entire area proposed for development as per Layout Alternative 2.

Systematic Biodiversity Planning Frameworks

The vegetation at the site has been identified as either Kowie Thicket or Albany Broken Veld according to the NSBA and VegMap mapping resource. These vegetation types are both Least Threatened. The former being Poorly Protected and the latter being Hardly Protected.

In the STEP mapping however, the vegetation types are classified as Albany Valley Thicket and Saltaire Karroid Thicket. The former has a Conservation Status of Vulnerable, while the latter is Currently Not Vulnerable.

An investigation into the species composition of the vegetation on the site has revealed that the vegetation most closely resembles Kowie Thicket. This is evidenced by the presence of characteristic species such as *Euphorbia tetragona*, *Schotia afra* and a number of Crassula and Aloe species.

According to the ECBCP (Eastern Cape Biodiversity Conservation Plan) the northern portion of the site has been transformed to Urban (BLMC 4) whereas the southern half of the site is still considered a Critical Biodiversity Area (CBA 2; BLMC 2). It does however indicate that for the majority of the site the CBA has been degraded, which was confirmed during the site visit (see map 2 below). So while the natural area does currently act as a corridor for ecological processes and faunal movement, the proximity of the site to the developed area as well as the degradation of the natural area diminishes the value thereof as a CBA. Due to the fact that the natural vegetation is still intact to the south and east of the site it is anticipated that these areas will continue functioning as ecological corridors after the proposed development.



Map 2: Excerpt from the ECBCP mapping showing the proposed development footprint.

Plant Species of Special Concern (SSC)

A number of species that are protected in terms of the Eastern Cape Nature and Environmental Conservation Ordinance (19 of 1974) were recorded on site, as well as two species that are listed on the National Red Data List as Declining (*Boophone disticha* and *Hypoxis hemerocallidea*) and the Protected tree species *Sideroxylon inerme* (in terms of the National Forests Act (Act 84 of 1998)). Permits for the removal or destruction of Protected Plants from the development footprint will need to be obtained from the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) or the Department of Agriculture, Forestry and Fisheries (DAFF) (in the case of protected trees). A full species list has been included in Appendix G (ix).

A few declared weeds and invaders in terms of CARA (Conservation of Agricultural Resources Act 43 of 1983) were also identified at the site. Table 2 below lists these species and indicates the CARA category for each. All category 1 weeds are required by law to be removed.

Development Footprint

The condition of the vegetation in the northern half of the site is severely degraded and in some instances completely transformed. Transformation is due to the construction of informal dwellings over much of this northern portion of the site. Excessive grazing and trampling by livestock that have been grazed in this northern portion has led to the degradation thereof. The condition of the vegetation improves southwards up the slope as well as eastwards towards the drainage line, with species richness increasing and the presence of bush encroachers (eg. *Acacia karoo*) and weedy species declining. A clump of Tree Euphorbias (*Euphorbia tetragona*) are encountered in the eastern portion of the proposed development footprint, where the vegetation tends to be slightly denser and more intact and where the overall canopy height tends to be greater, relative to the western portion of the site.

The Eskom powerline servitude and associated service road that runs up the middle of the site is also degraded with many of the tree and shrub species having been cut down and then treated to prevent them from coppicing. A number of the succulent species occur in these clearings including *Haworthia glauca* and several Mesembryanthemaceae, Crassula and Aloe species.

A portion of the footprint for the proposed water reservoir has been cleared historically and therefore is covered mostly with grassy and herbaceous species. Renosterbos seemed to be more dominant here than lower down on the slope where *Pentzia incana* dominated the herbaceous layer. The portion of the footprint area that was covered by thicket had mostly the same species as had been encountered lower down the slope. It is noteworthy however, that just north of the proposed footprint a change in the species composition of the vegetation becomes evident with *Sideroxylon inerme*, *Diospyros dichrophylla* and *Olea europaea subsp. africana* being observed for the first time at the site. This change is possibly due to the reduction in the level of degradation due to trampling and grazing by livestock as well as interference by humans as the slope steepens.

Drainage Lines

The vegetation associated with the drainage lines into which the stormwater from the development is proposed to discharge is not characteristic of a watercourse. In the case of the **western** drainage line the vegetation seems to resemble the Kowie Thicket that is found over the rest of the site. The portion of the drainage line where the stormwater discharge point will be constructed is relatively degraded, however, further down the drainage line where it becomes too steep for livestock to graze or for firewood collection the vegetation is still in a rather good condition. There is some evidence of erosion at the head of the drainage line and it is therefore recommended that appropriate erosion protection and flow dissipation measures be implemented so as to mitigate the erosive impact that the increased stormwater runoff from the proposed development would have on the drainage line.



Photo 3: Looking down the western drainage line

The vegetation associated with the **eastern** drainage line is more degraded than that of the western drainage line. The bedrock comes to the surface along the slopes of this drainage line at the point proposed for stormwater discharge, so there isn't much soil for plants to take root. As a result, the vegetation on the slopes is relatively sparse, while the bed of the

drainage line is predominantly covered by *Cynodon dactylon* and a few scattered thicket shrubs. Erosion of the soils is also evident in this drainage line and therefore erosion protection and flow dissipation measures will need to be implemented at the stormwater discharge point of this drainage line as well.



Photo 4 and 5: The eastern drainage line is covered predominantly by *Cynodon dactylon* and the erosion of the banks is clearly evident.

Should the installation of the stormwater discharge outfalls and their headwalls fall within the 1:100 year floodline of the watercourses northeast and northwest of the site, this component of the project will require a water use authorisation in terms of the National Water Act from the Department of Water Affairs.

Table 1: Species of Special Concern found at the site with the status and relevant legislation of each.

<u>Family Name</u>	<u>Species Name</u>	<u>Status</u>	<u>Relevant Legislation</u>
Amaryllidaceae	<i>Boophone disticha</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
		Declining	National Red Data List, 2012
	<i>Brunsvigia gregaria</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
Apocynaceae	<i>Pachypodium succulentum</i>	Whole Genus is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
Asphodelaceae	<i>Aloe ciliaris</i>	Whole Genus is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Aloe speciosa</i>	Whole Genus is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Aloe striata</i>	Whole Genus is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Haworthia glauca</i>	Whole Genus is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
Hypoxidaceae	<i>Hypoxis hemerocallidea</i>	Declining	National Red Data List, 2012
Iridaceae	<i>Moraea polystachya</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Tritonia sp.</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
Mesembryanthemaceae	<i>Delosperma ecklonis</i>	Whole Family	Eastern Cape Nature and

		is Protected	Environmental Conservation Ordinance 19 of 1974
	<i>Drosanthemum hispidum</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Lampranthus spectabilis</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Mesembryanthemum aitonis</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
	<i>Ruschia rigens</i>	Whole Family is Protected	Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974
Sapotaceae	<i>Sideroxylon inerme</i>	Protected	National Forests Act 84 of 1998

Table 2: Species found at the site listed by CARA as weeds and invaders and their relevant categorisations.

<u>Species Name</u>	<u>CARA Category</u>
<i>Opuntia ficus-indica</i>	1
<i>Solanum elaeagnifolium</i>	1

5. 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:

5.1 Natural area

5.2 Low density residential

5.3 Medium density residential

5.4 High density residential

5.5 Informal residential

5.6 Retail commercial & warehousing

5.7 Light industrial

5.8 Medium industrial^{AN}

5.9 Heavy industrial^{AN}

5.10 Power station

5.11 Office/consulting room

5.12 Military or police base/station/compound

5.13 Spoil heap or slimes dam^A

5.14 Quarry, sand or borrow pit

5.15 Dam or reservoir

5.16 Hospital/medical centre

5.17 School

5.18 Tertiary education facility

5.19 Church

5.20 Old age home

5.21 Sewage treatment plant^A

5.22 Train station or shunting yard^N

5.23 Railway line^N

5.24 Major road (4 lanes or more)^N

5.25 Airport^N

5.26 Harbour

- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station ^H
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture**
- 5.34 River, stream or wetland**
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge**
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard**
- 5.41 Archaeological site
- 5.42 Other land uses (describe)

It is not anticipated that the proposed development will have any significant negative impact on any of the surrounding features.

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

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

If YES, specify and explain:

If YES, specify:

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

If YES, specify and explain:

If YES, specify:

6. 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 palaeontological sites, on or close (within 20m) to the site?

If YES, explain:

The local cemetery is located adjacent to the proposed development. However, it is not proposed that the development should have any impact whatsoever on the graveyard.

Based on the geological mapping for the area, the underlying rock (quartzitic sandstone and mudstone) may be fossil-bearing (Witpoort Formation and Lake Mentz Subgroup of the Witteberg Group). For this reason SAHRA's opinion on the need for a Palaeontological Assessment was sought. It is SAHRA's opinion, after having considered the information

YES	NO
Yes	

contained in the Geotechnical Report compiled by Terratest as well as the Engineer's Report compiled by MBB for this proposed development, that the proposed development should not have an impact on fossil-bearing formations. Thus, it would be unnecessary to conduct a desktop palaeontological assessment for the proposed development. See the full correspondence between Public Process Consultants and SAHRA attached in Appendix G (iv).

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

Briefly explain the findings of the specialist:

Dr Johan Binneman was requested to undertake a Full Phase 1 Archaeological Assessment for the proposed development due to the proximity thereof to the river, amongst others. However, after he had undertaken a site visit he recommended that the proposed development be excluded from the requirement to undertake a Full Phase 1 Archaeological Assessment due to the low cultural sensitivity of the proposed site and the unlikelihood that archaeological heritage remains of any value would be found in situ.

Dr Binneman's full Specialist Report is contained in Appendix D.

Will any building or structure older than 60 years be affected in any way?

YES

NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES

NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;

A copy of the site notice board is attached in Appendix G (i).

- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

Process prior to the Review of the Draft Basic Assessment Report

Landowners of adjacent properties were identified using a Deed Search (WinDeed), and notification letters were mailed to these landowners. Notification letters were also hand delivered to the occupants of houses in Transriviere to the north and east of the proposed development as well as those occupying informal dwellings that are currently within the proposed development footprint.

All I&APs identified at the outset of the process, as well as those requesting to be registered on the project database were included on the database. A total of **17 I&APs** were identified at the beginning of the process and were provided with notification. Included in the notice was a Background Information Document on the proposed project, a locality map and comment form.

A Focus Group Meeting was held on **27 June 2012** with the Ward Councillor, Ward Committee members and representatives of the Alicedale Farmers Association so as to inform them of the proposed development and provide them with an opportunity to raise issues and concerns they may have regarding the project that should be addressed in the Basic Assessment Process. The notes from this meeting, including the registration form, are attached as Appendix G (iv) of this report.

Draft Basic Assessment Report Review

All I&APs registered on the project database were notified of the release of the Draft Basic Assessment Report for a 30 day review period which extended from 15 October 2012 to 13 November 2012. At the time of the release of the Draft Basic Assessment Report there were **29 I&APs registered** on the project database.

Section 4 below provides more detail on the Public Participation process followed for this assessment. A copy of the project database is contained as Appendix G (ii). Copies of correspondence sent to I&APs and Authorities is contained in Appendix G (iii), and copies of

correspondence received from I&APs, including notes from meetings held, have been included in Appendix G (iv).

- (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;

Cllr Ernest Louw, Makana Municipality Ward 14 Councillor was included on the I&AP database and provided with copies of all the relevant correspondence and a Focus Group Meeting was held with the Councillor and community representatives on the 27 June 2012. See Section 4 below for more detail on the Public Participation Process. A copy of the database is contained as Appendix G (ii). The notes from this meeting, including the registration form, are attached as Appendix G (iv) of this report.

- (iii) the municipality which has jurisdiction in the area;

The following representatives of the Makana Municipality were included on the project database and notified of the commencement of the Basic Assessment Process:

- Cllr Louw, (Ward 14 Councillor);
- Renier van der Merwe (Deputy Director: Planning and Land Use);
- Mandisi Planga (Acting Municipal Manager);
- Ndumiso Nongwe (Environmental Manager).

A copy of the database indicating interaction with I&APs is contained as Appendix G (ii).

- (iv) any organ of state having jurisdiction in respect of any aspect of the activity; and

The following organs of state were included on the project database and notified of the commencement of the Basic Assessment Process:

- Andries Struwig of the Eastern Cape Regional Office for the Department of Economic Development, Environmental Affairs and Tourism
- Dr Mariagrazia Galimberti of the South African Heritage Resources Agency
- Marius Keyser of the EC Dept. of Roads and Transport
- Sonette Nortier of the Eastern Cape Department of Roads & Public Works
- Moses Cele of the National Department of Public Works
- Gcinile Dumse of the National Department of Agriculture
- Rufus Maloma of the Provincial Department of Agriculture
- Marisa Bloem and Lizna Fourie of the Department of Water Affairs

A copy of the database indicating interaction with I&APs is contained as Appendix G (ii).

- (vii) any other party as required by the competent authority;

- (c) placing an advertisement in—
- (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

A newspaper advertisement was placed in “The Herald” of 29 June 2012. A copy of the advertisement is included in Appendix G (i).

- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

The proposed development will not have any impact that will extend beyond the boundaries of the Makana Municipality.

- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

In line with these requirements a newspaper advert was placed in “The Herald” of 29 June 2012, and a notice board placed at the site, copies of the newspaper advert and notice board are contained in Appendix G (i).

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

Copies of the newspaper advert and notice board are contained in Appendix G (i).

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority

to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

The public participation process up until the release of the Draft Basic Assessment Report is summarised below:

IDENTIFICATION AND NOTIFICATION OF I&APS

- **Advertisement to register interest** - "The Herald", 29 June 2012
- **Notice board at the site**
- **Notice to surrounding landowners** – see section 1(b) and (c) above.
- **Identification of key stakeholders** - One mechanism to identify I&APs is through media advertisements. In addition, the following I&AP groups were proactively identified, included on the project database and notified of the process:
 - Ward Committee and Councillor – Makana Municipality Ward 14 Cllr
 - Relevant Organs of State – DEDEAT, DAFF, DWA, SAHRA, DPW
 - Local Authorities – Makana Municipality
 - Surrounding Landowners – as above
 - Alicedale Farmers Association
- **Availability of information** – all project information has been made available on the website www.publicprocess.co.za. In addition to this, hard copies of correspondence were mailed and/or hand delivered to surrounding landowners, as appropriate.

A Focus Group Meeting was held on 27 June 2012 with the Ward Councillor, Ward Committee members and representatives of the Alicedale Farmers Association so as to inform them of the proposed development and provide them with an opportunity to raise issues and concerns they may have regarding the project that should be addressed in the Basic Assessment Process.

- **Database maintenance** – the project database has been updated as and when information is received from or sent to I&APs. At the outset of the process 17 I&APs were included on the database and at the time of review of the Draft Basic Assessment the database included 29 I&APs. While not required by the regulations, all I&APs remained on the database for the duration of public consultation process and are only removed from the database upon request.

Copies of all communication to I&APs up to the release of the Draft Basic Assessment Report for the 30 day review period are attached as an Appendix G (iii) of this Report.

IDENTIFICATION OF ISSUES FOR INCLUSION IN THE DRAFT BASIC ASSESSMENT

A total of 12 additional I&APs were registered on the project database during the initial 30 day registration period. At the time of the release of the Draft Basic Assessment Report there were **29 I&APs** registered on the project database, a copy of which is included as Appendix G(ii). Issues which were raised by I&APs have been addressed in the Comments and Responses Trail which is included in Appendix E. Copies of the correspondence received from I&APs are included in Appendix G (iv).

The following outlines the public participation process during the **Review of the Draft BAR.**
NOTIFICATION TO I&APS

- All I&APs on the project database received written notification of the 30 day review period (15 October 2012 to 13 November 2012) which included an Executive Summary of the Draft BAR as well as a comment form.
- The following authorities were provided with copies of the Draft Basic Assessment Report: Department of Economic Development, Environmental Affairs and Tourism, SA Heritage Resources Agency, Department of Water Affairs, Department of Agriculture, Sundays River Valley Municipality.

- The Draft Basic Assessment Report was placed on the website www.publicprocess.co.za for downloading.

Copies of correspondence received from I&APs have been included in Appendix G (iv). One I&AP requested the inclusion of a sports field and a graveyard in the proposed development. In addition, the commentator requested an area be set aside as grazing land for use by the local farmers and that they are provided an opportunity to view the layout before construction. The District Roads Engineer, Mr Marius Keyser commented on the access to the development from the main road.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application 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 this application. The comments and response report must be attached under Appendix E.

A Comments and Responses Report has been included in Appendix E.

6. AUTHORITY PARTICIPATION

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

List of authorities informed:

1.	Department of Economic Development, Environmental Affairs and Tourism (Cacadu Region) – Andries Struwig
2.	South African Heritage Resources Agency – Mariagrazia Galimberti
3.	National Department of Agriculture – Gcinile Dumse
4.	Provincial Department of Agriculture – Rufus Maloma
5.	EC Dept. of Roads and Transport – Marius Keyser
6.	Eastern Cape Department of Roads & Public Works – Sonette Nortier
7.	National Department of Public Works – Moses Cele
8.	Department of Water Affairs – Lizna Fourie
9.	Department of Water Affairs – Marisa Bloem

List of authorities from whom comments have been received:

1.	Marius Keyser (EC Dept. of Roads and Transport)
2.	Mariagrazia Galimberti (South African Heritage Resources Agency)
3.	Marisa Bloem, Department of Water Affairs.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or 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.

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

Has any comment been received from stakeholders?

YES	NO
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Comment was received from Eskom, prior to the release of the Draft BAR, as a powerline servitude runs through the site. The comment has been recorded in the Comments and Response Report in Appendix E and a copy of this correspondence is also attached in Appendix G (iv)

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, 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.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Prior to the DBAR review period

1. *Impact on provincial roads*
2. *Impact on vegetation*
3. *Impacts on Eskom services and structures*
4. *Land availability for the local Farmers Association*
5. *Impacts on heritage features (Graveyard and Palaeontology)*
6. *Impacts on watercourses*

During the DBAR review period

1. *Access to main road*
2. *Land availability for the local Farmers Association*
3. *Impacts on graves on the site*
4. *Request for inclusion of a sports field and graveyard in the proposed development.*

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

Prior to the DBAR review period

1. *Appropriate mitigation measures have been provided in the Basic Assessment Report as well as the EMP to limit the impact on the provincial road.*
2. *The vegetation and other sensitive biophysical features were taken into account for the assessment.*
3. *The buffer requirements for the Eskom services and structures have been accommodated in the proposed development layout.*
4. *The Department of Public works must engage the local farmers association with regards to the allocation of an alternative piece of land for their use.*
5. *1. The graveyard will not be impacted upon by the proposed development and no other burial sites were found in the proposed development footprint.*
5. *2. SAHRA has granted exemption from the requirement to undertake a Desktop Palaeontological Assessment for the proposed development due to the unlikelihood of the development impacting on fossil-bearing formations.*
6. *Should the installation of the stormwater discharge outfalls and their headwalls fall within the 1:100 year floodline of the watercourses northeast and northwest of the site, this component of the project will require a water use authorisation in terms of the National Water Act from the Department of Water Affairs.*

During the DBAR review period

1. *The settlement will utilize the existing access onto Main Road 476. Given the extent of the proposed development and the low anticipated vehicular ownership it is anticipated that no upgrading of the current intersection with the MR476 will be required. The engineers for the project are currently liaising with the District Roads Engineer, Mr Marius Keyser*
2. *The Department of Public works must engage the local farmers association with regards to the allocation of an alternative piece of land for grazing.*
3. *The Archaeological specialist assessment did not identify any burial sites within the proposed development footprint.*
4. *The request for inclusion of a sports field and graveyard in the proposed development*

has been noted, however this is outside of the scope of this assessment process.

2. 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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) 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.

Planning and Design Phase

No impacts are expected in the planning and design phase of the development.

Construction Phase

Alternative (preferred alternative)

Direct impacts:

Destruction of indigenous vegetation and plant species of special concern.

A number of species that are protected in terms of the Eastern Cape Nature and Environmental Conservation Ordinance (19 of 1974) were recorded on site, as well as two species that are listed on the National Red Data List as *Declining* and the Protected tree species *Sideroxylon inerme*. These may have to be removed or may be destroyed during construction activities.

Extent: Site Specific

Duration: Permanent

Probability: Definite

Intensity: High

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: High Negative (-)

Mitigation:

- The construction footprints should be demarcated with chevron tape.
- Disturbance to intact vegetation surrounding the site during construction should be prohibited.
- Permits for the removal or destruction of these plants need to be obtained from the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) or the Department of Agriculture, Forestry and Fisheries (DAFF) (in the case of protected trees).
- The development footprint should be surveyed by a qualified botanist prior to construction commencing and all species of special concern should be translocated to an area outside of the development footprint into the remaining intact vegetation.

Significance & Status with mitigation: Low Negative (-)

Destruction and removal of exotic plants.

The exotics that are listed as Category 1 weeds in terms of CARA (Conservation of Agricultural Resources Act 43 of 1983) will be removed when vegetation is cleared during construction.

Extent: Site Specific

Duration: Permanent

Probability: Definite

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Positive (+)

Mitigation:

- Cleared and disturbed areas must be re-vegetated (grassed) as soon as possible to prevent the future colonisation by weeds and invasive exotic species.
- The construction footprint area should be monitored regularly and follow-up clearing done before problem plants can become established.

Significance & Status with mitigation: High Positive(+)

Soil erosion of disturbed and unconsolidated soil in construction footprints and stockpiles.

Disturbed soil may be prone to erosion by wind and water. Stockpiles of topsoil and excavated material may also be prone to erosion.

Extent: Site Specific

Duration: Temporary

Probability: Highly Probable

Intensity: Low

Reversibility: Partially Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Site offices and storage area, construction areas, material lay-down areas, access routes, infrastructure footprints and No-Go areas should be clearly demarcated.
- Limit all access and construction related activities to the demarcated area.
- Limit vegetation disturbance outside the construction footprints.
- Stormwater on the site must be controlled for the duration of construction by employing appropriate temporary stormwater control structures e.g. cut-off berms.
- Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils.
- Topsoil should be removed and stockpiled in an appropriate manner:
 - Stockpiled separately from subsoil, monitored for- and protected from erosion, kept free of exotic vegetation
- Topsoil should be replaced on undeveloped portions of the site and the footprints re-vegetated immediately after construction.
- Re-vegetated areas should be watered until vegetation has become established.
- Should erosion scars begin to form on the landscape, erosion counter measures should be implemented immediately.
- Erosion control and construction disturbance should be an important monitoring facet falling under the control of an Environmental Control Officer (ECO), who should be appointed to implement the environmental management plans (EMP's) during the construction and site rehabilitation phases of this project.

Significance & Status with mitigation: Low Negative (-)

Dust generation during the excavation.

Areas of unconsolidated soil will be present in the footprint and soil stockpiles. These soils will be prone to wind erosion with associated generation of dust and windblown sand during high wind velocities.

Extent: Site Specific / Local

Duration: Temporary

Probability: Highly Probable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Limit vegetation disturbance outside the construction footprints.
- Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils.
- Topsoil and soil stockpiles should be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation.
- Topsoil should be replaced on undeveloped portions of the site and the footprints re-vegetated immediately after construction.
- A water cart or sufficient watering equipment should be available to wet soils during windy days if wind-blown sand and dust becomes problem.

Significance & Status with mitigation: Very Low Negative (-)

Noise and disturbance during construction activities.

Extent: Site Specific

Duration: Temporary

Probability: Highly Probable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Limit construction activities as far as possible to working hours, i.e. 7am - 5pm weekdays, excluding public holidays.
- Should after hours work take place nearby residents should be notified.
- Signage with the contact details of the responsible person should be provided at the site.
- A complaints register should be kept to document complaints and the corrective action taken.
- No loud music to be allowed on site.
- Security lights should be directed away from residences and the surrounding roads to limit nuisances and safety hazards for motorists.

Significance & Status with mitigation: Very Low Negative (-)

Disturbance and injury to fauna during construction.

It is unlikely that many wild faunal species will be affected by the proposed development. However, there are a number of domestic animals that are allowed to roam around free in the area. These may suffer injury during the construction phase.

Extent: Site Specific

Duration: Temporary

Probability: Probable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- The site should be fenced off for the duration of the construction process to prevent domestic animals from entering the site and being injured.
- No fauna encountered at the site may intentionally be harmed or killed.
- All personnel should be made aware of the need to prevent harm to fauna on site.
- All open excavations must be securely fenced or barricaded.
- Speeds travelled by vehicles must be kept to a minimum.
- Excavations must be checked daily for trapped fauna; and trapped animals rescued and released.
- Injured fauna should be referred to an appropriate faunal rehabilitation or care centre (e.g. SPCA).

Significance & Status with mitigation: Low Negative (-)

Generation of waste during construction.

Extent: Site Specific

Duration: Temporary

Probability: Highly Probable

Intensity: Medium

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Low Negative (-)

Mitigation:

- Excavated material should be used at other sites where fill is required or disposed of at an appropriately licensed waste disposal facility.
- Construction waste (e.g. packaging material, unused concrete) must be disposed of at an appropriately licensed waste disposal facility.
- No construction phase waste to be stockpiled on site.
- Adequate litter bins should be provided at the site for waste generated by construction personnel.
- Litter bins should be emptied on a regular basis and waste disposed of at an appropriately licensed waste disposal facility.
- Sufficient portable chemical toilets or similar sanitation facilities should be provided and suitably maintained at the site for the duration of construction.

Significance & Status with mitigation: Very Low Negative (-)

Pollution of surface and groundwater due to chemical, oil and fuel spills.

Extent: Site Specific

Duration: Temporary

Probability: Probable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Generators and fuel supply needed during construction must be placed on trays, which rest on clean sand. Once construction is complete this must be removed from the site and disposed of at an appropriately registered waste disposal facility.
- No cement / concrete mixing are to take place on the soil surface. Cement mixers are to be placed on large trays to prevent accidental spills from coming into contact with the soil surface;
- Vehicles and construction equipment should not be serviced at the site to prevent pollution of the soils by hydrocarbons or oil.
- Ensure secure storage of materials on site particularly hazardous materials e.g chemicals and fuels.
- Sufficient portable chemical toilets or similar sanitation facilities should be provided and suitably maintained at the site for the duration of construction.

Significance & Status with mitigation: Very Low Negative (-)

Construction related impacts on potential undiscovered archaeological material or artefacts on site.

Extent: Local

Duration: Temporary

Probability: Improbable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Low Negative (-)

Mitigation:

- It is recommended that in the unlikely event if any archaeological materials are exposed during the development, it should be reported immediately to the nearest museum/archaeologist or to the South African Heritage Resources Agency so that a systematic and professional investigation can be undertaken.
- If any evidence of archaeological sites or artefact, palaeontological fossils, graves or other heritage resources are found during development, construction or mining, SAHRA and an accredited professional archaeologist or palaeontologist must be alerted immediately. (SAHRA APM Unit (Mariagrazia Galimberti / Nonoflo Ndobochani, tel. 021 462 4502).
- If the newly discovered heritage resources prove to be of archaeological significance a phase 2 rescue operation might be necessary at the cost of the developer. Sufficient time must be allowed to remove/collect such material.
- Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites: i.e. human skeletal material, mussel middens, stone artefacts, fossil bone, stone features and historical artefacts or features.

Significance & Status with mitigation: Neutral to Very Low (-)

Fossilised material may be uncovered during excavations for the proposed development.

It is unlikely that substantial fossil remains will be uncovered during excavations for the proposed development.

Extent: Local

Duration: Temporary

Probability: Improbable

Intensity: High

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Low Negative (-)

Mitigation:

- Educate ECO, foremen and personnel about potential fossil heritage on site.
- The construction phase of the project should be monitored by an independent Environmental Control Officer (ECO), who should monitor excavations for potential fossilised material on an on-going basis while construction / excavation is commencing.
- Should substantial fossil remains be exposed during development, the responsible ECO should alert SAHRA so that appropriate mitigation measures may be considered.

- In the event that fossilised material is uncovered, construction on the affected excavation should cease until a palaeontologist has assessed the material.
- Fossilised material encountered at the site may only be removed or destroyed upon authorisation from the relevant Heritage Resources Authority by the issuing of an appropriate permit.

Significance & Status with mitigation: Neutral to Very Low (-)

A number of temporary employment and skills development opportunities will be created during construction.

Extent: Local

Duration: Temporary

Probability: Definite

Intensity: High

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Positive (+)

Mitigation:

- Collaborate with local councillors and institutions that specialise in skills development and training to create a database of available skills of individuals and SMME's in the Municipal area that could be utilised for the project.
- Members of the local community could be identified that would assist with mass meetings and community related issues.
- A skills audit of the local workers should be done to determine what skills are available locally so as to use local labour (particularly skilled and semiskilled) as far as possible.
- Skills training and capacity building during the construction phase will equip workers to obtain other employment once their contract has expired.

Significance & Status with mitigation: High Positive (+)

Influx of jobseekers from outside the Alicedale area.

This will result in a population increase, thus placing pressure on existing services, resources and social infrastructure. It would also result in the local community losing out on job and skills development opportunities. The possibility also exists that this influx may result in an increase in security issues in the local area

Extent: Local

Duration: Temporary

Probability: Probable

Intensity: High

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: High Negative (-)

Mitigation:

- An employment strategy should be implemented that stipulates the use of local labour as far as possible, with preference to workers from precincts nearest to the site.
- Tender documents should stipulate the use of local labour for unskilled and, as far as possible, semi-skilled labour.
- A recruitment office with a community liaison officer should be established in close proximity to the construction site to deal with jobseekers.
- The extent and actual number of employment opportunities should be narrowed and addressed to ensure that unrealistic expectations are not created.
- Keep the local police station informed about the construction progress and timelines to ensure that they would be able to adequately deal with any disruptive behaviour.
- Upgrade the access roads to enable efficient police response.

Significance & Status with mitigation: Medium Positive (+)

Increased opportunities for local businesses.

It is anticipated that some construction goods will be sourced from Alicedale and surrounds. The procurement of goods and services from the local area will make a positive contribution to the local economy of Alicedale. This will in turn stimulate local income generation.

Extent: Local

Duration: Temporary

Probability: Probable

Intensity: Medium

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Positive (+)

Mitigation:

- A local procurement process and strategy should be formulated to benefit local businesses, enterprises and SMME's to allow them to become part of the project from the start of the tender process.

Significance & Status with mitigation: High Positive (+)

Loss of grazing area for livestock from the local community

It is estimated that approximately 12 hectares of vegetation will be removed and therefore will no longer be available as grazing for the livestock of the local community. As the erf is approximately 90 hectares in size it is anticipated that local farmers will graze their animals in the indigenous vegetation that will remain on the erf.

Extent: Site Specific

Duration: Permanent

Probability: Improbable

Intensity: Medium

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- The Department of Public Works must liaise with the local farmers association and ward councillors with regards to making an alternative piece of land available.

Significance & Status with mitigation: Very Low Negative (-) to Neutral

Damage to Eskom Structures and Services

The servitude buffer requirements (9 metres either side of the centre line of the servitude and 6 metres from the structure supporting mechanisms) have been taken into consideration in the proposed layout of the development. No houses or other structures are proposed for this area and it is proposed to be rezoned as Public Open Space.

Extent: Site Specific

Duration: Temporary

Probability: Definite

Intensity: High

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- All work within Eskom servitude area must be carried out in accordance with the requirements of the Occupational Health and Safety Act, 85 of 1993.
- Special attention must be given to clearances between Eskom's conductors, structures, cables, electrical apparatus and proposed work as stipulated in Government notice GN R1593 of 12 August 1998 amended to GN R1185 of 1 June 1990 promulgated under the aforementioned act.
- Should any damage be done to any of the Eskom services or structures during construction the incident must be reported to Eskom 24 hour Contact Centre (086 0037566) immediately.

Significance & Status with mitigation: Very Low Negative (-) to Neutral

Relocation of informal occupants

A number of informal occupants currently reside on the site proposed for development. Relocation of them during the construction phase could lead to a negative consequence on social networks or informal business activity. All these individuals will be accommodated in the proposed development and therefore this impact will only be temporary.

Extent: Site Specific

Duration: Temporary

Probability: Definite

Intensity: High

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Relocation of illegal occupants during the construction phase must be done in consultation with the affected families, Ward Councillor and other relevant community representatives.
- Where practically possible these families could be allowed to remain on the portion of the erf which will not be developed during the construction of the dwellings.

Significance & Status with mitigation: Very Low Negative

Indirect impacts:

Risk to human health and safety issues

Open excavations and moving construction machinery may pose a hazard to local residents. Health issues could also arise due to airborne pollution and dust, water and other pollution during the construction phase. Improper sanitation facilities, wastewater and littering as well as flies, rodents and pests may impact on the health of the work force as well as the local community

Extent: Site/Local

Duration: Temporary

Probability: Highly Probable

Intensity: High

Reversibility: Partially reversible

Degree of Confidence: High

Significance & Status without mitigation: High Negative (-)

Mitigation:

- A Health and Safety Officer should be appointed to ensure that the construction of the proposed development does not negatively impact on the health of the local community.
- Adequate drinking water should be provided for the construction personnel.
- Sufficient portable chemical toilets or similar sanitation facilities should be provided and suitably maintained at the site for the duration of the construction phase.
- Construction footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and workers rest areas should be clearly demarcated and fenced off before construction commences.
- Open excavations must be kept free of water and should be securely fenced in.
- All construction activities should be limited to the demarcated area.
- Access to the demarcated construction area must be strictly controlled.
- Entry points and access routes to the site must be clearly marked and traffic limited to those areas as far as possible.
- Suitable warning and information signage should be erected before construction commences.
- Speed travelled by vehicles must be kept to a minimum and speed limits enforced.
- All construction vehicles and machinery should be checked regularly to ensure that they are safe and roadworthy.
- Residents of affected area must be notified timeously (two weeks minimum) prior to construction commencing.
- Ensure that there is a first aid facility and trained first aiders at the site.
- A Traffic Management Plan must be implemented during construction, to include the following: Warning signage, access control, flagmen, and monitoring road surface condition
- If construction machinery is to be used in high foot traffic areas (ie. outside schools and shops) it must only be done outside of peak traffic periods for these areas (ie. not when the learners are arriving or leaving school).
- Limit heavy vehicle movement through the populated residential areas.

Significance & Status with mitigation: Low Negative (-)

Potential loss of income for the local community due to the removal of Aloes from the site.

Currently the practice of "Aloe Tapping" is performed on Aloes growing within the indigenous vegetation on site by some from the local community. The removal of these plants will potentially result in the loss of income generated from this practice. It is anticipated that those engaging in this practice will continue to do so in the intact indigenous vegetation surrounding the proposed development.

Extent: Site/Local

Duration: Permanent

Probability: Definite

Intensity: High

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Disturbance to intact vegetation surrounding the site during construction should be prohibited.
Significance & Status with mitigation: Medium Negative (-)

Cumulative impacts:

Operational Phase

Alternative (preferred alternative)

Direct impacts:

Improved access to housing and community infrastructure

Extent: Local

Duration: Permanent / Long Term

Probability: Definite

Intensity: High

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Very High Positive (+)

Mitigation:

- None proposed.

Damage to the surrounding intact indigenous vegetation.

When the housing development is occupied it is likely that the surrounding intact indigenous will be disturbed due to trampling and grazing by livestock. This may include affecting erosion and the removal or destruction of species of special concern and harming the local fauna.

Extent: Site specific / Local

Duration: Long term

Probability: Highly Probable

Intensity: High

Reversibility: Partially reversible

Degree of Confidence: Medium

Significance without mitigation: Medium Negative (-)

Mitigation:

- None proposed.

Increased stormwater runoff from the site due to increased sealed surfaces.

Extent: Site Specific / Local

Duration: Long Term

Probability: Definite

Intensity: High

Reversibility: Partially reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Design adequate stormwater management infrastructure to convey stormwater from the site to outfall points associated with the natural drainage patterns in the landscape.
- Provide scour protection and flow dissipation structures at stormwater outfall / discharge points.
- Keep stormwater management structures free of litter and debris.

Significance & Status with mitigation: Low Negative (-)

Alien plant invasion of undeveloped portions.

Extent: Site Specific / Local

Duration: Permanent

Probability: Probable

Intensity: Medium

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- The area should be monitored regularly and follow-up clearing done before problem plants can become established.

Significance & Status with mitigation: Low Negative (-)

Indirect impacts:

Increased waste generation and littering

Extent: Site Specific

Duration: Long Term

Probability: Definite

Intensity: High

Reversibility: Reversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Makana Municipality to provide waste collection and disposal service to the site
- Provide and maintain communal waste skips on site.
- Provide informative signage to educate the public regarding proper waste disposal practices.

Significance & Status with mitigation: Low Negative (-)

Cumulative impacts:

Increase in electricity consumption and greater pressure on the local power grid.

Extent: Site/Local

Duration: Long Term

Intensity: High

Probability: Definite

Reversibility: Irreversible

Degree of Confidence: Medium

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Ensure that sufficient electricity supply is available from the local service provider.
- Encourage the use of energy efficient equipment (E.g. geyser switches, CFL lighting) in homes and residential complexes.
- Ensure that street lighting is kept to the minimum required, and switched off when not required.

Significance (with mitigation): Low Negative (-)

Pressure on water resources and water supply infrastructure as a result of increased water use.

Extent: Site/Local

Duration: Long Term

Intensity: Medium

Probability: Definite

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Medium Negative (-)

Mitigation:

- Use vegetation (lawn grass, trees) with low water requirements on sidewalks / road verges.
- Capture water from roof surfaces in water tanks for use to water gardens.
- Monitor and correct infrastructure leaks and malfunctions.

Significance (with mitigation): Low Negative (-)

Pressure on sanitation services infrastructure as a result of increased sewage generation.

The Makana Municipality is currently in the process of upgrading the Alicedale Wastewater Treatment Works. This upgrade has taken into account the proposed provision of formal housing for approximately 1200 individuals in the Transriviere/Kwanonzwakazi settlement.

Extent: Site/Local

Duration: Long Term

Intensity: Low

Probability: Definite

Reversibility: Irreversible

Degree of Confidence: High

Significance & Status without mitigation: Low Negative (-)

Mitigation:

- None proposed.

Alternative (No-Go Option)
<p><u>Direct impacts:</u> Continued lack of serviced formal housing. Extent: Local Duration: Permanent Probability: Definite Intensity: Medium Reversibility: Reversible Degree of Confidence: High Significance & Status without mitigation: High Negative (-) <u>Mitigation:</u> <ul style="list-style-type: none"> None proposed. </p> <p><u>Indirect impacts:</u> A number of potential employment and local business opportunities will not be realised Extent: Local / Regional Duration: Long Term Probability: Definite Intensity: High Reversibility: Reversible Degree of Confidence: High Significance & Status without mitigation: High Negative (-) <u>Mitigation:</u> <ul style="list-style-type: none"> None proposed. </p> <p>Continued lack of serviced formal housing. Extent: Local Duration: Permanent Probability: Definite Intensity: Medium Degree of Confidence: High Significance & Status without mitigation: High Negative (-) <u>Mitigation:</u> <ul style="list-style-type: none"> None proposed. Significance & Status with mitigation: High Negative (-)</p> <p>There will not be increased pressure on services (water, electricity, sewerage infrastructure, roads) Extent: Local Duration: Permanent Probability: Definite Intensity: Medium Reversibility: Reversible Degree of Confidence: High Significance & Status without mitigation: Medium Positive (+) <u>Mitigation:</u> <ul style="list-style-type: none"> None proposed. </p> <p><u>Cumulative impacts:</u> None anticipated</p>

3. 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)

Construction Phase

- The Destruction of indigenous vegetation and plant species of special concern is viewed as a high negative impact and with mitigation can be reduced to low negative.
- The destruction and removal of exotic plants is viewed as a high positive impact with mitigation.
-
- Construction phase activities associated with dust generation, soil erosion and noise can be reduced from a medium negative impact to a low and very low negative impact by applying the mitigatory measures proposed
- Disturbance and injury to fauna during construction can be mitigated from a medium negative impact to a low negative impact
- The generation of waste during construction is assessed a low negative impact and by applying the mitigatory measures proposed can be reduced to a very low negative impact
- Pollution of surface and groundwater due to chemical, oil and fuel spills can by applying the mitigatory measures proposed can be reduced to a very low negative impact
- Construction phase impacts on undiscovered archaeological material or artefacts on site is rated as a low negative impact and can be reduced to a neutral to very low negative impact.
- Fossilised material may be uncovered during excavations for the proposed development; this is rated as a low negative impact and can be reduced to a neutral to very low negative impact.
- A number of temporary employment and skills development opportunities will be created during construction, this is viewed a high positive impact.
- The construction phase may result in an influx of jobseekers from outside the Alicedale area, which is a high negative impact but by applying the mitigatory measures proposed can be reduced to a medium positive impact
- The construction phase may result in increased opportunities for local businesses, which is a medium positive impact but by applying the mitigatory measures proposed can be reduced to a high positive impact
- The development will result in the loss of grazing area for livestock from the local community, which can be mitigated to a neutral or very low negative impact.
- Construction activities may result in the damage to Eskom Structures and Services, but with mitigation this can be mitigated to a neutral or very low negative impact.
- The potential temporary relocation of occupants on the site during the construction phase is rated as a very low negative impact with mitigation.

Operational Phase

- The operational phase of the development will result in improved access to housing and community infrastructure and this is rated as a very high positive impact
- Increased stormwater runoff from the site due to increased sealed surfaces is rated as a medium negative impact and with mitigation can be reduced to a low negative impact.
- The operation phase may result in alien plant invasion of undeveloped portions of the site which is rated as a medium negative impact and can be mitigated to a low negative impact.

No-Go Option (compulsory)

- Impacts of the No Go option include the non-realisation of a number of construction and operational phase employment opportunities. This is considered a High negative impact to which no mitigation will apply.
- Should the project not proceed there will not be an improvement in the housing provision in the area, which is seen as a High negative impact.
- Should the project not proceed there will be no increase on services infrastructure which is viewed as a medium positive impact with no mitigation proposed.

SECTION E. RECOMMENDATIONS 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	NO
YES	NO

Is an EMPr attached?

The EMPr must be attached as Appendix F.

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):

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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:

All the recommended mitigation measures outlined in this report should be considered for inclusion in the Environmental Authorisation.
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