August 2016

DRAFT BASIC ASSESSMENT REPORT FOR THE CONSTRUCTION OF A CHRISTIAN COMMUNITY CENTER FOR THE PURPOSES OF COMMUNITY UPLIFTMENT ON PLOT 34 OF THE FARM AVONTUUR 725 JT.

Compiled for:

Friends of Emoyeni Children's Village.

H.E.S

Henwood Environmental Solution

PROJECT DETAILS

FILE REFERENCE NUMBER:

TITLE: The Construction of a Christian Community Center for the purposes of Community Upliftment on Plot 34 of the Farm Avontuur 725 JT

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PROJECT NAME: The Construction of a Christian Community Center for the purposes of Community Upliftment on Plot 34 of the Farm Avontuur 725 JT.

REPORT STATUS: Draft

REPORT NUMBER: 01

SUBMISSION DATE: August 2016

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STEVEN HENWOOD

(Nature Conservation Diploma)

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agriculture, rural development, land & environmental affairs
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

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

	(For applicant / EAP to complete)
File Reference Number:	
Project Title:	The Construction of a Christian Community Center for the purposes of Community Upliftment on Plot 34 of the Farm Avontuur 725 JT
Name of Responsible Official:	

	(For official use only)
NEAS Reference Number:	
Date Received:	

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TABLE OF CONTENTS

Henwood Environmental Solutions (2011) No unauthorised reproduction, or adaptation, in whole or in part, may be made.

LIST OF FIGURES

LIST OF TABLES

Henwood Environmental Solutions (2011) No unauthorised reproduction, or adaptation, in whole or in part, may be made.

SECTION A: BACKGROUND INFORMATION

Table 1: Details of Applicant and EAP

Applicant:	Friends of Emoyeni Children's Village		
Trading name (if any):			
Contact person:	Darryl Mather-Pike		
Physical address:	Plot 34 of the Farm Avontuur 725		
Postal address:	P O Box 9458 Nelspruit		
Postal code:	1200	**Cell:**	0794976512
Telephone:		**Fax:**	0865156476
E-mail:	darryl@emoyenisa.com		

Company name of EAP:	Henwood Environmental Solutions		
EAP name and surname:	Steven James Henwood		
Postal address:	Po Box 12340, Steiltes		
Postal code:	1213	**Cell:**	082 5528876
Telephone:	078 672 3645	**Fax:**	086 771 4642
E-mail:	shenwood@mweb.co.za		
Qualifications & relevant experience	Nat. Dip. Nature Conservation • Environmental Assessment Practitioner from November 2006 to date.		
Professional affiliation(s) (if any)	IAIAsa		

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SECTION B: DETAILED DESCRIPTION OF THE PROPOSED ACTIVITY

Describe the activity, which is being applied for, in detail. The description must include the size of the proposed activity (or in the case of linear activities, the length) and the size of the area that will be transformed by the activity.

Table 2: Activity Description

The Christian Community Center would consist of:

- Orphan Housing
- Mission Guest Housing
- Food Prep, cold storage and general storage
- Sheds
- Tunnel gardens
- Classrooms
- Dorms ablution
- Orchard expansion

Government Notice R983 Activity No.	**Describe the relevant Basic Assessment Activity in writing as per Listing Notice 1 (GN No. R983)**	**Describe the portion of the development as per the project description that relates to the applicable listed activity**
Activity 12 (x)(C)	*"The development of-* *(i) canals exceeding 100 square metres in size;* *(ii) channels exceeding 100 square metres in size;* *(iii) bridges exceeding 100 square metres in size;* *(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;* *(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;* *(vi) bulk storm water outlet structures exceeding 100 square metres in size;* *(vii) marinas exceeding 100 square metres in size;* *(viii) jetties exceeding 100 square metres in size;* *(ix) slipways exceeding 100 square metres in size;* ***(x) buildings exceeding 100 square metres in size;***	*The construction of the Christian Community Center would consist of the following* ***infrastructure within 32 meters*** *of a* ***wetland*** *that would* ***exceed 100 m²*** • *Orphan Housing (+- 480 m²)* • *Mission Guest Housing (+- 860 m²)* • *Food Prep, cold storage and general storage (+- 1320 m²)* • *Sheds (+- 880 m²)* • *Tunnel gardens (+- 2270 m²)* • *Classrooms (+- 90 m²)* • *Dorms ablution (+- 90 m²)* • *Orchard expansion (+-61 380 m²)*

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	where such development occurs- *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback exists,* ***within 32 metres of a watercourse, measured from the edge of a watercourse; -***	
Activity 19 (i)	*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;*** *(ii) the seashore; or* *(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving-* *(a) will occur behind a development setback;* *(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or* *(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.*	
Activity 27	*The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for-* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan.*	*The construction of the Christian Community Center, the associated infrastructure and extension of the existing agricultural fields would result in the* ***clearance*** *of approximately* ***7 ha of indigenous vegetation.*** • *Orphan Housing (+- 480 m²)* • *Mission Guest Housing (+- 860 m²)* • *Food Prep, cold storage and general storage (+- 1320 m²)* • *Sheds (+- 880 m²)* • *Tunnel gardens (+- 2270 m²)* • *Classrooms (+- 90 m²)* • *Dorms ablution (+- 90 m²)*

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		• *Orchard expansion (+-61 380 m²)*

Government Notice R985 Activity No:	Describe the relevant Basic Assessment Activity in writing as per Listing Notice 3 (GN No. R985)	Describe the portion of the development as per the project description that relates to the applicable listed activity
Activity 6	*"The development of resorts, lodges, hotels and tourism or hospitality facilities that sleep 15 people or more."*	*The construction of the Christian Community Center would consist of the following* ***infrastructure that may be utilised for hospitality purposes.*** • *Mission Guest Housing (+- 860 m²)* • *Food Prep, cold storage and general storage (+- 1320 m²)*
Activity 12 (ii)	*"The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* *(a) In Mpumalanga, Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape provinces:* *i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or indigenous vegetation is prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;* *ii. Within critical biodiversity areas identified in bioregional plans;"*	*The construction of the Christian Community Center, the associated infrastructure and extension of the existing agricultural fields would result in the* ***clearance*** *of approximately* ***7 ha of indigenous vegetation.*** • *Orphan Housing (+- 480 m²)* • *Mission Guest Housing (+- 860 m²)* • *Food Prep, cold storage and general storage (+- 1320 m²)* • *Sheds (+- 880 m²)* • *Tunnel gardens (+- 2270 m²)* • *Classrooms (+- 90 m²)* • *Dorms ablution (+- 90 m²)* • *Orchard expansion (+-61 380 m²)*
Activity 14 (x)(c)	*The development of-* *(i) canals exceeding 10 square metres in size;* *(ii) channels exceeding 10 square metres in size;* *(iii) bridges exceeding 10 square metres in size;* *(iv) dams, where the dam, including infrastructure and water surface area, exceeds 10 square metres in size;* *(v) weirs, where the weir, including infrastructure and water surface area,*	*The construction of the Christian Community Center would consist of the following* ***infrastructure within 32 meters*** *of a* ***wetland*** *that would* ***exceed 10 m²*** • *Orphan Housing (+- 480 m²)* • *Mission Guest Housing (+- 860 m²)* • *Food Prep, cold storage and general storage (+- 1320 m²)* • *Sheds (+- 880 m²)* • *Tunnel gardens (+- 2270 m²)* • *Classrooms (+- 90 m²)* • *Dorms ablution (+- 90 m²)*

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	exceeds 10 square metres in size; *(vi) bulk storm water outlet structures exceeding 10 square metres in size;* *(vii) marinas exceeding 10 square metres in size;* *(viii) jetties exceeding 10 square metres in size;* *(ix) slipways exceeding 10 square metres in size;* *(x) buildings exceeding 10 square metres in size*	• *Orchard expansion (+-61 380 m²)*

Government Notice R984 Activity No:	**Describe the relevant Scoping and EIA Activity in writing as per Listing Notice 2 (GN No. R984)**	**Describe the portion of the development as per the project description that relates to the applicable listed activity**

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SECTION C: PROPERTY/SITE DESCRIPTION

Provide a full description of the preferred site alternative (farm name and number, portion number, registration division, erf number etc.):

Table 3: Property Description

a Portion of Portion 1 of the Farm Nederland 54 KU.

T	0	K	U	0	0	0	0	0	0	0	0	0	5	4	0	0	0	1

Indicate the position of the activity using the latitude and longitude of the centre point of the preferred site alternative. 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. The position of alternative sites must be indicated in Section B of this document.

Table 4: Activity Position

Latitude (S):			**Longitude (E):**		
24°	17’	31.93”	31°	20’	14.11”

In the case of linear activities:

- 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	‘

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 an appendix to this document.

The site or route plans must be at least A3 and must include the following:

6.1 a reference no / layout plan no., date, and a legend / land use table
6.2 the scale of the plan which must be at least a scale of 1:2000;
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 indigenous trees taller than 1.8 meters and all vegetation of conservation concern (protected, endemic and/or red data species);
6.8 servitudes indicating the purpose of the servitude;
6.9 sensitive environmental elements within 100 meters of the site or sites including (but not limited thereto):
- watercourses and wetlands;
- the 1:100 year flood line;
- ridges;
- cultural and historical features;

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6.10 10-meter contour intervals

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 as an appendix to this form**.**

FACILITY ILLUSTRATION
A detailed illustration of the activity must be provided at a scale of 1:200 as an appendix 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.

SECTION D: BASIC ASSESSMENT REPORT

Prepare a basic assessment report that complies with Regulation 22 of the Environmental Impact Assessment Regulations, 2010. The basic assessment report must be attached to this form and must contain all the information that is necessary for the competent authority to consider the application and to reach a decision contemplated in Regulation 25, and must include:

Table 5: Basic Assessment Content Check List

		(Checklist for official use only)
1. Details of the EAP, including curriculum vitae.	**Page 6 & Appendix F**	
2. The location of the activity, including: i. the 21-digit Surveyor General code of each cadastral land parcel; ii. where available, the physical address and farm name; iii. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	**Page 12**	
3. A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale.	**Appendix A**	
4. A description of the scope of the proposed activity, including all listed and specified activities triggered and being applied for; and a description of the activities to be undertaken including associated structures and infrastructure	**Pages 7 – 10**	
5. Description of the policy and legislative context within which the development is proposed including- i. an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and	**Page 29**	

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ii. how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments		
6. A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.	**Page 35**	
7. A motivation for the preferred site, activity and technology alternative.	**Pages 35 – 37**	
8. A full description of the process followed to reach the proposed preferred alternative within the site, including: i. details of all the alternatives considered; ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; iv. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; v. the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- a. can be reversed; b. may cause irreplaceable loss of resources; and c. can be avoided, managed or mitigated; vi. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; viii. the possible mitigation measures that could be applied and level of residual risk; ix. the outcome of the site selection matrix; x. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and xi. a concluding statement indicating the preferred alternatives, including preferred location of the activity;	**Pages 35 - 46**	

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9. A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- i. a description of all environmental issues and risks that were identified during the environmental impact assessment process; and ii. (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	**Pages 43 – 47**	
10. an assessment of each identified potentially significant impact and risk, including- i. cumulative impacts; ii. the nature, significance and consequences of the impact and risk; iii. the extent and duration of the impact and risk; iv. the probability of the impact and risk occurring; v. the degree to which the impact and risk can be reversed; vi. the degree to which the impact and risk may cause irreplaceable loss of resources; and vii. the degree to which the impact and risk can be avoided, managed or mitigated;	**Pages 43 – 69**	
11. Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	**Pages 43 – 72**	
12. An environmental impact statement which contains- i. a summary of the key findings of the environmental impact assessment; ii. a map at an appropriate scale which superimposes the proposed activity and its associated iii. structures and infrastructure on the environmental sensitivities of the preferred site iv. indicating any areas that should be avoided, including buffers; and v. a summary of the positive and negative impacts and risks of the proposed activity and vi. identified alternatives;	**Pages 69 - 72**	
13. Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	**Pages 43 – 72**	

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14. Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	**Page 74**	
15. A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed.	**Page 74**	
16. A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	**Page 69 - 72**	
17. Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	**N/A**	
18. An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports; i. the inclusion of comments and inputs from stakeholders and I&AP's; ii. the inclusion of inputs and recommendations from the specialist reports where relevant; and iii. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	**Appendix F**	
19. Any specific information that may be required by the competent authority; and	**None**	
20. Any other matters required in terms of section 24(4)(a) and (b) of the Act.	**None**	

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The basic assessment report must take into account -

(a) any relevant guidelines; and

(b) any departmental policies, environmental management instruments and other decision making instruments that have been developed or adopted by the competent authority in respect of the kind of activity which is the subject of the application.

*In terms of Regulation 22(4), the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub regulation 22(2)(h), exist.

Table 6: Indication of evaluation of alternatives

Have reasonable and feasible alternatives been identified, described and assessed?	YES✓	
If NO, the motivation and investigation required in terms of Regulation 22(4) must be attached as an Appendix to this document		

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1 Description of the Affected Environment by the Proposed Activity

Locality and physical geography

The proposed development is situated on Portion 34 of the farm Avontuur 725 JT, approximately 5 km west of the town of Badplaas, Gert Sibande District, Mpumalanga. The study boundary forms a square of land around open grassland and a central developed area containing houses, sheds and orchards. The study area is approximately 22 hectares in size, of which 15 ha is either currently under macadamia orchards, timber plantations or buildings. The remaining 7 ha comprises natural vegetation in varying degrees of disturbance or degradation. Surrounding land uses include small-scale agricultural and residential developments. The study area is situated within the quarter-degree grid 2530 DC at an altitude of approximately 1200 mamsl.

The study area is evaluated against the “blueprint” for this vegetation type as detailed below.

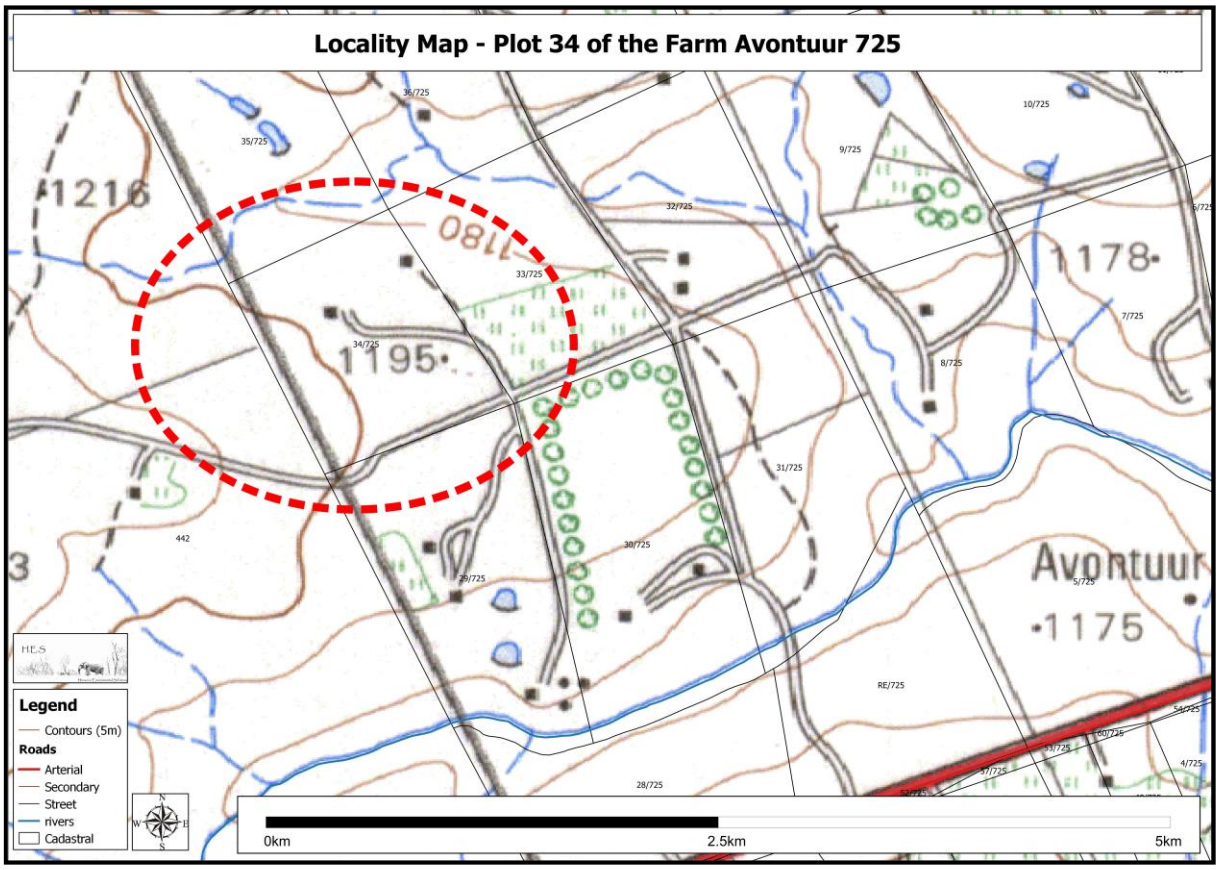

Figure 1: Locality

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Geology and soils

The geology of the study area is Swazian Era with granite in the western quarter and gneiss in the remainder. The land type of the study area is Fa (Land Type Survey Staff, 1987).

The site is underlain by transported and residual soils derived from the in situ decomposition of ancient basement granites.

Topography

Physiographically, the proposed site falls within an area that constitutes gently sloping, undulating terrain. With the exception of isolated areas (notably the north western section of the property where the wetland occurs), the site is essentially well drained. It is located within the center fold of the Badplaas valley, dipping towards the valley floor and stream (a smaller tributary to the Seekoeispruit, the main drainage feature in the area) in the north.

Figure 3 below shows the specific topography and Figure 4 the degree of slope, of the proposed development site.

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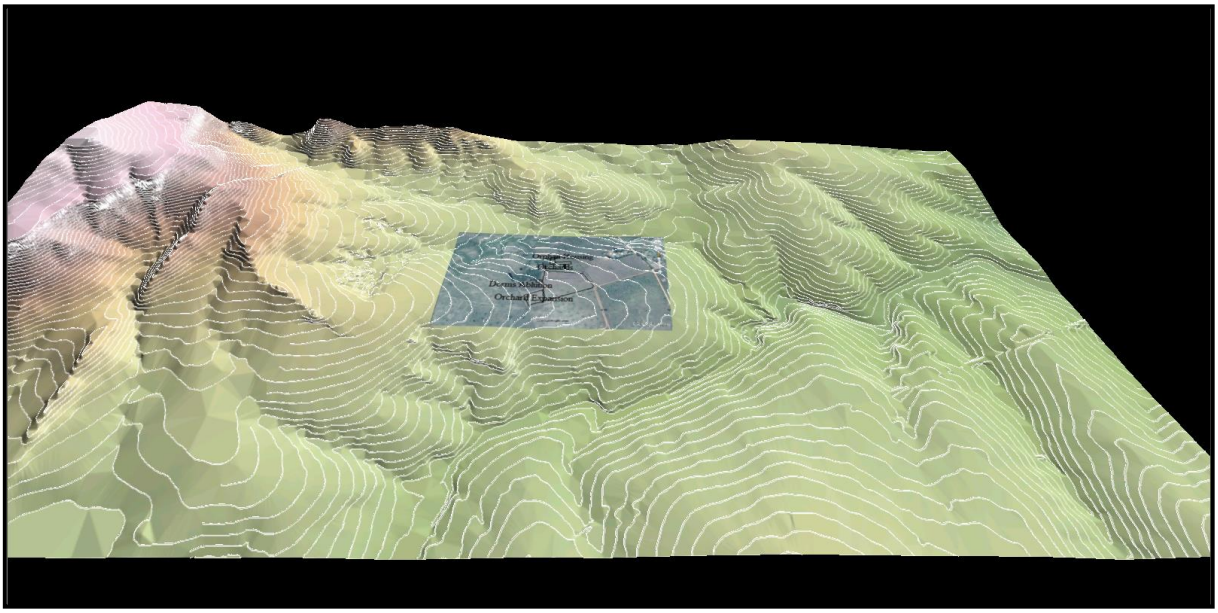

Figure 2: 3D model of the site.

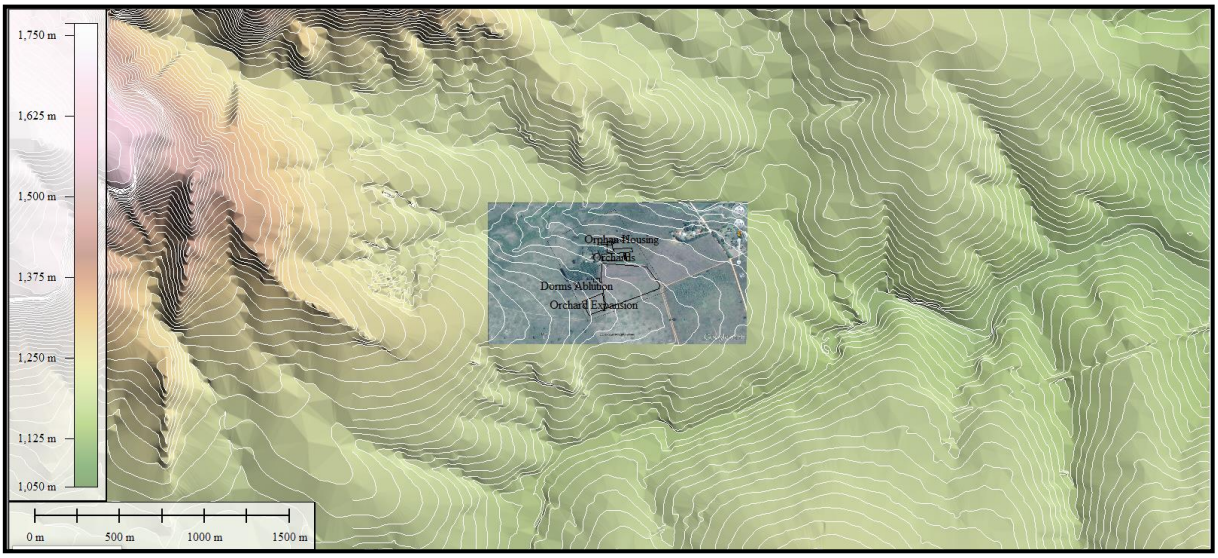

Figure 3: Topography of the site and surrounding area

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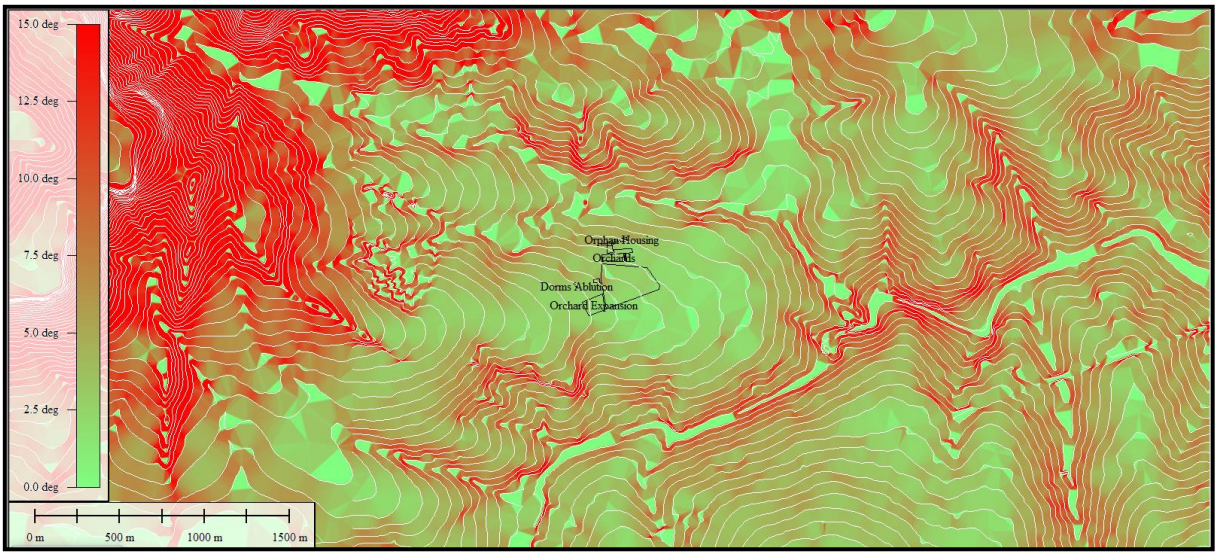

Figure 4: The degree of slope of the site

Climate

The Badplaas area is located within a summer rainfall region where rain occurs mainly in the form of thunderstorms and heavy showers, recording an average of 818,5mm per annum. Most rain occurs from November to March with very little rain during the months of May to September.

The Mean temperatures vary from 27°c in the summer to 13°c in the winter.

Biological aspects

The study area covers approximately 101 ha and is situated within KaNgwane Mountain Grassland, which is classified as Vulnerable and is listed as a Threatened Ecosystem.

About 15 ha, or 68% of the study area, has been transformed, mostly through commercial crop cultivation and rural residential developments. The remaining 7 ha includes two untransformed vegetation communities, which were identified within the study area on the basis of distinctive vegetation structure, floristic composition and position in the landscape:

- Tall Closed Grassland;
- Seep Wetland.

One-hundred and thirty-nine plant species were recorded within the study area during fieldwork. Five of these are protected under the Mpumalanga Nature Conservation Act (No. 10 of 1998). No plant species of conservation concern were confirmed to occur in the study area. Ten species of conservation concern have been recorded within the quarter-degree grid 2530 DC and surrounding grids with similar habitat, of which three species have a moderate chance of occurring because of the presence of suitable habitat. All three are assessed as Declining.

No fauna species of conservation concern were confirmed during fieldwork. Four Near Threatened mammals, namely Serval, Water Rat, Honey Badger and Spotted-necked Otter, are considered to have a moderate to high likelihood of occurring in the study area. Thirteen bird species of conservation concern potentially occur in the general vicinity of the study area. None of these were

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confirmed in the study area during fieldwork and only two species have a moderate likelihood of occurring: Lanner Falcon and Southern Bald Ibis (both Vulnerable). No breeding habitat is present for either. Two Near Threatened reptiles have a low likelihood of occurring and no amphibian species of conservation concern potentially occur.

Both untransformed vegetation communities have a High Biodiversity Value, which means that these are key systems that need to remain intact and functional. Impacts within these communities will have the highest significance levels and therefore the impact footprint should remain outside of these communities as much as possible. Tall Closed Grassland has High Conservation Value but Moderate Functional Value and Seep Wetland has a Moderate Conservation Value, but High Functional Value.

Most of the untransformed vegetation within the study area falls within Critical Biodiversity Area (CBA): Optimal in the MBSP. The transformed and degraded areas are classified as Heavily Modified. Areas falling within the Modified category are the preferred areas for a wide variety of land-use types, which includes housing and agricultural development.

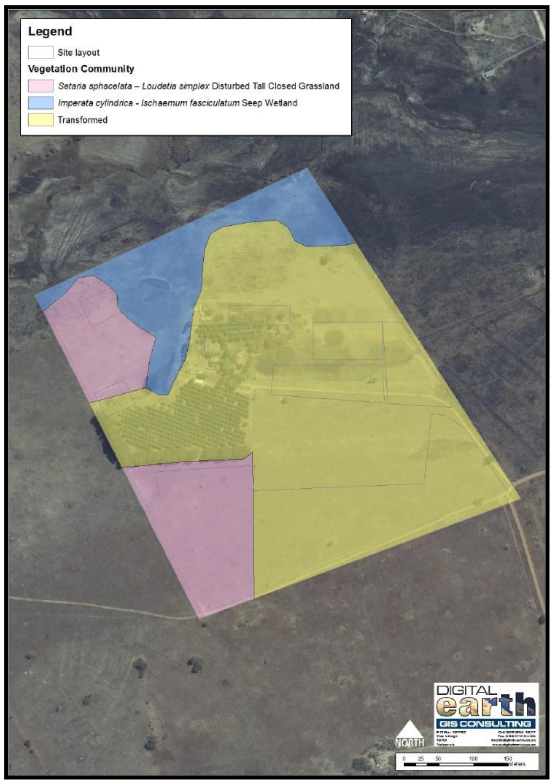

Figure 5: Vegetation communities identified site.

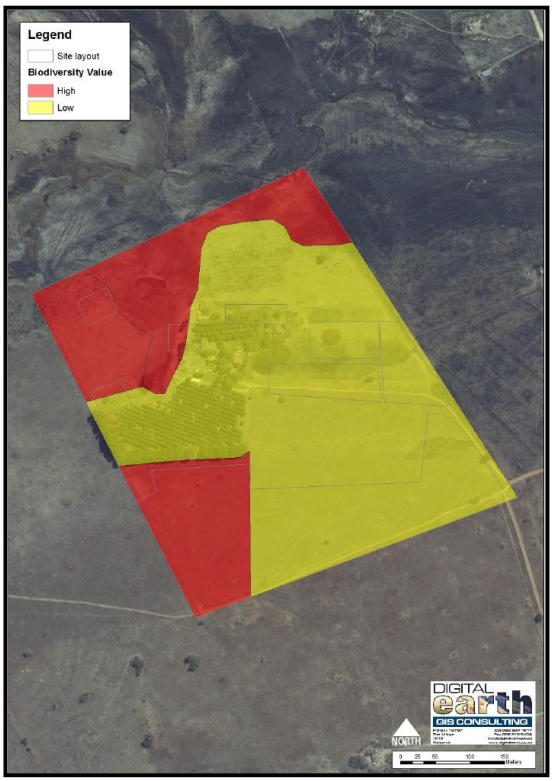

Figure 6: Biodiversity values for the on vegetation communities on site.

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Social aspects

The proposed activity is dedicated to upliftment of the Greater Badplaas community. The organisation that will run the Friends of Emoyeni Children's Village, has been working in the Albert Luthuli District since 2004. Since then they have built 6 homes for orphans, 3 pre-schools, and a church. They currently run 2 pre-schools with about 70 children attending and the other preschool has over 100 children attending. The organisation runs 6 kitchens where 22 bomake prepare meals for about 1100 children weekly. We provide school uniforms and blankets, visit the sick in their homes and provide meals for the needy. We provide full time employment for 8 people and part-time employment for 25 people.

In order for the Friends of Emoyeni Children's Village to realise Plot 34 of the Farm Avontuur was bought and the intention thereof is to:

1. Grow vegetables for the kitchens
2. Grow Macadamias to sustain projects and develop new ones
3. Host kids and Youth camps
4. Host international teams who assist in the projects
5. Host international and local students in Training Programs
6. Conduct Skills development programs
7. Provide housing for orphan and vulnerable children

The proposed activity while located on privately owned land with restricted access, will have huge positive implications for the greater social community.

Economic aspects

As above, the intention of this activity is to add value to the local and greater community and uplift those that are unable to fen for their selves.

The whole project will be funded independently while additional income will be gleaned from the products (agricultural) beneficiated on site.

It is envisaged that the project will add to the local economic status and economy in a positive way.

Cultural aspects

A full Phase 1 Archaeological Impact Assessment and a Palaeontological Screening was carried out on the proposed site.

The following outcomes were documented from the studies:

1. Archaeological Impact Assessment.
    - A total of seven (7) sites were located and documented.
    - In terms of the archaeological component of the Act (25 of 1999, section 35) ***no sites*** or ***features of archaeological significance was recorded during the survey***.
    - In terms of the built environment in the area (section 34 of the Act) ***no significant buildings were identified***.

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- Three sites were recorded for orientation purposes (OBS 1-3) and a further four sites (buildings) were recorded and assessed (BA 1-4).

From a heritage perspective it is recommended that the proposed activities (construction of infrastructure related to the operation of a children's village be allowed to continue.

2. Archaeological Impact Assessment.
   - The rocks to the region around Badplaas are mostly ancient basement rocks of the Barberton Greenstone Belt with a few outliers of slightly younger rocks of the Malmani subgroup. The rocks are ancient and igneous so there is ***no likelihood of any fossils*** being preserved. ***No further palaeontological assessment is required***.

2 Detailed description of the proposed The Christian Community Center.

The site is situated on Plot 34 of the Farm Avontuur 725 JT (see the locality map as attached).

GPS Coordinates:

- 25° 57' 34.2247" S
- 30° 30' 46.7640" E

The Christian Community Center would consist of:

- Orphan Housing
- Mission Guest Housing
- Food Prep, cold storage and general storage
- Sheds
- Tunnel gardens
- Classrooms
- Dorms ablution
- Orchard expansion

2.1 Water supply

Current drinking water comes from a spring which is located on an adjacent property to the west. This source flows constantly year - round. There is also a borehole at the top of the property near the camp ground. There is an additional water pump in the creek at the north east corner of the property this however is a standby source of water and is not regularly used as there is currently sufficient water being supplied from the neighbouring property.

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2.1 Sanitation and Waste

Sanitation and waste related activities will be carried out in full compliance with the local legislation. In this regard the following management actions apply and will be implemented:

- The Integrated Environmental Management (IEM) process must be followed before waste disposal methods are implemented. ***In this regard household waste will be collected and stored temporarily on site, from where it will be removed to a registered waste disposal site.***
- Production of solid waste should be minimized and recycling maximized. Waste must be split at source, rather than having to be sorted later. ***Recycling and waste sorting will be implemented on site.***
- Rubbish bins must be regularly emptied and surrounding areas must be tidied up. ***This will be implemented.***
- If it is realistic to do so, all solid and chemical waste should be removed from the site to an authorized landfill. ***This will be implemented.***
- A proactive attitude towards waste management will be promoted amongst staff and visitors. ***This will be implemented.***
- Waste derived from catering facilities can possibly be recycled as pigswill and the use of this should be investigated (although veterinary regulations may prohibit this;
- Grey water should be kept separate from sewerage and recycled where possible. ***This will be implemented. See sewerage treatment section for further detail.***
- Staff and contractors will dispose of chemicals in the approved manner. No cleaning of containers will be allowed in and along water courses and wetland areas. ***This will be implemented and maintained.***
- Spillage of oil and/or fuel from water pumps into the streams must be prevented through adequate construction, operational and maintenance procedures and staff training. ***This will be implemented and maintained.***
- Sewage disposal systems must be located at the legally and environmentally required distance from streams. ***This will be implemented. See sewerage treatment section for further detail.***
- Staff and visitors may not wash themselves or do their laundry in the streams, wetlands and rivers.
- Contractors will dispose of all waste and litter and will clean up building sites to the satisfaction of the ECO. Waste must be properly disposed of. ***This will be implemented and maintained and monitored.***

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2.3 Sewerage Treatment

The initial departure point was the ***need for effluent produced to be managed in the most ecologically, economically and healthy manner available***. The Department of Water Affairs & Forestry's "PROTOCOL TO MANAGE THE POTENTIAL OF GROUNDWATER CONTAMINATION FROM ON SITE SANITATION, National Sanitation Co-ordination Office, Directorate of Geohydrology, Edition 1, 1997" was used to evaluate the risk of groundwater contamination from onsite sanitation.

The existing infrastructures on Plot 34 are serviced by sewerage systems consisting of septic tanks and French drains. Due to the existing low density of development and the relative infrequent use of these facilities (units are only used at certain times of the year when shareholders utilise the property while on holiday) the septic tanks and soakaways have functioned effectively without any problems over the past 20 years.

It is proposed that the proponent continue to utilise this sewerage treatment method for the existing structures and where new structures need servicing, that they install new septic tanks and French drains.

Below is a brief evaluation of the proposed sewerage treatment technology that is to be installed and utilised on Plot 34.

1. **Septic Tanks coupled to soakaways/French Drains**

- **Description of the system**

Two separate systems should be designed for each unit/or group of units by separating grey water (bath, shower and hand basin water) and sewage (toilets and kitchen water). Each unit/group of units, will gravity feed sewerage laden wastewater into a septic tank for initial biological treatment. The partially treated liquid outflow from the septic tank passes into a rock or gravel filled soakaway and gradually filters into the surrounding substratum.

Septic tanks will be of the prefabricated variety and will be installed underground. Effluent will be gravity fed to the septic tank using standard 4" PVC piping. The volume of the septic tank will be designed according to the treatment requirements for Plot 34. Septic tanks should be designed to deal with peak period volumes to ensure that the system is not overloaded. The disadvantage of this is that the biological organisms in the tank may not efficiently be able to multiply to deal with peaks and troughs in the supply of effluent to the tank resulting in a below normal operating efficiency

Grey water originating from baths and showers will be released through an approved soak-away drainage system.

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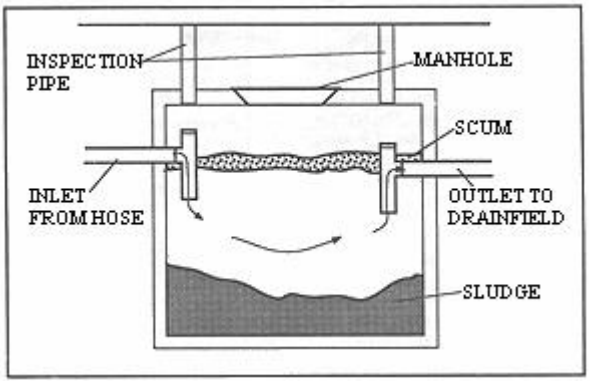
- **Septic Tank Function**



Sewage or untreated household waste will quickly clog all but the most porous gravel formations. The septic tank conditions sewage to allow percolation of the liquid portion into the subsoil. The most important function of septic tanks is to protect the absorption ability of the subsoil. In doing this the septic tank does the following three things.

Removes solids from liquid. As sewage enters the tank, the rate of flow is reduced and heavy solids settle, forming sludge. Grease and other light solids rise to the surface, forming a scum. The sludge and scum are retained and break down while the clarified effluent (liquid) is discharged to the drainfield/French drain for soil absorption.

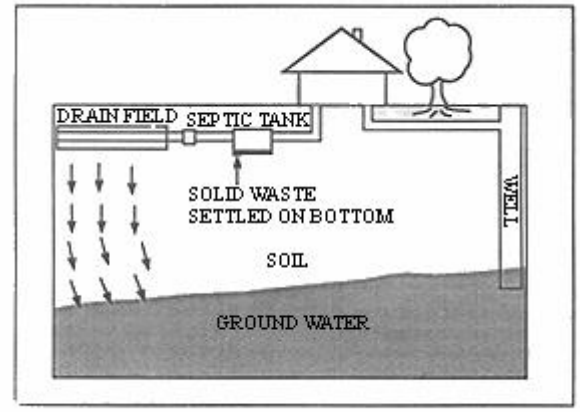


Figure 2. Septic systems can affect groundwater

Provides biological treatment. Natural processes break down the solids and liquids by bacterial action. The breakdown occurs in the absence of oxygen (anaerobic conditions). The anaerobic conditions are referred to as "septic," giving the tank its name.

Stores scum and sludge. The solids accumulate in the bottom of the tank to form sludge. The scum is a partially submerged mat of floating solids and grease. Scum and sludge are digested over time and compacted into a small volume. Areas with warm climates allow more complete breakdown of solids and scum than in the cooler climates. For this reason, tanks in warm climates do not usually need to be pumped or cleaned out nearly as often as those in cold climates. Regardless of climate, a non-volatile residue of material remains in the tank. Sufficient volume for the solids must be provided in the tank between pumping's or cleanings. If the solids fill the tank and enter the drainfield, the solids can clog the soil in the drainfield.

Grease from the kitchen is detrimental to septic tank functions. Effluent from grease traps must go through septic tanks before being discharged to drainfields to prevent soil plugging. Small amounts of kitchen grease can go into the septic tank without damaging the system.

Effluent -- Bacteria and Nutrients. The liquid fraction that leaves the septic tank and enters the drainfield is called the effluent. The bacterial level of the effluent is quite high, contrary to popular belief. The effluent also contains nitrates (among other nutrients), which move downward. To reduce potential for groundwater contamination by the effluent, a sufficient soil depth and soil contact time is required. Pathogens break down with soil contact and pathogen levels are reduced as the effluent percolates through the soil. Bacteria eventually die and are removed by the filtering effect of the soil, further purifying the effluent. In soils of insufficient depth or those with high permeability the risk of incompletely treated effluent entering the groundwater is elevated.

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- **Requirements for operation of conservancy tanks and soakaways**

Physical

For the effective operation of a septic tank system the following elements are critical:

- The ability to locate the tank and French drain adjacent to the house. Soil should be of a nature to allow a suitable sized hole to be excavated for the tank as well as to allow the laying of pipework to allow the tank to be gravity fed.
- There should be sufficient soil depth to allow for the percolation of effluent. The absence of perched water tables must be ascertained.
- The permeability of the soil must ensure sufficient soil contact time to allow pathogens to be broken down.

Legal

As a minimum the following legal parameters must be met:

- The release of effluent from septic tanks is contemplated in Schedule 4 of the General Authorisation issued under the National Water Act (36 of 1998). Compliance in this regard must be established to verify that the activity does not require a licence.
- National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977) for construction, operation and maintenance of any structure used for the collection, treatment or disposal of waste.
- SABS 0400-1990
- Risk assessment according to “A protocol to manage the potential of groundwater contamination from onsite sanitation. Version 2”
- Discharge of effluent at a suitable distance from boreholes and rivercourses (>100m)

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Recommendation:
Based on the above, it is recommended that the development install a combination of septic and soakaways. *Septic tank systems coupled to soakaways* are viewed as an acceptable alternative for the development as a whole.

However, it is imperative that stipulations of the National Water Act are adhered to. The various components of the sewerage treatment system should also be sited where they are not easily visible, and if not sited below ground, should be screened to further reduce visual impact. These units must be monitored in line with the requirements of DWAF and other compliance organisations.

In conclusion the EAP suggests, based on an assessment of the available information and applicable guidelines, standards and legislation, that septic tanks may be used. The final design must take cognisance of these recommendations and adherence to guidelines, standards and legislation must be ensured though regular monitoring.

2.4 Access

Access to the site will be via existing gravel road. See layout and locality maps in this regard.

2.5 Roads infrastructure

Existing roads will be utilised to access the various parts of the Plot.

2.6 Storm water

Additional runoff from large hardened surfaces (roofs etc.…) will be captured, abated, redirected and evenly dispersed prior to flowing into the river.

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3 Prescribed Environmental Management Standards, Practices, Policies, Guidelines or Legislation

The following legislation, guidelines, departmental policies, environmental management instruments and/or other decision making instruments that have been developed or adopted by a competent authority in respect of activities associated with a development of this nature, were identified and considered in the preparation of this basic assessment report:

a. Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), as amended.
b. DEA (2010), Public Participation 2010, Integrated Environmental Management Guideline Series 7, Department of Environmental Affairs, Pretoria, South Africa.
c. DEA&DP (2010) Guideline on Alternatives, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).
d. DEAT (2002) Specialist Studies, Information Series 4, Department of Environmental Affairs and Tourism (DEAT), Pretoria.
e. DWA (2007), Guideline for Developments within a Floodline (Edition 1), Department of Water Affairs and Forestry, Pretoria, South Africa.
f. DWAF (2004) General Authorisation No. 399 in the Government Gazette No. 26187 dated 26 March 2004.
g. Ferrar, A.A. & Lotter, M.C. 2007. Mpumalanga Biodiversity Conservation Plan Handbook. Mpumalanga Tourism & Parks Agency, Nelspruit.
h. Government Notice No. R. 543, R. 544, R. 545, R. 546 and R. 547 in Government Gazette No. 33306 of 18 June 2010.
i. Haydorn, A.E.F. (2006) Rational Assessment of Development in Sensitive Environments (*Ref: ENPLCRIT*). Tel/Fax: (021) 887 4382. eMail: heydaef@adept.co.za
j. National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”).

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4 Public Participation Process

The Public Participation Process (PPP) was undertaken according to Regulation 54 of the EIA Regulations, 2014, and took into consideration the Public Participation 2010 Guideline Document (DEA, 2010).

The level of public participation was determined by taking into account the scale of the anticipated impacts of the proposed project, the sensitivity of the affected environment and the degree of controversy of the project, and the characteristics of the potentially affected parties. Based on the findings of the aforementioned consideration, there was no reason to elaborate on the minimum requirements of the public participation process outlined in the EIA Regulations, 2014 or use reasonable alternative methods for people desiring of but unable to participate in the process due to illiteracy, disability or any other disadvantage.

Potentially interested and affected parties were notified of the proposed application by –

- Fixing a notice board at a place conspicuous to the public, specifically at the access road and tar road junction as well as at the site entrance. (APPENDIX E, Annexure A & B). There was no reasonable alternative site (Section D6).

- Giving written notice to owners and occupiers of land adjacent to Plot 34 (APPENDIX E; ANNEXURES C, D, G and H), and organs of state having jurisdiction in respect of the proposed activity. The applicant, Friends of Emoyeni Children's Village organization, is the owner of the land and occupies the property where the activity is to be undertaken. No reasonable alternative site (Section D 6). Consequently, a Background Information Document (BID) was prepared and distributed via email (APPENDIX E, Annexure C & D) to:

Table 7: List of Stakeholders

The owner or person in control of that land if the applicant is not the owner or person in control of the land: *The applicant is the owner or person in control of the land.*
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: *The applicant occupies the site where the activity is to be undertaken (Friends of Emoyeni Children's Village organization). There was no reasonable alternative site (Section D 7).*
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: **Neighbouring Properties** Baltie Kritzinger (ivork@karanbeef.com) Teuns Sevenste (badplaasacc@foreversa.co.za) Uri and Cora Reichel (corareichel51@gmail.com) Rob Winter (aloefalls@mweb.co.za) Dumisa (buhle.dlamini@live.co.za) Johan Bezuidenhout (johan@foreversa.co.za)
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: Municipal Manager (**Chief Albert Luthuli Local Municipality**) Vusi Mpila (083 434 6906)

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The municipality which has jurisdiction in the area:
Chief Albert Luthuli Local Municipality

Municipal Manager
Vusi Mpila (083 434 6906)

Any organ of state having jurisdiction in respect of any aspect of the activity:

Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA)

Thabile Mahlaku (mahlakut@mpg.gov.za 072 571 8851)
Robyn Luyt (Rluyt@mpg.gov.za, 082 672 7868)

Mpumalanga Tourism and Parks Agency (MTPA)

Frans Krige (frans@mtpa.co.za, (084 232 2902)
Komilla Narasoo (knarasoo@mtpa.co.za ***)***

Department of Water Affairs (DWA)

Stanford Macevele at maceveles@dws.gov.za/ (013 932 2061)

- Placing an advertisement in a local newspaper, the Lowvelder, on the on Tuesday 21st June 2016 (APPENDIX E, Annexure E & F). No official Gazette existed at the time of the application. The proposed activity shall not have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it will be undertaken.

In terms of regulation 55(1), all organs of state which have jurisdiction in respect of the proposed activity and all persons who submitted written comments or requested, in writing, to be registered were placed on the register (APPENDIX E, Annexure I & J).

A summary of the issues raised **(APPENDIX E, Annexure J) -**

Comment:

Johan Bezuidenhout

1. **We have no objections. A section of the proposed center will border Farm Avontuur, section 29, which is our property. This might impact us.**

Response:

Steven Henwood (EAP)

1. **Noted thank you.**

Comment:

Teuns Sevenste

2. **We confirm having received the documentation (BID). There are a few things that we would like clarification on, like water, sewerage ext.**

Response:

Steven Henwood (EAP)

a) **Water supply**

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- **Current drinking water comes from a spring which is located on an adjacent property to the west. This source flows constantly year - round.**
- **There is also a borehole at the top of the property near the camp ground.**
- **There is an additional water pump in the creek at the north east corner of the property this however is a standby source of water and is not regularly used as there is currently sufficient water being supplied from the neighbouring property.**

b) Sanitation and Waste

- **Sanitation and waste related activities will be carried out in full compliance with the local legislation. In this regard the following management actions apply and will be implemented:**
    - **The Integrated Environmental Management (IEM) process must be followed before waste disposal methods are implemented. In this regard household waste will be collected and stored temporarily on site, from where it will be removed to a registered waste disposal site.**
    - **Production of solid waste should be minimized and recycling maximized. Waste must be split at source, rather than having to be sorted later. Recycling and waste sorting will be implemented on site.**
    - **Rubbish bins must be regularly emptied and surrounding areas must be tidied up. This will be implemented.**
    - **If it is realistic to do so, all solid and chemical waste should be removed from the site to an authorized landfill. This will be implemented.**
    - **A proactive attitude towards waste management will be promoted amongst staff and visitors. This will be implemented.**
    - **Waste derived from catering facilities can possibly be recycled as pigswill and the use of this should be investigated (although veterinary regulations may prohibit this;**
    - **Grey water should be kept separate from sewerage and recycled where possible. This will be implemented. See sewerage treatment section for further detail.**
    - **Staff and contractors will dispose of chemicals in the approved manner. No cleaning of containers will be allowed in and along water courses and wetland areas. This will be implemented and maintained.**
    - **Spillage of oil and/or fuel from water pumps into the streams must be prevented through adequate construction, operational and maintenance procedures and staff training. This will be implemented and maintained.**
    - **Sewage disposal systems must be located at the legally and environmentally required distance from streams. This will be implemented. See sewerage treatment section for further detail.**
    - **Staff and visitors may not wash themselves or do their laundry in the streams, wetlands and rivers.**
    - **Contractors will dispose of all waste and litter and will clean up building sites to the satisfaction of the ECO. Waste must be properly disposed of. This will be implemented and maintained and monitored.**

c) Sewerage Treatment

- **The existing infrastructures on Plot 34 are serviced by sewerage systems consisting of septic tanks and French drains. Due to the existing low density of development and the relative infrequent use of these facilities (units are only used at certain times of the year when shareholders utilise the property while on holiday) the septic tanks and soakaways have functioned effectively without any problems over the past 20 years.**
- **It is proposed that the proponent continue to utilise this sewerage treatment method for the existing structures and where new structures need servicing, that they install new septic tanks and French drains.**

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Comment:

Rob Winter

3. **Your reference: Friends of Emoyeni Children's Village/Stakeholder Notification**

   A site visit took place last Tuesday 19 July 2016 at Plot 34 Avontuur 725JT by: R A Winter, S E Winter, J de Villiers, M. D. Winter, C Winter. The intent of the visit was to see and discuss the proposed development as per the notices. All parties mentioned are "Interested and Affected" and represent the following portions namely: Portions Remainder 0; 5; 6; 7; 8; 28; 30; 31; 40; 49 of the Farm Avontuur 725JT as well as Portion 49 Doornpoort 724JT.

   This response / feedback is done by consensus as a group but does not waive the right to individual feedback of each person.

   A site tour was conducted by Darryl who represented the owners of the property. A full and comprehensive tour took place with Darryl highlighted the scope of the Project and the Intent of the development that would take place on Portion 34 Avontuur. It was noted that some minor changes would be made to the original scope of works which would have no impact on the overall plan. A few questions arose by some while on the tour, which were all answered by Darryl in accordance with the Christian Community Center framework. The tour ended with the group being satisfied having all answers dealt with and a complete visual inspection and an understanding of the proposed future development.

   <u>Conclusion</u>: The group supports the development and compliment "Friends of Emoyeni" for tackling this project / initiative for the betterment of the Community through improving the quality of life and social development within the Greater Badplaas Area. We have no objections. A section of the proposed center will border Farm Avontuur, section 29, which is our property. This might impact us.

Response:

Steven Henwood (EAP)

3. **Your support of the project is noted. Thank you.**

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5 Need and Desirability

The Friends of Emoyeni Children's Village organization has been working in the Albert Luthuli District since 2004. Since then they have built 6 homes for orphans, 3 pre-schools, and a church. They currently run 2 of the pre-schools with about 70 children attending and the other preschool has over 100 children attending. They run 6 kitchens where 22 bomake prepare meals for about 1100 children weekly. They provide school uniforms and blankets, visit the sick in their homes and provide meals for the needy. Friends of Emoyeni provide full time employment for 8 people and part-time employment for 25 people.

Last year the Friends of Emoyeni organisation bought a small farm in the area (Plot 34 of the Farm Avontuur 725 JT) with the view to developing a Christian Community Center, which would in turn:

1. Grow vegetables for the kitchens
2. Grow Macadamias to sustain projects and develop new ones
3. Host kids and Youth camps
4. Host international teams who assist in the projects
5. Host international and local students in Training Programs
6. Conduct Skills development programs
7. Provide housing for orphan and vulnerable children

The Christian Community Center would consist of:

- Orphan Housing
- Mission Guest Housing
- Food Prep, cold storage and general storage
- Sheds
- Tunnel gardens
- Classrooms
- Dorms ablution
- Orchard expansion

There is a dire need for the services intended and the development of the Community Center would realise this.

6 Feasible and Reasonable Alternatives

6.1 Legislative Background

The very consideration of a development in terms of EIA is about the consideration of alternatives related to the development. The NEMA prescribes that all environmental impact assessments, which are to be utilised in informing an application for environmental authorisation, must identify and investigate the alternatives to the activity on the environment and include a description and comparative assessment of the advantages and disadvantages that the proposed activity and feasible and reasonable alternatives will have on the environment and on the community that may be affected by the activity. If, however, after having identified and investigated alternatives, no feasible and

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reasonable alternatives exist, no comparative assessment of alternatives, beyond the comparative assessment of the preferred alternative and the option of not implementing the activity, is required during the assessment phase. In this instance, the EAP managing the application must provide the competent authority/DARDLEA with detailed, written proof of the investigation(s) undertaken and motivation indicating that no reasonable or feasible alternatives, other than the preferred alternative and the no-go option.

6.2 Definition of Alternatives

"Alternatives", in relation to a proposed activity, means different means of meeting the general purposes and requirements of the activity, which may include the following types of alternatives:

- The property on which, or location where, it is proposed to undertake the activity;
  - Refers to both alternative properties as well as alternative sites on the same property.
- The type of activity to be undertaken;
  - Provision of public transport rather than increasing the capacity of roads.
- The design or layout of the activity;
  - Different architectural and or engineering designs.
  - Consideration of different spatial configurations of an activity on a particular site (Site Layout)
- The technology to be used in the activity;
  - Option of achieving the same goal by using a different method or process.
- The operational aspects of the activity;
- Demand
  - When a demand for a certain product or service can be met by some alternative means, i.e. the demand for electricity/storm water controls could be met by supplying more energy or using energy more efficiently by managing demand.

- Input
  - Input alternatives for projects that may use different raw materials or energy sources in their processes.
- Routing
  - Alternative routes generally applies to linear developments (pipeline routes).
- Scheduling and Timing
  - Where a number of measures might play a part in an overall programme, but the order in which they are scheduled will contribute to the overall effectiveness of the end result.
- Scale and Magnitude
  - Activities that can be broken down into smaller units and can be undertaken on different scales, i.e. for a housing development there could be the option 10, 15 or 20 housing units.
- The option of not implementing the activity (no-go option).
  - The no-go option is taken to be the existing rights on the property and this includes all the duty of care and other legal responsibilities that apply to the owner of the property. All the applicable permits must be in place for a land use to be an existing right.

The key criteria when identifying and investigating alternatives are that they should be "feasible" and "reasonable". The "feasibility" and "reasonability" of and the need for alternatives must be determined by considering, *inter alia*, (a) the general purpose and requirements of the activity, (b) need and desirability, (c) opportunity costs, (d) the need to avoid negative impact altogether, (e) the need to

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minimise unavoidable negative impacts, (f) the need to maximise benefits, and (g) the need for equitable distributional consequences. The (development) alternatives must be socially, environmentally and economically sustainable. They must also aim to address the key significant impacts of the proposed residential development by maximising benefits and avoiding or minimising the negative impacts.

Identification and Investigation of Alternatives Including Motivations

Given the aforementioned definition and description of alternatives, alternatives for investigation in this assessment were first identified by considering whether the different types of alternatives could meet the general purposes and requirements of the existing camp, and subsequently constitute a comparable activity. Thereafter, the need for an alternative was assessed to determine whether it warranted further investigation. Certain alternatives could not be considered as legitimate alternatives for comparable assessment from the onset of the assessment process because they apply to aspects/parts of the proposed activity. Consequently, they were considered throughout the assessment process to address site-specific impacts when the need for mitigation was identified by the relevant specialist studies.

Purpose and Requirements of constructing The Christian Community Center

The purpose for constructing The Christian Community Center is to provide specialised community care services for disadvantaged persons. Moreover, the construction of the Christian Community Center will allow the Friends of Emoyeni to support the community and keep the project self-sustainable. The growth and utilisation of crops will also provide funding for future projects.

Children's Youth camps; hosting of international teams who assist in the projects, hosting of international and local students in Training Programs, conducting Skills development programs, providing housing for orphan and vulnerable children will all contribute to providing specialised community care services for disadvantaged persons.

Alternative No. 1: Property and Location

Purpose and Requirements

The purpose of the proposed activity, including the construction of The Christian Community Center, is fundamentally to provide specialised community care services for disadvantaged persons. The applicant has purchased the property with this in mind. Moreover, the property is perfectly suited to the requirements of the project. To suggest an alternative site, on another property that has no related infrastructure or in another more ecologically sensitive area would be unreasonable.

Methodology

NA

Criteria used to investigate and assess alternatives

NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible.

It would be ***unreasonable*** to propose an alternative location in terms of neighbouring properties as the adjacent properties are ***not*** owned by the applicant. In addition, due to the current built and

agricultural environment on the property, the site chosen is well suited for the construction of The Christian Community Center. To suggest an alternative site, on another property that has no related infrastructure or in another more ecologically sensitive area would be ***unreasonable***.

Alternative No. 2: Type of Activity

Purpose and Requirements

The specific nature of this activity, providing specialised community care services for disadvantaged persons, does **not** afford alternative types of activities that can meet the same purposes or requirements, specifically providing Children's Youth camps; hosting of international teams who assist in the projects, hosting of international and local students in Training Programs, conducting Skills development programs, providing housing for orphan and vulnerable children will all contribute to providing specialised community care services for disadvantaged persons.

Methodology

NA

Criteria used to investigate and assess alternatives

NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible

The purpose and requirements for providing specialised community care services for disadvantaged persons ***cannot*** be achieved by using an alternative type of activity. Consequently, this type of alternative is not applicable.

Alternative No. 3: Design and Layout

Purpose and Requirements

The purpose and requirements for providing specialised community care services for disadvantaged persons, ***can*** be achieved using different architectural and or engineering designs, and by considering different spatial configurations of the development on the particular site (Site Layout).

Methodology

Specialist studies were undertaken during the assessment process to identify potential impacts on the environment and community/neighbours, and recommend appropriate mitigations to avoid or minimise negative impacts or enhance beneficial impacts. Those mitigations informed the final and preferred Site Layout (Appendix A, Annexure B).

Criteria used to investigate and assess alternatives

The Site Layout was designed to take cognisance of and address specific impacts. The assessment of the specific impacts associated with the Site Layout included a study of the nature of the impact, the extent and duration of the impact, the probability of the impact occurring, the degree to which the impact can be reversed, the degree to which the impact may cause irreplaceable loss of resources, and the degree to which the impact can be mitigated (Section D 6).

Reasoned explanation why an alternative was or was not found to be reasonable or feasible

Whilst alternative designs and or site layouts are reasonable, particularly given the need to avoid negative impacts or to minimise unavoidable negative impacts, the extent of those changes is

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restricted by the site itself and surrounding ecological sensitivities. Furthermore, the changes are informed by the findings contained in the relevant specialist studies. Consequently, this type of alternative had to be considered throughout the assessment process and evolve incrementally as and when the impacts were identified by the relevant specialist studies. The final and preferred site layout is an outcome of the aforementioned process or the 'end result'. The fact that it could not be predicted from the onset of the assessment process made it impossible to propose as an alternative for assessment.

Alternative No. 4: Technology

Purpose and Requirements

The purpose and requirements of providing specialised community care services for disadvantaged persons **can** be met by this type of alternative, specifically by using different technologies (methods or processes during the construction)

Methodology

Various technologies and methods available for the construction of The Christian Community Center were evaluated by the project team. Specialist studies were undertaken during the assessment process to identify potential impacts on the environment and community, and recommend appropriate mitigations to avoid or minimise negative impacts or enhance beneficial impacts. Those mitigations informed the final and preferred technologies and materials to be used.

Criteria used to investigate and assess alternatives

Recommendations made regarding the utilisation of proper and suitable technologies to construct The Christian Community Center were undertaken to address specific impacts. The assessment of the specific impacts associated with the site layout included a comparison of the nature of the impact, the extent and duration of the impact, the probability of the impact occurring, the degree to which the impact can be reversed, the degree to which the impact may cause irreplaceable loss of resources, and the degree to which the impact can be mitigated

Reasoned explanation why an alternative was or was not found to be reasonable or feasible

The purpose and requirements of the proposed construction ***can*** be achieved by using this type of alternative, 'technology'. Consequently, this type of alternative is applicable. In addition, alternative technologies were sought throughout the assessment process to address specific impacts identified by the specialist studies, in the manner described in the above mentioned alternative for 'Design and Layout (Alternative No. 3).

Alternative No. 5: Operational Aspects

Purpose and Requirements

Whilst alternative operational aspects (procedures) can meet the how the purpose for specialised community care services for disadvantaged persons are given to the community, they **cannot** meet or replace the actual purpose of for specialised community care services. Furthermore, the proposed activity will take place on Plot 34 that is currently utilised for various activities directly related to the proposed additional activities. Consequently, the proposed construction of Center has been proposed to directly address operational flaws that could not be accomplished by simply revising operational procedures.

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Methodology
NA

Criteria used to investigate and assess alternatives
NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible
Comparative assessment of alternative operational aspects (procedures) against the construction of additional infrastructure related specifically to community care, highlight that alternative operational procedures ***could not*** reasonably achieve the same operational efficiency requirements that the construction of additional infrastructures would.

Alternative No. 6: Demand
Purpose and Requirements
The purpose and requirements of providing specialised community care services for disadvantaged persons **cannot** be met by this type of alternative, specifically by reducing the demand (or need) for the proposed activity. The community is in need of these services and is in fact entitled to such. This is entrenched in the South African Constitution. The provision of community care via development of Plot 34 (within reason) should not be unreasonably withheld.

Methodology
NA

Criteria used to investigate and assess alternatives
NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible
The purpose and requirements of providing specialised community care services for disadvantaged persons **cannot** be achieved by using this type of alternative, 'demand'. Consequently, this type of alternative is not applicable. Never the less, alternative means were sought throughout the assessment process to address specific impacts identified by the specialist studies, in the manner described in the above mentioned alternative for 'Design and Layout (Alternative No. 3). For example, ways of reducing the demand for electricity were suggested by using energy saving devices.

Alternative No. 7: Input
Purpose and Requirements
The purpose and requirements of providing specialised community care services for disadvantaged persons **can** be met using different raw materials or energy sources.

Methodology
NA

Criteria used to investigate and assess alternatives
NA

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Reasoned explanation why an alternative was or was not found to be reasonable or feasible
However, the need for alternative inputs (to address site-specific impacts) cannot be predicted at the onset of the assessment process and is, therefore, not reasonable. However, alternative raw materials or energy sources were sought throughout the assessment process to address specific impacts identified by the specialist studies, in the manner described in the above mentioned alternative for 'Design and Layout (Alternative No. 3).

Alternative No. 8: Routing
Purpose and Requirements
The purpose and requirements of providing provide specialised community care services for disadvantaged persons and realising the owner's right to build a camp **cannot** be met using an alternative route. This specific type of alternative generally applies to linear developments, such as pipeline routes.

Methodology
NA

Criteria used to investigate and assess alternatives
NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible
This type of alternative, 'Routing', is not applicable. Never the less, alternative routes for internal services were sought throughout the assessment process to address specific impacts identified by the specialist studies, in the manner described in the above mentioned alternative for 'Design and Layout (Alternative No. 3).

Alternative No. 9: Scheduling and Timing
Purpose and Requirements
The purpose and requirements of providing specialised community care services for disadvantaged persons **can** be met using alternative scheduling and timing, specifically changing the order in which activities are scheduled to contribute to the overall effectiveness of the end result.

Methodology
NA

Criteria used to investigate and assess alternatives
NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible
However, the need for alternative scheduling or timing (to address site-specific impacts) cannot be predicted at the onset of the assessment process and is, therefore, not reasonable. However, alternative scheduling or timing was sought throughout the assessment process to address specific impacts identified by the specialist studies, in the manner described in the above mentioned alternative for 'Design and Layout (Alternative No. 3). For example, rehabilitation should not be left until the end of construction, etc.

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Alternative No. 10: Scale and Magnitude

Purpose and Requirements

The purpose and requirements of providing specialised community care services for disadvantaged persons **cannot** be met using an alternative scale or magnitude, specifically a smaller physical footprint.

Methodology

NA

Criteria used to investigate and assess alternatives

NA

Reasoned explanation why an alternative was or was not found to be reasonable or feasible

This type of alternative, 'Scale and Magnitude', is not applicable. The provision of adequate accommodation and services as well as food for the community and the fact that the proposed size of infrastructure is minimal, such that this cannot be reasonably reduced without compromising the required conditions that are humane and comfortable, is limiting and cannot be marginalised.

Alternative No. 11: No-go Option

The option of not implementing the activity (no-go option). was used as the benchmark against which all impacts associated with the proposed development were assessed.

Conclusion

Some types of alternatives were not applicable to the nature of the proposed activity, including its purpose or requirements ('Type of Activity', 'Technology', 'Demand', 'Routing' and 'Scale and Magnitude'). A range of different types of alternatives did exist, but not all warranted investigation ('Property and Location', 'Design and Layout', 'Input', 'Scheduling and Timing'). Based on the findings of the investigation that was undertaken (of 'Operational Aspects') and reasoned motivation there was no verifiable evidence for the existence of any reasonable and feasible alternative(s) other than the preferred option and the no-go option, at the time of this environmental impact assessment process. Consequently, no reasonable and feasible alternatives other than the preferred option and the no-go option were identified, described and assessed. Having said that, alternatives, specifically modifications and changes to activities in order to prevent and/or mitigate environmental impacts, were considered throughout the assessment process. The development proposal was amended in an incremental manner throughout the EIA process to address impacts and issues, as and when the need for mitigation was identified.

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7 Environmental Impacts

The purpose of the assessment is to synthesise and analyse information relevant to the environmental impacts of a proposal. In order to achieve this, two elements, namely the outline of methodology used and the systematic assessment of the impacts are required.

The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can be ecological, economic, social, or all of the aforementioned. The evaluation of the significance of an impact relies heavily on the values of the person making the judgement. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

Sub-Section 7.4 identifies the issues associated with the proposed development, providing the significance scale and mitigation measures to reduce negative impacts and enhance positive impacts. Section 7.1 provides an explanatory note on the methodology adopted for assessing the significance of the identified impacts.

To facilitate informed decision-making, EIA's must endeavour to come to terms with the significance of the potential environmental impacts associated with particular development activities. Despite their attempts at providing a completely objective and impartial assessment of the environmental implications of development activities, EIA processes can never completely escape the subjectivity inherent in attempting to define significance. Recognising this, we have attempted to address potential subjectivity in the current process as follows:

- Being explicit about the difficulty of being completely objective in the determination of significance, as outlined above.
- Developing an explicit methodology for assigning significance to impacts and outlining this methodology in detail in this BAR. Having an explicit methodology not only forces the assessor to come to terms with the various facets contributing toward determination of significance, thereby avoiding arbitrary assignment, but also provides the reader of the BAR with a clear summary of how the assessor derived the assigned significance.
- Wherever possible, differentiating between the likely significance of potential environmental impacts as experienced by the various affected parties.

Although these measures may not totally eliminate subjectivity, they provide an explicit context within which to review the assessment of impacts.

7.1 Assessment Methodology

This section outlines the methodology used to assess the significance of the potential environments impacts. For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) are described. These criteria are used to ascertain the significance of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described represents the full range of plausible and pragmatic measures and does not imply that they would or should be implemented. The tables below show the scale used to assess these variables, and define each of the rating categories.

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Table 8: Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	**Regional**	Beyond 5 km of the proposed activity.
	Local	Within 5 km of the proposed activity.
	Site specific	On site or within 100 m of the site boundary.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered.
	Medium	Natural and/ or social functions and/ or processes are *notably* altered.
	Low	Natural and/ or social functions and/ or processes are *slightly* altered.
	Very Low	Natural and/ or social functions and/ or processes are *negligibly* altered.
	Zero	Natural and/ or social functions and/ or processes remain *unaltered.*
Duration of impact	**Construction**	Up to 2 years.
	Short Term	0-5 years (after construction).
	Medium Term	5-15 years (after construction).
	Long Term	More than 15 years (after construction).

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in Table 9.

Table 9: Definition of significance ratings

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	• High magnitude with a regional extent and long term duration. • High magnitude with either a regional extent and medium term duration or a local extent and long term duration. • Medium magnitude with a regional extent and long term duration.
Medium	• High magnitude with a local extent and medium term duration. • High magnitude with a regional extent and short term duration or a site specific extent and long term duration. • High magnitude with either a local extent and short term duration or a site specific extent and medium term duration. • Medium magnitude with any combination of extent and duration except site specific and short term or regional and long term. • Low magnitude with a regional extent and long term duration.
Low	• High magnitude with a site specific extent and short term duration. • Medium magnitude with a site specific extent and short term duration. • Low magnitude with any combination of extent and duration except site specific and short term. • Very low magnitude with a regional extent and long term duration.
Very low	• Low magnitude with a site specific extent and short term duration. • Very low magnitude with any combination of extent and duration except regional and long term.
Neutral	• Zero magnitude with any combination of extent and duration.

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Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact, are estimated using the rating systems outlined in Table 10 and Table 11 respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly the REVERSIBILITY is estimated using the rating system outlined in Table 12**.**

Table 10: Definition of probability ratings

PROBABILITY RATINGS	CRITERIA
Definite	Estimated greater than 95 % chance of the impact occurring.
Highly probable	Estimated 80 to 95 % chance of the impact occurring.
Probable	Estimated 20 to 80 % chance of the impact occurring.
Possible	Estimated 5 to 20 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

Table 11: Definition of confidence ratings

CONFIDENCE RATINGS	CRITERIA
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Table 12: Definition of reversibility ratings

REVERSIBILITY RATINGS	CRITERIA
Irreversible	The activity will lead to an impact that is permanent.
Long Term	The impact is reversible within 2 to 10 years after construction.
Short Term	The impact is reversible within the 2 years of construction.

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7.2 Subjectivity in Assigning Significance

To facilitate informed decision-making, EIA's must endeavour to come to terms with the significance of the potential environmental impacts associated with particular development activities. Despite their attempts at providing a completely objective and impartial assessment of the environmental implications of development activities, EIA processes can never completely escape the subjectivity inherent in attempting to define significance. Recognising this, we have attempted to address potential subjectivity in the current process as follows:

- Being explicit about the difficulty of being completely objective in the determination of significance, as outlined above.
- Developing an explicit methodology for assigning significance to impacts and outlining this methodology in detail in this BAR. Having an explicit methodology not only forces the assessor to come to terms with the various facets contributing toward determination of significance, thereby avoiding arbitrary assignment, but also provides the reader of the BAR with a clear summary of how the assessor derived the assigned significance.
- Wherever possible, differentiating between the likely significance of potential environmental impacts as experienced by the various affected parties.

Although these measures may not totally eliminate subjectivity, they provide an explicit context within which to review the assessment of impacts.

7.3 Consideration of Cumulative Impacts

The National Environmental Management Act requires the consideration of cumulative impacts as part of any environmental assessment process. EIA's have traditionally, however, failed to come to terms with such impacts, largely as a result of the following considerations:

- Cumulative effects may be local, regional or global in scale and dealing with such impacts requires co-ordinated institutional arrangements; and
- EIA's are typically carried out on specific developments, whereas cumulative impacts may result from broader biophysical, social and economic considerations, which typically cannot be addressed at the project level.

In terms of the proposed The Christian Community Center the following cumulative impacts have specifically been identified:

- Loss of indigenous vegetation.
    - Due to input from various specialists no undisturbed areas will be utilised for the activity. Thus the significance of this impact may be rated ***low***.
- Loss of topsoil and sedimentation.
    - One of the potential impacts of clearing and planting is the sedimentation of downstream environments. This is due to the clearing of land, which leads to the runoff from the site having a high sediment load. Potential sedimentation of the tributary is therefore of particular concern. However, with implementation of all mitigation measures this impact can be rated as ***low***.
- Increase in pesticide pollution.
    - The increase in the number of areas planted to macadamia or any other crop and the necessity to control pests that affect the success of these crops, could lead to the increased utilisation of pesticides. This in turn could lead to possible negative impacts on the fauna surrounding the fields. However, the wise and judicious use of chemicals to control pests as well as the implementation of mitigatory measures listed above would reduce the significance of this impact to LOW.

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7.4 Construction Phase Impacts on the Biophysical and Social Environment

The construction phase is likely to result in a number of negative impacts on the biophysical and social environments. The significance of construction phase impacts is likely to be curtailed by their relatively short duration. Moreover, many of the construction phase impacts can be mitigated by the implementation of an approved Environmental Management Programme (EMPr), (see draft report attached as **Appendix F; Annexure A**).

The potential impacts and an assessment of their significance are discussed below.

The bio-physical issues identified include:

- Ecological Sensitivity (Fauna and Flora (Destruction of habitat))
- Erosion and Sedimentation
- Impact on wetland
- Ground and surface water impact
- Stormwater management

The socio-economic impacts identified include:

- Heritage
- Solid waste removal – to a registered site
- "Sense of place" – visual impact
- Dust
- Noise pollution
- Use of pesticides
- Employment opportunities (short and long-term) - positive

7.4.1 Assessment of construction phase impacts

A summary of the construction phase impacts (assessed within the draft BAR) is provided below.

Table 13: Summary of construction impacts

IMPACT	Without mitigations (positive & negative)			With mitigation (positive & negative)		
	HIGH	MODERATE	LOW	HIGH	MODERATE	LOW
Ecological Sensitivity • **Habitat loss (Fauna and Flora)** • **Barriers to dispersal and migration of fauna and flora**		✖				✖
Erosion and Sedimentation		✖				✖
Impact on wetland						
Ground and Surface Water Impact		✖				✖
Heritage			✖			✖
Solid Waste Removal		✖				✖

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IMPACT	Without mitigations (positive & negative)			With mitigation (positive & negative)		
	HIGH	MODERATE	LOW	HIGH	MODERATE	LOW
Noise disturbance		✖				✖
"Sense of Place" - Visual		✖				✖
Windblown Dust		✖				✖
Litter and Waste		✖				✖
Safety		✖				✖
Traffic		✖				✖
Socio-Economic ▪ Employment Opportunities (short-term)			✖		✓	
▪ Influx of aliens		✖				✖

A summary of the integrated construction phase impacts:

Table 14: Summary of integrated construction impacts for The Christian Community Center

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Site specific/ Local	Site specific/ Local
Magnitude	High (-)	Medium Low (-)
Duration	Construction	Construction
Significance	Medium (-)	Low (-)
Probability	Highly Probable	Highly Probable
Confidence	Certain	
Reversibility	Short Term	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.1. Ecological Sensitivity

Background

According to Mucina & Rutherford (2006), the study area is situated within KaNgwane Mountain Grassland, which they classify as **Vulnerable**. More recently, KaNgwane Mountain Grassland has been listed as a Threatened Ecosystem (Notice 1002 of Government Gazette 34809, 9 December 2011), and classified as **Vulnerable**. This vegetation type occurs over much of the south-eastern Mpumalanga and western Swaziland Highveld and just enters northern KwaZulu-Natal. It occurs along the lower slopes of the Escarpment, from the Phongolo River in the south, northwards to the

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Usutu River and to the uppermost Lomati River near Carolina. KaNgwane Mountain Grassland originally covered about 612 000 ha, of which 41 % has been transformed, mostly through afforestation, cultivation and urbanisation. Less than 1 % is formally protected, and at least four plants are endemic to this vegetation type Mucina & Rutherford, 2006).

The northern portions of the study area have been classified within the Mpumalanga Biodiversity Sector Plan (MBSP) as **Critical Biodiversity Area (CBA): Optimal** (Lötter *et al., 2014*). The central transformed areas are classified as **Heavily Modified** and the southern portion is classified as **Other Natural Areas.** CBA: Optimal refers to areas that are optimally located to meet both the various biodiversity targets and other criteria. These areas are not irreplaceable but they are the most efficient land configuration to meet all biodiversity targets (Lötter *et al., 2014*). The land-use guidelines recommended in the MBSP for CBA: Optimal areas include maintaining the areas in a natural state with no further loss of habitat.

Discussion
The site (Plot 34) constitutes two untransformed vegetation communities, which were identified within the study area on the basis of distinctive vegetation structure (grassland, woodland, thicket, etc.), floristic composition (dominant and diagnostic species) and position in the landscape (mid-slopes, terrace, crest, etc.). There are also transformed and degraded areas on the Plot. Transformed and degraded areas make up 15 ha, or 68% of the study area. Most of the transformed and degraded land is covered by macadamia orchards, various buildings and old lands.

Although the two untransformed areas (***Setaria sphacelata – Loudetia simplex* Disturbed Tall Closed Grassland** and ***Imperata cylindrica - Ischaemum fasciculatum* Seep Wetland**) are rated as having a ***high*** sensitivity, for the purposes of this application they have been excluded from the proposed footprint and will not be developed. These areas will be designated as "***NO GO AREAS***". Only areas considered transformed and degraded will be utilised for development. These areas have a ***low*** biodiversity value and have thus been allocated a ***low*** sensitivity rating.

The site therefore has **moderate** sensitivity.

As a result of specialist ecological input, the following potential ecological impacts have been identified:

1. **Loss of a portion of a Vulnerable vegetation type and listed Threatened Ecosystem** – if the proposed infrastructure overlaps with either of the two untransformed vegetation communities (Tall Closed Grassland or Seep Wetland), which are representative of KaNgwane Mountain Grassland, then this will be a significant impact;
2. **Loss of important regional biodiversity –** most of the untransformed vegetation within the study area is classified within the Mpumalanga Biodiversity Sector Plan (MBSP) as Critical Biodiversity Area (CBA): Optimal which, according to the MBSP guidelines should be managed as either grazing or conservation land;
3. **Loss of plant species of conservation importance** – five species could be impacted during the construction phase and would need to be rescued and relocated to adjacent suitable habitat if possible. Four of the five species are restricted to the two untransformed vegetation communities where no development is recommended at all while one is found within the transformed / degraded area just to the east of the homesteads (*Aloe marlothii*);
4. **Degradation of wetland habitat** – construction activities could result in degradation of these habitats if not carefully managed, e.g. dumping of soil, building rubble, etc.; long-term changes in surface and subsurface runoff could negatively affect wetland structure and function, particularly with respect to channel erosion caused by increased stormwater runoff;
5. **Invasion of natural habitat by alien plants** – a large seed-base of invasive alien species is already present, and invasion by these species could increase as bare soil is exposed; if well managed, this is likely to only have moderate significance;
6. **Loss of habitat for conservation-important fauna** – both untransformed vegetation communities are potentially key habitats and migration corridors for fauna that would be sensitive to impacts. Species such as Serval, Spotted-necked Otter, Southern Bald Ibis and Lanner Falcon have a moderate or high likelihood of occurring within these two communities.

Important mitigation measures would include:

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- A conservation buffer of 30m is recommended around all wetlands, measured from the outer edge of the temporary zone. The location of infrastructure should take place outside this buffer zone.
- The housing infrastructure footprint should be located outside all untransformed grassland and wetlands.
- If infrastructure is planned within any natural vegetation, the areas should be checked by a suitably experienced botanist to locate all conservation-important species. These plants should be marked and the relevant permits applied for before removal and translocated to nearby suitable habitat prior to vegetation being cleared.
- According to the National Environmental Management: Biodiversity Act 2004 (Act 10 of 2004) Alien and Invasive Species Lists, 2014 all declared alien invasive plant species need to be removed from wetland areas. It is therefore recommended that the developers implement an alien plant control program to combat the infestation present. This program should include regular inspections and follow-ups.
- All existing and proposed roads to contain adequate stormwater drainage and erosion control measures.
- The appointment of an ECO prior to construction,
- The borders of the areas to be developed should be demarcated with danger tape in order to prohibit access by the construction team into ecologically sensitive vegetation communities (this danger tape must be removed once construction is completed);
- No large trees (above 5 metres tall) should be impacted within the site, whether protected or not. If it is unavoidable to design infrastructure around the protected species, then permits to destroy them should be applied for from the relevant authority.
- Poaching could be a significant threat. If any external labour teams are used during construction, then these teams should preferably be accommodated off site; if this is not possible then teams should be carefully monitored to ensure that no unsupervised access to plant and animal resources takes place.
- Construction teams must not be allowed to harvest any plant or animal resources from the property;
- No dumping of building rubble must be allowed on the property;
- Topsoil must be protected through stock-piling during the construction phase; this soil can then be used for landscaping at a later stage.

If all proposed activities are kept within the transformed and degraded areas as indicated and mitigation measures are implemented, then this potentially medium significance could be reduced to **low**.

Table 15: Ecological sensitivity

	Preferred Layout	
	Without mitigation	**With mitigation**
Extent	**Local**	**Local**
Magnitude	**High (-)**	**Low (-)**
Duration	**Short term**	**Short term**
Significance	**Moderate (-)**	**Low (-)**
Probability	**Probable**	**Unlikely**
Confidence	**Sure**	
Reversibility	**Irreversible**	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

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7.4.1.2. Erosion and sedimentation

Discussion
One of the potential impacts of construction is the erosion of surface soils and the subsequent sedimentation of downstream and wetland environments. This is due to the clearing of land, which leads to the runoff from the site having a high sediment load. Potential sedimentation of the streams is therefore of particular concern.

Where possible, construction activities should be scheduled to occur outside of the rainy period, thereby reducing the volume of runoff during construction. If this is not possible then extra precaution needs to be taken to reduce this impact.

In addition to the above the following mitigatory measures should be implemented:

- Topsoil must be stockpiled separately on the high ground side of, and within the designated construction site of the camp for later rehabilitation use, and should not be compacted. No other soil may be placed or stockpiled upon it. Topsoil stockpiles are not to exceed 1.5 m in height and should be protected by a mulch cover. This mulch cover must not contain alien vegetation.

- Topsoil is to be replaced by direct return where feasible (i.e. replaced immediately on the area where construction is complete), rather than stockpiling it for extended periods, and may not be used for any other purpose.

- Where backfill material is deficient, it must be made up by importation from an approved borrow pit, and may not be made up by excavation within the construction site and the surrounding areas. The applicant must apply to the Department of Minerals and Energy for a Mining Permit in terms of section 27(2) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), for the borrow pit should borrow material not be sourced from a commercial source.

- During construction all areas susceptible to erosion must be protected by the installation of the necessary, temporary and permanent drainage works as soon as possible, and measures necessary for the prevention of surface water being concentrated in water sources and from scouring the slopes, banks and other areas must been taken into account.

  Erosion protection measures should include, but not be limited to:
  - The use of indigenous, endemic groundcover or grass
  - Hard landscaping e.g. gabions.

- Storm water drainage measures should be implemented on site to control runoff and prevent erosion.
- Storm water berms should be constructed that will channel storm water appropriately.

This potential impact is considered to be of **low significance** with mitigation measures implemented.

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Table 16: Erosion and sedimentation

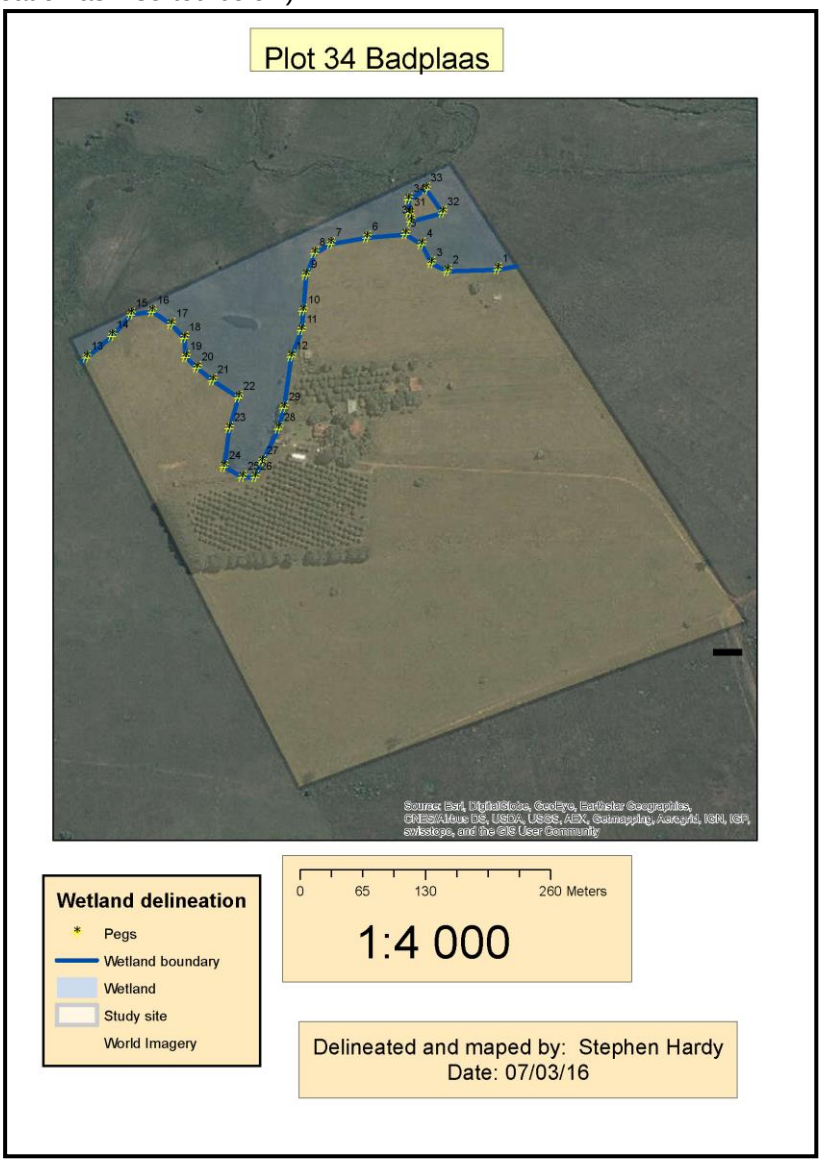
	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.3. Impact on the wetland

Discussion

The Seep Wetland areas are restricted to the northern portion of the study are, and contain a small dam and an equally small portion of a stream in the far north-eastern corner (See layout and the wetland delineation as inserted below).



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Vegetation structure is mostly Short Closed Grassland (*sensu* Edwards, 1983). Seep Wetland covers approximately 3 ha or 14% of the entire study area. The grasses *Imperata cylindrica* and *Ischaemum fasciculatum* dominate this community. Other common grass and sedge species recorded include *Kyllinga erecta, Leersia hexandra, Arundinella nepalensis, Eragrostis gummiflua, Setaria incrassata*, *Juncus exsertus, Miscanthus junceus, Paspalum urvillei* and *Pycreus polystachyos.* var. *polystachyos*. Common herbs found include *Helichrysum aureonitens, Mentha aquatica*, *Dissotis canescens, Pycnostachys reticulate* and *Nidorella auriculata*.

A total of 50 species (36% of the entire list) was recorded from Seep Wetland, the lowest species richness of the two untransformed vegetation communities in the study area (Appendix 1). Species fidelity, which is closely linked to community uniqueness, is high, with 37 species (74% of the community list) occurring nowhere else in the study area. A single conservation-important species was recorded in this vegetation community: a *Habenaria* species with old flowers. This plant is protected under the Mpumalanga Nature Conservation Act (No. 10 of 1998).

Impact assessment
Although the ***Imperata cylindrica - Ischaemum fasciculatum*** **Seep Wetland**) is rated as having a ***high*** sensitivity, for the purposes of this application it has been excluded from the proposed footprint and will not be developed. These areas will be designated as "***NO GO AREAS***". Only areas considered transformed and degraded will be utilised for development. These areas have a ***low*** biodiversity value and have thus been allocated a ***low*** sensitivity rating.

Mitigation measures

- A conservation buffer of 30m is recommended around all wetlands, measured from the outer edge of the temporary zone. The location of infrastructure should take place outside this buffer zone.
- The housing infrastructure footprint should be located outside all untransformed grassland and wetlands.
- If infrastructure is planned within any natural vegetation, the areas should be checked by a suitably experienced botanist to locate all conservation-important species. These plants should be marked and the relevant permits applied for before removal and translocated to nearby suitable habitat prior to vegetation being cleared.
- According to the National Environmental Management: Biodiversity Act 2004 (Act 10 of 2004) Alien and Invasive Species Lists, 2014 all declared alien invasive plant species need to be removed from wetland areas. It is therefore recommended that the developers implement an alien plant control program to combat the infestation present. This program should include regular inspections and follow-ups.
- All existing and proposed roads to contain adequate stormwater drainage and erosion control measures.
- The appointment of an ECO prior to construction,
- The borders of the areas to be developed should be demarcated with danger tape in order to prohibit access by the construction team into ecologically sensitive vegetation communities (this danger tape must be removed once construction is completed);
- No large trees (above 5 metres tall) should be impacted within the site, whether protected or not. If it is unavoidable to design infrastructure around the protected species, then permits to destroy them should be applied for from the relevant authority.
- Poaching could be a significant threat. If any external labour teams are used during construction, then these teams should preferably be accommodated off site; if this is not possible then teams should be carefully monitored to ensure that no unsupervised access to plant and animal resources takes place.
- Construction teams must not be allowed to harvest any plant or animal resources from the property;
- No dumping of building rubble must be allowed on the property;
- Topsoil must be protected through stock-piling during the construction phase; this soil can then be used for landscaping at a later stage.

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Table 17: Wetland Impact

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.4. Ground and surface water impact (Deterioration of water quality)

During construction, pollutants may find their way into drainage channels, wetlands and watercourses. Typical sources of pollution include oils and fuels from construction vehicles and construction materials such as cement, detergents, paints and other chemicals. Careful management and education of all construction staff, together with the implementation of an appropriate EMPr at this site, would curtail the risk of pollution spills. This potential impact is considered to be of **low significance** with mitigation measures implemented.

Mitigation:

- All personal washing operations will take place at a location where waste water can be disposed of in an acceptable manner. Facilities not feeding into a formal drain should ensure that biodegradable soaps are used.
- Dry chemical toilets must be made available at the construction camp and must be cleaned and serviced regularly. All chemical toilets must be placed at least 100 m away from any water course.
- At least one toilet must be provided for every 15 employees or part thereof and must be serviced at least twice a month.
- All maintenance and repair work of construction vehicles will be carried out within an area designated for this purpose, equipped with the necessary pollution containment measures.
- The ground under the servicing and refuelling areas must be protected against pollution caused by spills and/or tank overfills.
- In the event of a breakdown or emergency repair, any accidental spillage must be cleaned up or removed immediately.
- All construction equipment and machinery must be maintained in good order. Regular checks must be undertaken for leaks and any found must be immediately repaired.
- Construction vehicles have to be parked in the construction camp area after working hours.
- The Site Environmental Officer must ensure that reasonable precautions are taken to prevent the pollution of the ground and water resources on and adjacent to the sites during the construction phase.
- No natural watercourse is to be used for the cleaning of tools or any other apparatus. This includes for purposes of bathing, or the washing of clothes etc. All washing operations will take place at a location where waste water can be disposed of in an acceptable manner.
- The contractor must maintain good housekeeping practices that ensure that all work sites are kept tidy and litter free, ensuring no runoff of refuse into surrounding watercourses.
- No spills may be hosed down into a storm water drain or sewer, or into the surrounding natural environment. All contaminated soil is to be excavated to the depth of contaminant penetration, placed in 200 litre drums and removed to an appropriate landfill site.

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- Areas where cement and concrete are handled should be bunded and suitable methods developed to contain any access water containing waste. Water and slurry from concrete mixing operations must be contained to prevent pollution of the ground surrounding the mixing points.
- Tar and oil based products should be applied to the manufacturers specifications. Care should be taken to identify pollution timely and suitable methods of decontamination should be used.
- Excavation of sand to solid ground must be done carefully and appropriate drainage incorporated. Excavating soil or imported backfill is to be stockpiled within the area designated for such.
- A drainage diversion system is to be installed to divert run-off from areas of potential pollution. Internal storm water reticulation is to be constructed early on in the project in order to significantly reduce the storm water effluent during construction.

Table 18: Ground and surface water impact (Deterioration of water quality)

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.5. Heritage impacts

There was no evidence to show that the proposed site was of cultural, historical and palaeontological significance. A total of seven (7) sites were located and documented. In terms of the archaeological component of the Act (25 of 1999, section 35) no sites or features of archaeological significance was recorded during the survey. In terms of the built environment in the area (section 34 of the Act) no significant buildings were identified. Three sites were recorded for orientation purposes and a further four sites (buildings) were recorded and assessed. The rocks to the region around Badplaas are mostly ancient basement rocks with a few outliers of slightly younger rocks of the Malmani subgroup. The rocks are ancient and igneous so there is no likelihood of any fossils being preserved.

Despite this caution must be taken with regard to excavation of the site and possible disturbance of subsurface cultural relics. Furthermore, the public participation process, including site meetings, did not reveal any oral histories and cultural landscapes/viewscapes associated with the site.

If any human skeletal remains are revealed in the process all activity will be immediately halted and application made for an emergency rescue permit in terms of section 36 of the NHRA (25 of 1999) in order to exhume the remains. If, in the extremely unlikely event that fossil plant material is discovered during the construction of the buildings or orchards, then it is recommended that a professional palaeontologist be called to assess the importance and rescue them if necessary (with the relevant SAHRA permit).

If the fossil material is deemed to be of scientific interest, then further visits by a professional palaeontologist would be required to collect more material. Only when the excavations for foundations have commenced will it be possible to see if there are any fossils.

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Therefore, as far as the paleontological heritage is concerned, the construction of the Christian Center and facilities may proceed. No further paleontological assessments are required.

This potential impact is considered to be of **low significance**.

Table 19: Heritage

	Preferred Layout	
	Without mitigation	**With mitigation**
Extent	**Local**	**Local**
Magnitude	**Low (-)**	**Low (-)**
Duration	**Short term**	**Short term**
Significance	**Low (-)**	**Low (-)**
Probability	**Highly Unlikely**	**Unlikely**
Confidence	**Sure**	
Reversibility	**Irreversible**	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.6. Solid waste removal

Construction waste is an on-going issue on a construction site. Accumulation of waste can lead to health and safety hazards. In light of this any construction waste must be dealt with according municipal and governmental regulations. Household waste would be temporarily stored and sorted on site. Recycling of the waste would be promoted. An outside contractor would be appointed to remove all household waste from the developments to a registered waste disposal site. Any temporary waste storage site would be fenced off and made animal proof.

The developer envisages that the following waste management protocol be practiced:

- A place for food preparation and eating must be designated within the construction site. Dry chemical toilets must be made available at a ratio of 1:15 at the construction site and must be cleaned and serviced regularly.
- The contractor may not dispose of any waste and/or construction debris by burning or by burying. An adequate number of appropriate refuse bins must be provided at the construction site for refuse and solid waste.
- These bins must be emptied on a daily basis into an appropriate containment vessel that should be located in a designated waste storage area. This waste should be removed regularly to a registered dumping site for disposal.
- All waste must be transported in an appropriate manner (e.g. plastic rubbish bags). A specific site should also be allocated for construction waste e.g. empty cement bags etc. A low temporary fence may be erected around such a site in order to contain the waste and assist the effective removal thereof from the site.
- Waste should be separated and stored separately on site until removal. Construction waste should be removed on a weekly basis.
    - A place for food preparation and eating must be designated within the construction site. Dry chemical toilets must be made available at a ratio of 1:15 at the construction site and must be cleaned and serviced regularly.
    - The contractor may not dispose of any waste and/or construction debris by burning or by burying. An adequate number of appropriate refuse bins must be provided at the construction site for refuse and solid waste.
    - These bins must be emptied on a daily basis into an appropriate containment vessel that should be located in a designated waste storage area. This waste should be removed regularly to a registered dumping site for disposal.
    - All waste must be transported in an appropriate manner (e.g. plastic rubbish bags). A specific site should also be allocated for construction waste e.g. empty cement bags etc.

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A low temporary fence may be erected around such a site in order to contain the waste and assist the effective removal thereof from the site.

- Waste should be separated and stored separately on site until removal. Construction waste should be removed on a weekly basis. Limited amounts of non-hazardous rubble may be utilised as backfill in foundations that are to be capped to prevent any leaching occurring.
- Hazardous waste will be removed and taken to a registered hazardous waste disposal facility.

Table 20: Solid waste removal

	Preferred Layout	
	Without mitigation	**With mitigation**
Extent	**Local**	**Local**
Magnitude	**Medium (-)**	**Low (-)**
Duration	**Short term**	**Short term**
Significance	**Medium (-)**	**Low (-)**
Probability	**Highly Unlikely**	**Unlikely**
Confidence	**Sure**	
Reversibility	**Irreversible**	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.7. Noise disturbance to surrounding land users

The closest neighbours are relatively close to the proposed development and the area has a rural agricultural and natural sense of place. Construction activities, construction vehicles and construction personnel on site would cause an increase in noise in the area, which may impact negatively on adjoining landowners and users. Given that surrounding neighbours require a quiet and calm ambiance and setting, this impact is considered of medium to high significance prior to mitigation.

Impacts of noise generation during construction in general could be mitigated by ensuring that all regulations relating to noise generation are observed and by restricting work to normal working hours. Further to this the following mitigation measures are of relevance:

- Landowners and neighbouring properties should be informed prior to any activities that are bothersome taking place.
- Notify adjacent landowners of after-hours construction work and of any other activity that could cause a nuisance.
- No loud music is permitted on site.
- Noise from labourers to be controlled
- Noise suppression should be applied to all construction equipment
- If noise levels at the boundaries of the site exceed 7dB above ambient levels, then the local health authorities are to be informed.
- Respond to community complaints with regard to noise generation, taking reasonable action to eliminate and/or minimise the impact.
- Where complaints cannot be addressed to the satisfaction of all parties, then the Contractor will, upon instruction by the Project Manager, provide an independent and registered Noise Monitor to undertake a survey of the noise output levels. Recommendations to reduce noise to legislated levels must be implemented.

This potential impact could be readily managed by effective implementation of an EMPr.

The significance of this impact would be reduced from **medium to low** by the implementation of these mitigation measures.

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Table 21: Noise disturbance to surrounding land users

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.8. Visual – "Sense of Place"

The construction of The Christian Community Center could have a visual impact on the scenic views and sense of place immediately surrounding the site.

Sense of place refers to a unique experience of an environment by a user, based on his or her cognitive experience of the place. Visual criteria and specifically the visual character of an area (informed by a combination of aspects such as topography, level of development, vegetation, noteworthy features, cultural / historical features, current landuse, etc.…) play a significant role.

A visual impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light.

The most noteworthy aspect contributing to the sense of place of the surrounding area is the presence of undeveloped, natural bush.

The anticipated visual impact of The Christian Community Center (due to the natural surroundings, on the property) on the visual character of the landscape, is expected to be of **moderate** significance and may be mitigated to **low.**

- Alignment should be compatible with the natural contours
- Built structures should not break the horizon,
- Finishes should be carefully selected to match the surroundings, and free forms should be used where practicable.
- In terms of screening, all existing vegetation on the periphery of the site is to be maintained as a visual buffer and in addition to this the structures to be built are to incorporate existing vegetation. The structures and their placement are to be informed by the existing vegetation.
- Where possible, supplement the vegetation buffer with appropriate tree and shrub species (i.e. those already characterising the visual landscape of the site) between the proposed development and possible sensitive receptors.
- In terms of all infrastructure, it is recommended the access road and all structures be planned so that the unnecessary clearing of vegetation is avoided. This implies making use of already disturbed sites rather than pristine areas wherever possible, and avoiding large tree specimens and dense established vegetation areas.
- Mitigation of lighting impacts includes the pro-active design, planning and specification lighting for The Christian Community Center by a lighting engineer. The correct specification and placement of lighting and light fixtures for the house will go far to contain rather than spread the light.
- Mitigation of visual impacts associated with the construction phase, albeit temporary, entails proper planning, management and rehabilitation of the construction site. In addition, it is vital that vegetation is not unnecessarily cleared or removed during the construction period.
- The facility must be maintained in a neat and visually acceptable state throughout the operational life of the facility.

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Table 22: Visual Sense of Place

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Long term	Long term
Significance	Medium (-)	Low (-)
Probability	Highly Probable	Probable
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.10. Windblown dust

Construction activities are likely to result in the increased production of windblown dust. However, provided that normal dust control measures (e.g. watering, suspending dust generating activities during high wind conditions, re-vegetating/ stabilising disturbed surfaces as soon as possible) are implemented, the significance of this potential impact is considered to be **low** post mitigation**.**

The following are mitigations that should be implemented:

- Air pollution caused during construction can be limited by using dust suppression methods such as water spraying.
- Trucks that comply with the relevant legislation should be used and these delivery vehicles should be restricted in terms of the speed that they travel.
- Building material and sand should be covered during transport to and from the site.

Table 23: Windblown dust

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

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7.4.1.11. Use of pesticides

The area in which the existing fields and the proposed extension to these existing fields are situated, falls within a Conservation Biodiversity Area and is surrounded by relatively intact vegetation. This habitat in turn plays host to a plethora of fauna and flora including insects, birds and fish.
Due to the current agricultural scale of economy, the applicant wishes to extend existing fields thus increasing the total area available for planting. It is crucial to this process that optimal harvest is obtained. In order to achieve this, crops must be protected against unwanted consumption by fauna. Possible risk of loss of crops to disease must also be minimised.

It is normal practice to control possible crop damage by utilising pesticides.

Impact assessment
Pesticides are widely used to control the growth and proliferation of undesirable organisms that, if left unchecked, would cause significant damage to forests, crops, stored food products, ornamental and landscape plants, and building structures. The use of pesticides in both agricultural and non-agricultural settings provides important benefits to society, contributing to an abundant supply of food and fibre and to the control of a variety of public health hazards and nuisance pests.
Owing to the fact that they are designed to be biologically active, pesticides have potential to cause undesirable side effects. These include adverse effects on workers, consumers, community health and safety, groundwater, surface waters, and non-target wildlife organisms. In addition, pesticide use raises concern about the persistence and accumulation of pesticides in food chains quite distant from the original point of use, and about the role of certain pesticides in causing reproductive failure and endocrine system abnormalities in both wildlife and humans and other species that are not their intended target. It is therefore, important to control the use of pesticides, by carefully weighing the benefits that they confer against any possible adverse effects.
The relatively small scale and given that all mitigation measures as indicated below, are implemented it is expected that the significance of this impact will **low**.

Mitigation measures
General Mitigation:

- Chemical control of pests on Boschkom may not take the form of pesticides that pose unmanageable risk such as:
    - Those containing Endocrine Disrupting Properties (EDP),
    - Those containing Persistent Organic Pollutants (POPs),
    - Those containing carcinogenic and immunotoxic potential,
    - Those containing formulations classified by WHO as Extremely Hazardous (class 1a) and Highly Hazardous (class 1b), as well as
    - Pesticides associated with frequent and severe poisoning incidents.

- To maintain healthy populations of natural enemies and pollinators, use pesticides sparingly and in accordance with the label and local regulations. Also consider these general guidelines for pesticide applications:
    - Choose selective pesticides
    - Identify the pest, and use resources available to determine which pesticides will specifically control that pest. Avoid broad-spectrum insecticides such as organophosphates, carbonates, and pyrethroids, which indiscriminately kill everything. Also avoid broad-spectrum herbicides, which reduce floral plants that attract pollinators.
    - Choose nonpersistent pesticides
    - Some pesticides leave residues that kill natural enemies and pollinators long after the initial application (residual toxicity); in addition to immediately killing them (contact toxicity).
    - Choose less harmful formulations
    - Generally, dusts, powders, and microencapsulated pesticides are the most harmful to honey bees, and aerial spraying is the most hazardous method of application. Liquid solutions and granules are the least detrimental to pollinators.
    - Spot-treat

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Targeting your application to specific areas where the pest is a problem will reduce the harm to natural enemies and pollinators.

- Time applications

To protect pollinators and other fauna, avoid spraying when flowers are in bloom. Apply pesticides during the evening or early morning when pollinators are less active. Do not apply when temperatures will be especially low or when dew is expected. Risk of pesticide toxicity is prolonged under these conditions, since residues remain on plants longer.

- Consider water management practices that reduce pesticide movement off-site
- Consult relevant publications.
- Consider practices that reduce air quality problems:
  - When possible, reduce volatile organic compound (VOC) emissions by decreasing the amount of pesticide applied, choosing low-emission management methods, and avoiding emulsifiable concentrate (EC) formulations.
- Protection of water quality:
  - Include instituting buffer zones, restricting aerial spraying in a certain proximity to surface water bodies.
- Food Safety:
  - Insure that pesticides are properly labelled, and the producers apply those pesticides in accordance with the label. To ensure compliance with relevant legislation.
- Worker Protection:
  - The Occupational Health and Safety Act (OHSA). 1993 (Act No. 85 of 1993) regulates health and safety at the workplace for all workers. This Act places the onus on employers to maintain a safe workplace. The regulation makes provision for various mandatory safety measures to protect the health of workers handling hazardous chemicals, such as risk assessment, safety training, safe practices and medical, biological and environmental monitoring of all workplaces.
- Pesticide disposal and container management
  - South Africa has enacted several laws in an attempt to ensure that toxic wastes are disposed of without becoming a danger to people or the environment. This legislation includes the Hazardous Substance Act, 1973 (Act No. 15 of 1973), the Environmental Conservation Act. 1989 (Act 73 of 1989), the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965), and the National Environmental Management Act, 1998 (Act 107 of 1998.

Specific Mitigation:

- Before an application:
  - Ensure that spray equipment is properly calibrated to deliver the desired pesticide amount for optimal coverage.
  - Use appropriate spray nozzles and pressure to minimize off-site movement of pesticides.
  - ➢ Avoid spraying during these conditions:
  - Wind speed over 8 km/h
  - Temperature inversions
  - Just prior to rain or irrigation (unless it is specifically recommended, as when incorporating a soil-applied pesticide)
  - At tractor speeds over 3 km/h
  - ➢ Identify and take special care to protect sensitive areas (for example, waterways or riparian areas) surrounding your application site.
  - ➢ Review and follow labelling for pesticide handling, personal protection equipment (PPE) requirements, storage, and disposal guidelines.
  - ➢ Check and follow restricted-entry intervals (REI) and preharvest intervals (PHI).

- After an application:
  - ➢ Record application date, product used, rate, and location of application.

Follow up to confirm that treatment was effective.

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Table 24: Use of pesticides

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Irreversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.12. Safety

Construction activities could lead to injuries to staff, the public or fauna in the area.

These activities include:

- The construction of the Christian Community Center –
  - Movement of construction vehicles to and from the site
  - Handling of equipment and material

The significance of this potential impact is considered to be **low** if the proposed mitigation measures are implemented.

General Mitigation:

- Measures should be taken during the construction phase, to ensure that personnel and the general public are safe at all times.
- Access should be sufficient to provide safe movement of construction vehicles.
- Construction sites and trenches should be demarcated and protected.

Emergency Response.

The contractor will prepare a detailed emergency response plan prior to work commencing. The plan will include consideration of the following:

- Information identifying the obligations under the relevant legislation.
- Development of a response, investigation, command, control and recovery for both natural disasters and other disasters/emergencies and incidents.
- Response procedures in the event of a fire, chemical release, spill, accident, explosion, equipment failure, bomb threat, natural disaster (including severe storm, bushfire and flood events) or any other likely emergency.
- Communication arrangements and contact details.
- Roles and responsibilities of responsible personnel.
- Emergency controls and alarms.
- Evacuation procedures.
- Emergency response equipment.
- Training requirements.
- Site access and security.

Fire Management

Minimise fire risk through evaluation processes and management of those risks.

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- Restrict high-risk activities in accordance with local fire bans or in times of high fire danger.
- Maintain a plan for rapid and co-ordinated response to the outbreak of fire through an established fire response plan in conjunction with the local reserve and rural fire brigades.
- Develop evacuation procedures and hazard reduction.
- Undertake fire safety awareness training as part of site inductions.
- Conduct fire safety awareness training as part of site inductions.
- Conduct regular fire drills and record exercises as actions generated.
- Conduct periodic fire equipment audits.
- Consult with all relevant fire management authorities.

Incidents and Complaints

All incidents and complaints will be managed through the auditing process and reported to the appropriate authority as required.

All incidents and complaints will be documented in an incidents/complaints register. The complaints form will document at least the following information:

- Time, date and nature of complaint.

Type of communication (telephone, letter, email, visit).

- Name, contact address and contact number (if provided).
- Response and investigation undertaken as a result of the complaint.
- Action taken and signature of person investigating complaint.

Each complaint will be investigated as soon as practicable and, where appropriate, corrective action taken to remedy the cause of the complaint.

Table 25: Safety

	Preferred Layout	
	Without mitigation	**With mitigation**
Extent	**Local**	**Local**
Magnitude	**High (-)**	**Low (-)**
Duration	**Short term**	**Short term**
Significance	**Medium (-)**	**Low (-)**
Probability	**Probable**	**Unlikely**
Confidence	**Sure**	
Reversibility	**Irreversible**	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.1.13. Socio-Economic Impact

There will definitely be a positive economic impact during the construction phase as temporary employment will be provided through the sourcing of unskilled labour. The construction of the proposed centre opens up potential for local suppliers to also benefit from the proposed development. This positive impact will, however, be negated if out-of-town contractors are employed who utilise non-local construction workers and make use of supplies brought in from other provinces (i.e. Gauteng). If local labour and suppliers are utilised during the construction phase this potential positive socio-economic impact will go from a **low (negative)** to **medium (positive)** significance.

There is also the potential for negative social impacts if there is an influx of construction workers from outside the area. This issue needs to be carefully managed which will then reduce the significance from **medium** to **low**.

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Mitigation should include:

- Continued promotion of Department of Trade and Industry's guidelines to redress past racial and gender inequalities.
- Promotion of local business ventures.
- Employment of local labour for permanent positions.
- Provision made for improvement of local skills

Table 26: Socio-Economic impact – employment (short term)

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Low (-)	Medium (+)
Duration	Short term	Short term
Significance	Low (-)	Moderate (+)
Probability	Probable	Probable
Confidence	Sure	
Reversibility	Reversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

Table 27: Socio-Economic impact – influx of aliens

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Moderate (-)	Low (-)
Duration	Short term	Short term
Significance	Moderate (-)	Low (-)
Probability	Probable	Probable
Confidence	Sure	
Reversibility	Reversible	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.4.2 Environmental Management Programme and Environmental Control Officer

As alluded to under Section 6 and 7, all of the aforementioned construction phase impacts could be addressed and minimised by the development and effective implementation of an Environmental Management Plan/Programme (EMPr). Accordingly, a draft EMPr for both construction and operational phases will be prepared (see draft report attached as **Appendix F; Annexure A**). Prior to construction, an appropriately qualified environmental consultant should ensure that the draft EMPr be amended to take cognisance of any further requirements included in the RoD. This EMPr should be incorporated into the Civil Tender Document, since this would ensure that:

- The Contractor is made aware of the EMPr "up front";
- The EMPr is presented in a form and language familiar to the Contractor;
- The Contractor is able to cost for compliance with the EMPr; and
- The EMPr is binding within a well-developed legal framework.

To give appropriate effect to the environmental controls, it is essential that this EMPr be enforced by an appropriately qualified, independent Environmental Control Officer (ECO). The roles and responsibilities of the ECO should include:

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- Ensuring that the necessary environmental authorisations and permits have been obtained;
- Monitoring and verifying that the EMPr is adhered to at all times and taking action if the specifications are not followed;
- Monitoring and verifying that environmental impacts are kept to a minimum;
- Reviewing and approving construction method statements with input from the Engineers;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Giving a report back on the environmental issues at the monthly site meetings and other meetings that may be called regarding environmental matters;
- Keeping records of all activities/ incidents on Site in the Site Diary concerning the environment;
- Inspecting the site and surrounding areas regularly with regard to compliance with the EMPr;
- Keeping a register of complaints in the Site Office and recording and dealing with any community comments or issues;
- Monitoring the undertaking by the Contractor of environmental awareness training for all new personnel coming onto site;
- Ensuring that activities on site comply with other relevant environmental legislation;
- Ordering, via the Engineer's Representative, the removal of person(s) and/or equipment not complying with the specifications;
- Issuing of fines for contraventions of the EMPr;
- Completing monitoring checklists; and
- Keeping a photographic record of progress on Site from an environmental perspective.

7.5. Operational Phase Impacts on the Biophysical and Social Environment

A number of potential long-term (operational) impacts were identified during the investigative phases.

Potential bio-physical impacts:

- Erosion and siltation

The socio-economic impacts identified include:

- Safety
- Visual impact
- Economic

7.5.1. Assessment of operation phase impacts

A summary of the operation phase impacts (assessed within the draft BAR) is provided below.

Table 28: Summary of operation impacts

	Without mitigations			With mitigation		
	HIGH	MODERATE	LOW	HIGH	MODERATE	LOW
Erosion and Siltation		✘				✘
Safety		✘				✘
Visual – "sense of place"		✘				✘
Economic			✘	✓		

7.5.1.1. Erosion and Siltation

One of the potential impacts that Christian Community Center may have on the receiving environment is that of erosion of surface soils and the subsequent sedimentation of downstream environments. Due to the topography, large scale agriculture and potential lack of vegetation cover at certain times of the year, the site may be particularly vulnerable to erosion if not managed correctly.

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Areas of concern would be the access road and any areas where pedestrian traffic is high and vegetation cover is denuded. All the watercourses/wetlands have the possibility of being silted up due to the runoff from the site having a potentially high sediment load.

Due to the sites proximity to a wetland and stream, potential sedimentation of the watercourses is of particular concern.

This potential impact is considered to be of **low** significance with mitigation measures implemented.

Mitigation should include:

- Where possible, maintenance activities that would necessitate vegetation clearing should be scheduled to occur outside of the rainy period, thereby reducing the volume of runoff during maintenance. If this is not possible then extra precaution needs to be taken to reduce this impact.
- Any steep road surfaces should have water-traps and drainage furrows constructed in order to direct water off the road as quickly as possible. These must be maintained properly and regularly.
- Cut-off drains diverting stormwater around the perimeter of the development should be maintained so as to ensure proper functionality.
- Outflow from cut-off drains and stormwater diversions should be attenuated sufficiently to prevent erosion of receiving environment. These must be inspected and maintained regularly.
- As far as possible all cleared areas should be rehabilitated and re-vegetated.

Table 29: Erosion and Siltation

	Preferred Layout	
	Without mitigation	With mitigation
Extent	Local	Local
Magnitude	Medium (-)	Low (-)
Duration	Short term	Short term
Significance	Medium (-)	Low (-)
Probability	Probable	Unlikely
Confidence	Sure	
Reversibility	Short Term	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

7.5.1.3. Visual – "Sense of Place"

Construction of the Christian Community Center could have a visual impact on the scenic views and sense of place immediately surrounding the site.

Sense of place refers to a unique experience of an environment by a user, based on his or her cognitive experience of the place. Visual criteria and specifically the visual character of an area (informed by a combination of aspects such as topography, level of development, vegetation, noteworthy features, cultural / historical features, current landuse, etc.…) play a significant role.

A visual impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light.

The most noteworthy aspect contributing to the sense of place of the area is the presence of undeveloped, natural bush and a generally pastoral atmosphere.

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The anticipated visual impact of The Christian Community Center (due to the natural surroundings, and pastoral atmosphere) on the visual character of the landscape, and by implication, on the sense of place, is expected to be of **moderate** significance and may be mitigated to **low.**

Mitigation to be implemented:

- In terms of screening, all existing vegetation on the periphery of the site is to be maintained as a visual buffer and in addition to this the structures to be built are to incorporate existing vegetation. The structures and their placement are to be informed by the existing vegetation.
- Where possible, supplement the vegetation buffer with appropriate tree and shrub species (i.e. those already characterising the visual landscape of the site) between the proposed development and possible sensitive receptors.
- In terms of all infrastructure, it is recommended the access road and all structures be planned so that the unnecessary clearing of vegetation is avoided. This implies making use of already disturbed sites rather than pristine areas wherever possible, and avoiding large tree specimens and dense established vegetation areas.
- Mitigation of lighting impacts includes the pro-active design, planning and specification lighting for The Christian Community Center by a lighting engineer. The correct specification and placement of lighting and light fixtures for the house will go far to contain rather than spread the light.
    - Outdoor lighting should be kept to a minimum, and be aimed downwards (towards the ground). Energy-saving lighting should be used.
- The development must be maintained in a neat and visually acceptable state throughout the operational life of the facility.
- Aesthetic standards must be maintained by ensuring that architectural styles and landscaping blend in with the surrounding environment.

Table 30: Visual Sense of Place

	Preferred Layout	
	Without mitigation	**With mitigation**
Extent	**Local**	**Local**
Magnitude	**Medium (-)**	**Low (-)**
Duration	**Long term**	**Long term**
Significance	**Medium (-)**	**Low (-)**
Probability	**Highly Probable**	**Probable**
Confidence	**Sure**	
Reversibility	**Irreversible**	

Significance: positive impacts indicated by no shading & (+), negative impacts indicated by shading & (-)

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7.5.1.4. Economic (Job Creation & Capital Investment)

The construction of The Christian Community Center will add further positive socio-economic opportunities to the current operation (direct benefit) as well as to the local community (both direct and indirect benefit).

The knock-on effect from an increase in the number of employment opportunities and the benefit of additional income for individuals within the local community cannot be under estimated. Furthermore, the whole project is based on the provision of community care and as such is to the benefit of all involved.

The proposed development corresponds with current land use objectives and it is anticipated that there will be a positive impact to community in the form of provision of employment and community upliftment.

In mitigation the following should be implemented and practiced:

- Continued promotion of Department of Trade and Industry's guidelines to redress past racial and gender inequalities.
- Promotion of local business ventures.
- Employment of local labour for permanent positions.
- Provision made for improvement of local skills

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7.6 Final Conclusions and Recommendations

The essence of all EIA processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. In terms of NEMA (No 107 of 1998), the commitment to sustainable development is evident in the provision that "development must be socially, environmentally and economically sustainable and requires the consideration of all relevant factors. In addition, the preventative principle is required to be applied, i.e. that the disturbance of ecosystems and loss of biological diversity are to be "…avoided, or … minimised and remedied" and "disturbance of the landscape and the nation's cultural heritage is avoided and where it cannot be altogether avoided is minimised and remedied". Therefore, negative impacts on the environment and on people's environmental rights in terms of the Constitution (Act 108 of 1996)) should be anticipated and prevented, and where they cannot be altogether prevented, they must be minimised and remedied in terms of "reasonable measures". "Reasonable measures" implies that "every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law and cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment".

7.6.1 Conclusions

The preceding chapters provide a detailed assessment of the anticipated environmental impacts on specific components of the biophysical and social environments associated with the proposed construction and operation of the Christian Community Center. This DBAR has provided a comprehensive assessment of the potential environmental impacts, identified by the EIA team and I&AP's, associated with the proposed project. **This investigation has not identified any potential impacts on the biophysical or social environments that are so severe as to suggest that the proposed activity should not proceed.** The design has taken cognisance of the various environmental considerations and accordingly, incorporates remedial measures aimed at curtailing the significance of the potential negative environmental impacts associated with the proposed development, as well as enhancing the potential positive environmental (including Socio-economic) impacts.

The significance of the potential environmental (biophysical and social) impacts associated with the proposed The Christian Community Center are summarised in Table 31.

It should be noted that the impacts have been assessed with a reasonable amount of confidence, i.e. in terms of the defined confidence ratings presented in Table 11.

From table 31 it is apparent that there is **no** long term or operational phase impacts of significant concern. The negative impacts associated with the operational phase are likely to be of **medium** to **low** significance, particularly if the proposed mitigation measures are implemented. Moreover, there are a number of potential positive impacts associated with the proposed development, viz., the creation of positive construction and operational phase employment opportunities and general community upliftment.

With regards to the short term or construction phase impacts, the significance of the construction phase impacts is likely to be curtailed by the relatively short duration of the construction phase. Moreover, many of the construction phase impacts could be mitigated by the effective implementation of the mitigation measures outlined above. If these measures were put into practice the significance of all construction phase impacts would be reduced to **low**. While the probability of the construction phase impacts occurring is relatively high without mitigation, the effective implementation of the mitigation measures will reduce the probability of the impacts occurring.

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Table 31: Summary of the significance and probability of the potential positive and negative impacts associated with the proposed Christian Community Center.

IMPACT	Without mitigations (positive & negative)			With mitigation (positive & negative)		
	HIGH	MODERATE	LOW	HIGH	MODERATE	LOW
Ecological Sensitivity • Habitat loss (Fauna and Flora) • Barriers to dispersal and migration of fauna and flora		✖				✖
Erosion and Sedimentation		✖				✖
Impact on wetland						
Ground and Surface Water Impact		✖				✖
Heritage			✖			✖
Solid Waste Removal		✖				✖
Noise disturbance		✖				✖
"Sense of Place" - Visual		✖				✖
Windblown Dust		✖				✖
Litter and Waste		✖				✖
Safety		✖				✖
Traffic		✖				✖
Socio-Economic ▪ Employment Opportunities (short-term)			✖		✓	
▪ Influx of aliens		✖				✖

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	Without mitigations			With mitigation		
	HIGH	MODERATE	LOW	HIGH	MODERATE	LOW
Erosion and Siltation		✖				✖
Safety		✖				✖
Visual – "sense of place"		✖				✖
Economic			✖	✓		

It is felt that the proposed Christian Community Center will have an overall positive impact on the socio-economic environment, and should the necessary mitigation measures be implemented there are no impacts envisaged of high significance or any fatal flaws.

In this regard the EAP sees no reason as to why the proposed activity (construction of The Christian Community Center) may not be authorised.

7.6.2 Recommendations and Environmental Impact Statement

Should the proposed activity be authorised, the most important mitigation measures, which should be stipulated as requirements in any authorisation include the following:

- The Construction Phase EMPr that addresses, *inter alia*, the issues discussed under Construction Phase impacts, *viz*. Ecological sensitivity, erosion and sedimentation, deterioration of water quality, heritage impact, noise disturbance and socio-economic impacts, traffic, windblown dust, litter/waste and safety should be effectively implemented for the duration of the project.
- A suitably qualified professional should be appointed to act as the ECO and oversee the implementation of the EMPr during construction.
- If any human remains are discovered during earth moving activities, excavations must stop at the location of these findings and these must be treated with respect. The South African Heritage Resources Agency must be notified immediately. An archaeologist may be required to remove the remains at the expense of the developer.
- Effective design of all stormwater outlet areas to prevent erosion and flooding at the point of discharge and immediately downstream.
- Appropriate landscaping and rehabilitation of indigenous vegetation should be included in the development of the site.
- Construction should be planned so that the unnecessary clearing of vegetation is avoided.
- Measures are taken to ensure that personnel and the general public are safe at all times.

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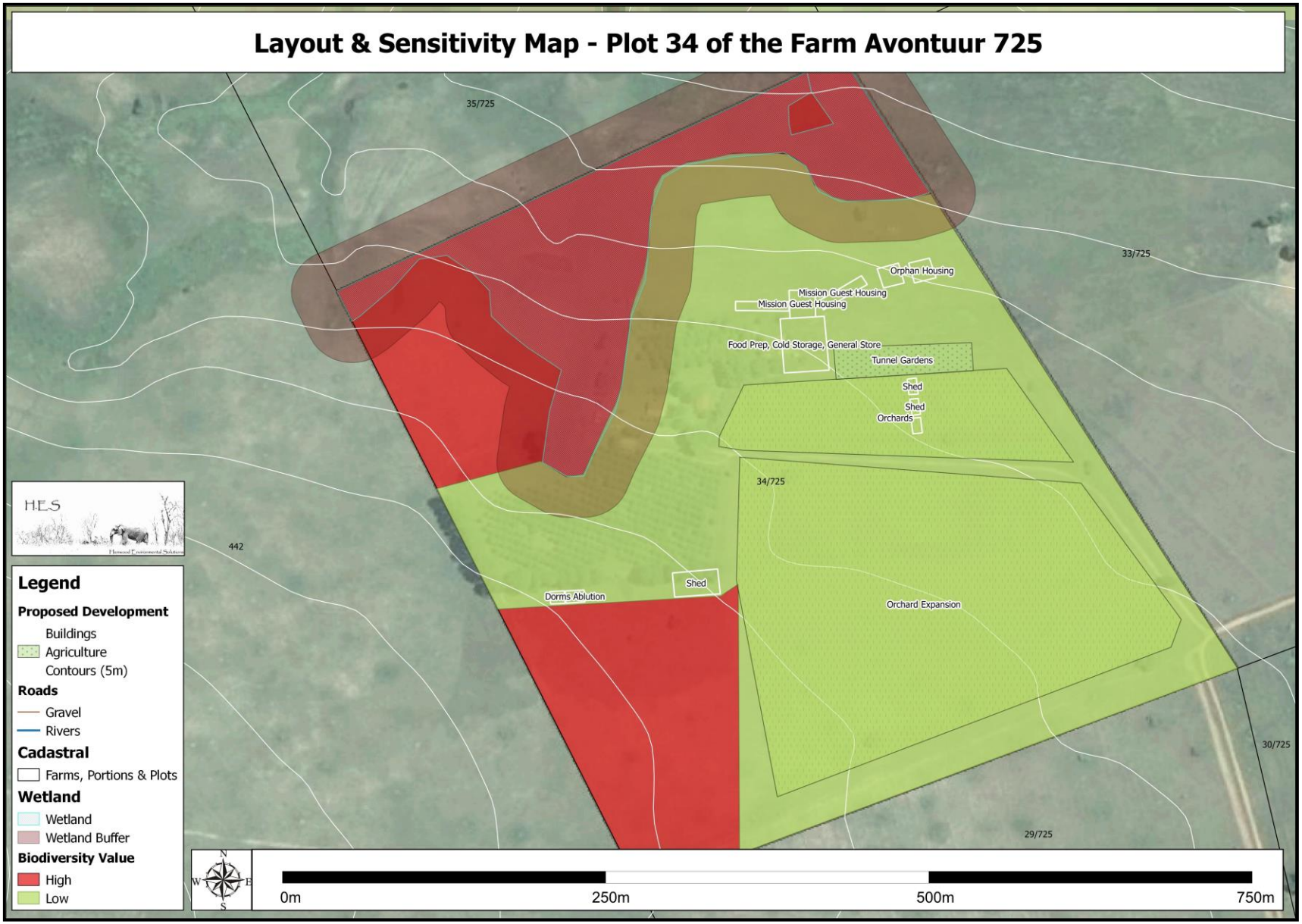

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7.6.3 The way forward

The competent environmental authority (i.e. DARDLEA) will review the final BAR and decide whether or not to grant authorisation.

Once DARDLEA has reviewed the Final BAR they will either issue a Record of Decision based on the information contained in the Final BAR or indicate that further information is required in order to make an informed decision with regard to the proposed activities. If a Record of Decision is issued, this would be communicated by means of letters to all identified I&AP's. Following the issuing of the Record of Decision, there will be a 10-day notice of intent to appeal period, followed by a 30-day appeal period within which I&AP's will have an opportunity to appeal against DARDLEA's decision to the Provincial MEC for Environmental Affairs and Development Planning in terms of the National Environmental Management Act.

8 References

BAMFORD M *(2016) Palaeontological Impact Assessment for the proposed Avontuur Christian Center, near Badplaas, Mpumalanga Province.*

CELLIERS JP *(2016) Phase 1 Archaeological Impact Assessment on Plot 34 of the farm Avontuur 725 JT near Badplaas Resort, Mpumalanga Province.*

DEAT (2006a) *Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 2006, Integrated Environmental Management Guideline Series.* National Department of Environmental Affairs and Tourism (DEAT), Pretoria.

DEAT (2006b) *Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations, 2006, Integrated Environmental Management Guideline Series.* National Department of Environmental Affairs and Tourism (DEAT), Pretoria.

HARDY S. (2016) *Wetland Delineation for the proposed Avontuur Christian Center, near Badplaas, Mpumalanga Province*.

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LOCHNER, P. (2005) *Guideline for Environmental Management Plans*. Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning (DEA&DP), Cape Town.

McKENZIE, D. (2016) *Baseline terrestrial ecology Study & biodiversity value assessment, Mpumalanga Province.* Ecorex

MÜNSTER, F. 2005. (2005) *Guideline for determining the scope of specialist involvement in the EIA process.* Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning (DEA&DP), Cape Town.

OBERHOLZER, B. (2005) *Guideline for involving visual and aesthetic specialists in the EIA process*. Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning (DEA&DP), Cape Town.

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9 Assumptions, Uncertainties and Gaps in Knowledge

In undertaking this investigation and compiling the EIA Report, the following has been assumed:

- The information provided by the applicant is accurate and unbiased;
- The scope of this investigation is limited to assessing the environmental impacts associated with the proposed development and associated infrastructure.

10 Representations and Comments

Comment:

Johan Bezuidenhout

2. **We have no objections. A section of the proposed center will border Farm Avontuur, section 29, which is our property. This might impact us.**

Response:

Steven Henwood (EAP)

4. **Noted thank you.**

Comment:

Teuns Sevenste

5. **We confirm having received the documentation (BID). There are a few things that we would like clarification on, like water, sewerage ext.**

Response:

Steven Henwood (EAP)

d) Water supply

- **Current drinking water comes from a spring which is located on an adjacent property to the west. This source flows constantly year - round.**
- **There is also a borehole at the top of the property near the camp ground.**
- **There is an additional water pump in the creek at the north east corner of the property this however is a standby source of water and is not regularly used as there is currently sufficient water being supplied from the neighbouring property.**

e) Sanitation and Waste

- **Sanitation and waste related activities will be carried out in full compliance with the local legislation. In this regard the following management actions apply and will be implemented:**
  - **The Integrated Environmental Management (IEM) process must be followed before waste disposal methods are implemented. In this regard household waste will be collected and stored temporarily on site, from where it will be removed to a registered waste disposal site.**
  - **Production of solid waste should be minimized and recycling maximized. Waste must be split at source, rather than having to be sorted later. Recycling and waste sorting will be implemented on site.**
  - **Rubbish bins must be regularly emptied and surrounding areas must be tidied up. This will be implemented.**
  - **If it is realistic to do so, all solid and chemical waste should be removed from**

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the site to an authorized landfill. This will be implemented.
- **A proactive attitude towards waste management will be promoted amongst staff and visitors. This will be implemented.**
- **Waste derived from catering facilities can possibly be recycled as pigswill and the use of this should be investigated (although veterinary regulations may prohibit this;**
- **Grey water should be kept separate from sewerage and recycled where possible. This will be implemented. See sewerage treatment section for further detail.**
- **Staff and contractors will dispose of chemicals in the approved manner. No cleaning of containers will be allowed in and along water courses and wetland areas. This will be implemented and maintained.**
- **Spillage of oil and/or fuel from water pumps into the streams must be prevented through adequate construction, operational and maintenance procedures and staff training. This will be implemented and maintained.**
- **Sewage disposal systems must be located at the legally and environmentally required distance from streams. This will be implemented. See sewerage treatment section for further detail.**
- **Staff and visitors may not wash themselves or do their laundry in the streams, wetlands and rivers.**
- **Contractors will dispose of all waste and litter and will clean up building sites to the satisfaction of the ECO. Waste must be properly disposed of. This will be implemented and maintained and monitored.**

f) Sewerage Treatment

- **The existing infrastructures on Plot 34 are serviced by sewerage systems consisting of septic tanks and French drains. Due to the existing low density of development and the relative infrequent use of these facilities (units are only used at certain times of the year when shareholders utilise the property while on holiday) the septic tanks and soakaways have functioned effectively without any problems over the past 20 years.**
- **It is proposed that the proponent continue to utilise this sewerage treatment method for the existing structures and where new structures need servicing, that they install new septic tanks and French drains.**

Comment:

Rob Winter

4. Your reference: Friends of Emoyeni Children's Village/Stakeholder Notification

A site visit took place last Tuesday 19 July 2016 at Plot 34 Avontuur 725JT by: R A Winter, S E Winter, J J de Villiers, M. D. Winter, C Winter. The intent of the visit was to see and discuss the proposed development as per the notices. All parties mentioned are "Interested and Affected" and represent the following portions namely: Portions Remainder 0; 5; 6; 7; 8; 28; 30; 31; 40; 49 of the Farm Avontuur 725JT as well as Portion 49 Doornpoort 724JT.

This response / feedback is done by consensus as a group but does not waive the right to individual feedback of each person.

A site tour was conducted by Darryl who represented the owners of the property. A full and comprehensive tour took place with Darryl highlighted the scope of the Project and the Intent of the development that would take place on Portion 34 Avontuur. It was noted that some minor changes would be made to the original scope of works which would have no impact on the overall plan. A few questions arose by some while on the tour, which were all answered by Darryl in accordance with the Christian Community Center framework. The tour ended with the group being satisfied having all answers

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dealt with and a complete visual inspection and an understanding of the proposed future development.

<u>Conclusion</u>: The group supports the development and compliment "Friends of Emoyeni" for tackling this project / initiative for the betterment of the Community through improving the quality of life and social development within the Greater Badplaas Area. We have no objections. A section of the proposed center will border Farm Avontuur, section 29, which is our property. This might impact us.

Response:

Steven Henwood (EAP)

6. **Your support of the project is noted. Thank you.**

11 Specific Information

To date no other specific information was required by the Mpumalanga Department of Economic Development, Environment and Tourism.

12 Matters Required in terms of sections 24(4)(a) and (b) of the Act

None

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SECTION E: APPENDICES

APPENDIX A: SITE PLAN(S)
Annexure A: Locality Map
Annexure B: Preferred layout including onsite sensitivities

APPENDIX B: SITE PHOTOGRAPHS
Annexure A: Site photos

APPENDIX C: FACILITY ILLUSTRATION(S)

APPENDIX D: SPECIALIST REPORTS
Annexure A: Baseline terrestrial ecology Study & biodiversity value assessment.
Annexure B: HIA
Annexure C: PIA
Annexure D: Wetland Delineation

APPENDIX E: PUBLIC PARTICIPATION PROCESS
Annexure A: Site notice text
Annexure B: Proof of displayed notice boards
Annexure C: Background Information Document (BID) text
Annexure D: Proof of given Background Information Document (BID) - distributed via email
Annexure E: Advertisement text
Annexure F: Proof of placed advertisement
Annexure G: Letter of notification of the land owner
Annexure H: Proof of given Letter of notification of the land owner
Annexure I: List of registered Interested and Affected Parties (I&AP's)
Annexure J Comments and responses

APPENDIX F: OTHER
Annexure A: Draft Environmental Management Programme
Annexure C: Curriculum Vitae of EAP
Annexure C: Declaration by EAP.