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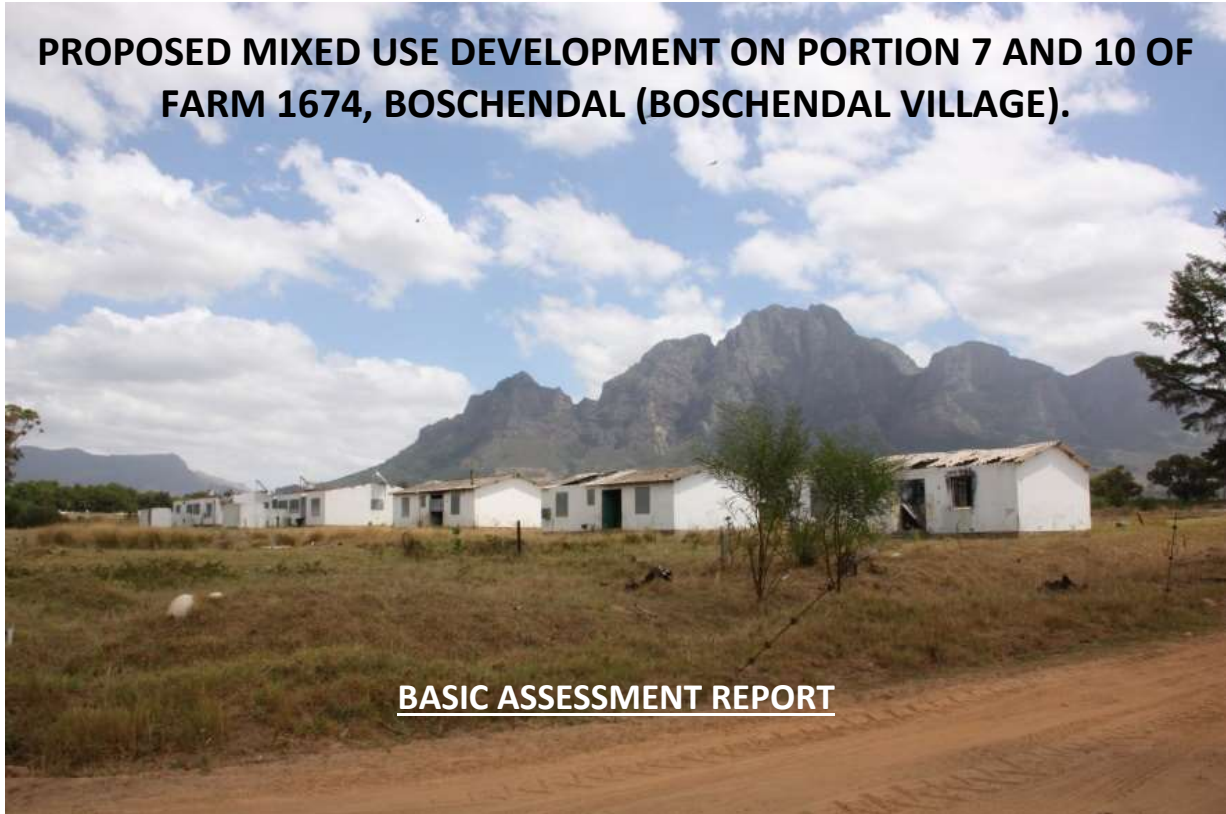
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### **PROPOSED MIXED USE DEVELOPMENT ON PORTION 7 AND 10 OF FARM 1674, BOSCHENDAL (BOSCHENDAL VILLAGE).**



#### **BASIC ASSESSMENT REPORT**

*In terms of the National Environmental Management Act (NEMA, Act 107 of 1998) as amended and EIA Regulations 2014, as amended.*

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**Prepared for the Applicant:**

Boschendal (Pty) Ltd

**By:**

Lindsay Speirs of Doug Jeffery Environmental Consultants

**Date:**

August 2017

**DJEC Ref: 2004/31**



**Basic Assessment Report in terms of the NEMA Environmental Impact Assessment Regulations, 2010**  
**AUGUST 2010**

**Kindly note that:**

1. This **Basic Assessment Report** is the standard report required by DEA&DP in terms of the EIA Regulations, 2010 and must be completed for all Basic Assessment applications.
2. This report must be used in all instances for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended, and the Environmental Impact Assessment Regulations, 2010, and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM: WA), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA).
3. This report is current as of 2 August 2010. It is the responsibility of the Applicant / EAP to ascertain whether subsequent versions of the report have been published or produced by the competent authority.
4. The required information must be typed within the spaces provided in the report. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that will expand as each space is filled with typing.
5. Incomplete reports will be rejected. A rejected report may be amended and resubmitted.
6. The use of "not applicable" in the report must be done with circumspection. Where it is used in respect of material information that is required by the Department for assessing the application, this may result in the rejection of the report as provided for in the regulations.
7. **While the different sections of the report only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.**
8. Unless protected by law all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for the belief that the information is protected.
9. This report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. No faxed or e-mailed reports will be accepted. **Please note that for waste management licence applications, this report must be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office Region A.**
10. Unless indicated otherwise, two electronic copies (CD/DVD) and three hard copies of this report must be submitted to the Department.

**DEPARTMENTAL DETAILS**

<b>CAPE TOWN OFFICE REGION A (Cape Winelands, City of Cape Town: Tygerberg and Oostenberg Administrations)</b>	<b>CAPE TOWN OFFICE REGION B (West Coast, Overberg, City of Cape Town: Helderberg, South Peninsula, Cape Town and Blaauwberg Administrations)</b>	<b>GEORGE OFFICE (Eden and Central Karoo)</b>
Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region A2) Private Bag X 9086 Cape Town, 8000  Registry Office 1 <sup>st</sup> Floor Utilitas Building 1 Dorp Street, Cape Town  Queries should be directed to the Directorate: Integrated Environmental Management (Region A2) at: Tel: (021) 483-4793 Fax: (021) 483-3633	Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region B) Private Bag X 9086 Cape Town, 8000  Registry Office 1 <sup>st</sup> Floor Utilitas Building 1 Dorp Street, Cape Town  Queries should be directed to the Directorate: Integrated Environmental Management (Region B) at: Tel: (021) 483-4094 Fax: (021) 483-4372	Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region A1) Private Bag X 6509 George, 6530  Registry Office 4 <sup>th</sup> Floor, York Park Building 93 York Street George  Queries should be directed to the Directorate: Integrated Environmental Management (Region A1) at: Tel: (044) 805 8600 Fax: (044) 874-2423

View the Department's website at <http://www.capegateway.gov.za/eadp> for the latest version of this document.

Please note that this report is in terms of the EIA Regulations 2014, as amended.

**Departmental Details have changed:**

CAPE TOWN OFFICE: REGION 2  
(Cape Winelands)

**DEPARTMENTAL REFERENCE NUMBER(S)**

File reference number (EIA):	Pre- Application Reference number: 16/3/3/6/7/1/B4/45/1096/15
File reference number (Waste):	
File reference number (Other):	

**PROJECT TITLE**

**PROPOSED MIXED USE DEVELOPMENT ON PORTION 7 AND 10 OF FARM 1674, BOSCHENDAL (BOSCHENDAL VILLAGE).**

**DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**

Environmental Assessment Practitioner (EAP):	Doug Jeffery Environmental Consultants (Pty) Ltd.		
Contact person:	Lindsay Speirs		
Postal address:	PO Box 44		
	Klapmuts	Postal code:	7625
Telephone:	(021) 875 5272	Cell:	083 2898727
E-mail:	lindsay@dougjeff.co.za	Fax:	086 660 2635
EAP Qualifications	Douglas Jeffery: BSc; BSc (Hons); MSc [UCT] Lindsay Speirs: BA; BA (Hons); MA (Stell)		
EAP Registrations/Associations	Douglas Jeffery: Professional Natural Scientist registered with SACNASP (159/90); certified Environmental Practitioner with EAPSA; and member of IAIA.		

**Details of the EAP's expertise to carry out Basic Assessment procedures**

Report compiled by: Lindsay Speirs  
Lindsay Speirs obtained a BA degree majoring in Archaeology, Psychology, Geography and Environmental Studies, an Honours degree in GIS and a Master's degree in Geography & Environmental Sciences, all from the University of Stellenbosch. She has extensive experience (12 years) as an environmental assessment practitioner, and has worked on a great variety of projects throughout the Western Cape. Curriculum vitae attached as **Appendix I**.

Report reviewed by: Doug Jeffery  
Doug Jeffery obtained a BSc. with majors in Botany and Zoology, from the University of Cape Town and went on to obtain a MSc. in Botany at UCT. He has worked throughout South Africa, both as a professional Botanist and has co-ordinated Environmental Impact Assessments (EIAs) for over 25 years.

**EXECUTIVE SUMMARY OF THE CONTENT OF THE BASIC ASSESSMENT REPORT:**

**ENVIRONMENTAL IMPACT STATEMENT**

**BACKGROUND**

**Overview of Boschendal Strategy:**  
Over the past 15 years several development proposals have been generated for the Boschendal landholding, in various planning processes. This comprised extensive development proposals which saw significant portions of the farm being proposed for various extensive residential developments, a retirement village, equestrian estate and other residential estate "villages". In 2012 new shareholders invested in the farm and reviewed this previous development approach. The proposals which were at that stage being advertised for comment were then withdrawn from the statutory processes.

The new owners adopted a different approach to the landholding, which can be summarised shortly as follows: The **first leg** of the investment strategy is placing the primary emphasis on the agricultural activities as the key driver of activity and income. Significant investment has been and is currently being made into diversifying and expanding the agricultural activities on the estate including new orchards and vegetables, and establishing livestock, chicken and game farming.

The **second leg** of the strategy is to focus on the tourism and hospitality industry which is inextricably linked with the preservation of the heritage resources on the property. This includes providing increased and improved tourism opportunities, tourism accommodation, a wider offering of tourist and leisure activities which taps into, and builds on, the unique natural beauty and heritage assets of the farm.

The **third leg** of the investment strategy is to establish key development opportunities which will add long term value to the agricultural and tourism components identified above and which will transform degraded and derelict portions on the estate. To this end the consultant team was briefed to explore development opportunities within the ambit of the Municipality of Stellenbosch's Spatial Development Framework (SDF) and various policies.

For the new Boschendal shareholders it is important to promote sustainability, ethical practices, social upliftment and empowerment with long term preservation of major heritage assets to ensure a business which contributes to the Dwars River Valley and the Western Cape economy. These principles are woven through the entire business approach.

The third leg of the investment strategy resulted in a team being briefed to prepare a new development proposal for a village which originates from the Municipality's Spatial Development Framework. The Stellenbosch Municipal Spatial Development Framework promotes a series of interconnected nodes which are located at points of highest accessibility. The SDF identifies the Groot Drakenstein node as a future development node which is located at the R45/R310 intersection. This is an important cross-roads and a highly accessible point located equidistant between Stellenbosch, Franschhoek and Paarl. It is a typical location for a village and it is the aim of Boschendal to develop a rural 'Cape village' with distinct and authentic urban qualities.

**Vision**

***"In essence, the character of the proposed development will be that of rural village, characterised by certain urban qualities, discreetly knitted into an agrarian landscape, whilst responding to the historical context of the area."***

***Philin Briel (project architect)***

Due to the location of the proposal it is important that such a village is rooted in the Cape tradition of village-building. Traditionally Cape villages use a distinct grid layout and are varied as a result of topography and building typology. Importantly, in this setting, the heritage indicators play an important role in ensuring the development of an authentic Cape village and defining the extent and form of development, with emphasis being placed on urban edge-making, scenic route, density, public access, vistas and views, and authentic walled architecture.

The team developed a methodology which is informed by heritage, environmental sustainability, planning, engineering services, traffic and socio-economic informants which guide and shape the proposals.

**Principles which informed the design:**

- This should not be a 'gated community', although security features are to be embedded and designed into the layout.
- There is a gradient of open accessible public places to private spaces where access is controlled.
- Buildings have an active interface with the street environment and reciprocally, the development will enhance and improve the immediate environment, which is a degraded site with an industrial activity which does not contribute to the area or the heritage character of the surrounding area. Human scale will be reinforced at the edges of public spaces and streets by the use of colonnades, verandas and pergolas where needed. Overlooking features like balconies, roof terraces and windows will be used as safe city mechanisms to ensure security through surveillance.
- Publically accessible areas are created which gives this village its unique character.
- Public activity will be located on a pedestrian orientated, walkable "high street".
- Community facilities (for example a crèche or other similar education facility) can develop over time and should be located along the "high street" clustered with the police station to form a civic hub.
- Public transport drop off points will be located along the R310 at the civic hub.
- The village should be well-contained and as small and compact as possible.
- A variety of residential densities are provided which can serve a diverse community. To this end dwellings will vary from single dwelling free standing houses and row houses to entry level apartments which will be made available to key workers.

- The "high street" contains a variety of publicly orientated activities including shops, restaurants, offices, educational facilities, entry level housing, public parking and open space. A farmers' market which is located centrally on the "high street" will be the main activity space. The area closer to the R45 will display a civic character as the existing police station forms part of that precinct already.
- The buildings in the development will be predominately of a horizontal character, unless specified differently in the urban design framework. Urban design framework, controls and guidelines will inform development proposals to ensure an appropriate architectural response and language in the village. It is however strongly resisted that houses all "look the same" and therefore various architects will be invited to design individual buildings within the village.
- New agricultural areas should be brought right up to the settlement edges. The town should respond to the predominant agricultural patterns, but must have strong spatial edge-definition in order to eliminate the possibility of future expansion or sprawl. The use of structural landscaping is paramount in achieving this principle, and edges of the village will be clearly defined through critical strategic structural planting.

**SITE DESCRIPTION**

The site for the proposed village is located on Portion 7 Farm 1674 and Portion 10 Farm 1674. The proposed sewer and water pipelines will be crossing small streams mainly within the road reserve of the Helshoogte Road. Below is a table showing the property information of all the relevant land portions for this proposed village and associated infrastructure which would trigger activities in terms of the EIA Regulations 2014.

	Land Portion	SG 21 Code	Co-Ordinates
<b>Village</b>	Portion 7 Farm 1674	C06700220000167400007	33° 52'26.62"S 18° 58'24.33"E
	Portion 10 Farm 1674	C06700220000167400010	
<b>Pipes</b>	R310 Road Reserve		<u>Crossing 4 on Figure 8b:</u> Water Pipe 33° 53'0.35" S 18° 58'4.94" E  Sewer Pipe 33° 53'0.54" S 18° 58'5.47" E  <u>Crossing 5 on Figure 8b:</u> Water Pipe 33° 53' 10.19" S 18° 57' 56.86" E  Sewer Pipe 33° 53' 10.32" S 18° 57' 57.63" E
	Portion 8 of Farm 1201	C06700220000120100008	<u>Crossing 5 on Figure 8b:</u> Water Pipe 33° 53' 45.63" S 18° 57' 3.91" E
	Portion 1 of Farm 1674	C06700220000167400001	<u>Crossing 4 on Figure 8b:</u> Water Pipe 33° 53' 36.26" S 18° 57' 12.35" E
	Portion 17 of Farm 1685	C06700220000168500017	<u>Crossing 3 on Figure 8b:</u> Water Pipe 33° 53' 24.33" S 18° 57' 37.99" E Sewer Pipe 33° 53' 24.49" S 18° 57' 38.87" E

The site is partly surrounded to the south by the remainder of the Boschendal Estate, including the historic Boschendal homestead and werf, and associated vineyards. The Rhodes fruit canning factory is located immediately to the north of the site. The historical Meerlust and Lekkerwijn farmsteads, along with the Groot Drakenstein and Delta settlements, lie to the north of the R45, along with several other wine farms.

The area surrounding the site consists of an orthogonal pattern of agriculture, mainly vineyards and orchards, articulated in places by tree shelterbelts. Neighbouring land uses include the Rhodes Food Group Head Office, Rhodes food factory and a police station to the north of the site. A disused railway track roughly follows the alignment of the R45 Route to the north of the site.

The scenically striking Simonsberg and Drakenstein Mountains, their blocky cliffs formed by sandstones of the Table Mountain Group of rocks, form a visual backdrop to the site. The weathered Cape Granite forms the gently sloping foot slopes, while the site itself lies in the broad alluvial valley of the Dwars River.

The site slopes gently in a northeasterly direction towards the Dwars River to the east of the site. A belt of large Eucalyptus (gum) trees occurs in the southeast portion of the site providing a useful windbreak.

According to the Zoning Certificates received from the Stellenbosch Municipality, Portion 7 is zoned Agriculture Zone I in its entirety. Portion 10 is zoned primarily Agriculture Zone I with a spot zoning for Institutional Zone I (farm school) and Institutional III (health clinic) in terms of the Section 8 Zoning Scheme.

Boschendal, and numerous other historical farmsteads in the area, together with the vineyards, make this an important cultural landscape, nominated for World Heritage Site status. The Dwars River Valley has recently been gazetted by SAHRA as a provisional National Heritage Site.

The project site is located on the left bank of the Dwars River, with the boundary of the site coming, at its closest, to within approximately 200 m of the river.

The dominant freshwater ecosystem within the study area is the Dwars River, an important perennial tributary of the Berg River. This river is a foothill, cobble-bed system typical of the Fynbos Biome – instream habitat is typically riffle-run sequences with some pools and marginal vegetation.

Four wetlands were noted on site. In addition, a wet area has been created through water leaking from a broken water pipe. The wetlands are associated with agricultural drains, roads and railway lines but most of them are likely to be remnants of more extensive wetland areas, which have been partially impacted by the surrounding activities.

Historically, the underlying vegetation type would have been Swartland Alluvium Fynbos, which is Critically Endangered on a national basis. However, the entire area is either developed, cultivated or heavily disturbed, and any natural vegetation present is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern.

## **ENVIRONMENTAL REQUIREMENTS**

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a National Act, which is enforced by the Department of Environmental Affairs (DEA). In the Western Cape, these powers are delegated to the Department of Environmental Affairs & Development Planning (DEA&DP).

According to **the 2014 EIA Regulations, as amended**, of Section 24(5) of NEMA, authorisation is required for the following listed activities (Basic Assessment): Listing Notice 1: 9, 12, 19, 27 and 28; and Listing Notice 3: 4, 12 and 17.

## **PROPOSAL**

The Stellenbosch Municipal Spatial Development Framework (SDF) promotes a series of interconnected nodes located at points of highest accessibility. The SDF identifies the Groot Drakenstein node as a future development node which is located at the R45/R310 intersection. This is an important crossroad and a highly accessible point located equidistant between Stellenbosch, Franschhoek and Paarl. It is an appropriate location for a village and it is the aim of Boschendal to develop a rural 'Cape Village' with distinct and authentic rural settlement qualities, within this node.

The Village development area is to be subdivided off the main farm portions owned by Boschendal and

rezoned to Subdivisional Area in accordance with the Stellenbosch Land Use Planning Bylaw. The Village development area is to be further subdivided with a subsequent subdivision plan to create the "superblocks" which will define the structure of the village and create the outline of development phases. The appropriate zoning can be allocated to each "superblock" in accordance with the envisaged land use.

### **Description of Commercial and Mixed-Use Development Precinct**

The mixed-use business area of the Village is a space with the highest degree of public access. This area is centred on a "high street" where the public can access it any time of the day. The area is served by on-street and surface parking in dedicated parking areas. Some portions will also have access to parking basements.

An important feature at the heart of this high street is the farmer's market which will provide small entrepreneurs, surrounding farmers, home crafters, artists and small local businesses the opportunity to access a regular, local market.

It is intended for the buildings in this precinct to be mixed-use in nature, with retail and business at ground floor levels and residential apartments or general business use at upper levels. It is the intention to ensure a mixed offering of commercial, shopping, restaurants and convenience goods which will serve the residents, visitors and surrounding communities.

It is important to note that it is not the intention of this development to contain a shopping centre. The GLA proposed is sufficiently limited and designed on a publicly accessible high street concept, to ensure it takes the form of a local business node.

### **Residential Development**

The residential development will comprise a mix of housing types ranging from freestanding dwelling houses on single erven (at nett densities of  $\pm 4-11$  du /ha) to more compact row houses ( $\pm 25$  du/ha) to apartments ( $\pm 86$  du/ha). The overall gross density for residential development is 17, 85 dwelling units/ha and the development will comprise a maximum of 475 dwelling units.

The residential development will consist predominantly of single and double-storey row houses, which create an attractive and compact urban form which is well suited to the concept of a rural village. Higher residential densities are proposed most central to the development, which will comprise of Alphen-style 3-storey walk-up apartments. Furthermore, it is also intended to provide apartments above retail and business to ensure true mixed use development.

Private neighbourhoods: The various superblocks make up the neighbourhoods which are blocks of residential development which internally provides a greater degree of privacy. It is, however, important to note that the Urban Design Framework does not allow for the construction of blank walls around these neighbourhoods. The dwelling units themselves, with their front stoeps, small gardens and visually permeable fences, windows and front doors overlooking the streets, become the perimeter which defines each private residential neighbourhood. Inside the perimeter, privacy is created and guaranteed.

One of the key concepts supported by the Applicant is to ensure a range of housing options to a range of income groups. It is therefore proposed that approximately 10% of the units (maximum of 47 units) be made available to key financed workers (either through a rental scheme owned by Boschendal Pty Ltd. or through bond financing to middle-low income groups). Key workers" is defined as families who have income generated from jobs such as teachers, nurses, police officers, council employees and similar types of employees who serve the community. The average annual income of these workers will be determined and used as a guide for structuring the proposed apartment rental/purchase scheme to ensure accessibility for these workers to live in Village.

The proposal also includes guest accommodation since one of the objectives is to provide for the increasing tourist demand in the area. At this stage, the proposal is for a small boutique hotel of approximately 50 bedrooms, plus some self-catering apartments in the Village (maximum 20 bedrooms). Five existing cottages, which define the southern edge of the Village, will be retained and converted to self-catering guest accommodation with approximately 30 bedrooms. The maximum total number of guest accommodation bedrooms to be provided in the Village is therefore 100. It is important to note that the proposal is not for a 100 bedroom hotel, rather for the provision of a range of different types of guest accommodation which is more

suited in scale and extent to the proposed Village and rural environment.

It can furthermore be indicated at this stage that it is the intention of Boschendal Pty Ltd. to develop and manage the guest accommodation and hotel themselves and their continued involvement will ensure synergy between the ongoing agricultural activities on the farm.

#### **Existing and Proposed Community Facilities**

A clinic consisting of 2-3 consulting rooms is currently located within an old building located north and directly adjacent to the police station. In the context of this development, and due to the limited access afforded off the R310, the clinic at this location will become increasingly isolated. It is therefore proposed to relocate the clinic to a more centrally located position in the new Village where better access can be given to it. The developer proposes to accommodate the clinic in buildings which are located within the Village high street, where the principle of clustering of community facilities can give maximum access. It will be located either directly adjacent to or opposite the existing police station and will be accessible to residents in the valley by public transport.

An early childhood development and aftercare centre (ECD, place of instruction) will also be constructed in the village and will have a capacity for 120 children. The centre will serve both the residents of the village, who can walk to the ECD, employees of Boschendal and Lanquedoc and Pniel communities, who would mostly utilise public transport. The focus will be on quality pre-school education, as well as afterschool care. The approximate location of the ECD will be opposite the police station in the Community centre hub of the village, however the exact location will still be determined and is subject to final design. This location is very accessible, will be in close proximity to the public transport stops and adjacent a significant open space which can double as play area. It should be noted that Boschendal has already established an ECD elsewhere on the farm for the surrounding community and it is the intention to relocate this ECD to the village once constructed.

A small maintenance facility and refuse collection for the Owners Association will be located in the position where the current clinic is located and will be managed by the Owners Association. This facility will serve the whole Village and the Owners Association will also conduct their administrative activities from this location. This site is accessible from the R310 and a refuse embayment can be provided along the R310 to ensure collection can be made by municipal refuse vehicles.

Two smaller civic buildings are provided internally to the residential development which will serve the residents of the Village.

#### **Proposed Open Space Network**

A significant portion of land inside the Village is set aside for open space. All open spaces in the development will be zoned Open Space II (Private Open Space) because ownership of these spaces will transfer to the Owners Association, which will be responsible for the ongoing maintenance of these spaces.

An important feature of the open spaces abutting the R310 is to provide continuity of green and ensure that the scenic route qualities are preserved inside the urban edge, albeit to an altered extent and degree. Continuity of green along the road will ensure the preservation of the rural sense of place and unique character.

The open spaces abutting the R310 will be public in nature since they are located in the most accessible "public" heart of the Village. It is seen that these spaces can also fulfil a dual function in that the farmers market can be expanded on occasion and these spaces can then be used for the occasional expansion of the market. It will also accommodate some more formal gravel parking areas and the green surfaced areas can provide for overflow parking during peak use. See Table 1.

The significant open space on the eastern side of the village is formalised into an open space which is similar in scale and proportion to the main "werf" space at the manor house, thereby replicating a system of werfs in a modern interpretation of the historical spaces. It is a semi-public space which is accessible to the public during the day time. It is seen as a place where special events and activities can take place over weekends and where certain day-time activities, which access the farm (i.e. mountain bike trails; bicycle rides; walks to the manor house; and local small community gatherings), can take place.



### **Proposed Roads**

Public Roads are those roads which are transferred to the relevant Roads Authority and which are constructed to the standards as defined by the controlling Roads Authority (in this instance the Provincial Roads Engineer and District Municipality controls the R310 and the Minor Road 5230). The cadastral boundaries of the R310 and Minor Road 5230 are not defined in certain places and these roads will be subdivided and transferred to the required authorities upon commencement of this development.

Private Street with Public Access: "Public streets" as defined in the zoning scheme have to, in terms of legislation, be ceded to the municipality, who prescribes standards, materials, treatment and who will then have to maintain it. "Private streets" on the other hand, have to be constructed to certain general standards, but a much greater degree of flexibility is allowed in terms of materials and finishes to be used. The Owners Association becomes responsible for the maintenance of these streets. The developer has decided that all the streets in the Village (other than R310 and Minor Road 5230) will be private streets, because the heritage indicators demand that roads be constructed using materials and finishes which are not necessarily compatible with the Municipality's Engineering Department standard requirements.

This development will aim to ensure a rural character and therefore, normal kerbs and channels will not be permitted and lighting and surface materials will not be asphalt but other finishes. An important consideration for the Village as a whole is to preserve and ensure the Village remains an openly accessible village which is not "gated". Public access will, however, be ensured to these "private streets", so that the integrity of the Village is maintained and it cannot be converted to a gated village. This will be achieved through the registration of appropriate servitudes over certain roads to ensure public access.

Private Streets which remain private: Within the superblocs, dwelling houses, row houses and flats will be served by private streets or service roads which are entirely private. These private streets will have gated access control, be of an informal nature and be completely private internal "access courtyards" to the superblock.

Refer to Figure A below.

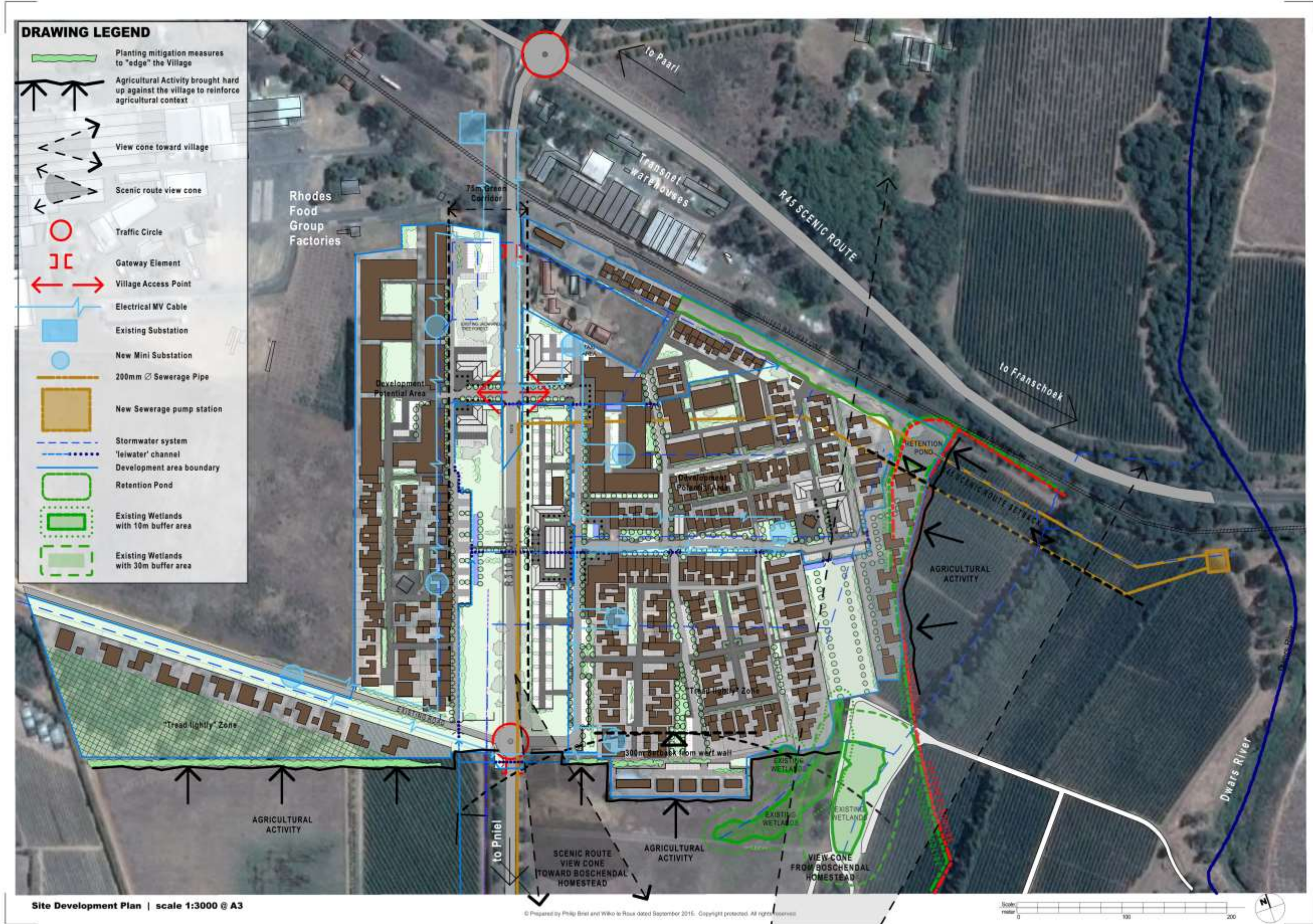


FIGURE A: THE PROPOSED LAYOUT SHOWING THE CONSTRAINTS

**PRE-APPLICATION PUBLIC PARTICIPATION TO DATE:**

- Identified Interested and Affected Parties (I&APs) including all adjacent landowners (as supplied by the municipality), the ward councillor, local ratepayers and landowners associations, interest groups, environmental groups, relevant Organs of State and State Departments.
- Distributed the Background Information Document to all identified I&APs and State Departments and Local Authorities.
- Advertised the project in the Cape Times, Die Burger and The Eikestadnuus with a registration and comment period from 21 May – 11 June 2015.
- Placed site notices on site informing the general public of the process and how to register as an I&AP.
- A letter drop was undertaken in order to inform occupiers of the site and adjacent land.
- Initial concerns and issues were received.
- A comments and response table was compiled summarising issues and responses to them by the project team.
  
- Notification letters were posted to all registered I&APs notifying them of the availability of the 'DRAFT' Basic Assessment Report (BAR), commenting period and inviting them to attend an Open House Meeting.
- Copies of the report were delivered to relevant State Departments and Organs of State, for their comment.
- In addition, advertisements were placed in Die Burger (19 October 2016), the Cape Times (19 October 2016), and Eikestadnuus (20 October 2016) informing the public of the availability of the report and inviting them to attend the Open House Meeting.
- A copy of the report was lodged at the Pniel Library and on our company website [www.dougjeff.co.za](http://www.dougjeff.co.za)
- An Open House Meeting was held on Wednesday 2 November 2016, in a shed on site. The proposal was presented in poster format. Specialists and consultants were present at the meeting to answer questions raised by the public.
- The report was available for a 30 day commenting period from 19 October to 18 November 2016.
- All comments received have been summarised and responded to by the project team.

**POST-APPLICATION PUBLIC PARTICIPATION (STATUTORY PROCESS):**

- Notification letters will be posted to all identified I&APs notifying them of the availability of the Basic Assessment Report (BAR) and commenting period and inviting them to register as an I&AP, if they have not already done so.
- Copies of the report will be delivered to relevant State Departments and Organs of State, for their comment.
- A letter drop will be undertaken in order to notify as many occupiers of adjacent land and the site, as possible.
- A site notice will be placed on site.
- Advertisements will be placed in the Cape Times, Die Burger and The Eikestadnuus, informing the public of the availability of the report for comment.
- A copy of the report will be lodged at the Pniel Library and on our company website [www.dougjeff.co.za](http://www.dougjeff.co.za)
- The report will be available for a 30 day commenting period.
- All comments received and our responses to these comments will be included in the final report that will be submitted to DEA&DP for decision.

**SPECIALIST STUDIES**

The following studies were undertaken:

- Soil Study
- Botanical Input
- Freshwater Assessment
- Social Impact Assessment
- Visual Impact Assessment
- Heritage Impact Assessment
- Archaeological Assessment
- Traffic Impact Assessment

### **IMPACTS ON VEGETATION:**

Negligible to no impacts on vegetation are expected.

### **IMPACTS ON FRESHWATER SYSTEMS**

#### LAYOUT PHASE

- Loss of open space
- Loss of floodplain area
- Hardening of the banks of the Dwars River, in order to stabilise the stormwater outlet structure and to construct gabion drop structures to take up the level difference between the stormwater pipe outlet and the river.

#### CONSTRUCTION PHASE

- Dumping of building materials (sand, soil, bricks etc) in sensitive areas – such dumping would damage the soil structure, and would destroy or shade out plants growing in and around these ecosystems.
- Pollution of the wetlands or Dwars River through leakage of fuels, oils, etc. From construction machinery.
- Destruction or deterioration of freshwater habitat as a result of foot and vehicular traffic.
- Excavation and / or infilling of the wetlands or the floodplain of the Dwars River
- Disturbance of freshwater fauna and flora
- Increased input of sediments
- Introduction and spread of invasive alien plants

#### OPERATIONAL PHASE

- Increased water demand and water supply infrastructure
- Decrease in water quality
- Increase in water quantity
- Disturbance of fauna and flora
- Spread and establishment of invasive alien plants

### **SOCIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE**

- Creation of local business and employment and opportunities
- Risk posed to family and social networks
- Safety, security and potential for increased crime
- Impact of construction related activities

### **SOCIAL IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PREFERRED ALTERNATIVE**

- Provision of housing, retail and community facilities
- Creation of employment, training and business opportunities
- Support and promote tourism
- Impact on adjacent properties
- Impact on rural sense of place

### **TRAFFIC IMPACTS**

The Helshoogte Road (R310) / R45 intersection is starting to approach capacity in the peak periods.

A single-lane roundabout is proposed on Helshoogte Road (R310) at the Minor Road 6/4 (New Oaks Access) intersection. A double-lane roundabout is proposed at the intersection of the Helshoogte Road (R310) and the R45. This is preferred to a signalised intersection due to the traffic calming characteristics of the roundabout. A full central access is proposed with opposing right-turn lanes (on Helshoogte Road (R310)) entering the site and stop controls on the side roads with separate right and left-turn lanes.

The proposed roundabouts will operate well during both AM and PM peak hours. The proposed central access right-turn movements will operate poorly during both the AM and PM peak hours. The sub-standard delays experienced are caused by the high volumes of through traffic along Helshoogte Road (R310). This type of

access is still preferred due to the flexibility it offers during off-peak periods and weekends. Vehicles wishing to exit via right-turn movement can utilise the alternative roundabout during peak periods.

### **Construction Phase Traffic**

During the construction phase there is a potential for temporary impacts on the local traffic and pedestrians. The construction phase will generate traffic onto the surrounding road network through delivery of materials/equipment to the site and the construction workforce travelling to and from the site on a daily basis.

### **HERITAGE IMPACTS (Including Visual Impacts)**

- Overarching principles: dominance of wilderness and rural landscapes and authenticity
- Locational indicators: regional and subregional
- Village qualities and spatial indicators
- Street indicators
- Open space and landscaping indicators
- Streets and parking indicators

### **RECOMMENDATIONS**

A comprehensive Urban Design Framework has been prepared as part of formulating of the development proposals. This Urban Design Framework sets the following important guiding development parameters:

#### **Height**

The height of the buildings ranges between 1 and 3 storeys. No buildings in the Village, apart from the tower vertical structures, may exceed 3 storeys. One storey buildings are located on the edges of the village whilst 3storey buildings are located closer to the centre of the Village.

#### **Landmark Buildings**

Certain landmark buildings are identified which will create architectural variety in the Village landscape. These are located on key corner sites and are clearly indicated in the Urban Design Framework plan.

#### **Compulsory Colonnades**

The aim of this Village is to create a walkable town. Compulsory colonnades provide protection against the elements (rain, sun) and are essential for the architectural character of the Village.

#### **Culverts, Gateways and Water Elements**

The concept is very much rooted in the creation of rural gateways (low walls) which announce the arrival at an entrance or traversing over a channel. As part of the natural topography, water traverses the site towards the Dwarsriver and the design ensures the 'bringing to the surface' of water (instead of piping) in line with the designs found in other traditional rural towns in South Africa.

#### **Compulsory Build-to-lines**

The framework identifies certain compulsory "build-to-lines" to ensure that the required public interface, built form and grain is achieved. It should be noted that these should be adhered to at all times to ensure the desired urban form is achieved.

#### **Vertical Tower Structures**

The identified vertical structures are inserted into the layout to provide architectural points of interest which add variety and diversity to the development.

#### **Existing Vegetation to be retained**

There are a number of existing mature trees and a hedge which are to be retained.

#### **Compulsory Structural Planting vs indicative landscaping**

Over and above retaining of existing trees, there is significant landscaping which will be undertaken by the developer when developing the Village. These are:

- i) Structural planting which is the planting of avenues or hedges which are critical to visual screening, lining of important avenues or creating important edges;

- ii) Green open space which is extensive landscaping of a rural/agrarian character (not fine gardens);
- iii) Wetland rehabilitation and stormwater ponds which requires the introduction, rehabilitation and restoration of wetland vegetation in certain areas; and
- iv) Indicative landscaping which indicates the developer's intent but is not compulsory.

#### **Urban Open Space and Neighbourhood Open Square.**

This is a hardened space which serves the surrounding land uses such as the farmers market and other urban land uses and these are indicated as Urban Open Spaces on the plan.

#### **Compulsory Street Frontage**

Compulsory street frontage relates to where buildings must present a positive interface onto the street. For dwelling houses, this means a front door and windows. For business properties, this means a front door where patrons can gain access and windows where goods can be displayed or where the interior of the shop is visible to passers-by.

#### **Gateway**

Indicates where access can be exercised and when shown into a superblock, it means access to a private space beyond.

#### **Articulated Corner Treatment**

This relates to the architectural treatment of the corner of a building and roof which will distinguish it from the rest of the buildings in the row.

#### **Compulsory Activity Street Garden Zone and Compulsory Steep Zones**

This area indicates where compulsory gardens and steep slopes have to be provided to ensure an active street front and façade is presented to streets which are external to the superblock. These are important design elements to ensure development is not internalised to the superblocks.

#### **Visually Permeable Fencing**

Visually permeable fencing is proposed throughout and solid walls are not encouraged unless they form part of a building.

#### **CONSTRUCTION PHASE:**

##### **Freshwater Specialist's Recommendations**

- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN INCLUDED IN ALTERNATIVES 5a-c.
- Allow for an ecological corridor to connect all of the wetlands, preferably with a connection to the Dwars River and its floodplain (i.e. contiguous with the 1:100 year floodline, below which no development should occur).
- Where filling in of the floodplain is unavoidable (Alternatives 4, 5a and 5c), hardened surfaces (buildings, roads) must be kept out of the "revised" 1:100 year floodline.
- The filled area must be kept as natural as possible, with indigenous planting and minimisation of additional hardened surfaces (e.g. roads, parking areas).
- The gabions must be placed in such a way as to avoid erosion on the river banks and floodplain.
- The size of the structure must be minimised as far as possible, in order to minimise the hardening of the river bank and loss of natural vegetation.
- The drop structure must be placed outside of the active channel.
- Ensure that all building materials are stored at least 50m away from the edges of the wetlands, as demarcated prior to construction. Storage areas must be bunded adequately to prevent contaminated runoff from entering the wetlands or the Dwars River.
- Materials must be stored in piles that do not exceed 1.5m in height and must be protected from the wind, to prevent spread of fine materials across the site.
- Construction close to sensitive areas must take place during the dry season, to reduce the risks of contamination of the ecosystems through rainfall and runoff.
- Machinery prone to oil or fuel leakage must be located at least 50m away from any freshwater ecosystem, and the area adequately bunded in order to contain leakages.

- Water pumps and cement mixers shall have drip trays to contain oil and fuel leaks – these must be cleaned regularly.
- Suitable toilet and wash facilities must be provided to avoid the use of sensitive areas for these activities. These service areas must be maintained, and toilets emptied on at least a weekly basis.
- Pathways and access roads must be routed around the wetlands and must cross drainage channels as seldom as possible.
- Sensitive areas must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process.
- Affected areas must be ripped and re-planted after construction, to the satisfaction of the ECO.
- Excavation and infilling must be restricted to areas where this is necessary.
- Any such work must be done during the dry season, to minimise impacts on the freshwater fauna and flora.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (directional drilling) under the river or stream and outside the riparian zone, rather than trenching, in order to minimise disturbance to flow, and the bed and banks of any freshwater ecosystem.
- The sensitive areas (i.e. the edges of the buffers around the wetlands, river banks) not affected by construction must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process, except where work is occurring.
- Affected areas must be rehabilitated after construction, to the satisfaction of the ECO, and according to a construction EMP.
- The construction site and pathways must avoid sensitive areas. If lights are used, these must be directed away from all sensitive areas.
- Construction in and around the wetlands and Dwars River (e.g. sewage pump station) must take place during the dry season, to reduce the risks of contamination through rainfall, runoff and erosion.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (horizontal directional drilling) under the watercourse, rather than trenching.
- Special care should be taken around storm and heavy rain events. The construction site should be inspected for erosion damage at these times.
- If construction areas are to be pumped of water (e.g. after rains), this water must first be pumped into a settlement area, and not directly into a natural ecosystem.
- All soils and top material must be bought from reliable sources, and must be free of alien seeds or grass runners.
- Constant monitoring of the construction site by the Site Engineer and ECO must occur, and all alien plant species removed from or destroyed on the site.

#### **Social Specialist's Recommendations**

- The developer must inform the local authorities, local community leaders, organizations and councillors of the project and the potential job opportunities for local builders and contractors.
- The developer must consult with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) with regards to the establishment of a database of local construction companies in the area, specifically SMME's owned and run by HDI's. However, while the use of local building contractors and workers is recommended, it is recognised that a competitive tender process may not guarantee the employment of local companies and labour during the construction phase.
- The developer in consultation with the appointed contractor/s must look to employ a percentage of the labour required for the construction phase from local area in order to maximize opportunities for members from the local HD communities.
- The developer must seek as far as is possible to appoint local or regional contractor/s from the area for the bulk services, commercial and housing contracts.
- The developer in consultation with the appointed contractor/s must implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase.
- The construction site must be fenced off prior to the start of construction.
- The movement of construction workers on and off the site must be closely managed and monitored by the contractors. In this regard, no construction workers may be permitted to leave the construction site during operating hours and the contractor/s must be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis.

- No construction workers, with the exception of security personnel, may be permitted to stay overnight on the site.
- Access to the site for heavy construction vehicles must be, where possible, via the R45. The movement of heavy construction vehicles transporting material etc. to the site via the R310 through Priel must be minimised as far as possible.
- The intersection between the R45 and R310 should be up-during phase 4 of the phasing of the development.
- Construction related activities must comply with all relevant building regulations. In this regard activities on site must be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays. No work must be permitted after 13h00 on Saturdays and on Sundays or Public Holidays.
- Drivers must be made aware of the potential risk posed to school children and other road users along the R45 and R310. All drivers must ensure that speed limit of 60 km per hour is enforced.
- Any abnormal loads along the R45 must be timed to avoid peak traffic hours, specifically early mornings.
- Dust suppression measures must be implemented when site clearing takes place, such as wetting of exposed areas.
- Dust suppression measures must be implemented to reduce impacts associated with the movement of construction vehicles, including wetting of gravel roads and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits.

#### **Heritage Specialist's Recommendations**

- The design development must proceed in accordance with the Urban Design Framework dated November 2015 (**Appendix G2**) and the Heritage Indicators in Section 8 (pages 14-22) of the HIA report (**Appendix G12**).
- The proposed residential erven in Precinct F2 must be reduced in extent to exclude the existing orchard from the proposed development, as shown in Alternative 5c.
- More refined articulation of building elevations and roofscapes in Precincts E1 and E2 must be undertaken at the precinct plan level.
- The Landscape Framework Plan prepared by CNdV Landscape Architects must be implemented (**Appendix G7**).
- An Integrated Environmental Management Plan must be formulated to address mandatory controls and guidelines related to lighting, signage and architectural and landscaping treatment as formulated in Section 5 of the Urban Design Framework (**Appendix G2**).
- The five focus or action areas identified in Figure 24 of the Urban Design Framework relate to the more public parts of the scheme. In accordance with the 'package of plans' approach these focus areas must be subject to detailed precinct plans, which include detailed site and transportation planning, design and landscaping. Precinct plans for these areas must return to HWC for approval.
- The conclusions and recommendations of the Traffic Impact Assessment including the proposed geometries must be subject to detailed design particularly with respect to place-making qualities, pedestrian access, non-motorised transport and public transport, and be incorporated into precinct level plans and heritage assessment referred to above.
- A Phasing Plan must be prepared to ensure an integrated form of development that is tied in with landscape mitigation. Each phase should be implemented as a completed development as far as possible, including all landscaping. As a first step, planting and other elements of edge-making to define the overall site, should be undertaken as soon as possible.

#### **Visual Specialist's Recommendations**

- An environmental management plan (EMP) should be prepared and included in all contract documentation, particularly during the construction period.
- A suitably qualified Environmental Control Officer (ECO) should be employed to manage potential environmental and visual impacts on the site.

#### **Traffic Specialist's Recommendations**

The following roundabouts must be constructed or upgraded:

- Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access) intersection
- R45 / Helshoogte Road (R310)
- Central access. Although the analysis results indicate that the right-turn exiting movements will operate poorly in the peak periods, the few motorists experiencing these poor conditions can divert to the adjacent Minor Road 6/4 (New Oaks Access) roundabout, which has ample spare capacity during peak periods.



- The Rhodes Food Group factory and retail facility entrances remain temporarily until these sites are developed. The PGWC can, at this stage, request that these access points are regularised in terms of the applicable road access spacing guidelines.
- The Police station access remains as a minor driveway access for strategic and operational reasons.
- New public transport facilities are provided along Helshoogte Road (R310) in the form of taxi embayments adjacent to the proposed central access on either side of the road (downstream). A pedestrian crossing should be provided linking the two public transport facilities and advanced warning signs should be provided to notify motorists of the pedestrian crossing
- Sidewalks are provided along both sides of the Helshoogte Road (R310) along the frontage of the development and along the R45 in the vicinity of the roundabout. These sidewalks should be minimum 1.5m wide and should link seamlessly to the internal pedestrian network.
- The shoulder along Helshoogte Road (R310) be maintained along the frontage of the development unless it is linked to an off-road cycle facility for safety purposes.
- During the construction phase, ensure that safety and protection measures are implemented where pedestrians are within the construction site boundary.
- The following parking ratios, as per LUPO Section 8 Scheme regulations, should be applied:
  - Residential - Low density : 2 bays / unit
  - Residential - Medium density: : 2 bays / unit
  - Residential - High Density: : 1.25 bays / unit
  - Hotel : 0.7 bays / room + 20 additional bays
  - General Retail : 4 bays / 100m<sup>2</sup> GLA
  - General offices - Suburban : 4 bays / 100m<sup>2</sup> GLA
  - Guest accommodation : 0.7 bays / room
  - Civic / Community Building : 1 bay/8 fixed seats or persons
  - Clinic : 3 bays/consulting room
  - Crèche/ECD : 1 bay/classroom + 1 bay/15 students

The total parking requirement amounts to 1 491 bays; however, it should be noted that the proposed development is mixed-use in nature and therefore a degree of shared parking is likely to take place.

- The parking ratio for the Residential High Density land use originally includes an additional 0.25 bays/unit for visitors. It is, however, proposed that visitors use the parking provided for offices after hours.
- Furthermore, the number of parking bays required for the clinic can be reduced by 50% to account for the sharing of parking between land-uses.
- A refuse embayment measuring not less than 3m by 12m should be provided on the Helshoogte Road adjacent to the proposed refuse facility (at the old clinic site).
- A construction traffic management plan, containing the layout of temporary signage, requirement for flagmen and the management of heavy vehicles will be submitted to the authorities for approval during the detailed design submission phase. This plan is required to ensure that the impacts of the construction vehicles are minimised and safety and protection measures are implemented to reduce the risks of collisions.
- The proposed road infrastructure upgrades must be considered in the precinct plans and precinct level heritage assessments for the approval of Heritage Western Cape.

## **OPERATIONAL PHASE**

### **Freshwater Specialist's Recommendations**

- Landscaped areas and gardens must be planted with species that do not require much watering.
- Water demand management must be implemented within the development, as specified in the Provincial and Stellenbosch Municipality SDFs.
- Rainwater storage tanks should be built on every erf.
- Care must be taken in the location of water supply infrastructure, in order to avoid sensitive areas.
- Where pipes must cross the river channel or wetlands on the property, this should be done using areas that will be disturbed, such as roads or tracks.
- Stormwater should be allowed to flow along unlined channels before discharge into either natural or created wetland areas. This will allow some infiltration of water into the ground, so reducing the quantity of runoff and improving the quality.
- Wetland 4 can be used for stormwater detention.
- Sand filters should be constructed, which effectively trap oil and grease.

- Hardened areas should be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (<6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system.
- The sewer pipe must be regularly (at least once a month) checked for leaks.
- Leaks in the sewer pipe, or at manholes, must be fixed immediately.
- Effort should be made to minimise the hardening of surfaces. Natural areas, gardens and road verges are areas where water can filter into the ground. The predominantly sandy soils of the site will allow this to occur.
- Stormwater should not be conveyed directly into either wetland 1 or 2, but rather into detention/retention ponds and/or wetland 4, permeable areas, bioswales and/or constructed wetlands.
- Wherever possible, parking areas should be constructed of permeable materials to allow for infiltration of water.
- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN DONE FOR ALTERNATIVE 5a-c.
- Lighting must face away from the wetland areas.
- Domestic pets must be discouraged from entering the wetlands and their buffers, through the wise use of fencing and gates.
- All newly planted areas must be planted with indigenous plants. Alternative grasses for lawns include *Stenotaphrum secundatum*, *Paspalum vaginatum* and *Cynodon dactylon*.
- Alien and invasive plants (including kikuyu) must be kept out of wetlands and rivers.
- The spread of alien plant species into all natural areas must be prevented and monitored.
- Road verges must be monitored for alien species.

#### **Social Specialist's Recommendations**

- The developer must ensure that the retail component of the development takes into account the needs of the local community. In this regard the findings of the SIA highlighted the need for a shop, such as a Spar or Pick and Pay, in the study area.
- The food outlets associated with the proposed development must cater for the local community and not only tourists.
- Public access to and use of all public open spaces within the development must be provided and guaranteed.
- Activities and events that create opportunities for and encourage the use of the public spaces by the local community must be held on a regular basis. These include school outings, picnic's, music events etc.
- Adequate space must be provided for the establishment of the crèche and community facilities. The possible need to develop a primary school should also be investigated.
- A Management and Maintenance Plan and programme for the public open spaces and play areas must be developed and implemented.
- The proponent must ensure that the required funding and resources are made available to implement a Management and Maintenance Plan.
- The developer must liaise with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) and stakeholders regarding the potential job opportunities associated with the different components associated with the operational phase of the development.
- The developer should, where possible, implement a policy aimed at employing members from the local communities in the study area, specifically Pniel, Lanquedoc (Old and New), Kylemore, Meerlust and Simondium.
- The developer must continue to implement training and skills development programme for local community members aimed at enhancing their chances of being employed during the operational phase.
- The developer must liaise with the SLM and DLM with regard to establishing a database of local service providers in the area, specifically SMME's owned and run by HDI's. These companies should be notified of the potential opportunities associated with the operational phase of the development.
- The owners of Boschendal should liaise with the SLM and local stakeholders to identify potential development initiatives aimed at addressing the needs and challenges facing the Dwars River Valley.
- The owners of Boschendal must liaise with the SLM, Dwars River Tourism and other tourist destinations in the

area to promote the area.

- The developer must identify SMME's that are qualified to provide services to the tourism based activities associated with the proposed development.
- The developer must continue to implement the training and skills development programmes to enable members from the local community to qualify for tourism related jobs created by the proposed development.
- The developer and planners need to take into account the existing operations that border onto the site in the final design and layout. Potentially sensitive land uses, such as hotels and residential areas should be designed and planned accordingly.
- The developer must recognise and acknowledge the right of these operations to carry on operating and the right to expand their operations in the future.
- Prospective homeowners and business owners must be informed of the existing operations that border onto the site and that they will continue to operate in the area, and may expand at some future date.

#### **Traffic Specialist's Recommendations**

- Correct upgrade of access intersections according to Western Cape Government guidelines.

#### **Visual Specialist's Recommendations**

- The proposed village development should be softened through major site rehabilitation and landscape planting, appropriate for the cultural and agricultural setting.
- A Landscape Framework Plan should be prepared as part of the current planning application by a professional Landscape Architect. THIS HAS BEEN DONE.
- An incremental or phased approach should be considered for the development of the proposed village, to minimise the visual effect of a large-scale development. THIS HAS BEEN DONE.
- A precinct phasing plan should be prepared as part of the planning application. THIS HAS BEEN DONE.
- The stated principle of a 'well-contained, small and compact' village, including 'urban edge-making' should be emphasized.
- The existing orchards should be retained, as currently proposed in Alternative 5c, as they provide useful visual screening, and constitute the essential rural context.
- The proposed filling of the floodplain on the eastern edge should be avoided or minimised, as these corridors provide an essential hydrological and biological function, as well as being part of the larger landscape framework.
- The stated principle of a 'Cape tradition of village-building' and an 'authentic Cape village' should be emphasized.
- Preferably limit buildings to 2 or 2.5 storeys to minimise visual intrusion above tree canopies. (3-storey structures could be strategically used to emphasize focal points).
- Long or slab-like buildings should be more articulated and varied to express individual units, both in their elevation and in roofscape, to create more of a Cape village fabric.
- Parking areas along the R310 must be set back from the scenic route to allow multiple rows of trees for screening.
- Parking must be screened with buildings, walls, berms and/or trees, where possible.
- Parking must be organised into smaller parking courts of about 20-30 cars to avoid visually and climatically exposed parking lots. (The 2 parking lots to the east of the R310 should ideally have exits to allow for hunting and circulation).
- Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Parking areas could have gravel surfaces for visual informality and to minimise stormwater runoff.
- Stormwater should consist of dish channels and grassed swales, or traditional furrows (as indicated in the proposed Urban Design Framework).
- Street and outdoor lighting must be discrete to maintain the rural ambience of the area. Outdoor lighting should be fitted with reflectors to minimise light spillage. Low-level bollard type lights could be used for parking areas and pedestrian paths.
- Advertising signage, banners and flags must be avoided.
- Low-level signs are less visually intrusive. Signs should be fixed to walls where possible to minimise the visual clutter of support poles.
- Each phase must be implemented as a completed development as far as possible, including all the landscaping, particularly if there is a long time period before another phase is undertaken.

**IMPACT SUMMARY OF ALTERNATIVE 5 AND NO-GO OPTION:**

Impact	Construction Phase							
	No-Go Alternative (Alt 1)		Alternative 5a		Alternative 5b		Alternative 5c	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Loss of vegetation	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Loss of open space	N/A	N/A	Low to moderate negative	Low to moderate negative	Low negative	Low negative	Low to moderate negative	Low to moderate negative
Loss of floodplain area	N/A	N/A	Low to moderate negative	Low negative	Low negative	Negligible to low negative	Low to moderate negative	Low negative
Hardening of river bank to construct gabion drop structure	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Dumping of building material in sensitive areas	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Pollution of the wetlands or Dwars River	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Destruction or deterioration of freshwater habitat as a result of foot and vehicular traffic	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Excavation and/or infilling of wetlands or floodplain	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Disturbance of freshwater fauna and flora	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Increased input of sediments	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Introduction and spread of invasive alien plants	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Creation of employment and business opportunities during the construction phase	High negative	N/A	Medium positive	High positive	Medium positive	High positive	Medium positive	High positive
Potential impacts on family structures and social networks associated with the presence of construction workers	N/A	N/A	Low negative	Low negative	Low negative	Low negative	Low negative	Low negative
Potential safety and security risk posed by presence of construction workers on site.	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
Potential noise, dust and safety impacts associated with movement of construction related traffic to and from the site.	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
Traffic	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative

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Impacts on heritage resources	Medium negative	Medium negative	Medium – High negative	Medium-High positive	Medium – High negative	Medium-High positive	Medium – High negative	Medium-High positive
Construction could result in additional visual intrusion from construction equipment, trucks, dust and noise.	N/A	N/A	Medium-high negative	Medium negative	Medium-high negative	Medium negative	Medium-high negative	Medium negative
<b>Operational Phase</b>								
Increased water demand and water supply infrastructure	N/A	N/A	Low negative	Negligible to low negative	Low negative	Negligible to low negative	Low negative	Negligible to low negative
Decrease in water quality	Low negative	N/A	Moderate negative	Low to moderate negative	Moderate negative	Low to moderate negative	Moderate negative	Low to moderate negative
Increase in water quantity	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Disturbance of fauna and flora	Low negative to negligible	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Spread and establishment of invasive alien plants	Low negative to negligible	Negligible	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Provision of housing, retail and community facilities	N/A	N/A	Low positive	Medium positive	Low positive	Medium positive	Low positive	Medium positive
Creation of employment, training and business opportunities during operational phase.	N/A	N/A	Medium positive	High positive	Medium positive	High positive	Medium positive	High positive
Support and fund local development initiatives in the Dwars River Valley that are aimed at benefiting the local community	N/A	N/A	Low positive	High positive	Low positive	High positive	Low positive	High positive
Support and promote tourism and create opportunities for job creation and economic development in the area	N/A	N/A	Low positive	Medium positive	Low positive	Medium positive	Low positive	Medium positive
Impact of the proposed development on existing operations in the vicinity of the site	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
The no-development option would result in the lost opportunity for the local economy the SLM and residents who would benefit from the development.	High negative	High positive	N/A	N/A	N/A	N/A	N/A	N/A
Loss of Agricultural Land	Low positive	Low positive	Medium negative	Medium negative	Low negative	Low negative	Low negative	Low negative
Traffic	N/A	N/A	Low negative	Low negative	Low negative	Low negative	Low negative	Low negative
Visual Impact	Low negative	Low negative	Medium-high negative	Medium negative	Medium-high negative	Medium negative	Medium-high negative Low negative	Medium negative

**CONCLUSION**

The site is included within the Groot Drakenstein Development Node which has been identified for future urban development. The proposed development also supports a number of the provincial and local level policy and planning objectives.

The site has been transformed by agricultural activities, residential houses, the old pallet factory and has been heavily disturbed by alien vegetation and farm roads. Any natural vegetation present on site is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern. No plant Species of Conservation Concern were recorded on site and none are likely to occur here.

The freshwater ecosystems affected by the proposed Boschendal Village development include three hillslope seep wetlands and one depression on site, the Dwars River (adjacent to site, but affected by services) and five small watercourses (channels < 5m across) located off-site between the proposed site and Pniel (these would be impacted by the water supply mains and the sewer pipeline). The wetlands were found to be fairly heavily impacted by the surrounding agricultural activities, roads and the railway line. Wetland 1 lies in a category C in terms of present ecological status (PES) while the other three wetlands are in poorer condition. The wetlands are all of moderate ecological importance and sensitivity, with wetland 3 being the least important due to its probable anthropogenic origin. The wetlands could provide functional (both in terms of biodiversity and ecological processes, primarily related to infiltration of water) value to the development, if conserved in an ecological corridor. The Dwars River has a PES category C or moderately modified. The river has a high ecological importance and a very high ecological sensitivity. The natural channels affected by pipe crossings off-site, are all fairly modified from their natural state, due to the proximity of roads, houses, agricultural activities and infestations of acacias.

From a freshwater ecological perspective, there are fewer impacts associated with Alternative 1, the status quo, and is obviously the preferred alternative. The wetlands on the site are being maintained by current runoff, and support some wetland plants and probably animals. The Dwars River floodplain is cultivated to some extent, and there is polluted runoff entering the river from current activities on the site, however these are all of lesser negative significance compared with any of the development options. Given the development pressures of the area, the likelihood of the site remaining as is, is relatively low.

From a freshwater ecological perspective, the preferred *development* option is Alternative 5b, as this option will lead to less fragmentation of the landscape, and of the connectivity between the wetlands on the site and the Dwars River floodplain. The difference between this option and the others (Alternatives 5a and 5c) is marginal and generally does not translate into a shift in the significance of impacts, apart from those associated with the layout – loss of open space, and loss of floodplain area – where the significance could be lowered to negligible, with effective implementation of the recommended mitigation measures. All development alternatives are therefore acceptable, with the implementation of the proposed mitigation measures, from a freshwater perspective.

From a social perspective, there are no material differences between the nature and significance of the social impacts associated with Alternative 5a, 5b and 5c. The findings of the Social Impact Assessment (SIA) indicate that the construction and operational phase of the proposed development will result in a number of positive social benefits for the local community and the area as a whole. These include the creation of employment opportunities during the construction and operational phase, creation of commercial, training and skills development opportunities during the operational phase and the generation of funds for community based initiatives.

Alternatives 5 a - c are supported, from a socio-economic perspective, on the condition that the recommended enhancement and mitigation measures are implemented. Positive social impacts can be enhanced to a medium and high positive significance and the negative impacts can be mitigated to an acceptable low negative significance.

The no-development alternative would result in a lost opportunity to create employment and business opportunities associated with the construction and operational phase of the proposed development. The no-development option would also result in a lost opportunity to create a well-designed mixed use development that provides a mix of housing opportunities for middle and high income households, combined with retail and

public facilities. The no-development option is therefore not supported, from a socio-economic perspective.

The heritage specialists formulated a comprehensive set of heritage indicators and directives which followed a rigorous process of analysis and against which the development proposals have been assessed. According to the heritage specialists, this method recognises that the site cannot be assessed in isolation, that indicators should relate to the region as a totality and that the assessment should occur across scales. It is foregrounded by the principle of maintaining the dominance of wilderness and rural landscapes as opposed to the increasing dominance of urban and suburban landscapes, and the principle of authenticity. It sets out criteria for where development should not occur and establishes an acceptable argument for the location of a village at the intersection of the R45 and the R310. It then provides a set of indicators for what constitutes a rural village in terms of its relationship with its setting, spatial structure, patterns of access and use.

Alternatives 5 a – c conform to the identified heritage indicators and will improve the area. The No-Go option does not address the opportunities evident in the site's location and the derelict nature of existing site conditions. The overall heritage impact of the No-Go alternative (Alternative 1) is thus regarded as medium negative. The overall heritage impact of Alternative 5 (a, b or c), including the mandatory controls and guidelines specified in the Urban Design Report and recommended mitigation measures, is regarded as potentially medium-high positive. However, should these mandatory controls, guidelines and mitigation measures not be implemented, then the overall heritage impact of the proposed development is potentially medium-high negative.

From a visual impact point of view, Alternatives 5 a – c could be mitigated to a medium negative significance. However, over time, with the growth of extensive new tree planting, the visual impact could reduce further to medium-low significance, which is considered acceptable considering the context of the site. Although the No-Go Option is visually undesirable, the vacant, derelict land could be rehabilitated but this cannot be enforced. Alternative 1 would therefore have a neutral significance.

The No-Go Option (Alternative 1) is only preferred by the freshwater specialist. From a social and heritage perspective, the No-Go Option is not supported, as discussed above.

Alternative 5 (a, b or c) is the preferred alternative by the heritage and social specialists and would result in numerous positive impacts, with the adherence to the mitigation measures proposed. From a traffic perspective, Alternative 5a, 5b and 5c are feasible, provided the recommendations in the TIA are implemented.

Of the development alternatives, Alternative 5b is preferred by the freshwater specialist. However, the difference between Alternative 5b and Alternatives 5a and 5c is marginal and the associated impacts can be mitigated to a negligible significance. Therefore, Alternatives 5a, 5b and 5c are acceptable from a freshwater perspective.

Alternative 5b and 5c is preferred from an agricultural point of view since the pear orchard will be retained in Alternative 5b and only 0,9 ha of the pear orchard will be lost in Alternative 5c.

**Alternatives 5b and 5c are preferred by the EAP. It is therefore the recommendation of the EAP that Alternative 5c, the Applicant's preferred alternative, be approved, with adherence to the mitigation measures.**

# SECTION A: ACTIVITY INFORMATION

## 1. PROJECT DESCRIPTION

(a) Is the project a new development?	YES	NO
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(b) Provide a detailed description of the development project and associated infrastructure.

Over the past 15 years, several development proposals have been generated for the Boschendal landholding, in various planning processes. This comprised extensive development proposals which saw significant portions of the farm being proposed for various extensive residential developments, a retirement village, equestrian estate and other residential estate villages. In 2012 new shareholders invested in the farm and reviewed the applications of previous shareholders which were, at that stage, still under consideration and not approved.

The new owners adopted a different approach to the landholding, which can be summarised shortly as follows:

- The primary emphasis is on the agricultural activities as the key driver of activity and income. Significant investment has been and is currently being made into diversifying and expanding the agricultural practises on the estate. These practises include new orchards and vegetables as well as establishing livestock, chicken and game farming.
- Secondly, the focus is on the tourism and hospitality industry which is linked with the preservation of the heritage resources on the property. This includes providing additional and improved tourism opportunities, tourism accommodation, a wider variety of tourist and leisure activities which is complimented by the natural beauty and heritage assets of the farm.
- Thirdly, the new owners wish to establish key development opportunities which will add long-term value to the agricultural and tourism components of the estate, and will transform degraded and derelict portions on the estate. To this end, the consultant team was briefed to explore development opportunities within the ambit of the Municipality of Stellenbosch's Spatial Development Framework (SDF) and various policies (THIS APPLICATION).

The Stellenbosch Municipal Spatial Development Framework (SDF) promotes a series of interconnected nodes located at points of highest accessibility. The SDF identifies the Groot Drakenstein node as a future development node which is located at the R45/R310 intersection. This is an important crossroad and a highly accessible point located equidistant between Stellenbosch, Franschhoek and Paarl. It is an appropriate location for a village and it is the aim of Boschendal to develop a rural 'Cape Village' with distinct and authentic rural settlement qualities, within this node.

The Village development area is to be subdivided off the main farm portions owned by Boschendal and rezoned to Subdivisional Area in accordance with the Stellenbosch Land Use Planning Bylaw. The Village development area is to be further subdivided with a subsequent subdivision plan to create the "superblocks" which will define the structure of the village and create the outline of development phases.

This subdivision and zoning plan is illustrated in **Figure 1**. It is proposed that once more detailed design has been undertaken (by means of Site Development Plans); the individual superblocks will be further subdivided into smaller land parcels which will enable individual ownership. Commercial properties along the high street will remain in Boschendal's ownership and will be developed and owned by Boschendal.





Figure 1: Subdivision and Zoning Plan

**Summary of Proposed Land Uses and Development Extent**

The overall development extent for the Village is summarised in the table below:

	Land Area (m <sup>2</sup> )	Percentage (%)
Residential	143 136	56.75
Business	22 137	8.85
Public Road	13 948	5.53
Private Road	32 393	12.84
Private Open Space	30 298	12.01
Guest Accommodation	8 176	3.24
Home Owners Utility	1 965	0.78
	<b>252 233</b>	<b>100</b>

Land Use	Maximum Extent of development
Dwelling units <i>Free Standing Dwellings</i> <i>Row Houses</i> <i>Apartments</i> <i>Key Worker Apartment</i>	475 dwelling units 24 194 210 10% to max of 47 units
Hotel/Guest apartments/Guest cottages	100 Bedrooms
Retail GLA	5 500 m <sup>2</sup> Gross Leasable Area
General Business GLA (which may include a crèche )	9 000m <sup>2</sup> Gross Leasable Area
Clinic	2-3 consulting rooms in Business GLA
Early Childhood Development and Aftercare	120 children
Civic buildings (multi-purpose) (which may be used by places of worship)	500m <sup>2</sup> Gross Leasable Area
Home Owners Utility (maintenance and recycling)	±500m <sup>2</sup> Gross Leasable Area

**Description of Commercial and Mixed-Use Development Precinct (Figure 2)**

The mixed-use business area of the Village is a space with the highest degree of public access. This area is centred on a "high street" where the public can access it any time of the day. The area is served by on-street and surface parking in dedicated parking areas. Some portions will also have access to parking basements. An important feature at the heart of this high street is the farmer's market which will provide small entrepreneurs, surrounding farmers, home crafters, artists and small local businesses the opportunity to access a regular, local market.

Refer to Table 1 and **Figure 1** for the extent of the business and commercial component of the proposed development. The development breakdown per portion is indicative and may vary subject to the overall development extent set out in the Land Use Summary Table.

Table 1: Development Breakdown and Zoning

Ptn	Zoning of superblock	Super-block Size (m <sup>2</sup> )	Proposed Zoning (split after subdivision)	Approximate Size (m <sup>2</sup> )	Land Use (indicative)	Indicative Development Extent				
						Dwelling Units	Guest Accommodation Bedroom	Retail GLA (m <sup>2</sup> )	General Business GLA (m <sup>2</sup> )	Other (m <sup>2</sup> )
1	Subdivisional Area	28 101	Residential I	27 944	Dwelling houses	12				
			Open Space II	157	Private Open Space					
2	Subdivisional Area	20 132	Residential III	20 132	Townhouses	60				
					Clubhouse					500
3	Subdivisional Area	19 397	Residential IV	19 397	Flats	126				
4	Subdivisional Area	5 843	Open Space II	4 843	Private Open Space					
			Business I (spot zone)	1 000	Business Premises			1 000	Clinic 2-3 rooms	
5	Subdivisional Area	11 193	Open Space II	10 193	Private Open Space					
			Business I (spot zone)	1 000	Business Premises			1 000		
6	Subdivisional Area	3 402	Authority Zone	1 965	Home Owners Utility				500	
			Residential III	1 437	Townhouses	8				
7	Subdivisional Area	13 265	Business I	8 306	Business Premises			1 100	7 000	
			Residential III	3 958	Townhouses	5				
			Residential IV	1 001	Flats	56				
8	Subdivisional Area	12 851	Business I	10 566	Business Premises			2 000		
			Open Space II	2 285	Private Open Space					
9	Residential V	5000			Guest Cottages		30			
10	Subdivisional Area	14 957	Residential III	13 834	Townhouses	31				
			Business I	1 123	Business Premises			2 000		
11	Subdivisional Area	21 933	Residential III	21 933	Townhouses	40				
12	Subdivisional Area	9 301	Residential III	8 979	Townhouses	32				
			Business I	322	Restaurant/Meeting Hall/ Business Premises			400		
13	Subdivisional Area	13 294	Residential III	6 736	Townhouses	18				
			Residential IV	6 558	Flats	50				
14	Residential V	3 176			Hotel		50			
					Self-Catering Apartments		20			
15	Open Space II	6 329			Private Open Space					
16	Subdivisional Area	11 227	Residential I	11 227	Dwelling Houses	12				
17	Transport II	13 948			Public Road					
18	Open Space II	6 419			Private Road					
19	Open Space II	9 057			Private Road					
20	Open Space II	5 103			Private Road					
21	Open Space II	5 627			Private Road					
22	Open Space II	2 168			Private Road					
23	Open Space II	4 019			Private Road					
24	Open Space II	6 491			Stormwater Retention & Wetland					
Floating land use (not yet allocated to a portion)			Residential IV		Flats	25				
			Business or Institutional I		Place of instruction				120 children	
<b>TOTAL</b>		<b>252 233</b>	<b>TOTAL</b>	<b>184 896</b>		<b>475</b>	<b>100</b>	<b>5 500</b>	<b>9 000</b>	
									<b>1 000</b>	

It is intended for the buildings in this precinct to be mixed-use in nature, with retail and business at ground floor levels and residential apartments or general business use at upper levels. It is the intention to ensure a mixed offering of commercial, shopping, restaurants and convenience goods which will serve the residents, visitors and surrounding communities.

It is important to note that it is not the intention of this development to contain a shopping centre. The GLA proposed is sufficiently limited and designed on a publicly accessible high street concept, to ensure it takes the form of a local business node.

### **Residential Development (Figure 2)**

The residential development will comprise a mix of housing types ranging from freestanding dwelling houses on single erven (at nett densities of  $\pm 4-11$  du /ha) to more compact row houses ( $\pm 25$  du/ha) to apartments ( $\pm 86$  du/ha). The overall gross density for residential development is 18,8 dwelling units/ha and the development will comprise a maximum of 475 dwelling units.

The residential development will consist of the following residential land use mix:

- $\pm 24$  freestanding free-hold single residential dwellings ,
- $\pm 194$  single and double storey row houses
- $\pm 257$  apartments (of which 10% to a maximum of 47 units will be key workers accommodation)

The diversity of types of residential units will ensure an attractive and compact urban form which is well suited to the concept of a rural village. Higher residential densities are proposed most central to the development, which will comprise of Alphen-style 3-storey walk-up apartments. Furthermore, it is also intended to provide apartments above retail and business to ensure true mixed use development.

Private neighbourhoods: The various superblocks make up the neighbourhoods which are blocks of residential development which internally provides a greater degree of privacy. It is, however, important to note that the Urban Design Framework does not allow for the construction of blank walls around these neighbourhoods. The dwelling units themselves, with their front stoeps, small gardens and visually permeable fences, windows and front doors overlooking the streets, become the perimeter which defines each private residential neighbourhood. Inside the perimeter, privacy is created and guaranteed.

One of the key concepts supported by the Applicant is to ensure a range of housing options to a range of income groups. It is proposed that 10% of the dwelling units (maximum 47 units) be made available to key financed workers most probably through a rental scheme owned by Boschendal (Pty) Ltd). Key workers" is defined as families who have income generated from jobs such as teachers, nurses, police officers, council employees and similar types of employees who serve the community. The average annual income of these workers will be determined and used as a guide for structuring the proposed apartment rental/purchase scheme to ensure accessibility for these workers to live in Village.

Refer to the Table 1 for the extent of the residential component of the proposed development.

The proposal also includes guest accommodation since one of the objectives is to provide for the increasing tourist demand in the area. At this stage, the proposal is for a small boutique hotel of approximately 50 bedrooms, plus some self-catering apartments in the Village (maximum 20 bedrooms). Five existing cottages, which define the southern edge of the Village, will be retained and converted to self-catering guest accommodation with approximately 30 bedrooms. The maximum total number of guest accommodation bedrooms to be provided in the Village is therefore 100. It is important to note that the proposal is not for a 100 bedroom hotel, rather for the provision of a range of different types of guest accommodation which is more suited in scale and extent to the proposed Village and rural environment.

It can furthermore be indicated at this stage that it is the intention of Boschendal Pty Ltd. to develop and manage the guest accommodation and hotel themselves and their continued involvement will ensure synergy between the ongoing agricultural activities on the farm.

### **Existing and Proposed Community Facilities (Figure 2)**

Refer to the Table 1 for the extent of the community facilities in the proposed Village.

A clinic consisting of 2-3 consulting rooms is currently located within an old building located north and directly adjacent to the police station. In the context of this development, and due to the limited access afforded off the R310, the clinic at this location will become increasingly isolated. It is therefore proposed to relocate the clinic to a more centrally located position in the new Village where better access can be given to it. The developer proposes to accommodate the clinic in buildings which are located within the Village high street, where the principle of clustering of community facilities can give maximum access. It will be located either directly adjacent to or opposite the existing police station and will be accessible to residents in the valley by public transport.

An early childhood development and aftercare centre (ECD, place of instruction) will also be constructed in the village and will have a capacity for 120 children. The centre will serve both the residents of the village, who can walk to the ECD, employees of Boschendal and Lanquedoc and Pniel communities, who would mostly utilise public transport. The focus will be on quality pre-school education, as well as afterschool care. The approximate location of the ECD will be opposite the police station in the Community centre hub of the village, however the exact location will still be determined and is subject to final design. This location is very accessible, will be in close proximity to the public transport stops and adjacent a significant open space which can double as play area. It should be noted that Boschendal has already established an ECD elsewhere on the farm for the surrounding community and it is the intention to relocate this ECD to the village once constructed.

A small maintenance facility and refuse collection for the Owners Association will be located in the position where the current clinic is located and will be managed by the Owners Association. This facility will serve the whole Village and the Owners Association will also conduct their administrative activities from this location. This site is accessible from the R310 and a refuse embayment can be provided along the R310 to ensure collection can be made by municipal refuse vehicles.

Two smaller civic buildings are provided internally to the residential development which will serve the residents of the Village and can be used for religious and other community gatherings. The main meeting space in the Village will be farmers market and this structure can also double up as a large community meeting space. The werf on the eastern side of the village in front of the hotel will also double up as a space where occasional outdoor events can take place.

### **Proposed Open Space Network (Figure 2)**

A significant portion of land inside the Village is set aside for open space. All open spaces in the development will be zoned Open Space II (Private Open Space) because ownership of these spaces will transfer to the Owners Association, which will be responsible for the ongoing maintenance of these spaces.

An important feature of the open spaces abutting the R310 is to provide continuity of green and ensure that the scenic route qualities are preserved inside the urban edge, albeit to an altered extent and degree. Continuity of green along the road will ensure the preservation of the rural sense of place and unique character.

The open spaces abutting the R310 will be public in nature since they are located in the most accessible "public" heart of the Village. It is seen that these spaces can also fulfil a dual function in that the farmers market can be expanded on occasion and these spaces can then be used for the occasional expansion of the market. It will also accommodate some more formal gravel parking areas and the green surfaced areas can provide for overflow parking during peak use. See Table 1.

The significant open space on the eastern side of the village (**Figure 2**) is formalised into an open space which is similar in scale and proportion to the main "werf" space at the manor house, thereby replicating a system of werfs in a modern interpretation of the historical spaces. It is a semi-public space which is accessible to the public during the day time. It is seen as a place where special events and activities can take place over weekends and where certain day-time activities, which access the farm (i.e. mountain bike trails; bicycle rides; walks to the manor house; and local small community gatherings), can take place.

### **Proposed Roads (Figure 2)**

Public Roads are those roads which are transferred to the relevant Roads Authority and which are constructed to the standards as defined by the controlling Roads Authority (in this instance the Provincial Roads Engineer and District Municipality controls the R310 and the Minor Road 5230). The cadastral boundaries of the R310 and Minor Road 5230 are not defined in certain places and these roads will be subdivided and transferred to the required authorities upon commencement of this development.

Private Street with Public Access: "Public streets" as defined in the zoning scheme have to, in terms of legislation, be ceded to the municipality, who prescribes standards, materials, treatment and who will then have to maintain it. "Private streets" on the other hand, have to be constructed to certain general standards, but a much greater degree of flexibility is allowed in terms of materials and finishes to be used. The Owners Association becomes responsible for the maintenance of these streets. The developer has decided that all the streets in the Village (other than R310 and Minor Road 5230) will be private streets, because the heritage indicators demand that roads be constructed using materials and finishes which are not necessarily compatible with the Municipality's Engineering Department standard requirements.

This development will aim to ensure a rural character and therefore, normal kerbs and channels will not be permitted and lighting and surface materials will not be asphalt but other finishes. An important consideration for the Village as a whole is to preserve and ensure the Village remains an openly accessible village which is not "gated". Public access will, however, be ensured to these "private streets", so that the integrity of the Village is maintained and it cannot be converted to a gated village. This will be achieved through the registration of appropriate servitudes over certain roads to ensure public access.

**Figure 3** shows the most significant of the private roads. These are the following:

1. The "**high street**" from which the farmers market will gain access and which will also provide access to the abutting businesses. The street will be un-gated and have a high degree of public access and a servitude will be registered to ensure 24-hour public areas, subject to the rules contained in the Owners Association.
2. The "**western service road**" is located to the west of the R310 and provides access to the Village on the western side of the development. This road is also accessible to the public 24 hours per day, subject to the rules contained in the Owners Association and will not be gated.
3. The "**central avenue**" which runs perpendicular to the "high street". This street is open to the public during daytime hours and public access will be ensured during these hours via a conditions servitude which sets out the hours and other conditions of access. An access gate or other measures may be introduced after hours to increase safety.

Private Streets which remain private: Within the superblocks, dwelling houses, row houses and flats will be served by private streets or service roads which are entirely private. These private streets will have gated access control, be of an informal nature and be completely private internal "access courtyards" to the superblock.

For more detail regarding the Proposal, refer to the Planning Report attached as **Appendix G1**.

**3.10 SITE DEVELOPMENT PLAN**

The site development plan illustrated in Figure 88 is a composite plan illustrating the overall development intent for the Boschendal Village. It illustrates the public spaces, movement network, planting framework and position of buildings as envisaged for the development.



Figure 2: Site Development Plan

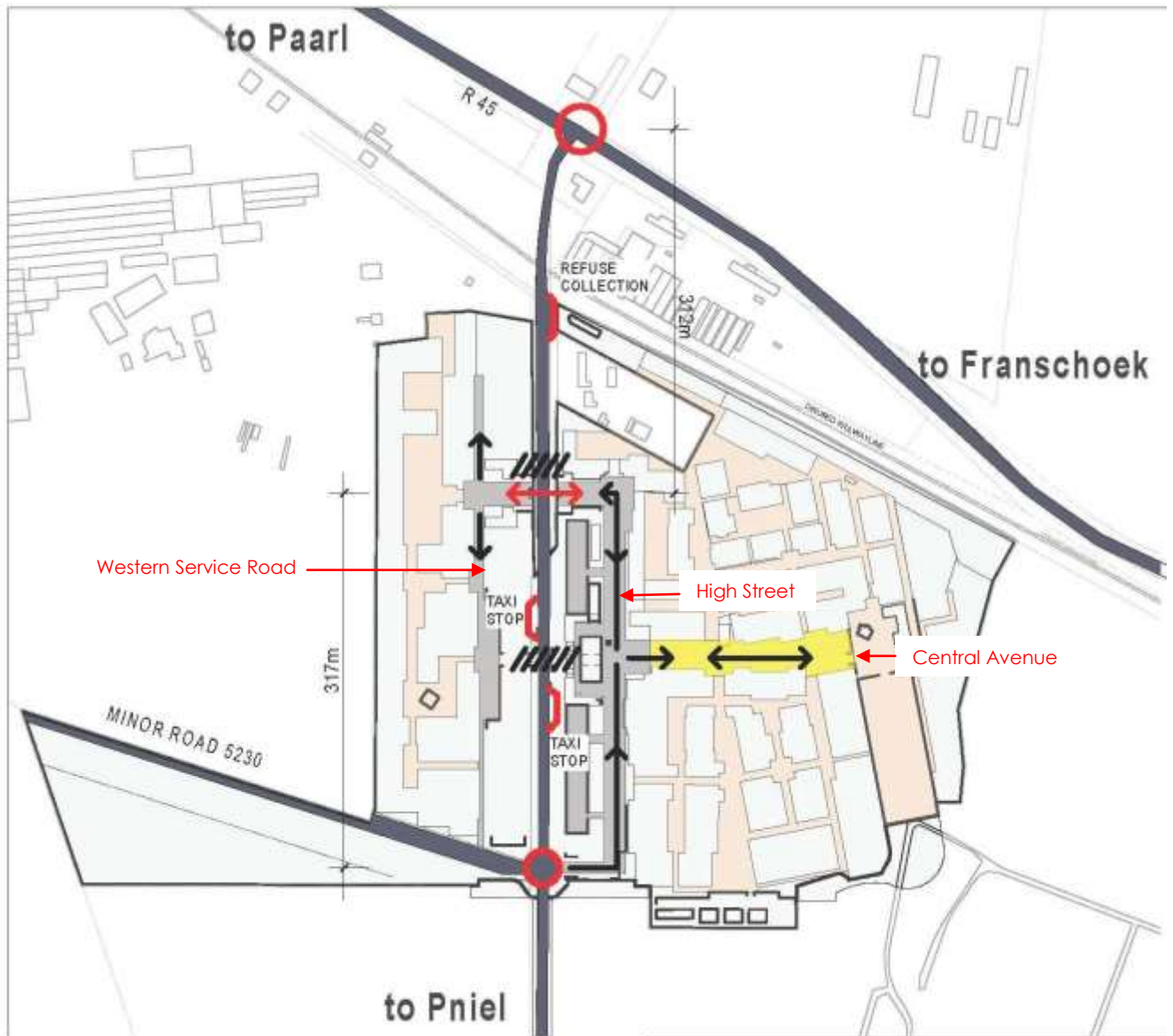


Fig. 35 Access

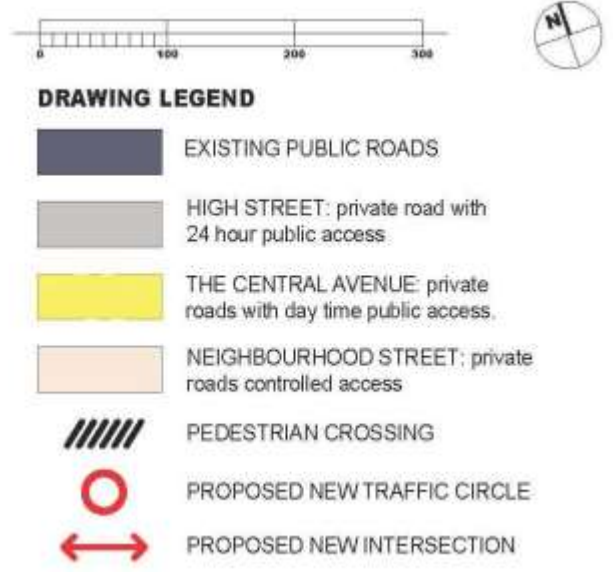


Figure3: Access Roads

(c) List all the activities assessed during the Basic Assessment process:

**(PLEASE NOTE THAT THE LISTED ACTIVITIES AS DESCRIBED BELOW ARE LISTED IN TERMS OF EIA REGULATIONS 2014, AS AMENDED)**

GN No. 983 Activity No(s):	Describe the relevant <b>Basic Assessment Activity(ies)</b> in writing as per <b>Listing Notice 1</b>	Describe the portion of the development as per the project description that relates to the applicable listed activity.
9	<p>The development of infrastructure exceeding 1000 metres in length for the <i>bulk transportation</i> of water or storm water-</p> <ul style="list-style-type: none"> <li>(i) with an internal diameter of 0,36 metres or more; or</li> <li>(ii) with a peak throughput of 120 litres per second or more;</li> </ul> <p>excluding where-</p> <ul style="list-style-type: none"> <li>(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or</li> <li>(b) where such development will occur within an urban area.</li> </ul>	<p>The stormwater outlet pipe will have a diameter of more than 360mm.</p>
12	<p>The development of—</p> <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</li> <li>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</li> </ul> <p>where such development occurs-</p> <ul style="list-style-type: none"> <li>(a) within a watercourse;</li> <li>(b) in front of a development setback; or</li> <li>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; -</li> </ul> <p>excluding-</p> <ul style="list-style-type: none"> <li>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</li> <li>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</li> <li>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</li> <li>(dd) where such development occurs within an urban area;</li> <li>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</li> <li>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</li> </ul>	<p>The construction of infrastructure and buildings measuring 100 m<sup>2</sup> or more will be located within 32m of the wetlands on site.</p>
19	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing , dredging, excavation, removal or moving –</p>	<p>The construction of the stormwater outlet will require the infilling and movement of more than 10 m<sup>3</sup> of soil within the watercourse.</p>



	<p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	
27	<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation,</p> <p>except where such clearance of indigenous vegetation is required for-</p> <ul style="list-style-type: none"> <li>(i) the undertaking of a linear activity; or</li> <li>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</li> </ul>	<p>Although the little remaining natural vegetation on site is of no botanical significance, the proposed development may result in the clearing of 1 ha or more of natural vegetation.</p>
28	<p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:</p> <ul style="list-style-type: none"> <li>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</li> <li>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</li> </ul> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>The land is zoned Agriculture and certain portions of the site has been used for agricultural activities.</p>
GN No. 985 Activity No(s):	<p>Describe the relevant <b>Basic Assessment Activity(ies)</b> in writing as per <b>Listing Notice 3</b></p>	<p>Describe the portion of the development as per the project description that relates to the applicable listed activity.</p>
4	<p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p>	<p>Roads wider than 4 m will be constructed in the proposed village. The proposed village is located within a node identified for development; however, the site is currently located outside an urban area.</p>
12	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>Although the little remaining natural vegetation on site is of no botanical significance, the proposed development may result in the clearing of 300m<sup>2</sup> of natural vegetation that was classified as critically endangered before the site was transformed.</p>
17	<p>The expansion of a resort, lodge, hotel, tourism or hospitality facilities where the development footprint will be expanded and the expanded facility can accommodate an additional 15 people or more.</p>	<p>Guest accommodation of roughly 100 bedrooms will be included in the proposed village. However, since Boschendal Estate has existing tourism facilities, this activity is seen as expansion rather than development.</p>

If the application is also for activities as per Listing Notice 2 and permission was granted to subject the application to Basic Assessment, also indicate the applicable Listing Notice 2 activities: **N/A**

GN No. R. 984 Activity No(s):	If permission was granted in terms of Regulation 20, describe the relevant <b>Scoping and EIA Activity(ies)</b> in writing as per <b>Listing Notice 2</b> (GN No. R. 984)	Describe the portion of the development as per the project description that relates to the applicable listed activity.

**Waste management activities** in terms of the NEM: WA (Government Gazette No. 32368): **N/A**

GN No. 718 - Category A Activity No(s):	Describe the relevant <u>Category A</u> waste management activity in writing.

**Please note:** If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I**.

If the application is also for waste management activities as per Category B and permission was granted to subject the application to Basic Assessment, also indicate the applicable Category B activities: **N/A**

GN No. 718 – Category B Activity No(s):	Describe the relevant <u>Category B</u> waste management activity in writing.

**Atmospheric emission activities** in terms of the NEM: AQA (Government Gazette No. 33064): **N/A**

GN No. 248 Activity No(s):	Describe the relevant atmospheric emission activity in writing.

(d) Please provide details of all components of the proposed project and attach diagrams (e.g. architectural drawings or perspectives, engineering drawings, process flow charts etc.).

Buildings	YES	NO
Provide brief description:		
<p><b>Buildings to be retained, renovated and re-used:</b></p> <ul style="list-style-type: none"> <li>• One building on the western side which is accommodated in the design;</li> <li>• A row of cottages to the south of the application area which will form the southern edge of the village;</li> <li>• The old pallet factory structures to be remodelled as a farmers' market;</li> <li>• An existing wooden cottage and a gabled cottage dating back to 1951 will be retained; and</li> <li>• Existing clinic building (previously the station building) to be retained but not as the clinic.</li> </ul> <p>Most of the village development will, however, be newly constructed buildings. The proposed village will consist of the following buildings:</p> <ul style="list-style-type: none"> <li>• 475 dwelling units are proposed.</li> <li>• An hotel/guest apartments/cottages consisting of 100 bedrooms in total.</li> <li>• Business gross leasable area (GLA) of 14 500m<sup>2</sup> which will include a clinic consisting of 2-3 consulting rooms.</li> <li>• Civic buildings with a GLA of 500m<sup>2</sup>.</li> <li>• Maintenance and recycling building measuring approximately 500m<sup>2</sup>.</li> <li>• Early Childhood Development and Aftercare Facility for 120 children.</li> </ul> <p>The housing component will consist of 475 housing units made up of:</p> <ul style="list-style-type: none"> <li>• 24 free standing dwellings</li> <li>• 194 row houses</li> <li>• 210 apartments</li> <li>• 10% to a maximum of 47 units for key worker apartments</li> </ul> <p>The height of the buildings ranges between 1 and 3 storeys. No buildings in the Village, apart from the tower vertical structures, may exceed 3 storeys. One storey buildings are located on the edges of the village whilst 3</p>		

storey buildings are located closer to the centre of the Village.  
 For more detail regarding the design of buildings, refer to the Urban Design Framework (**Appendix G2**) which sets important guiding development parameters.

Infrastructure (e.g. roads, power and water supply/ storage)	YES	NO
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Provide brief description:

**Roads**

The extent of the proposed development necessitates the upgrade of two intersections, the upgrading of Minor Road 6/4 and the construction of a new intersection.

**Parking Requirements**

It is recommended that a minimum of 1 457 bays be provided for the development. Refer to the Parking Requirements shown in Table 8.1 in the Traffic Impact Assessment (TIA) attached as **Appendix G3**.

It should be noted that the proposed development is mixed use in nature and therefore a degree of shared parking is likely to take place. The sharing of off-street parking is expected to occur between office visitors and shop customers. After hours, office off-street parking can be used by visitors to the flats. It is also expected that visitors will walk to the clinic due to adequate pedestrian facilities and the close proximity of the clinic to the rest of the development.

For more detail regarding the parking facilities, refer to the Urban Design Framework (**Appendix G2**).

**Refuse Embayment**

A refuse embayment will be constructed on Helshoogte Road (R310) adjacent to the existing Clinic. As a minimum requirement, the embayment shall measure not less than 3 m by 12 m (**Figure 3**).

**Public Transport**

The acceptable walking distance to public transport facilities is 500m. The access point of the proposed development is located approximately 400m away from the nearest bus and mini-bus taxi facilities. Although the access points will be within reasonable walking distance of public transport facilities, the development footprint is extensive and pedestrians will be forced to walk even further distances.

It is therefore recommended that new public transport facilities in the form of taxi embayments be provided along Helshoogte Road (R310) adjacent to the proposed central access to the development on either side of the road (after the intersection in each direction). A pedestrian crossing should be provided linking the two public transport facilities and advanced warning signs should be provided to notify motorists of the pedestrian crossing (**Figure 3**).

**Non-Motorised Transport**

Helshoogte Road (R310) has a pedestrian walkway located on the eastern side of the road, linking to pedestrian sidewalks provided along both sides of the R310 closer to the intersection with the R45. Pedestrian walkways are also provided along the southern side of the R45, east of the intersection with Helshoogte Road (R310) and along the northern side of the R45, west of the intersection. No pedestrian crossing facilities are provided at the R45 / Helshoogte Road (R310) intersection.

Surfaced sidewalks, with widths no less than 1.5m and with barrier kerbs protecting pedestrians from through traffic and preventing motor vehicles from parking on sidewalks, should be provided on Helshoogte Road (R310) along the frontage of the development. The new sidewalks should be linked seamlessly to the existing pedestrian facilities as well as the development's internal pedestrian network. The proposed locations of pedestrian crossings are shown in **Figure 5**.

Provision has been made for cyclists along Helshoogte Road (R45) in the form of a wide coloured shoulder as well as the provision of pedal cycle warning signs.

The shoulder along Helshoogte Road (R310) should be maintained along the frontage of the development unless it is linked to an off-road facility for safety purposes. The safety of cyclists will be dependent on the type of access control implemented at the R45 / Helshoogte Road (R310) intersection, e.g. should a roundabout be

introduced, an off-road cycle facility would be more beneficial.

All NMT facilities located along Helshoogte Road (R310) should be designed to the satisfaction of the relevant roads and other authorities.

For more detail, refer to the Urban Design Framework (**Appendix G2**).

### **Power**

The proposed development area falls within the electrical supply jurisdiction of the Stellenbosch Municipality.

The total estimated conventional electrical load for the Boschendal Development is approximately 2,4 MVA - (11 000 V).

The municipal electrical department has advised that there is a 1,5MVA spare capacity available at the existing main substation in the area. This substation is located on Helshoogte Road diagonally opposite the police station. The Municipality will upgrade this sub-station building in order to house the switchgear for this Boschendal Village development.

The complete medium voltage (MV) and low voltage (LV) Reticulation systems to the development will comprise underground cabling only. Any existing MV overhead lines within the development will be removed and replaced with underground cabling.

A secondary 11kV reticulation system will be provided as required and approximately 7 mini substations will be located at various locations to be determined. These will be located on 5.5x4m sites. LV connections to each erf will be provided as calculated.

All routes will be within existing road-reserves or the new road-reserves of the subdivision and/or municipal servitudes.

Conventionally the power required for this development would be approximately 2,4MVA. However, it is intended to conserve energy and reduce the demand at peak periods to 1,5MVA by means of the following:

- An Energy Management system
- Energy saving / controlling devices fitted to each consumer distribution board to limit the maximum power to the design limits
- Lighting fittings shall be fitted with LED lamps only
- Hot water generation by means solar panel together with LPG gas geyser back-up. In the case of three storey apartments, solar hot water units combined with gas geyser will be provided.
- In the case of the hotel, a centralised heat pump unit will be provided.
- The Municipality advised that a control relay be provided to control each hot water unit. This relay will be controlled by the Municipality by switching it OFF during peak electricity consumption periods and switching it ON after the peak period. This will apply where a separate heat pump unit is provided for each separate hot water unit.

Further power savings will be achieved by means of the following:

- Installation of stoves with gas heating hob and gas oven
- Inclusion of smart meters and relay switches to limit consumption to non-essential appliances. Appliances like washing machines or driers are switched off in the event that the development load is exceeded or the dwelling unit power allocation be exceeded.
- In the case of the hotel and retail areas, conservation of electricity in terms of mechanical ventilation will have to be applied by the Mechanical Engineer.
- Power will be supplemented by means of Photo-Voltaic (solar energy panels) where possible.

It is understood that it will be a requirement of the Municipality for these limitations and measures to be recorded in the sales agreements with purchasers.

The table below, provided by the Engineer, shows the estimated electrical power requirement after the various conservation measures are in place, resulting in a total power requirement of 1,55 MVA.

<b>BOSCHENDAL - ESTIMATED ELECTRICAL POWER REQUIREMENTS AFTER CONSERVATION MEASURES - Rev2</b>			Reduced Power (kVA)	Standard Calculation	Standard Power (kVA)
based on Green Report submitted by AGAMA ENERGY dated 7/6/16 - Clauses 3.1.3, 3.2.1 and 4.2. and notes below)			(kVA values)		
Residential (Low Density)	One storey: Free standing dwelling	24 Dwelling Units x 4	96	24 x 4kVA	96
Residential (Medium Density)	Two storey: Row houses and duplexes	194 Dwelling Units x 1.8	349.2	194 x 3kVA	582
Residential (High Density)	Three storey: Flat and row houses	210 Dwelling Units x 2	420	210 x 3kVA	630
Residential (Hospitality)	Two storeys (Hotel and self catering apartments)	50 Bedrooms (hotel) + 10 apartments (2 rooms each) -	100	100 x 2kVA	200
Worker Apartments	One storey	(up to) 47 Dwelling units x 2	94	141	90
<b>Residential Total</b>	dwelling units: bedrooms hotel/guests:	450 Dwelling Units 100 Bedrooms	<b>1060</b>		<b>1598</b>
Business (Retail)		5 500m <sup>2</sup> GLA x 30VA per m <sup>2</sup>			
Business (Retail)		9 000m <sup>2</sup> GLA x 30VA per m <sup>2</sup>			
Clinic		Part of 9 000m <sup>2</sup> GLA above			
<b>Business Total</b>	Retail: General Business : TOTAL BUSINESS:	5 500m <sup>2</sup> GLA 9 000m <sup>2</sup> GLA <b>14 500m<sup>2</sup> GLA - 30 VA per m<sup>2</sup></b>	435	14500 x 50VA	725
Civic/Community Building		500m <sup>2</sup> at 30 VA per m <sup>2</sup>	15		50
Early childhood development	120 children		20		50
Utility	Recycling and maintenance	500m <sup>2</sup> at 40 VA per m <sup>2</sup>	20		50
		<b>TOTAL SUPPLY</b>	<b>1550 kVA*</b>		<b>2473 kVA**</b>

\*\* - In this case, the power calculations are based upon the ratings as stipulated by NRS-034-1 Table 30. In the case of domestic consumers, the mandatory energy saving requirements are:

- Hot water generation shall be solar type or heat pump
- Lighting - LED

\* - In this case, the following energy saving interventions are applicable:

- Hot water generation - solar type with gas geyser backup
- Lighting - LED
- Stove - gas hob and gas oven
- Installation of smart meters and relay switches to limit consumption to non-essential appliances. Appliances like washing machines/driers be switched off in the event that the development load is exceeded, or the dwelling unit power allocation is exceeded.
- Provision of an Energy Management System

### Future Demand and Availability

Should the demand increase in future from this and other developments in the area, or should the above-mentioned limitations need to be relaxed, additional bulk power will need to be obtained. Apart from master planning being done by the Municipality for the area as a whole to bring in more power, additional power will also become available at the Helshoogte Road substation due to the existing surrounding farm reducing their power consumption off the external supply. The Applicant has indicated that he intends to reduce the farm's power consumption from the external supply by at least 1,0 MVA, mainly by means of solar power panels, but also by other generation methods and/or and other power saving measures.

The Municipality has indicated that once this is in place, an additional 0.5 MVA will become available from the above-mentioned substation opposite the police station, thus reducing reliance on the required load control interventions considerably.

**Street Lighting**

The street lighting design together with controls shall comply with the Municipal Standards and SANS Standards for Public Lighting.

Refer to the Electrical Layout (**Appendix B**), the Services Report (**Appendix G4**) and the Greening Report (**Appendix G5**) for more information. Confirmation of available capacity has been confirmed (**Appendix E1**).

**Water**

The water demand expected from this development is estimated to be as follows:

<b>WATER</b>	<b>AADD</b>	<b>AVERAGE FLOW RATE</b>	<b>PEAK RESIDENTIAL</b>	<b>PEAK COMMERCIAL</b>
	<b>l/day</b>	<b>l/s</b>	<b>l/s</b>	<b>l/s</b>
Residential	450 000	5.21	31.3	31.3
Business	60 000	0.69	0.7	1.0
Hotel	35 000	0.41	2.7	
<b>Totals</b>	<b>545 000</b>	<b>6.31</b>	<b>34.7</b>	<b>32.3</b>
<b>FIRE DEMAND</b>			<b>100</b>	
<b>PEAK DEMAND (incl. FIRE)</b>			<b>134.0</b>	

Reservoir size required = 3 x 0.545 MI = +/- 1.6 MI

After investigation of a number of alternatives, and elimination of many, the following new master planning elements are required for this development, all as in the Water Reticulation Layout (**Appendix B**):

1. A storage reservoir above the Pniel area

- The reservoir is to be located adjacent to the existing reservoirs, where it can be fed by the existing supply pipe, which has sufficient capacity for the existing flow plus that of this development, and which runs all the way from an existing connection to the Wemmershoek pipeline via various pump-stations which also have sufficient capacity.
- A reservoir capacity of 1.5MI is needed for this development but the Municipality may wish to have a larger capacity of 2.0MI constructed to achieve economy of scale and/or to also serve other existing or future areas.
- The 1.5MI reservoir will be approximately 20m in diameter and 6m high, and will be on the existing Municipal site, and a 2.0MI reservoir 23m diameter and 6m high. It will not fit onto the existing reservoir defined erf but will need to extend to outside the northeast corner thereof, also on municipal/Pniel-community land. It will be at the same levels as the existing reservoir and therefore cut into the side of the hill, also to ensure being more than 32m from the adjacent watercourse. A schematic preliminary layout of this precinct is included in the Services Report (**Appendix G4**).

2. A gravity main starting at 250dia and increasing to 315dia from the reservoir to the development

- This will skirt around the edge of the town's cadastral boundaries, either in municipal/Pniel-community land or in servitudes to be registered over the Boschendal farm, until it reaches Helshoogte Road. It will then run inside the Helshoogte Road reserve until it reaches the development.
- The size is based on the future master planning and allows for all future development served by this pipe.

3. Two pressure reducing valves on the gravity main.

- This will be located such that the pressure at the development will not be greater than the municipal norms.

The water mains will cross over watercourses or water channels (i.e. where a natural watercourse has been diverted into a straight water channel). Watercourses/channels will be crossed either using pipes on the surface, threading these through existing culverts, or by thrust-boring, i.e. jacking or pushing the pipe under the watercourse or channel without excavating through the watercourse or channel. Water supply pipes will also be laid onto and across the site, with an on-site reservoir for water storage and supply. Refer to **Appendix B** for diagrams showing the location of the reservoir, the water pipe route and stream crossings and the typical pipe crossings of watercourses.

Confirmation of available capacity has been confirmed (**Appendix E1**). For more detail, refer to the Services Report (**Appendix G4**).

**Stormwater Management**

The management of stormwater within the development will be designed in accordance with the general principles of sustainable urban water drainage systems, this to disconnect the system and protect the receiving waters, being that of the Dwars River to the east.

In addition, by means of attenuation ponds, the outflow from the development will be limited to the pre-development flows, which for a 1 in 50 year scenario is approximately 1.3m<sup>3</sup>/s. The stormwater from the development will ultimately flow out from the development from an attenuation pond at the north-east corner thereof, via a new channel and pipe south of the railway line, just inside the Boschendal farm boundary, discharging into the Dwars River just upstream from the railway bridge.

The new channel for this development will be open and unlined along the first portion, and then become a 900dia pipe. Gabion drop-structures will be constructed at the outlet from the pond, and at the outlet to the river, where a double gabion drop-structure will be constructed to take up the level difference.

Although there are no specific municipal requirements with regards to designs for stormwater quality, the general principles of sustainable urban drainage systems (SUDS) will be followed:

- The receiving waters, being that of the Dwars River to the east, will be protected by disconnecting this development's system from the river until the final outflow from the development, by which time the various treatment measures will have taken effect.
- Identified wetlands are incorporated in the urban design layout and the Stormwater Management Plan, by routes being planned so as to coincide with wetlands, as well as ponds being designed around the wetlands and their buffer zones.
- Infiltration and bio-retention of stormwater will be promoted as far as possible. Run-off will be conveyed in open unlined channels, or along existing wetlands or green-belts as far as possible along all the routes. Open channels such as this also result in attenuation along the routes, enabling smaller main ponds at the end. Where open channels need to be lined for erosion protection reasons, this will be done by means of environmentally friendly measures such as vegetation, ungrouted stone-pitching, grass blocks, gabions and reno-mattresses etc. Design of the open channels and areas will be done in close conjunction with the landscaping architects and wetland specialists. Underground conduits will be limited to road crossings, and where there are space limitations for open channels and areas.
- When the internal precincts proceed, stormwater design guidelines will be drawn up for those developments to follow the same principles as these. Such guidelines will include grassed swales, maximising grassed/planted areas, discharging of downpipes onto these areas, infiltration/bioretention ponds etc. Run-off from hard areas will be routed to permeable areas as far as possible, before entering the main system.

For more detail, refer to the Stormwater Management Plan attached as **Appendix G6** and Stormwater Management Diagram included as **Appendix B**.

Processing activities (e.g. manufacturing, storage, distribution)	YES	NO
Provide brief description:		
This application is for the construction of a village, no processing activities are required.		

Storage facilities for raw materials and products (e.g. volume and substances to be stored)				
Provide brief description	YES	NO		
This application is for the construction of a village, no storage facilities for raw materials are required.				
Storage and treatment facilities for solid waste and effluent generated by the project				
Provide brief description	Yes	No		
<b>Solid Waste</b>				
<p>The volume of solid waste estimated to be generated is approximately 24t/week. After sorting and processing, the remaining waste will be removed by the Municipality from this development to one of the existing or planned municipal landfill facilities in the area, which have been planned to accommodate future developments including this one.</p> <p>The development will have a central refuse collection facility, located between the police station and the railway on the eastern side of the Helshoogte Road. It will be the responsibility of the Homeowners Association(s) to transport the refuse from the individual units/precincts to this point.</p> <p>The refuse will be stored in standard bulk sized bins for collection by the Municipality. The collection point for the Municipality will be off the Helshoogte Road and designed to Municipal requirements to accommodate their vehicles.</p> <p>A separate bin system for recyclable material will also be implemented e.g. glass, tin, plastic and paper.</p> <p>The Homeowners Association rules and constitutions will be drawn up accordingly, to ensure proper management of the above system.</p> <p>Refer to the Services Report (<b>Appendix G4</b>) and proof of the capacity of the landfill site to accommodate the additional solid waste is attached as <b>Appendix E1</b>.</p>				
<b>Sewage</b>				
The sewerage flows to be generated from this development are estimated as follows:				
<b>SEWERAGE</b>	<b>ADWF</b>	<b>AVERAGE FLOW RATE</b>	<b>PDWF</b>	<b>PWWF</b>
	l/day	l/s	l/s	l/s
Residential	337 000	3.90	11.7	14.6
Business	48 000	0.56	1.7	2.1
Hotel	28 000	0.32	1.0	1.3
<b>Totals</b>	<b>413 000</b>	<b>4.78</b>	<b>14.4</b>	<b>18.0</b>
<b>Approximate required pumping rate = 20 l/s</b>				
<p>After investigation of a number of alternatives, the following new master planning elements are required for this development, all as shown in the Sewer Layout Diagram (<b>Appendix B</b>):</p> <ol style="list-style-type: none"> <li>1. A gravity main of 200dia along the north-eastern boundary of the development <ul style="list-style-type: none"> <li>• This will collect the internal reticulation sewer pipes from the development and convey the sewage to the pump-station in 2 below. It will run in a servitude to be registered just inside the Boschendal farm boundary.</li> </ul> </li> <li>2. A new sewage pump-station close to the Dwars River bridge <ul style="list-style-type: none"> <li>• This will receive the above gravity main and pump the sewage via the rising main in 3 below.</li> <li>• The site area required for this is approximately 20mx10m, and a schematic preliminary layout is attached as <b>Appendix B</b>.</li> <li>• The sump will be about 5m below ground, and the structure size about 5mx5m.</li> <li>• Because the ground level here is below the 1 in 50 year floodline level, the floor level of the pump-station will be raised by about 1m from the ground level so that it is above the 1 in 100 year flood level. This will not</li> </ul> </li> </ol>				



affect any river flow, as it is well out of the main channel flow under the bridge here.

- The pump station will be designed so that it can be upgraded in future on a modular basis to take more flow from other future developments (however, these future developments do not form part of this application and are not linked to Boschendal.
- The structures (being the screen inlet chamber, sump and top structure, and emergency overflow tank) will be designed and constructed so as to accommodate the predicted future flow. The pumps, pipework, switchgear and instrumentation will be installed for this development's flow only, but will be designed such that additional equipment can be added on a modular basis, all within the initially built structures.
- The sub-structures will be water-retaining reinforced concrete up to and including their top slabs, which will be above the 1 in 100 year flood level. As such they will be sealed from leaking into the surrounding ground and against infiltration from the outside.
- The top structure (which will house the switchgear, instrumentation panels, distribution boards, emergency generator and fuel room) will be in brickwork with a tiled roof, all above the 1 in 100 year flood level. The specific building regulation requirements for the fuel room and other fire protection requirements will be adhered to.
- As is standard in the design of such pump stations, the following measures will be implemented as back-up in the case of failure:
  - stand-by pumps;
  - telemetry communication with the municipality depots and cell phones, as well as flashing lights at the building, all to provide alarms in the case of breakdowns or malfunction;
  - a back-up generator that automatically starts in the event of a power failure;
  - an emergency overflow tank to accommodate at least 4 hours of flow.
- This pump station will be owned, operated and maintained by the Municipality.
- A separate erf will need to be sub-divided from the farm here, to become the property of the Municipality, otherwise a servitude agreement will be required. The erf will be fenced in for safety and security.
- Access to the pump station will be via roads through the development and then via gravel roads on the farm, over which servitude rights will be written into either of the above-mentioned agreements.

3. A rising main of 200dia to the existing Pniel sewer pump-station

- Although there are a number of alternative routes, the preferred route is back through the abovementioned servitude and then through the development, along and inside the Helshoogte Road reserve and then via municipal road reserves in Pniel, to the Pniel pump-station.
- This pipe size is designed to take the total future flow of 40l/s.

The sewer pipeline will cross over watercourses or water channels. Watercourses/channels will be crossed either using pipes on the surface, threading these through existing culverts, or by thrust-boring, i.e. jacking or pushing the pipe under the watercourse or channel without excavating through the watercourse or channel.

4. Upgrading of the pumping capacity in the existing Pniel sewer pump-station from 15l/s to 40l/s

- It is expected that this upgrade will be for the pumps, pipework and switchgear inside the existing structure only, and will be to increase the pumping capacity to accommodate the existing flow plus that from this development, plus from the soon to be developed areas in Pniel draining to this position.
- From here the sewage is pumped along an existing rising main to the WWTW in 5 below. This rising main has sufficient capacity to convey the existing flow plus that from this development.

5. A 0.41 Ml/d upgrade to the Dwars River Waste Water Treatment Works near Johannesdal

- A separate EIA has already been approved for this project

For more detail refer to the Services Report, Sewer Layout and typical pipe crossings of watercourses, attached as **Appendix G4**. Sewage capacity letter is attached as **Appendix E1**.

Other activities (e.g. water abstraction activities, crop planting activities)	Yes	No
Provide brief description		
<b><u>Landscaping</u></b>		
Use of indigenous plants and tree species will be used to promote the character of an agrarian landscape and as per the plant species guideline established for the proposed village. Refer to the Landscape Master Plan		

(Appendix G7).

**2. PHYSICAL SIZE OF THE ACTIVITY**

(a) Indicate the size of the property (cadastral unit) on which the activity is to be undertaken.	<b>Size of the property:</b>
	Portion 7 Farm 1674 ±106.6670ha Portion 10 Farm 1674 ±106.6539ha

(b) Indicate the size of the facility (development area) on which the activity is to be undertaken.	<b>Size of the facility:</b>
	±28ha

(c) Indicate the physical size (footprint) of the activity together with its associated infrastructure:	<b>Size of the activity:</b>
	25.2 ha
(d) Indicate the physical size (footprint) of the activity:	25.2 ha
(e) Indicate the physical size (footprint) of the associated infrastructure:	Roads: 46 341m <sup>2</sup> Wetlands and Retention ponds: 6 491 m <sup>2</sup> Pump Station: 200 m <sup>2</sup>

and, for linear activities: **Pipes**

(f) Indicate the length of the activity:	<b>Length of the activity:</b>
	Sewer pipe 4121m Water pipe 4300m

**3. SITE ACCESS**

(a) Is there an existing access road? Refer to Figure 4.	YES	NO
(b) If no, what is the distance over which a new access road will be built?	m	

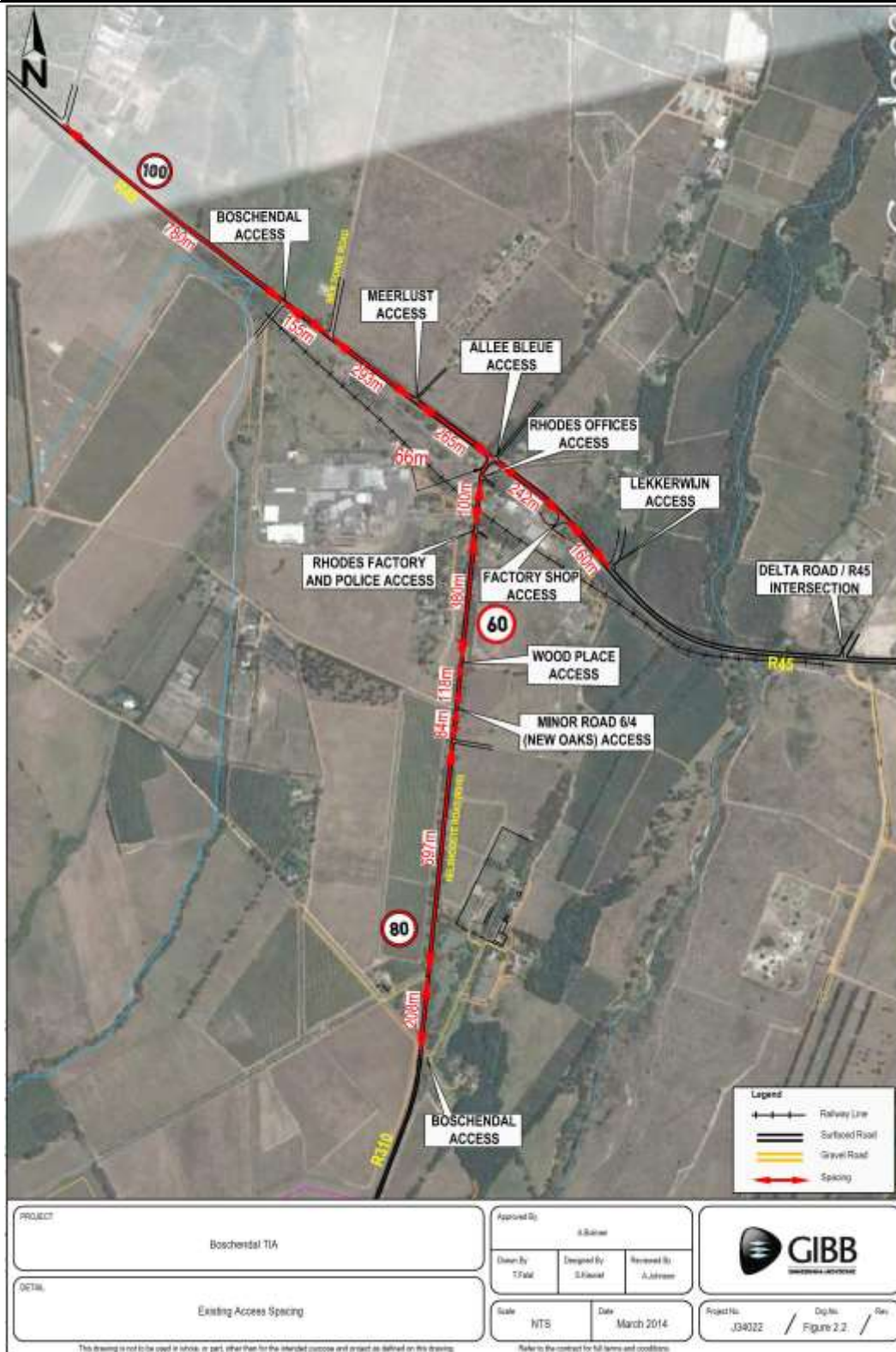


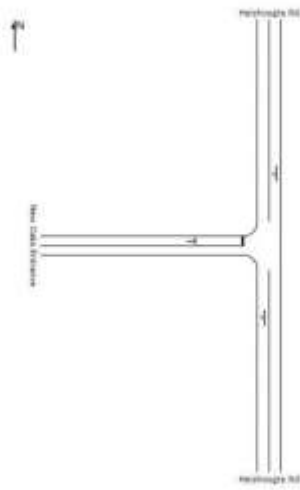
Figure 4: Existing Accesses

(c) Describe the type of access road planned: Refer to Figure 4

**1. Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access)**

**Existing Geometry**

The existing geometry of the Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access) intersection is shown in figures below.



Existing geometry



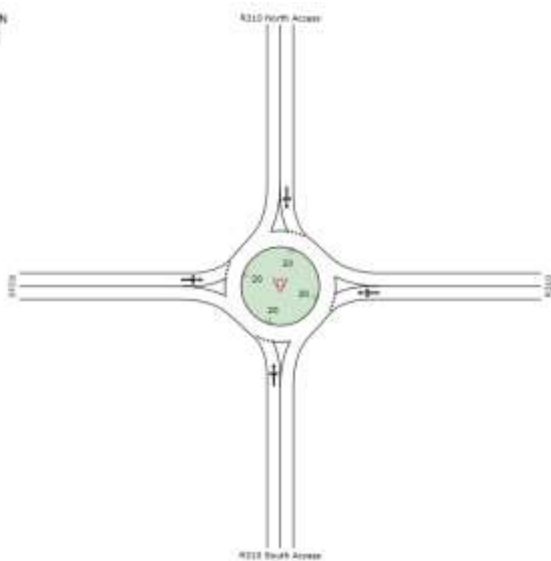
Aerial view of intersection

**Existing Traffic**

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues ranging between 1 and 2 vehicles.

**Proposed Upgrade**

A new roundabout will provide access to the north and south sections of the development, as shown in figure below.



Proposed geometry

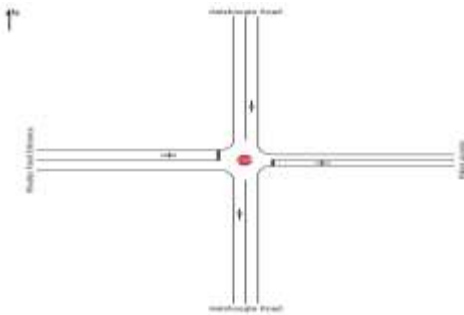
**2019 Total Traffic**

The new roundabout will operate well during both the AM and PM peak hours ranging between LOS A and LOS B, with the 95th percentile queues ranging between 1 and 7 vehicles.

## 2. Helshoogte Road (R310) / Rhodes Food Access / Police Station Access

### Existing Geometry

The existing geometry of the Helshoogte Road (R310) / Rhodes Food Access / Police Station Access intersection is shown in figures below.



Existing geometry



Aerial view of intersection

### 2014 Existing Traffic

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queue of 1 vehicle.

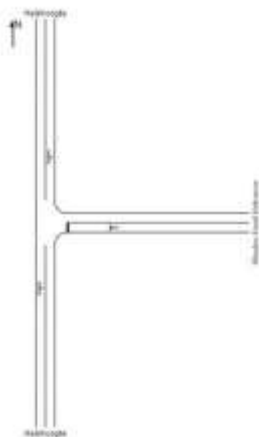
### 2019 Total Traffic

The Helshoogte Road approaches will operate well at LOS A during both the AM and PM peak hours, with no vehicle queues. The Rhodes Food Group access and the police station access will operate poorly at LOS D and LOS F during both the AM and PM peak hours respectively, with the 95th percentile queues ranging between 1 and 3 vehicles.

## 3. Helshoogte Road (R310) / Rhodes Food Offices Access

### Existing Geometry

The existing geometry of the Helshoogte Road (R310) / Rhodes Food Offices Access intersection is shown in figures below.



Existing geometry



Aerial view of intersection

**2014 Existing Traffic**

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues not exceeding 1 vehicle.

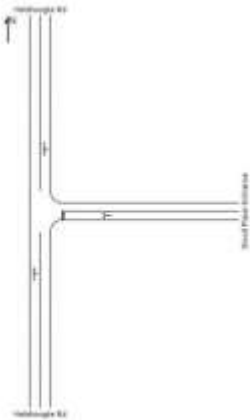
**2019 Total Traffic**

The Helshoogte Road approaches will continue to operate well during both the AM and PM peak hours, with no vehicle queues. The Rhodes Food Office access will operate poorly at LOS C and LOS E during both the AM and PM peak hours, with the 95th percentile queues of 1 vehicle. This is due to the long delays caused by the high volumes of through traffic on Helshoogte Road (R310).

**4. Helshoogte Road (R310) / Wood Place Access**

**Existing Geometry**

The existing geometry of the Helshoogte Road (R310) / Wood Place Access intersection is shown in figures below.



Existing geometry



Aerial view of intersection

**2014 Existing Traffic**

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues ranging between 0 and 2 vehicles.

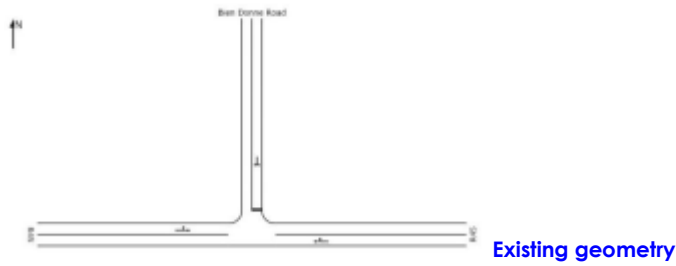
**Proposed upgrade**

This access will be closed and future access will be off the Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access) roundabout.

### 5. R45 / Bien Donne Road

#### Existing Geometry

The existing geometry of the R45 / Bien Donne Road intersection is shown in figures below.



Aerial view of intersection

#### 2014 Existing Traffic

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues ranging between 0 and 1 vehicle.

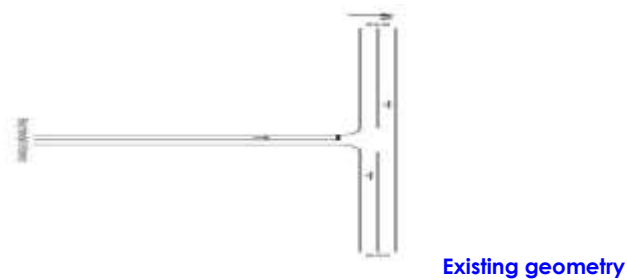
#### 2019 Total Traffic

The intersection will operate adequately during both the AM and PM peak hours, ranging between LOS A and LOS C, with the 95th percentile queues ranging between 0 and 1 vehicle.

### 6. R45 / Boschendal Access

#### Existing Geometry

The existing geometry of the R45 / Boschendal Access intersection is shown in figures below.





Aerial view of intersection

**Existing Geometry**

The intersection currently operates adequately during both the AM and PM peak hours, ranging between LOS A and LOS B and no vehicle queues.

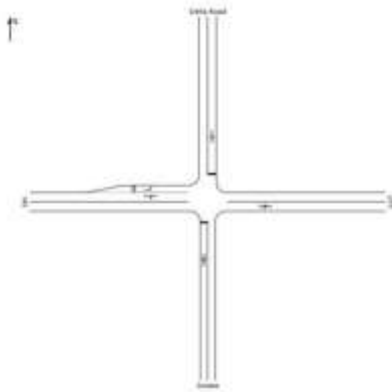
**2019 Total Traffic**

The intersection will operate adequately during both the AM and PM peak hours, ranging between LOS A and LOS C and no vehicle queues.

**7. R45 / Delta Road**

**Existing Geometry**

The existing geometry of the R45 / Delta Road intersection is shown in figures below.



Existing geometry



Aerial view of intersection

**2014 Existing Traffic**

The intersection currently operates adequately during both the AM and PM peak hours, ranging between LOS A and LOS C, with the 95th percentile queues ranging between 0 and 1 vehicle.



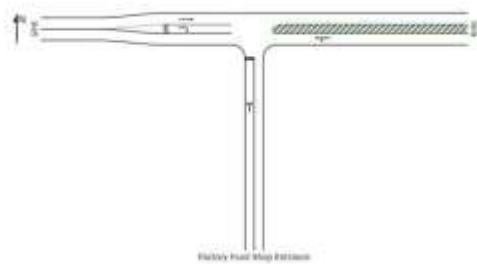
### 2019 Total Traffic

The R45 approaches will operate well at LOS A during both the AM and PM peak hours with no vehicle queues. The Delta Road approaches will deteriorate to operate at LOS C and LOS F during both the AM and PM peak hours, with the 95th percentile queues being 1 and 2 vehicles respectively. This is due to the long delays caused by the high volumes of through traffic on the R45.

### 8. R45 / Factory Food Shop Access

#### Existing Geometry

The existing geometry of the R45 / Factory Food Shop Access intersection is shown in figures below.



Existing geometry



Aerial view of intersection

### 2014 Existing Traffic

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues ranging between 0 and 1 vehicle.

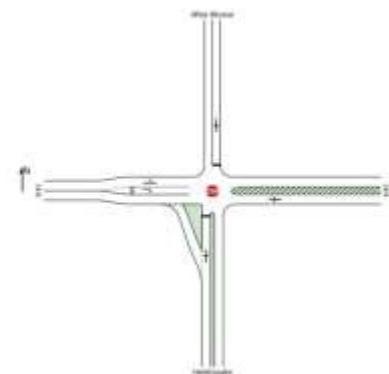
### 2019 Total Traffic

The intersection will continue to operate adequately during both the AM and PM peak hours, ranging between LOS A and LOS C, with the 95th percentile queues ranging between 0 and 1 vehicle.

### 9. R45 / Helshoogte Road (R310) / Allee Blueue Access

#### Existing Geometry

The existing geometry of the R45 / Helshoogte Road (R310) / Allee Blueue Access intersection is shown in figures below.



Existing geometry



**Aerial view of intersection**

**2014 Existing Traffic**

The intersection currently operates adequately during both the AM and PM peak hours, ranging between LOS A and LOS D, with the 95th percentile queues ranging between 0 and 5 vehicles.

**2019 Total Traffic**

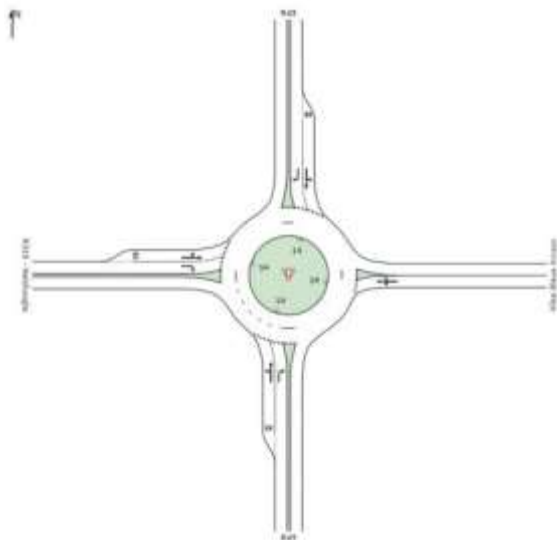
The intersection will operate poorly during both the AM and PM peak hours at LOS F at the Helshoogte Road (R310) approach, with excessive 95th percentile queues (over-capacity results). This is due to the large volume of right turning vehicles at the Helshoogte Road (R310) approach.

Due to safety issues and traffic congestion at the R45 / Helshoogte Road (R310) intersection, local authorities expressed an interest in upgrading the intersection to either a roundabout or signalised intersection. Both of these upgrade options have been assessed to determine the most appropriate upgrade option.

**Proposed upgrade:**

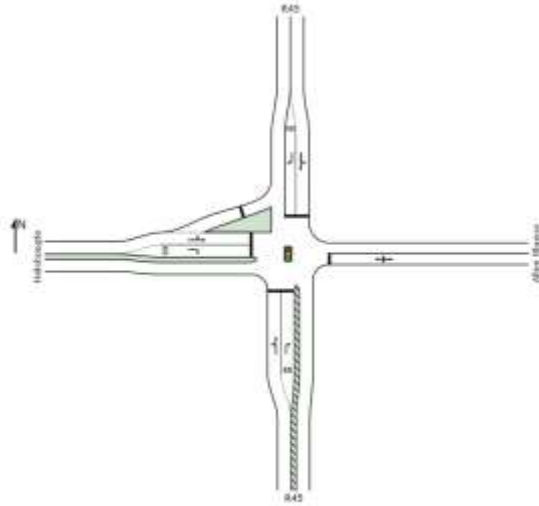
a) Option 1: Roundabout

The intersection will operate well as a roundabout during both the AM and PM peak hours at an average LOS A, with the 95th percentile queues ranging between 0 and 8 vehicles. The proposed roundabout geometry is shown in figure below.



b) Option 2: Signalised Intersection

The intersection will operate adequately as a signalised intersection during the AM peak and operate poorly at LOS A to LOS F during the PM peak hour, with the 95th percentile queues ranging between 1 and 10 vehicles during the AM peak hour and 1 to 51 during the PM peak hour. The proposed geometry for the signalised intersection is shown in figure below.



c) Recommended Upgrade

It is recommended that the intersection be upgraded to a roundabout as the improvement in LOS is superior to that of the signalised intersection upgrade option. The roundabout also has a greater capacity and can therefore better accommodate future traffic growth.

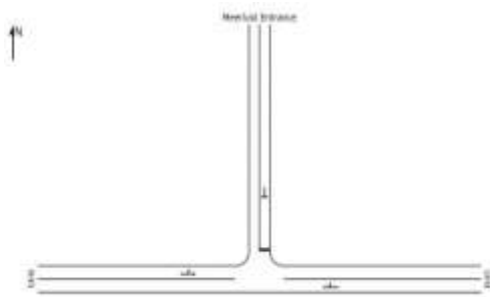
Furthermore, safety will be enhanced in the vicinity of the intersection as motorists will be forced to slow down when approaching the roundabout.

Adequate warning signage should be provided to alert motorists to the presence of the roundabout. A conceptual design of the proposed upgrades and the access spacing is attached as **Figure 6**.

**10. R45 / Meerlust Access**

**Existing Geometry**

The existing geometry of the R45 / Meerlust Access intersection is shown in figures below.



Existing geometry



Aerial view of intersection

**2014 Existing Traffic**

The intersection currently operates well during both the AM and PM peak hours, ranging between LOS A and LOS B, with the 95th percentile queues ranging between 0 and 1 vehicle.

**2019 Total Traffic**

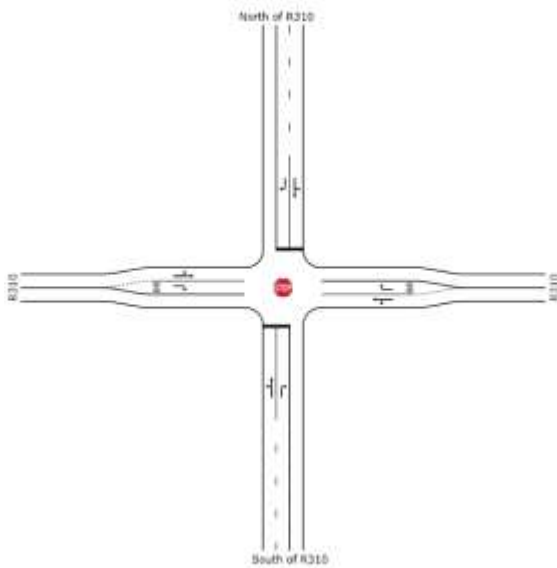
The intersection will operate adequately during both the AM and PM peak hours, ranging between LOS A and LOS C, with the 95th percentile queues ranging between 0 and 1 vehicle.

**Proposed Access off Helshoogte Road (R310)**

A central access to the proposed development is proposed equidistant from the proposed roundabouts mentioned in 1 and 9 above.

**Proposed Geometry**

A full access arrangement with opposing right-turn lanes (on Helshoogte Road (R310)) entering the site and stop controls on the side roads with separate right and left-turn lanes is proposed, as shown in figure below.



**Proposed geometry**

**2019 Total Traffic**

The north and south approach right-turn movements will operate at LOS F during both the AM and PM peak hours. The poor LOS is due to the high volume of through traffic along Helshoogte Road (R310).

However, the relatively few motorists experiencing these poor conditions during peak periods will naturally divert to the adjacent Minor Road 6/4 (New Oaks Access) roundabout which has ample spare capacity during peak hours.

It is important that these right-turn exits are retained in order to provide maximum flexibility of movement during off-peak periods and weekends.

**Proposed Access Spacing**

The proposed access points for the development have been assessed in accordance with the WCG Access Management Guidelines (2016). In terms of these guidelines, equivalent side roads should be spaced 400m and left-in / left-out side roads should be spaced at 200m.

Access to the internal road network will be via a proposed roundabout at Minor Road 6/4 (New Oaks Access) and a proposed central access located equidistant (approximately 330m) between the R45 / Helshoogte Road (R310) intersection and the proposed roundabout at Minor Road 6/4 (New Oaks Access) as shown in **Figure 5**.

While the central access is slightly sub-standard in terms of the required spacing, it is appropriate in the context of this being a rural village with a density closer to suburban than semi-rural.

The access to Wood Place will be closed as this area will be redeveloped as part of the proposed development. The Rhodes Food Group access points are sub-standard in terms of the required access spacing. The Rhodes Food Group Factory access, however, can be considered to be temporary as the Rhodes Food Group is planning to develop their property in the near future.

This development has no right to compel the Rhodes Food Group to relocate their access at this stage, however, when the Rhodes Food Group decides to develop, the WCG should request that they relocate their current access to take access off Minor Road 6/4, connecting to the Helshoogte Road (R310) at the proposed roundabout.

The minor driveway access to the police station will also remain at this stage for strategic and operational reasons.



Figure 5: Proposed access roads and upgrades

**Please Note:** indicate the position of the proposed access road on the site plan.

#### 4. DESCRIPTION OF THE PROPERTY ON WHICH THE ACTIVITY IS TO BE UNDERTAKEN AND THE LOCATION OF THE ACTIVITY ON THE PROPERTY

- (a) Provide a description of the property on which the activity is to be undertaken and the location of the activity on the property.

Boschendal Estate is located approximately 62km from the CBD of the City of Cape Town, in the Cape Winelands District Municipal area. The Estate is located almost equidistant from three main towns in the area namely:

- Stellenbosch which is situated approximately 14km southwest of the Estate;
- Franschhoek which is situated approximately 20km southeast of the Estate; and
- Paarl/Wellington situated approximately 20km to the north of the Estate.

Boschendal Estate falls within both the Stellenbosch and Drakenstein municipal boundaries with the majority of the Estate being located within Stellenbosch Municipality.

Boschendal Estate is situated in an area known as the Dwars River Valley and is surrounded by various smaller rural development nodes (**Figure 6**). These smaller towns and nodes are as follows:

- Kylemore approximately 6km to the south of the proposed Village;
- Pniel and Lanquedoc is situated approximately 3km towards the south of the proposed Village;
- Simondium is situated roughly 6km to the northwest of the proposed Village;
- The proposed Meerlust Forestry housing development area is situated to the north of the R45 within the Groot Drakenstein Node; and
- Wemmershoek is situated about 6km to the east of the proposed Village.

#### **BOSCHENDAL ESTATE**

Boschendal Estate consists of 28 farm portions (cadastral entities) which measure a total of ±1 813ha in extent. The farm is a working farm consisting of diverse agricultural activities. The farm is well known for its wine production, however, other agricultural activities include fruit, livestock, game farming and conservation areas.

#### **Current Initiatives on Boschendal Estate**

The farm was acquired by the current owners in 2012 who decided that the ailing wine estate could be rejuvenated into a top agricultural farm and winelands tourism destination. A vision was adopted to create a healthy and sustainable food system to produce naturally grown food while improving the soil health on the estate.

The key elements of the vision include:

- To create a healthy and sustainable food system based on local, naturally grown foods;
- Improve the fertility of the soil on the farm;
- Provide guests with the opportunity to savour the best of winelands farm living.
- Support the upliftment of local communities

In order to achieve this vision the owners have embarked on a programme that is based on three primary components aimed at rejuvenating Boschendal. The components are:

- Agriculture;
- Hospitality; and,
- Property development.

In terms of current initiatives, the new shareholders have invested ~ R250 million in up-grading the infrastructure and buildings on the site and equipment. The number of employees on the farm has increased from ~ 100 employees (salaried and wages) to 358 permanent employees and 137 temporary employees. Approximately 65% of the employees are members from the local communities in the study area. Of the 358 permanent employees 328 (90%) are Historically Disadvantaged Individuals (HDIs), while 130 (95%) of the temporary employees are HDIs. In terms of gender, 157 (44%) of the permanent employees and 73 (53%) of the temporary workers are female. The annual salary and wage bill is ~ R30-35m per annum.

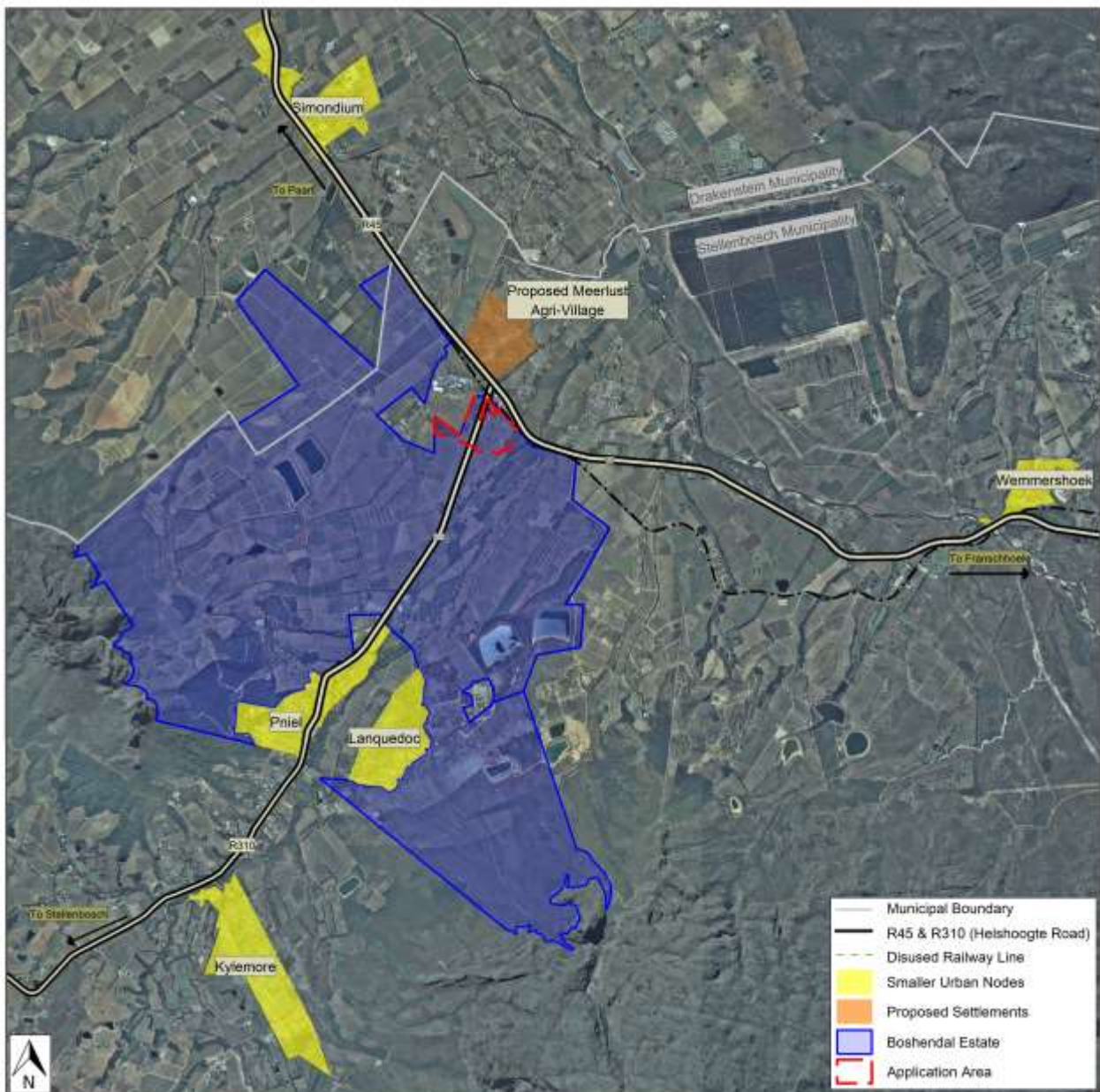


Figure 6: Boschendal Estate and surrounding urban nodes in relation to proposed Village (application area)

Agriculture

The farm was acquired by the current owners in 2012 who decided that the ailing wine estate could be rejuvenated into a top agricultural farm and winelands tourism destination. A vision was adopted to create a healthy and sustainable food system to produce naturally grown food while improving the soil health on the estate.

The vision includes a key commitment to the conservation, preservation and restoration of the natural environment, and uses biological farming practices that enrich the soil and promote a habitat of biodiversity both in the vineyards, orchards and surrounding vegetation.

According to the Applicant, the farm management focusses on 6 areas in the quest to improve soil health on Boschendal:

- Biological farming practices are implemented that minimises the use of chemical fertilisers and pesticides.
- Effective cover crops are planted to encourage rich humus production and keep the ecosystem in balance.
- 'Drill no till' are practiced in the fields to minimize soil disturbance.
- Cattle and chickens are pasture raised which contributes significantly to the health and productivity of

the soil, reducing the need for traditional fertilizer programmes.

- Large compost making capabilities have been introduced to make biochar from alien vegetation and fruit tree cuttings – this converts agricultural waste into a soil enhancer.
- Water saving strategies include removing invasive alien trees and plants, investing in conservation efficient irrigation systems for our vineyards and fruit trees, and using cover crops.

Below is a summary of agricultural activity on Boschendal Estate, comparing the year 2012 to 2016 to the future plans up to 2018.

	2012	2016	2018
<b>Vineyards</b>	120ha	130ha	150ha
<b>Fruit</b>	40ha	160ha	300ha
<b>Vegetables</b>	-	5ha	20ha
<b>Pastures</b>	50ha	300ha	300ha
<b>Nursery &amp; Trees</b>	-	-	10 000 trees + 30 000 plants
<b>Cattle</b>	200 head	700 head	1000 head
<b>Chicken Egg</b>	-	1000 birds	2000 birds
<b>Chicken Broilers</b>	-	1000 per month	2 000 per month
<b>Multispecies Protein</b>	-	30 head	300 head
<b>Game</b>	-	20 head	100 head

**Vineyards:** The quality of vineyards are being significantly improved. Vineyards will be increased from current 130ha to 150ha by 2018.

**Fruit Trees:** This is an area of significant investment. 120ha has been planted since 2013 with another 140ha planned by 2018. Fruit farming is to be undertaken as biologically as possible.

Fruit trees include plum, pear, apple and citrus. By 2018 the aim is to have 300ha of fruit consisting of:

- Plums 155ha
- Pears 50ha
- Apples 30ha
- Citrus 35ha
- Organic Lemons 20ha
- Olives 6ha
- Almond's-4ha

**Vegetables:** A 5ha food garden supplies the restaurant and farm shop with naturally produced garden produce. This food garden will be extended to 20ha by 2018.

**Pastures:** 300 hectares of pasture has been planted and is being used, in rotation, for the grazing of our pasture-raised beef and chicken.

**Cattle:** The Black Angus beef herd is being developed to not only produce meat for the restaurants on the estate, but also to be sold in retail. This is a grass fed herd and play an important role in promoting soil health and repair. Current herd size is 700 animals growing to 1000 in 2018.

**Eggs:** Five mobile chicken houses in the fields provide free-range eggs from pasture fed chickens. Currently, there are 1000 chickens with the intention of increasing this to 2000 by 2018.

**Broiler Chickens:** Pasture raised chickens play an important role in promoting soil health. In 2016 Boschendal started to raise free-range broiler chickens with the intention of slaughtering 2000 per month by 2018.

**Multi Species:** A mix of sheep, goats and pig are being used to manage vegetation growth. Currently, there is an experimental collection of 30 head extending to 300 in 2018.

**Game:** Boschendal is part of the Banhoek Conservancy and stocks an area on the Drakenstein side of Boschendal with game including Eland, Waterbuck and Sable. 20 heads were introduced in 2016 aiming to



increase to 100 by 2018.

It is clear from the above description that the Boschendal Estate is investing significantly into agricultural activities, by expanding existing activities and introducing new agricultural activities on the estate.

#### Hospitality

The hospitality component has involved the establishment of the new Werf Restaurant, which overlooks the vegetable garden, and the Deli and Farm Shop on Boschendal Farm. A new function venue, the Olive Press, has also been established on Boschendal Farm. A number of old farm workers cottages have been renovated to provide accommodation for guests. In addition, the Rhone Homestead Restaurant has been up-graded. A new picnic area has also been opened at the Rhone Werf area. The two wine tasting venues on the farm have also been up-graded. In addition, a bakery and butchery have been established to serve Boschendal's retail and hospitality requirements.

A series of new nature trails have also been developed on the farm that cater for hiking, running and mountain biking. Horse rides and horse drawn carriage rides around the farm have also been introduced. Boschendal has also entered into partnership with one of the local managers on the farm to rent mountain bikes out to visitors. The initiative currently involves 30 mountain bikes and has also created employment linked to servicing and repair of bikes.

#### Property Development (Planned)

The property development component involves the proposed Boschendal Village Mixed Use Development which is subject to the current EIA process. The mixed-use functions are aimed at allowing for both residential and commercial opportunity, providing the potential for economic expansion to the local economy and jobs closer to home. It is also envisaged that the village will become a major outlet and consumer of food being produced on the farm. In this regard the establishment of a farmers market and artisanal food production has potential to create opportunities for members from the surrounding community.

#### Local Community Initiatives

The current owners have embarked on a number of community initiatives. These include the establishment of a pre-school and aftercare facility in the Dwars River Valley. The aftercare facility will provide opportunities for supervised and development of life-skills through sport. A food nutrition programme using natural produce produced on the farm will be linked to these facilities and local schools in the area. Local produce from the farm will also be made available to the local residents in the valley. The establishment of the Rachelsfontein Centre on the farm, which will provide a space for staff and their families to relax and interact and will include a sports field, theatre, amphitheatre, meeting rooms, lecture hall, library, etc.

Boschendal, in partnership with Solms Delta, have also established an early child development centre on the farm. The school currently accommodates 60 school children ranging from age of 6 months to 5 years. The school currently employs 10 teachers.

The option of establishing some form of Agricultural College on the farm is also being considered. The option of linking the college with the Elsenburg Agricultural College is being investigated. The facility will create opportunities for members from the local community to get formal training in the field of agriculture in the form of a Farmers Apprentice School. A bursary programme for local workers and community members will also be established.

#### Skills development and training

The current owners have also embarked on an employee training and skills development programme. This programme is designed to provide employees with the necessary skills to further their careers both at Boschendal and in the broader economy.

During 2014 50 staff members were involved in a number of programmes ranging from level one first aid courses (12 staff), forklift driving course (5 staff), chain saw handling course (7 staff), driving licence (1 staff) and general people skills development (25 staff). The number of staff sent on training courses increase to 261 in 2015. This total included pruning course (24 staff), tractor maintenance (21 staff), Adult Basic Education and Training (ABET) in numeracy and literacy (40 staff), first aid (23 staff), firefighting (20 staff), wine advisors course (5 staff) and peoples skills development course (105 staff).

In addition to the above, hospitality focused training was implemented in 2015 which involved weekly programmes for 6 months. This training programme was linked to the newly established hospitality components, including the Deli, Werf Restaurant, Olive Press functions venue and La Rhone picnic and restaurant developments. The programme include training for management (16 staff), waiters (24 staff), housekeeping (19 staff), chefs (14 staff), security (15 staff), farm and vineyard workers (80 staff), wine tasting, reception and gift shop (19 staff). As part of the programme, 20 members from the local community participated in an intensive 2 week waiter course. Ten were offered permanent employment on Boschendal.

The new owners have also established a security company, Silver Mine Protection Services. The company is owned and run by two local HDI operators that used to work as security personnel on the farm. The company provide security on the farm and is also providing services to other customers in the area. The company currently employs 37 employees. As indicated above, a small egg business that is 70% owned by a local HDI from Stellenbosch, Integri Egg, has also been established. Boschendal provide the owner with land and buy eggs for the restaurants on the farm.

### **THE SITE (Figure 7)**

The site for the proposed village and associated infrastructure is located on Portion 7 Farm 1674 and Portion 10 Farm 1674. The water and sewer pipelines are located within the road reserve of the R310, Farm 1201/8, 1674/1, 1685/17, 1674/14, 1685/16 and 1685/15.

The site is partly surrounded to the south by the remainder of the Boschendal Estate, including the historic Boschendal homestead and werf, and associated vineyards. The Rhodes fruit canning factory is located immediately to the north of the site. The historical Meerlust and Lekkerwijn farmsteads, along with the Groot Drakenstein and Delta settlements, lie to the north of the R45, along with several other wine farms.

The area surrounding the site consists of an orthogonal pattern of agriculture, mainly vineyards and orchards, articulated in places by tree shelterbelts. Neighbouring land uses include the Rhodes Food Group Head Office, Rhodes food factory and a police station to the north of the site. A disused railway track roughly follows the alignment of the R45 Route to the north of the site.

The scenically striking Simonsberg and Drakenstein Mountains, their blocky cliffs formed by sandstones of the Table Mountain Group of rocks, form a visual backdrop to the site. The weathered Cape Granite forms the gently sloping foot slopes, while the site itself lies in the broad alluvial valley of the Dwars River.

The site slopes gently in a northeasterly direction towards the Dwars River to the east of the site. A belt of large Eucalyptus (gum) trees occurs in the southeast portion of the site providing a useful windbreak.

The current land uses and buildings within the application area include:

Portion 7 Farm 1674 – West of R310

- Dwelling houses – occupied by tenants
- Vacant land

Portion 10 Farm 1674 – East of R310

- Fruit Packing Facility (previously used as a saw mill but no chemicals were used at mill)
- Farm workers cottages (derelict and vacant)
- Clinic
- Farm school (no longer in operation)
- Farm packing shed
- Vacant land
- Pear Orchard

Refer to **Appendix C** for photographs of the site.

According to the Zoning Certificates received from the Stellenbosch Municipality, Portion 7 is zoned Agriculture Zone I in its entirety. Portion 10 is zoned primarily Agriculture Zone I with a spot zoning for Institutional Zone I (farm school) and Institutional III (health clinic) in terms of the Section 8 Zoning Scheme.

## ROADS

The surrounding road network of the proposed site is shown in **Figure 4** and described below:

- Helshoogte Road (R310) is a two-lane undivided road and is classified as Class 2 Primary Arterial.
- The R45 is a two-lane undivided road and is classified as Class 2 Primary Arterial.
- Minor Road 6/4 (New Oaks Access) is an unsurfaced Minor Road and is located 660m from the R45/Helshoogte T-Junction on Helshoogte Road (R310).
- Bien Donna Road is an unsurfaced Minor Road.
- Delta Road is a two-lane undivided Minor Road and a portion of the road situated north of the R45 is surfaced, whilst the section south of the R45 is unsurfaced.

### Road Network Upgrades

The R45 is currently being upgraded by the Western Cape Government (WCG), which includes the realignment of the R45 near the N1, landscaping and the construction of non-motorised transport (NMT) facilities. The extent of the upgrades, however, falls outside the study area of this report.

### Existing Access Spacing

Existing access points are located at the following distances from the R45 / Helshoogte Road (R310) T-Junction and are indicated on **Figure 4**:

1. At 66m (Rhodes Offices)
2. At 166m (Rhodes Factory and Police Station)
3. At 550m (Wood Place (farm access))
4. At 660m (New Oaks/Rhodes Fruit access)

The access points at 1, 2 and 3 above currently do not meet the minimum spacing requirements as stated in the Western Cape Government (WCG) *Access Management Guidelines 2016*. According to the guidelines, the minimum spacing requirement for an unsignalised access along a Class 2 Primary Arterial within a semi-rural development environment (<1000m<sup>2</sup> GFA/ha) is 305m.

## VISUAL SIGNIFICANCE

Boschendal, and numerous other historical farmsteads in the area, together with the vineyards, make this an important cultural landscape, nominated for World Heritage Site status. The Dwars River Valley has recently been gazetted by SAHRA as a provisional National Heritage Site.

The area relates to a major scenic and wine route network, with dramatic distant views towards the mountains, and numerous historical wine farms.

## SOILS AND GEOLOGY

The Geology of Boschendal Village consists mostly of Quaternary terrace gravel (with large sandstone pebbles) and younger alluvial soils on the eastern side that is currently cultivated with fruits.

The land of Boschendal Village can basically be divided into two useable units.

1. The rocky terraces with a low water retention capacity and low cation exchange capacity (CEC) (mostly as a result of the high rock percentage and sandy texture). This includes all the land forms on the site except for the Tukulu soils.
2. The younger organic, alluvial sandy-loam soils (Tukulu soils).

The Tukulu soils have a much higher agricultural potential than the rocky soils.

For more detail, refer to the Soil Study and Soil Map attached as **Appendix G8**.

## FRESHWATER SYSTEMS

The project site is located on the left bank of the Dwars River, with the boundary of the site coming, at its closest, to within approximately 200 m of the river.

Most of the site falls within the ecoregion known as the south western coastal belt, while a small portion of the site in the south-western corner lies within the southern folded mountains. The quaternary catchment is G10C in the Berg River Water Management Area. The site spans two sub-quaternary catchments.

The dominant freshwater ecosystem within the study area is the Dwars River, an important perennial tributary of the Berg River. This river is a foothill, cobble-bed system typical of the Fynbos Biome – instream habitat is typically riffle-run sequences with some pools and marginal vegetation. Water quality of the Dwars River is impacted by runoff from Pniel, farming activities (e.g. severe impacts at times as a result of runoff from the Boschendal piggery) and limited industrial activity in the area. During high flows, the Dwars River has high levels of phosphorus and total suspended solids, due to surface runoff from agricultural areas.

The underlying geology of the Dwars River Valley is dominated by granites of the Stellenbosch Pluton of the Cape Granite Suite, and the surrounding mountains comprise quartzitic Table Mountain Group sandstones. The bed of the Dwars River is made up of quartzite cobbles and boulders that have been carried down the valley by the river and its tributaries.

Most of the site has been heavily disturbed through agricultural activities (primarily orchards, now pears), road construction and use, housing, and small-scale industrial operations. Very little of the original vegetation remains on the site. There are several agricultural drains crossing the site, serving to channel surface water away from buildings and fields (see **Figure 8a**). Four wetlands were noted on site during the specialist's field visit. In addition, a wet area has been created through water leaking from a broken water pipe. The wetlands are associated with agricultural drains, roads and railway lines but most of them are likely to be remnants of more extensive wetland areas, which have been partially impacted by the surrounding activities.

**Wetlands 1 and 2** are located near the southeastern corner of the site, and are probably two parts of the same wetland, on either side of a dirt road bisecting this area (**Figure 8a**). The wetlands are both mono-specific stands of riverbed grass, *Pennisetum macrourum*. This species is an indicator of temporary to seasonal wetness, and is thus a wetland indicator. The soils in this wetland are sandy in texture and light grey in colour (hue of 10YR, a value of 7 and a chroma of 1 on the Munsell soil colour chart, thus indicating signs of wetness in the soil horizon) with some signs of a ferricrete base. A proportion of the Western Cape soils lack the usual signs of wetness displayed throughout South Africa, as recommended in the DWS guidelines for wetland and riparian zone delineation. These difficult soils are typically sandy, and of low chroma, or colour. The soils on this site fit this description (chroma of 1 – see above). In the absence of clear wetness indicators in the soil, the hydrology and vegetation of the area may present better indicators of wetland presence. In this case, the presence of *P. macrourum* confirms temporary to seasonal wetness.

**Wetland 3** is a small, isolated patch of *P. macrourum*, with similar soil conditions to Wetlands 1 and 2. This wetland occupies a slight indentation in the ground. Due to its isolation from an obvious surface water source and from wetlands 1 and 2 and its small size, it is difficult to ascertain whether this is a naturally occurring wetland, or one that was created as a result of excavations in the area.

**Wetland 4** is a linear wetland that is adjacent to the railway line. While this area may always have been seasonal wetland, the shape and location of the wetland area is probably influenced by the obstruction to subsurface and surface flow presented by the railway line, and the surrounding buildings. This wetland is also dominated by *P. macrourum*.

The **artificially wet area** in the middle of the site is a permanently wet area, close to a few houses. This wetland has been artificially created from a burst and leaking water pipe lying adjacent to the buildings. Vehicles crossing over the pipe have compacted the pipe, and water was been leaking here for some time, creating a perennially wet area. The patch is dominated by the bracken, *Pteridium aquilinum*, which is an indigenous but invasive species, growing in seasonally wet, sandy, well-drained soils. This artificially wet area is not considered to be of any ecological importance, and would drain away once the pipe is mended or removed.

Wetlands 1, 2 and 4 are hillslope seeps and wetland 3 an isolated depression. Given the soil type observed on site and the hydrogeomorphic wetland type noted here, it is most likely that the hillslope seep wetlands are fed naturally primarily by subsurface (i.e. interflow) water and groundwater, rather than surface water. The localised water table is higher in winter, pushing water to the surface and creating / sustaining seepage wetlands. This water daylight (surfaces) where there is a change in topography – this occurs along the outer edge of the Dwars River floodplain, i.e. the gentle surrounding slopes meet the flatter floodplain, and the subsurface water surfaces. Wetland 3 probably relies on rainfall as its water source.

Surface water draining into and through the wetlands by virtue of the agricultural channels will add to the subsurface water supply, but this is unlikely to sustain the wetlands through the dry summer months. The sandy soils are well-drained and dispersive, with considerable absorptive capacity, leading to the lack of natural surface channels, and occurrence of seep wetlands.

Five small watercourses and a number of agricultural and stormwater ditches will be impacted by the proposed bulk water and sewer pipelines that will run from Pniel to the site (**Figure 8b**).

The natural channels are all fairly modified from their natural state, due to the proximity of roads, houses, agricultural activities and infestations of acacias. Streams 1 - 3 have been channelled to a certain extent around agricultural fields and in one case (Stream 2 on **Figure 8b**), around a sports field. Stream 5 flows into an impoundment above Pniel, and Stream 4 flows for a short distance above Pniel, disappearing into the village below (probably into pipes, but this was not confirmed). The riparian vegetation is dominated by kikuyu grass, with some reeds (*Phragmites australis*), bulrush (*Typha capensis*) sedges, grasses (mainly *Pennisetum macrourum*) and arum lilies. *Seersia angustifolia* (willow karee) also occurs in clumps in the riparian zone. The channels are generally between 2 and 5 m wide, with gently sloping banks and sandy beds. Where these watercourses cross under the Helshoogte Road, they are carried in pipes under the road, continuing along either natural or artificial channels on the southern side of the road.

## VEGETATION

Historically, the underlying vegetation type would have been Swartland Alluvium Fynbos, which is Critically Endangered on a national basis.

However, the entire area is either developed, cultivated or heavily disturbed, and any natural vegetation present is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern.

The few small, seasonal wetlands are secondary in nature, and support no plant species of any conservation significance. Indigenous species recorded in these patches are mainly *Pennisetum macrourum* (fonteingras) and *Searsia angustifolia* (smalblaar). Indigenous species noted in the dryland areas include *Stoebe plumosa* (slangbos), *Anthospermum spathulatum*, *Passerina corymbosa* (gonna) and *Thesium* sp.

No plants Species of Conservation Concern were recorded and none are likely to occur here.

## HISTORICAL CONTEXT

The farm Boschendal was first granted to Jean le Long in 1685. Title deeds issued a few years later indicate 'Boschendal A' being issued to Nicolaas de Lanoy in 1690 and 'Boschendal B' being issued to Jean Le Long in 1713. These two farms joined circa 1710 when they were both acquired by Abraham de Villiers. Boschendal remained in the ownership of the de Villiers family until 1879.

In 1717 Abraham de Villiers sold Boschendal to his brother Jacob, who subsequently sold it to his son Jan in 1738. It was during 1717 and 1738 that the first buildings were probably erected on Boschendal. Jan's widow sold the property to their son Paul in 1807. Extensive improvements were made to the werf between 1738 and 1807. The early 19th century was associated with a period of agricultural prosperity in the wine industry at the Cape. It was during this period that many of the architectural set pieces of the Valley were established including Boschendal. The present homestead was constructed in circa 1818 incorporating the foundations of an earlier dwelling. Paul de Villiers owned the property until 1840, when the property was transferred to his sons Jan Jacobus and Hendrik Francois.

In 1886 the outbreak of phylloxera virtually destroyed all the Cape vineyards, leaving many farmers bankrupt and the Cape economy in ruin. Boschendal was one of twenty-six farms in the Drakenstein Valley to be acquired by Cecil John Rhodes from 1897 and consolidated into an innovative agricultural scheme, the Rhodes Fruit Farms (RFF). Rhodes instructed his agents to give preference to those farms with examples of Cape Dutch homesteads and set aside substantial sums for their maintenance. The historic homesteads such as Boschendal, Good Hope and Rhone became RFF managerial residences. RFF was initially established as an experimental and training centre for the development of the Cape fruit industry and was soon to become the centre of a thriving industry. HEV Pickstone was the originator of the scheme. He managed the consolidated agricultural group until 1905 and was regarded as one of the pioneers of the export fruit and dried fruit industries.

The early 20th century valley landscape was characterized by a dramatic shift from wine farming to fruit farming with extensive orchards and windbreaks being planted. It was also associated with the introduction of corporate farming methods and new employment opportunities resulting from the growth and diversification of the fruit industries. This necessitated the construction of new farm managers' and workers' houses. It was during this period that the intersection of the R45 and R310 started developing into an agro-industrial node facilitated by the construction of the railway line between Paarl and Franschhoek in 1904 and the establishment of a railway station at Groot Drakenstein. A cannery was built in 1903 and a jam factory in 1906. The offices of RFF were also established here. None of these earlier factory buildings remain.

De Beers took over RFF in 1925. In 1937 De Beers sold RFF to Abe Bailey and, after his death in 1940, a syndicate of business interests acquired RFF and they owned and developed it for the next 28 years. Jack Manning was appointed Managing Director in 1949. It was under his management during the 1950s and 1960s that massive expansions and improvements were undertaken – new dams and irrigation doubled the productive agricultural area, the factory precinct was enlarged including the construction of a saw-mill and a new cannery to the west of the R310, new workers' housing was built, transport was mechanized and refrigeration technology was improved. The export markets boomed and by 1968 RFF employed hundreds of people and produced and packaged large scale export crops.

It was during this mid-20th century period that the cottages parallel to the railway line, the packshed and pallet factory building were built and the Uilkraal cottages and school were built for black employees. It was also during this period that the first suburban houses at "Cannery Row" were constructed to accommodate white employees.

In 1969 Anglo American and de Beers purchased RFF to become Amfarms for the next 31 years. In 1976 the Boschendal homestead, outbuildings and gardens were restored/renovated to their 19th century appearance by Gabriel and Gwen Fagan. The northern entrance to the front of Boschendal homestead was made redundant by the reinstatement/reinforcement of the southern access situated on axis with the homestead. The Boschendal werf was declared a national monument in 1979 (now a provincial heritage site). In the late 1970s it was established as a museum/tourism/restaurant facility, one of the first establishments of its kind within the context of the Cape Winelands.

In 1998 Amfarms decided to dispose of its landholdings in the Dwars River Valley. In 2003 a consortium of investors (Boschendal Ltd) purchased 2242 hectares of these landholdings. A large portion of the factory precinct including the cannery to the west of the R310 and the factory buildings to the north of the site between the R45 and the railway line were acquired by Rhodes Food Group. By the time that Boschendal landholdings were sold, black and coloured employees of Amfarms then were living on Boschendal landholdings had been relocated to Lanquedoc and numerous workers' cottages including the Uilkraal cottages have been unoccupied since.

Significant shifts in landscape and settlement patterns within the Valley over time have included the following:

- A pre-colonial landscape with archaeological remains dating to the Earlier, Middle and Later Stone Ages having been recorded in the Cape Winelands, and after 2000 years ago part of the transhumance pattern of Khoekoen pastoralists. Archaeological evidence in the form of stone tools and the remains of circular structures dating to about 2000 years ago have been located in close proximity to the Solms Delta homestead.
- An early colonial landscape associated with first permanent colonial settlement during the late 17<sup>th</sup> century when land in Drakenstein was granted to French protestant refugees alongside Dutch and German settlers, and Free Blacks during the late 17<sup>th</sup> century with the primary purpose of supplying agricultural produce for

the VOC refreshment station in Table Bay. A mixed use of agriculture was established and this endured with production emphasis becoming wine based during the 18<sup>th</sup> and 19<sup>th</sup> centuries, fruit based during the early 20<sup>th</sup> century and wine based during the later 20<sup>th</sup> century onwards. Despite resistance from the Khoekoen, by the early 18<sup>th</sup> century colonial settlement had destroyed traditional mobility of the Khoekoen population and their decimation was hastened by the indentured labour system and disease.

- The 18<sup>th</sup> and early 19<sup>th</sup> century colonial landscape associated with the emerging rural gentry, the building and expansion of farmsteads (e.g. Boschendal, Rhone and Good Hope) and the central role of slavery and indigenous labour in farm production. Also associated with emerging Cape vernacular and later classic Cape Dutch makeovers in the 1780s to 1820s which extended into the British period.
- The 19<sup>th</sup> century (first half) landscape characterized by a rural gentry and syncretic Dutch Cape and British trade and farming practices, slave emancipation, segregation and labour management. The introduction of the quitrent land grant system resulting in substantially enlarged landholdings and effectively removing common arable and grazing land between them. It was during this period that the mission settlement of Pniel was established in 1843 mainly to accommodate freed slaves.
- The 19<sup>th</sup> century (second half) landscape characterized by mineral exploitation in the interior and the consolidation of British colonial interests at the Cape including the development of the harbor and railway line, and the decline in the wine industry and agricultural economy. It is associated with the devastating impact of phylloxera on the agricultural economy of the region when many of the farmsteads fell into serious disrepair. It was during late 19<sup>th</sup> century that 26 farms in the Valley were consolidated into Rhodes Fruit Farms.
- The 20<sup>th</sup> century (first half) landscape characterized by the Union of South Africa, Cape Revival movement and a rising corporatism. It is associated with the development of the fruit industry in the Valley, new workers' housing, railway infrastructure and improvements to the road network. It was during the late 19<sup>th</sup> and early 20<sup>th</sup> century that the settlements of Johannesdal and Kylemore were established and the Baker designed Lanquedoc village was built to accommodate RFF employees. It was during this period that agro-processing facilities were constructed at the intersection of the R310 and R45, significantly expanded in the mid-20<sup>th</sup> century.
- The 20<sup>th</sup> century (second half) landscape characterized by apartheid, the migrant labour system and massive expansions and improvements in infrastructure. It was during this period that Pniel, Lanquedoc, Kylemore and Johannesdal were declared "coloured areas", various clusters of farm workers' cottages were built and Thembaletu Hostel was built to the east of the Dwars River to accommodate black migrant workers employed on Amfarms. These settlements emerged with different origins and largely distinctive communities and have strong historical ties with the old Rhodes Fruit Farms/ Amfarms Boschendal farms.
- The 21<sup>st</sup> century landscape characterized by increasing corporate branding, tourism, a shift to democracy, and change in institutional ownership. Between 2003 and 2005 about 3000 employees and their families living on Boschendal landholdings were relocated to a large new extension of Lanquedoc called "New Lanquedoc".

## HERITAGE RESOURCES

The site is located within a Grade I landscape. It is located within the Dwars River Valley which is an integral component of this landscape and is of outstanding heritage value in terms of the following:

- It is highly representative of the Cape Winelands Cultural Landscape in terms of the visual dominance of a productive agricultural landscape, dramatic mountain-valley setting, its collection of historical farm werfs, cottages and villages, and pattern of historical tree alignments.
- It reflects a pattern of early colonial settlement and expansion during the late 17<sup>th</sup> and 18<sup>th</sup> centuries with an emphasis on agricultural production concentrated in the well-watered fertile valleys.
- It has played a key role in the history of the fruit industry with the establishment of Rhodes Fruit Farms and its association with important figures in the development of the export fruit industry at the turn of the 20<sup>th</sup> century.
- It has the strong presence of a major corporate institution (Rhodes Fruit Farms-Amfarms) spanning more than a century and its associated impacts on the landscape in terms of farming methods, infrastructure, built form, patterns of labour and institutional memory.
- It has a concentration of highly important heritage places with Boschendal and Rhone and their landscape settings providing a pivotal set piece within the valley system. Its rich architectural and settlement history reflects the evolution of the Cape farm werf tradition from the 18<sup>th</sup> century, the influence of the Arts and Crafts Movement and the work of one of South Africa's foremost architects, Herbert Baker.
- It also reflects a range of built form and settlement typologies, e.g. farm werfs, managerial residences, farm

cottages, planned labourer's villages (Lanquedoc and Thembaletu hostel) and mission settlement (Pniel).

- It has a distinctive and legible pattern of agricultural settlement which has evolved in response to fertile soils, water availability and movement routes, and has resulted in a pattern of farm werfs strung out along the Dwars and Berg Rivers. The riverine corridor contributes significantly to the setting and provides strong edge conditions to heritage places, e.g. Rhone and Boschendal.
- It has a strong relationship with a regional scenic route network, e.g. the R310, and variation of views ranging from dramatic distant views towards the mountains and focused views on landmark buildings, e.g. Boschendal.
- It reflects the history of farm labour, i.e. slavery, indentured labour, wage labour, migrant labour, and related shifts from a feudal to a corporate to a democratic order. Its community has worked and inhabited the landscape for generations resulting in strong linkages between place and social identity.

The site is situated at a regional gateway at the intersection of the R45 and R310 and the junction of two valley systems, namely the Dwars River and Berg River Valleys. The R45 and R310 form a major part of a regional scenic and tourism route network.

The site is situated on the northern boundary of a highly significant historical precinct incorporating the farm werfs of Boschendal and Rhone and their agricultural frames, as well as the R310 scenic corridor and the Dwars River corridor. The werf is a PHS and is of outstanding heritage value, one of the most iconic farm werfs within the Cape Winelands. It is worthy of Grade I heritage status in terms of its historical, architectural, social and aesthetic value. Of particular value at a precinct scale is the prominent landmark status of the Boschendal homestead along the R310 scenic route with dominant views towards the homestead within a vineyard setting and the Drakenstein Mountains beyond. Also of value are views from the Boschendal homestead looking across vineyards and the development site, towards Wemmershoek Mountains beyond.

The site is largely vacant, derelict and lacks visual amenity.

A number of buildings situated on the site are associated with the history of Rhodes Fruit Farms and the development of the fruit industry during the mid-20th century. However, the primary buildings associated with this history of food (fruit) processing are located off the site to the north and north-west. None of the buildings on the site are worthy of formal protection in terms of the NHRA.

## **ARCHAEOLOGICAL BACKGROUND**

The Dwars River Valley has been occupied since the Early Stone Age (ESA). Artefacts have been found in the area, especially along river terraces. The first identification of ESA stone artefacts was made along the Eerste River in Stellenbosch, and the tool types (hand axes and clevers) were denoted as the 'Stellenbosch Culture'. Kaplan (2005) reported ESA artefacts on the Boschendal property, found amongst the vineyard rows and in the piles of rocks cleared from the vineyards. Likewise he found artefacts on other farms in the area, in similar situations. This demonstrates that highly transformed nature of the area (through agriculture), and that ESA artefacts are not known to be found *in situ*.

Evidence of Middle and Later Stone Age activity is less common, but artefacts have been found in the Paarl/Stellenbosch area and at Solms Delta. It is also known that Khoisan people used the area. By 2000 BP the Khoi pastoralists, the Cochoqua, kept a principal cattle kraal close to Paardeberg, north of Paarl. It is not unlikely that they would have moved their cattle along the Berg River close to the study area, however, no evidence is as of yet documented.

The Dwars river valley and the surrounding Paarl/Stellenbosch area are rich with colonial archaeology. ACO Associates have concluded a number of studies in the area including on the nearby Boschendal farms Bethlehem and the Founders Estate.

The footprint of the proposed development is not archaeologically sensitive. This is due largely in part to transformation through cultivation of fruit trees in the past, habitation and infrastructure such as tracks. There was no clear evidence of Early of Middle Stone Age occupation, nor was any archaeological material encountered. There is also no historical archaeology present on these sections of the Boschendal Estate.



## **SOCIO-ECONOMIC CHARACTERISTICS**

The proposed Boschendal Village Mixed Use Development is located within the Stellenbosch Local Municipality (SLM), which is one of five local municipalities that make up the Cape Winelands District Municipality (CWDM). The SLM is comprised of 22 Wards. The Boschendal site falls within Ward 3.

The SLM's historic settlement pattern evolved around major roads and watercourses in what is one of South-Africa's oldest and most important farming areas, and still the undisputed centre of gravity of the South African wine industry. Stellenbosch (~77 500) is the only major town in the LM, followed by Franschhoek (~15 500). After Cape Town, Stellenbosch is the second oldest settlement in South Africa (1679). Franschhoek is significantly younger, and was only formally developed in 1860 on farming land occupied by French Huguenots in the Franschhoek Valley since around the 1680s. Stellenbosch and Franschhoek are well-developed and thriving towns and that attract both local and international tourists.

Smaller Stellenbosch LM settlements include Klipmuts, Koelenhof, Kylemore, Pniel/ Johannesdal, Lanquedoc, Raithby, Jamestown, and Vlothenburg. For the most part the smaller settlements are largely residential ("dormitory") settlements with little supporting retail, commerce or private sector services.

### **Dwars River Communities**

The Dwars River Valley includes the Groot Drakenstein area. A number of settlements are located in the Dwars River study area. In terms of proximity to the Boschendal site, these are Meerlust, located ~ 500m to the north-west, Pniel, located ~ 800m to the south, and Lanquedoc and Kylemore, located ~ 1.5 km and 3.6 km to the south-east respectively. The small settlement of Simondium, which is located in the Drakenstein LM, is located along the R45, approximately 2.8 km north-west of the Boschendal site. These settlements have different origins and largely distinctive communities and have strong historic ties with the old Rhodes Fruit Farms/ Amfarms Boschendal farms.

### **Dwars River Public Services**

#### Schools

A number of prestigious secondary schools are located within a 20 km radius of the study area. These include Paul Roos Gymnasium, Stellenbosch High, Rhenish, and Bloemhof Girls High in Stellenbosch, and Paarl Boys High, Paarl Gimnasium and La Rochelle in the Paarl. Closer to the Dwars River study area, Bridge House (located along the R45 en route to Franschhoek) offers private education from Grade 00 to 12 for day learners and boarders. Bridge House has a capacity to accommodate approximately 650 learners.

Due to high school fees and the lack of public transport, schools outside the Dwars River area are essentially only accessible to middle class families with access to private transport. Two Primary Schools, namely Pniel Primary and PC Petersen Primary (Kylemore), and one Secondary School, Kylemore High, are located in the Dwars River area, while two primary schools are located in Simondium, one of which a private school. Based on the information collected during the study local schools are all filled beyond capacity. All have limited sport infrastructure, largely limited to netball courts. Municipal and club facilities in Pniel and Kylemore are used for rugby and cricket. None of the schools have access to a swimming pool.

Subsidised transport is available to children attending PC Petersen and Kylemore High. Learners living in Kylemore typically walk to school. No subsidised transport is available to Pniel Primary and the majority of children walk to school. Lanquedoc is located within the 2 km maximum walking distance radius prescribed for primary level learners by the WC Department of Education. Meerlust is also located less than 2km from Simondium Primary.

Of specific relevance to the study approximately 30% of the pupils in the Dwars River rely on school feeding schemes at the three Dwars River schools. Headmasters interviewed in 2009 indicated that the feeding scheme meals often constituted the only decent meal of the day for many learners. High poverty levels and very limited involvement from the parent body were identified as key challenges.

#### Public health

Most households from the study area communities rely exclusively on public health care facilities. The Pniel community is the only one to make significant use of private general practitioners. The Dwars River area falls under the Stellenbosch Health District (Western Cape Department of Health (WCDoH) and is served by two

municipal clinics, one located in Kylemore and one along the R310 ("RFF Clinic"). A third clinic, located in Simondium (Paarl Health District), also serves the study area (mainly Meerlust). The Simondium and RFF clinics are located approximately 3 km apart. A mobile clinic service is operated from the RFF clinic. Stellenbosch Hospital serves as reference hospital. An ambulance service, based in Stellenbosch is available.

Of the study area communities, Lanquedoc has the greatest need for clinic services. The community has high levels of HIV and the highest level of TB incidence in the Stellenbosch Health District. However, Lanquedoc has proved very difficult to service due to the lack of suitable premises with secure facilities for accommodating a burglar-proof dispensary. At present, health officials consider servicing the community from a mobile clinic the most feasible option (Johnson, pers. comm). As elsewhere in the Boland the lack of sufficient access to public drug and alcohol-rehabilitation facilities and aftercare facilities is a major issue. At present, facilities in the Stellenbosch LM are limited to Abba (outreach) in Stellenbosch, and Heskith King (alcoholism treatment) at Koelenhof.

#### Public transport

No public transport facilities are currently available to the study area communities. Most people rely on minibus-taxis or lifts to access services and opportunities in the nearby towns. From the R45-R310 intersection, the towns of Paarl, Franschhoek and Stellenbosch are approximately equidistant (viz. 15 km). Pniel and Kylemore favor Stellenbosch as primary destination, while Lanquedoc and Meerlust prefer Paarl.

The study area is roughly split into the following minibus routes:

- T-junction to and from Franschhoek or Paarl;
- T-junction to and from Lanquedoc/ Die Werf (Pniel);
- Die Werf to and from Stellenbosch via Pniel/ Johannesdal and Kylemore.

No taxi-ranks or formalised taxi ranks are located in the study area settlements. The partially tree-shaded Pniel "Werf" serves as a collection point and convenient relay station for operators. Apart from "die Werf", minibuses have no fixed stops. The lack of a direct link between Lanquedoc and Kylemore means that people have to travel via the R310 and "die Werf". All taxi movement sticks to the tarred roads in the study area.

#### Community safety

The study area is served by one police station, namely Groot Drakenstein. The facility is located along the R310, approximately 300 m south of the T-junction with the R45. The facility and land belongs to the state (Department of Police). The station serves a relatively confined area, namely the area to the north of the Helshoogte Pass, west of Simonsberg, east of the Groot Drakenstein Mountains, and south of the Berg River. The station has a staff of 41, inclusive of administrative staff, and 13 vehicles. The station is currently waiting for additional new vehicles.

Three neighbourhood watch bodies, namely one each for Kylemore, Lanquedoc and Pniel, are currently active. All three bodies are represented on the Groot Drakenstein Policing Forum. A number of local area farms subscribe to private security companies.

Interviewees described Pniel/ Johannesdal as very safe, with Kylemore less so, and Lanquedoc the least safe. Lanquedoc only became a crime hotspot after the establishment of "New Lanquedoc". Meerlust is a small and intimate community, and crime levels are consequently low. The Drakenstein policing area is described as a "low risk policing area". Serious and organized crime is limited. Most property crime takes place in winter, when employment opportunities in local agriculture and at the RFF factory are scarce. As elsewhere in the Western Cape, drug-related crime is on the increase, with especially "tik"-abuse a major issue.

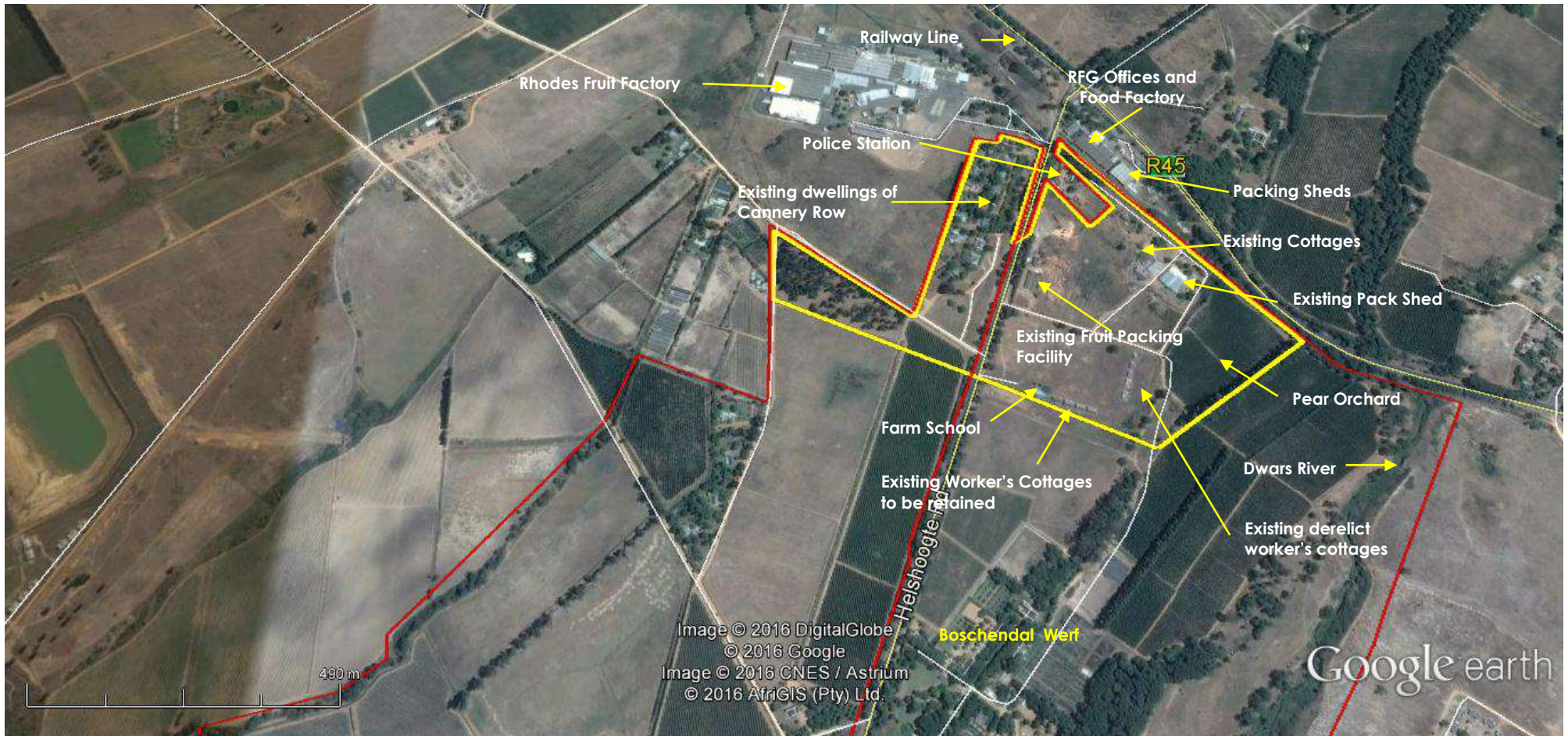


Figure 7: The Site and Surrounds

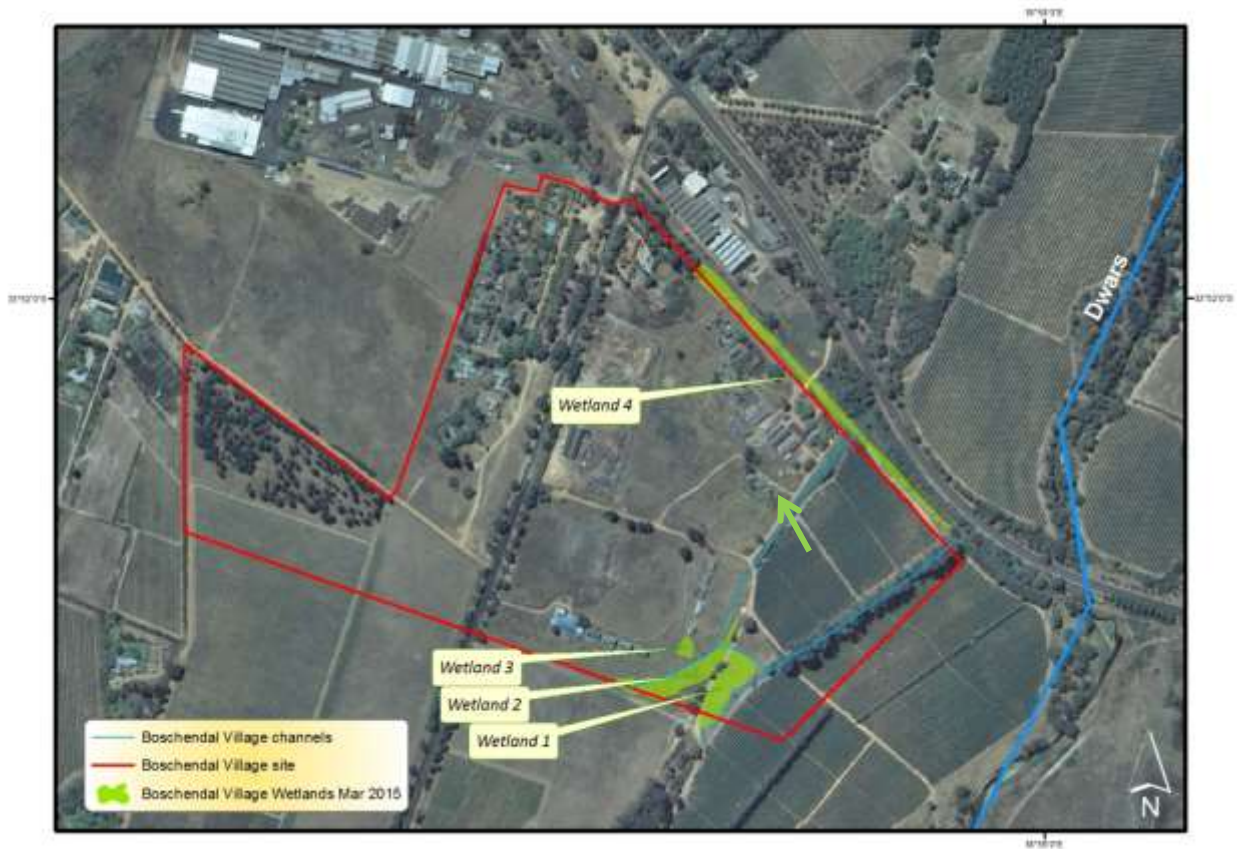


Figure 8a: The site (red boundary) that was assessed with the wetlands (green polygons) and channels (blue lines). A green arrow shows the wet area associated with a broken water pipe. The Dwars River lies to the east of the site.

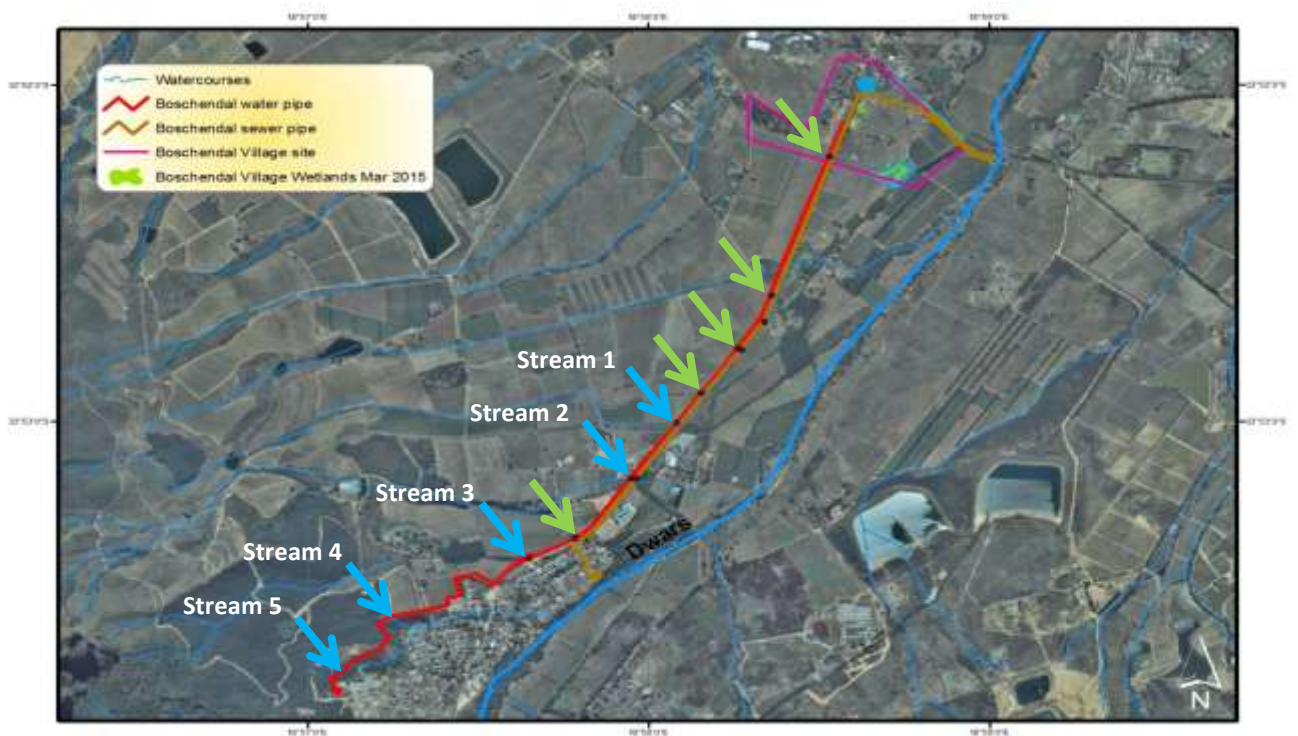


Figure 8b: Proposed routes for the bulk water and sewer pipes required for the development, showing the location of natural watercourses (blue arrows) and drainage ditches (green arrows) along the routes.

(b) Please provide a location map (see below) as **Appendix A** to this report which shows the location of the property and the location of the activity on the property; as well as a site map (see below) as **Appendix B** to this report; and if applicable all alternative properties and locations.

Locality map ( <b>Appendix A</b> ):	The scale of the locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: <ul style="list-style-type: none"> <li>• an accurate indication of the project site position as well as the positions of the alternative sites, if any;</li> <li>• road names or numbers of all the major roads as well as the roads that provide access to the site(s)</li> <li>• a north arrow;</li> <li>• a legend;</li> <li>• the prevailing wind direction (during November to April and during May to October); and</li> <li>• GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).</li> </ul>
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Site Plan ( <b>Appendix B</b> ):	Detailed site plan(s) must be prepared for each alternative site or alternative activity. The site plan must contain or conform to the following: <ul style="list-style-type: none"> <li>• The detailed site plan must be at a scale preferably at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan.</li> <li>• The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.</li> <li>• The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan.</li> <li>• The position of each element of the application as well as any other structures on the site must be indicated on the site plan.</li> <li>• Services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development must be indicated on the site plan.</li> <li>• Servitudes indicating the purpose of the servitude must be indicated on the site plan.</li> <li>• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):                         <ul style="list-style-type: none"> <li>○ Rivers.</li> <li>○ Flood lines (i.e. 1:10, 1:50, year and 32 meter set back line from the banks of a river/stream).</li> <li>○ Ridges.</li> <li>○ Cultural and historical features.</li> <li>○ Areas with indigenous vegetation (even if it is degraded or infested with alien species).</li> </ul> </li> <li>• Whenever the slope of the site exceeds 1:10, then a contour map of the site must be submitted.</li> </ul>
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(c) For a linear activity, please also provide a description of the route. **N/A**

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Indicate the position of the activity using the latitude and longitude of the centre point of the site. The co-ordinates must be in degrees, minutes and seconds. The minutes should be given to 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.	<b>Latitude (S):</b>			<b>Longitude (E):</b>		
	33°	52'	26.62"	18°	58'	24.33"

(d) or: **N/A**

For linear activities:	<b>Latitude (S):</b>			<b>Longitude (E):</b>		
• Starting point of the activity	°	'	"	°	'	"
• Middle point of the activity	°	'	"	°	'	"
• End point of the activity	°	'	"	°	'	"

**Please Note:** For linear activities that are longer than 500m, please provide and addendum with co-ordinates taken every 100 meters along the route.

## 5. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken of the site and from the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached as **Appendix C** to this report. It should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

## SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

### Site/Area Description

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

#### 1. GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

Flat	Flatter than 1:10	1:10—1:4	Steeper than 1:4
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#### 2. LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box(es)).

Ridgeline	Plateau	Side-slope-of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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(b) Please provide a description of the location in the landscape.

The site slopes gently in a northeasterly direction towards the Dwars River some 200m to the east of the site.

The Simonsberg and Drakenstein Mountains surround the site at a distance.

#### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

Shallow water table (less than 1.5m deep)	YES	NO	UNSURE
Seasonally wet soils (often close to water bodies)	YES	NO	UNSURE
Unstable rocky slopes or steep slopes with loose soil	YES	NO	UNSURE
Dispersive soils (soils that dissolve in water)	YES	NO	UNSURE
Soils with high clay content	YES	NO	UNSURE
Any other unstable soil or geological feature	YES	NO	UNSURE
An area sensitive to erosion	YES	NO	UNSURE
An area adjacent to or above an aquifer.	YES	NO	UNSURE
An area within 100m of the source of surface water	YES	NO	UNSURE

(b) If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department. (Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Please indicate the type of geological formation underlying the site.

Granite	Shale	Sandstone	Quartzite	Dolomite	Dolorite	Other (describe)
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Please provide a description.

The geology of Boschendal Village consists mostly of Quaternary terrace gravel (with large sandstone pebbles) and younger alluvial soils on the eastern side that is currently cultivated with fruits.

**4. SURFACE WATER**

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

(b) Please provide a description.

The following information has been provided by the Freshwater Ecologist.

The Dwars River is located roughly 200m from the proposed development. The Dwars River is an important perennial tributary of the Berg River. This river is a foothill, cobble-bed system typical of the Fynbos Biome – instream habitat is typically riffle-run sequences with some pools and marginal vegetation. See **Figure 7**.

Four wetlands are found on site as well as an artificially wet area. Wetlands 1 and 2 are located near the southeastern corner of the site, and are probably two parts of the same wetland, on either side of a dirt road bisecting this area (**Figure 8a**). The presence of *P. macrourum* confirms temporary to seasonal wetness.

Wetland 3 is a small, isolated patch of *P. macrourum*, with similar soil conditions to Wetlands 1 and 2. This wetland occupies a slight indentation in the ground. Due to its isolation from an obvious surface water source and from wetlands 1 and 2 and its small size, it is difficult to ascertain whether this is a naturally occurring wetland, or one that was created as a result of excavations in the area.

Wetland 4 is a linear wetland that is adjacent to the railway line. While this area may always have been seasonal wetland, the shape and location of the wetland area is probably influenced by the obstruction to subsurface and surface flow presented by the railway line, and the surrounding buildings. This wetland is also dominated by *P. macrourum*.

The artificially wet area in the middle of the site is a permanently wet area, close to a few houses. This wetland has been artificially created from a burst and leaking water pipe lying adjacent to the buildings. This artificially wet area is not considered to be of any ecological importance, and would drain away once the pipe is mended or removed.

Wetlands 1, 2 and 4 are hillslope seeps and wetland 3 an isolated depression. Given the soil type observed on site and the hydrogeomorphic wetland type noted here, it is most likely that the hillslope seep wetlands are fed naturally primarily by subsurface (i.e. interflow) water and groundwater, rather than surface water. The localised water table is higher in winter, pushing water to the surface and creating / sustaining seepage wetlands. This water daylights (surfaces) where there is a change in topography – this occurs along the outer edge of the Dwars River floodplain, i.e. the gentle surrounding slopes meet the flatter floodplain, and the subsurface water surfaces. Wetland 3 probably relies on rainfall as its water source.

Five small watercourses and a number of agricultural and stormwater ditches will be impacted by the proposed bulk water and sewer pipelines that will run from Pniel to the site (**Figure 8b**). The natural channels are all fairly modified from their natural state, due to the proximity of roads, houses, agricultural activities and infestations of acacias. Streams 1 - 3 have been channelled to a certain extent around agricultural fields and in one case (Stream 2), around a sports field. Stream 5 flows into an impoundment above Pniel, and Stream 4 flows for a short distance above Pniel, disappearing into the village below. The riparian vegetation is dominated by kikuyu grass, with some reeds (*Phragmites australis*), bulrush (*Typha capensis*) sedges, grasses (mainly *Pennisetum macrourum*) and arum lilies. *Seersia angustifolia* (willow karee) also occurs in clumps in the riparian zone. The channels are generally between 2 and 5 m wide, with gently sloping banks and sandy beds. Where these watercourses cross under the Helshoogte Road, they are carried in pipes under the road, continuing along either natural or artificial channels on the southern side of the road.

**5. BIODIVERSITY**

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	<p>A map of critical biodiversity areas (CBAs) was developed for the Drakenstein Municipality. This map identifies the Dwars River as a CBA and ESA. The Dwars River is located 200m from the site. Some services for the proposed development will be located near the river.</p> <p>A small portion of a minor CBA is located on the western boundary of the site and southern portion of the site. The purpose of these CBAs are unclear as it is located across existing agricultural land. The portion of the CBA that is located on the western boundary of the site is covered in alien trees and grass. The CBA on the southern portion of the site is covered in grass. Loss of these small CBAs will have no significant impact.</p> <p>The site has been investigated and assessed by a Freshwater Specialist and Botanist.</p> <p>ESAs are located across portions of the site. These areas are disturbed and transformed land with the exception of the wetlands found on site. These wetlands have been investigated and assessed as part of this application.</p> <p>Refer to <b>Appendix D</b>.</p>

(b) Highlight and describe the habitat condition on site.

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes etc).
Natural	0%	No natural areas remain on site.
Near Natural (includes areas with low to moderate level of alien invasive plants)	5%	Any natural vegetation present on site is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern.
Degraded (includes areas heavily invaded by alien plants)	15%	Most of the site has been disturbed with some alien vegetation occurring in these areas. There are also gum trees on site.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	80%	The site consists of existing dwellings and a pallet factory which is now being used as a fruit packing facility. The remainder of the site is either cultivated or heavily disturbed by past agricultural practises and road construction.

(c) Complete the table to indicate:  
 (i) the type of vegetation, including its ecosystem status, present on the site; and  
 (ii) whether an aquatic ecosystem is present on site.



Terrestrial Ecosystems		Aquatic Ecosystems						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary			Coastline		
	Endangered							
	Vulnerable							
	Least Threatened							
		YES	NO	UNSURE	YES	NO	YES	NO

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

**VEGETATION**

Historically the site would have been covered in Swartland Alluvium Fynbos, which is Critically Endangered on a national basis. However, the entire site has been developed, cultivated or heavily disturbed and any natural vegetation present is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern.

According to the botanist, the few small, seasonal wetlands are secondary in nature, and support no plant species of any conservation significance. Indigenous species recorded in these patches are mainly *Pennisetum macrourum* (fonteingras) and *Searsia angustifolia* (smalblaar). Indigenous species noted in the dryland areas include *Stoebe plumosa* (slangbos), *Anthospermum spathulatum*, *Passerina corymbosa* (gonna) and *Thesium* sp. See **Figure 9**.

No plants Species of Conservation Concern were recorded and none are likely to occur here.

In terms of the proposed new water and sewer pipelines, the route is unlikely to disturb any patches of intact, significant natural vegetation, and 98% of the route in fact passes through road reserve, dense alien vegetation or agricultural land of no conservation value. The remaining 2% of the route passes through heavily degraded Boland Granite Fynbos of Medium sensitivity. Overall botanical impacts of the construction phase of this aspect of the project are likely to be Low negative, even prior to mitigation.

No specific mitigation is required, other than replacement of the topsoil as soon as possible after pipeline completion.

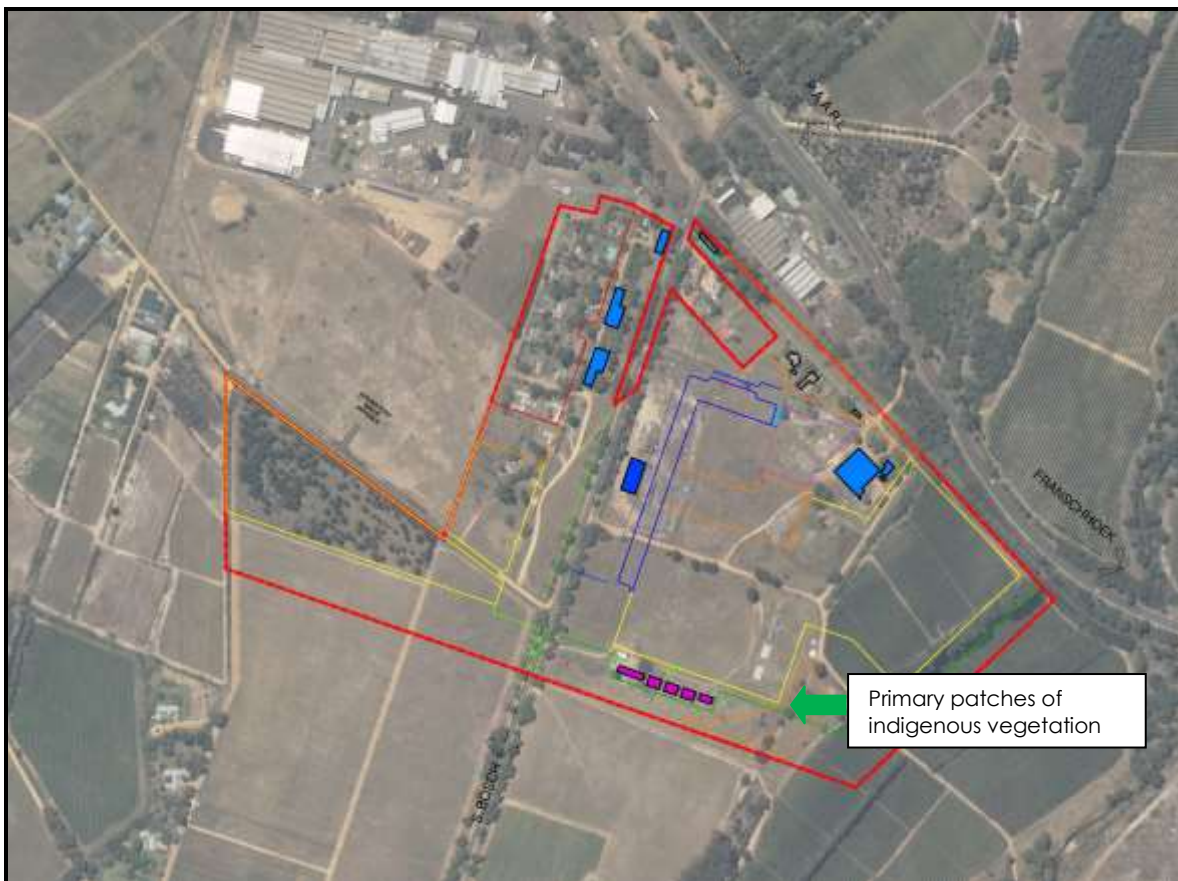


Figure 9: Primary patch of indigenous vegetation outlined in orange (with green arrow) found on Site.

Refer to **Appendix G9**.

## **FRESHWATER SYSTEMS ON SITE**

As mentioned above, there are four wetlands on site and the Dwars River is located 200m from the site.

### **WETLANDS**

#### **Present Ecological Status (PES) and Ecological Importance and Sensitivity**

The four wetlands are similar in terms of their vegetation and soils. Their overall condition varies, mostly due to variations in the impacts associated with altered hydrology and geomorphology. This is mainly due to:

- Presence of channels draining into and out of the wetlands, which alter surface hydrology.
- Presence of roads, a railway line, berms, and other areas of infilling, which are obstacles to the flow of surface and subsurface water, leading to changes in the way water accumulates on the surface, and thus the extent and seasonality of the wetlands.

In terms of ecological importance and sensitivity, all of the wetlands provide some wetland habitat, even if this is limited in diversity. Wetlands 1 and 2 together provide the least disturbed habitat, and thus may be important for feeding or breeding of some faunal species. However, their small size limits this benefit. Wetland 3 is isolated and of very limited ecological value – this wetland may have been artificially created. Wetland 4 currently provides important stormwater management services, and this service could be improved within the proposed development footprint.

One of the important values of the wetlands on the site is their aesthetic value. The wetlands could provide open spaces within the development, which would have the added value of providing wetland habitat to the local fauna and flora. Rehabilitation of these wetlands would further enhance their value.

All of the wetlands scored similarly for biodiversity support, landscape scale and sensitivity. Wetland 1 scored highest in terms of hydrological/functional importance, primarily because of its condition (PES higher than the other three wetlands). Wetland 4 has the highest direct human benefit score, as it currently performs stormwater management services.

Overall, the wetlands are considered to be of **moderate** importance and sensitivity, with wetland 3 achieving a lower score, due to its small size and probably anthropogenic origin.

Refer to the Freshwater Report (**Appendix G10**) for more detail on the PES and EIS of the wetlands on site.

### **DWARS RIVER AND OFF-SITE WATERCOURSES**

#### **Present Ecological Status and Ecological Importance and Sensitivity**

The PES for the Dwars River and flowing past the site is category C, i.e. moderately modified. The following anthropogenic impacts were recorded as impacting on the condition of the reaches of the Dwars River flowing past the Boschendal Village site:

- Encroachment of cultivated lands and roads close to and into the riparian zone of the river (i.e. within the 1:100 year floodline).
- Construction of river crossings over the river;
- Alien invasion of the riparian zone, with subsequent erosion and steepening of banks.
- Discharge of treated effluent from the Pniel Waste Water Treatment Works.
- Diffuse discharge of irrigation return flows into the river, carrying fertilizers, herbicides and pesticides into the river.

The Ecological Importance (EI) for the Dwars River was calculated as being high, and the Ecological Sensitivity (ES) very high. These results were based on the following:

- The Dwars River is likely to be home to at least three species of indigenous fish (note: this is not the same as the NFEPA fish sanctuaries, which are known locations of fish populations), and a diversity of riverine macroinvertebrates (approximately 50 taxa estimated to occur within the river reach).
- The value of the river as a corridor of refuge for and the movement of fauna and flora within a highly cultivated environment.
- The sensitivity of the system to changes in water quality and quantity, due to the relatively undisturbed state of the instream habitat and to the relatively good water quality.

The default ecological category for this stretch of river, which is based on a combination of the PES, EI and ES results, is a category A. This is essentially the desired state of the river, and a goal for river management. While it may seem unlikely that this category is attainable, it emphasises the recommendation that **no activities in and around the sub-catchment should lead to a deterioration in the condition of the river.**

The results of the assessment of PES and EIS for the off-site watercourses are as follows:

- Stream 1: PES is B/C, and EIS is moderate;
- Stream 2: PES is D, and EIS is moderate;
- Stream 3: PES is B/C, and EIS is moderate;
- Stream 4: PES is C, and EIS is low to moderate, and
- Stream 5: PES is B/C, and EIS is moderate.

## 6. LAND USE OF THE SITE

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies.

Untransformed area	Low density residential	Medium density residential	High density residential	Informal residential
Retail	Commercial & warehousing	Light industrial	Medium industrial	Heavy industrial
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex	Tourism & Hospitality facility
Open cast mine	Underground mine	Spoil heap or slimes dam	Quarry, sand or borrow pit	Dam or reservoir
Hospital/medical center	School	Tertiary education facility	Church	Old age home
Sewage treatment plant	Train station or shunting yard	Railway line	Major road (4 lanes or more)	Airport
Harbour	Sport facilities	Golf course	Polo fields	Filling station
Landfill or waste treatment site	Plantation	Agriculture	River, stream or wetland	Nature conservation area
Mountain, koppie or ridge	Museum	Historical building	Graveyard	Archeological site
Other land uses (describe):				

(a) Please provide a description.

The site consists of residential dwellings, some are occupied by tenants such as those to the west of the R310 and others are vacant such as the old farm worker's cottages to the east of the R310. There is an existing fruit packing facility (old pallet factory), cultivated land and four wetlands on site.

Refer to **Appendix C** for photographs.

## 7. LAND USE CHARACTER OF SURROUNDING AREA

(a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies.

Untransformed area	Low density residential	Medium density residential	High density residential	Informal residential
Retail	Commercial & warehousing	Light industrial	Medium industrial	Heavy industrial
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex	Tourism & Hospitality facility
Open cast mine	Underground mine	Spoil heap or slimes dam	Quarry, sand or borrow pit	Dam or reservoir
Hospital/medical center	School	Tertiary education facility	Church	Old age home

Sewage treatment plant	Train station or shunting yard	Railway line	Major road (4 lanes or more)	Airport
Harbour	Sport facilities	Golf course	Polo fields	Filling station
Landfill or waste treatment site	Plantation	Agriculture	River, stream or wetland	Nature conservation area
Mountain, koppie or ridge	Museum	Historical building	Graveyard	Archeological site
Other land uses (describe):				

(b) Please provide a description, including the distance and direction to the nearest residential area and industrial area.

The site is located south of a disused railway line, to the west of the site is the Rhodes Food Group Factory (RFG), northeast is the RFG administrative office and immediately east of this is the Imibala packaging operations. These operations accommodate stores, large industrial buildings and a structure housing offices. The Drakenstein Police Station and RFF Clinic are located immediately to the south of the RFG offices, adjacent to R310.

The remainder of the site is surrounded by homesteads, farm worker cottages, agricultural land and the historic Boschendal Homestead to the south.

Hospitality and tourism facilities are offered on adjacent farms to the north and northeast of the site and within the Boschendal Estate itself.

Approximately 500m to the northwest of the site, some informal housing exists.

The Dwars River is located approximately 200m from the proposed site.

Refer to **Figure 7**.

**8. SOCIO-ECONOMIC ASPECTS**

Describe the existing social and economic characteristics of the community in order to provide baseline information.

**DEMOGRAPHIC PROFILE**

Information provided below is derived from Census 2011. Data for the Stellenbosch LM and the study area wards (Stellenbosch Wards 3 and 4) is presented.

Population and households

Stellenbosch LM had population of 155 733 in 2011. Ward 3 had a population of 8 951, which represented 5.7% of the SLM population. Ward 4 had a population of 8 230, which represented 5.3% of the SLM population. According to Census 2011 the majority of the LM's population was Coloured (52.2%), followed by Black Africans (28.1%) and Whites (18.5%). With regard to the study area communities, the Coloured group make up the majority, making up 77.3% of the Ward 3 and 86.8% of the Ward 4 populations respectively.

Age structure

The LM and Ward profiles are comparable. Approximately 25% of the relevant populations are younger than 15, while ~70% fall within economically active age group of 15-64. Approximately 5% are 65 years and older. Ward 3 has a somewhat larger youth component, while Ward 4 has a somewhat larger elderly component than the LM average.

Socio-economic indicators

Census 2011 data indicates that Ward 3 performed significantly worse than the LM in terms of the households living below the poverty line (32.3%, as opposed to the LM average of 24.4%) as well as the percentage of the population 20 years or older without a secondary qualification (72.6% as opposed to 53.6%). The formal unemployment rate for Ward 3 was also higher than the LM's rate of 5.2%.

Ward 4 had a relatively smaller, but still substantial percentage of households living below the poverty line (20%), and slightly higher percentages of adults without a secondary qualification (58.2%) and unemployment (9.5%) than the LM averages.

The comparatively low unemployment rates for the LM and relevant wards are likely to hide significant seasonal unemployment amongst many of its communities. This is largely linked to the seasonal nature of local agricultural and associated processing activities in the wine and fruit sectors.

Service levels indicators

According to Census 2011, service levels for Ward 3 were substantially better than LM averages with regard to access to formal housing – almost double – and access to electricity for lighting. With regard to access to waterborne sewage, piped water inside dwellings and weekly refuse removal, Ward 3 was worse off than the LM.

Service levels for Ward 4 in 2011 were higher than for Ward 3 with regard to all indices apart from access to electricity for lighting. Only with regard to access to waterborne sewage is Ward 4 outperformed by the LM.

## ECONOMIC OVERVIEW

The SLM economy is the thirteenth largest regional economy in South Africa. Since 1994, growth has generally outpaced national, provincial and DM growth rates, as well as that for the City of Cape Town. As a result the SLM economy is the dominant economy in the CWDM, and also the fastest growing. In 2011 the SLM accounted for 33.6% of the CWDM's economic output. The SLM GDP-R (Gross Domestic Product – Regional) grew by 5.5% per year over the period 2000-2013. The SLM economy was also affected by the global recession, but has recovered well since 2009, already registering a yearly growth of 5.4% in 2011.

The key drivers of the Stellenbosch economy are agriculture (wine, fruit and vegetables), tourism (heritage, food, wine and scenic) and the knowledge economy (tertiary institutions such as the University). Strong links exist between agriculture and tourism. The strong Manufacturing sector is closely linked to agricultural processing (food and beverages, sawmills). While the economy is diversified, it remains critically reliant on agricultural production.

According to Census 2011, four sectors dominated the Stellenbosch economy, namely Financial Services (23.6%); Manufacturing (22.3%); Trade (18.2%) and Government Services (12%). Tertiary sectors together accounted for 65.5% of economic activity. Agriculture accounted for only 5% (down from 13% in 2001). While the relative importance of the Financial Services (+4.6%) and Trade (+8.2%) sectors significantly increased, that of Manufacturing decreased (-7.7%). Manufacturing was hardest hit by the global crisis, but has since shown significant signs of recovery. The largest providers of employment opportunities were Government Services (30%), Trade (16.9%), Manufacturing (13.4%) and Agriculture (13.1%) (Bureau for Economic Research, 2013).

While the primary sector (agriculture) is neither a key sector in terms of direct economic output nor employment provision, it should be noted that agricultural activities and agricultural landscapes crucially underpin the local tourism and manufacturing sectors.

### Agriculture

Stellenbosch District is the undisputed centre of the SA wine industry. It has the oldest wine route in SA (1973), the largest area planted to wine grapes, the most Scheme of Origin wards, and by far the most producers of private cellar and estate wines in the country. Due to better soils and higher elevation, deciduous orchard crops are especially important in the area to the north-east of Stellenbosch town – the Banhoek, Dwars River and Franschoek Valleys. The area is of national significance as a producer of plums and pears.

However, over the past few decades a number of factors, including land and labour costs, have seen Tulbagh, Wolseley and especially Ceres overtake the area in importance as fruit growing area. However, during the same period viticulture has increased and much of the land in the study area has reverted to vineyard. Significant plantings of pears and plums, supplemented by citrus and more recently persimmons, still exist, but all indications are that fruit growing in the area is on a slow decline, largely being overtaken by vineyards.

### Tourism

The SLM tourism sector is probably one of the most mature in the country. Virtually the entire Stellenbosch municipal area is of great local, regional, provincial and national tourism importance. This includes the historic towns of Stellenbosch and Franschoek, as well as the scenically located, intensively cultivated agricultural land occupying much of the broad, fertile valleys in the SLM area. This area is commonly referred to the Cape Winelands Historical Landscape. The Stellenbosch Wine Route is a priority destination for both local and overseas visitors to the Cape.

The Franschoek Valley has become established as one of the primary food and wine destinations in South Africa, and includes top-rated restaurants like Ruebens, and wine estates such as La Motte. The Dwarsriver mainly consists of farms associated with the historic Boschendal Estate, but also includes Allée Bleue and Solms Delta Estates. The Klapmuts-Simondium road may be described as a tourism hotspot. A number of well-known wine farms (Rupert and Rothschild, Backsberg, Babylonstoren etc.), the prize-winning Dalewood Cheese farm, and Le Bonheur Crocodile Farm are located along this road. Many of these estates are also renowned as up-market wedding venues.

For more detail, refer to the Social Impact Assessment (SIA) – **Appendix G11**.

**9. HISTORICAL AND CULTURAL ASPECTS**

- (a) Please be advised that if section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), is applicable to your proposed development, then you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation process. Section 38 of the Act states as follows: "38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
- (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
  - (b) the construction of a bridge or similar structure exceeding 50m in length;
  - (c) any development or other activity which will change the character of a site-
    - (i) exceeding 5 000 m2 in extent; or
    - (ii) involving three or more existing erven or subdivisions thereof; or
    - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
    - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
  - (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
  - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,
- must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development."
- (b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), must also be investigated, assessed and evaluated. Section 3(2) states as follows: "3(2) Without limiting the generality of subsection (1), the national estate may include—
- (a) places, buildings, structures and equipment of cultural significance;
  - (b) places to which oral traditions are attached or which are associated with living heritage;
  - (c) historical settlements and townscapes;
  - (d) landscapes and natural features of cultural significance;
  - (e) geological sites of scientific or cultural importance;
  - (f) archaeological and palaeontological sites;
  - (g) graves and burial grounds, including—
    - (i) ancestral graves;
    - (ii) royal graves and graves of traditional leaders;
    - (iii) graves of victims of conflict;
    - (iv) graves of individuals designated by the Minister by notice in the Gazette;
    - (v) historical graves and cemeteries; and
    - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
  - (h) sites of significance relating to the history of slavery in South Africa;
  - (i) movable objects, including—
    - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
    - (ii) objects to which oral traditions are attached or which are associated with living heritage;
    - (iii) ethnographic art and objects;
    - (iv) military objects;
    - (v) objects of decorative or fine art;
    - (vi) objects of scientific or technological interest; and
    - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)."

Is section 38 of the National Heritage Resources Act, 1999, applicable to the development?		YES	NO
		UNCERTAIN	
If YES, explain:	<p>The proposed development will trigger the change of character of the site exceeding 5 000m<sup>2</sup> and the rezoning of the site exceeding 10 000m<sup>2</sup>. A Notification of Intent to Develop (NID) form was submitted to Heritage Western Cape (HWC). In response to the NID, HWC requested a HIA in terms of Section 38 (3) of the National Heritage Resources Act, 1999 (NHRA) assessing impacts on cultural landscape, visual resources and archaeology, and incorporating archaeological, built environment, cultural landscape and visual impact assessment studies.</p> <p>The HIA was sent to HWC and SAHRA for preliminary comment. Interim comment was received from HWC and SAHRA, refer to <b>Appendix E2</b>. These comments have been dealt with by the Heritage Specialists and have been responded to in Section 12 of the updated HIA (<b>Appendix G12</b>).</p>		
Will the development impact on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999?		YES	NO
		UNCERTAIN	



**STATEMENT OF HERITAGE SIGNIFICANCE AND GRADING**

A full HIA was undertaken and is included as **Appendix G12** of this report.

Heritage resources are mapped in Figures 16 to 23 in the HIA.

**BROADER LANDSCAPE ASSESSMENT (Figure 10)**

The site is located within a Grade I landscape. It is located within the Dwars River Valley which is an integral component of this landscape and is of outstanding heritage value in terms of the following (Drakenstein Landscape Group 2012):

- It is highly representative of the Cape Winelands Cultural Landscape in terms of the visual dominance of a productive agricultural landscape, dramatic mountain-valley setting, its collection of historical farm werfs, cottages and villages, and pattern of historical tree alignments.
- It reflects a pattern of early colonial settlement and expansion during the late 17th and 18th centuries with an emphasis on agricultural production concentrated in the well-watered fertile valleys.
- It has played a key role in the history of the fruit industry with the establishment of Rhodes Fruit Farms and its association with important figures in the development of the export fruit industry at the turn of the 20th century.
- It has the strong presence of a major corporate institution (Rhodes Fruit Farms-Amfarms) spanning more than a century and its associated impacts on the landscape in terms of farming methods, infrastructure, built form, patterns of labour and institutional memory.
- It has a concentration of highly important heritage places with Boschendal and Rhone and their landscape settings providing a pivotal set piece within the valley system. Its rich architectural and settlement history reflects the evolution of the Cape farm werf tradition from the 18th century, the influence of the Arts and Crafts Movement and the work of one of South Africa's foremost architects, Herbert Baker.
- It also reflects a range of built form and settlement typologies, e.g. farm werfs, managerial residences, farm cottages, planned labourer's villages (Lanquedoc and Thembaletu hostel) and mission settlement (Pniel).
- It has a distinctive and legible pattern of agricultural settlement which has evolved in response to fertile soils, water availability and movement routes, and has resulted in a pattern of farm werfs strung out along the Dwars and Berg Rivers. The riverine corridor contributes significantly to the setting and provides strong edge conditions to heritage places, e.g. Rhone and Boschendal.
- It has a strong relationship with a regional scenic route network, e.g. the R310, and variation of views ranging from dramatic distant views towards the mountains and focused views on landmark buildings, e.g. Boschendal.
- It reflects the history of farm labour, i.e. slavery, indentured labour, wage labour, migrant labour, and related shifts from a feudal to a corporate to a democratic order. Its community has worked and inhabited the landscape for generations resulting in strong linkages between place and social identity.

If YES, explain:

**PRECINCT ASSESSMENT**

The site is situated at a regional gateway at the intersection of the R45 and R310 and the junction of two valley systems, namely the Dwars River and Berg River Valleys. The R45 and R310 form a major part of a regional scenic and tourism route network.

The site is situated on the northern boundary of a highly significant historical precinct incorporating the farm werfs of Boschendal and Rhone and their agricultural frames, as well as the R310 scenic corridor and the Dwars River corridor. The werf is a PHS and is of outstanding heritage value, one of the most iconic farm werfs within the Cape Winelands. It is worthy of Grade I heritage status in terms of its historical, architectural, social and aesthetic value. Of particular value at a precinct scale is the prominent landmark status of the Boschendal homestead along the R310 scenic route with dominant views towards the homestead within a vineyard setting and the Drakenstein Mountains beyond. Also of value are views from the Boschendal homestead looking across vineyards and the development site, towards Wemmershoek Mountains beyond.

	<p><u>SITE ASSESSMENT</u> The site is largely vacant, derelict and lacks visual amenity.</p>		
Will any building or structure older than 60 years be affected in any way?	YES	NO	UNCERTAIN
If YES, explain:	<p>A number of buildings situated on the site are associated with the history of Rhodes Fruit Farms and the development of the fruit industry during the mid-20th century. However, the primary buildings associated with this history of food (fruit) processing are located off the site to the north and north-west.</p> <p><b>None of the buildings on the site are worthy of formal protection in terms of the NHRA.</b></p> <p>Refer to the HIA (<b>Appendix G12</b>) for photographs of the existing buildings on site, describing when the buildings were possibly constructed and their association to the fruit factory.</p>		

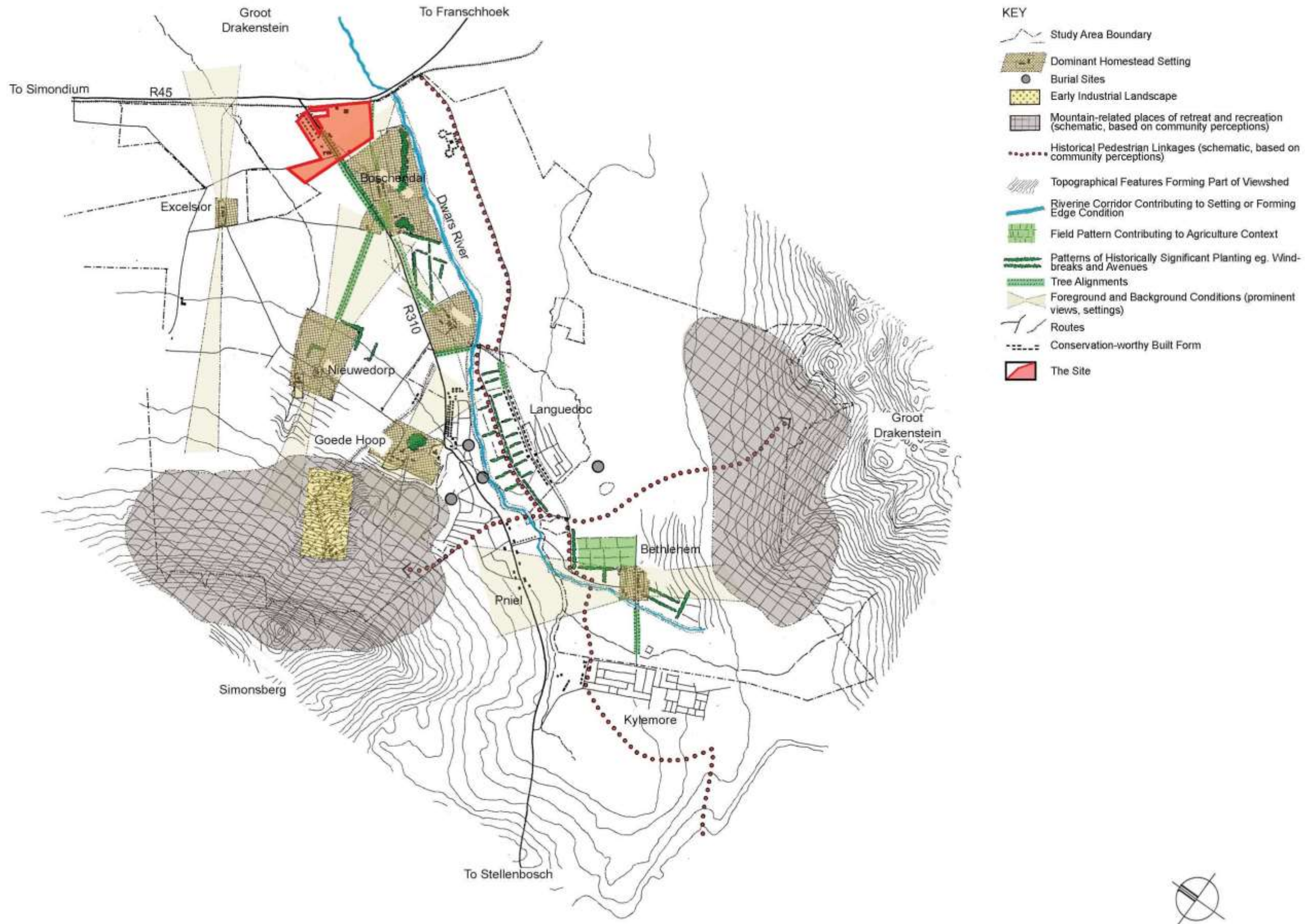


Figure 10: The Groot Drakenstein-Simondium Valley: Composite Constraints and Informants Heritage and Cultural Landscape

**10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

(a) Please list all legislation, policies and/or guidelines that have been considered in the preparation of this Basic Assessment Report.

LEGISLATION	ADMINISTERING AUTHORITY	TYPE Permit/ license/ authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval)	DATE (if already obtained):
National Environmental Management Act (Act No. 107 of 1998) (NEMA)	Department of Environmental Affairs and Development Planning (DEA&DP)	Environmental Authorisation	This application
Western Cape Land Use Planning Act (No. 3 of 2014) (LUPA).	DEA&DP	Section 53(2) Application for the loss of agricultural land.  Section 19 of LUPA makes certain determinations about compliance, consistency and deviation from a Spatial Development Frameworks (SDF). In Section 19(1) it states that if a land use application which is specifically provided for in an SDF the proposal is compliant. Section 19(2) states that if the proposal is not specifically provided for, but also not in conflict with it, then the proposal is consistent. If a proposal is not consistent or compliant, section 19(3) states that it "deviates" from the SDF. In section 20(2)(b) of LUPA it states that when an SDF is being updated, all approved applications which deviate from the previous SDF must be recorded in the updated SDF.	Pending
Spatial Planning and Land Use Management Act (No. 16 of 2013) SPLUMA	DEA&DP	In section 22(1) of SPLUMA it is stated that a Municipal Planning Tribunal (MPT) may not approve an application which is inconsistent with a Municipal Spatial Development Framework (MSDF). In section 22(2) it is further stated that a MPT may however depart from the provisions of an MSDF in instances where site-specific circumstances justify such deviation.	Pending
Section 15(2) of the Stellenbosch Land Use Planning By-Law (2015) (SLUPBL)	Council	i) Rezoning of Land (from Agriculture to Subdivisional Area in accordance with Section 20(2) of the SLUPBL; ii) Subdivision of Land (including registration of servitudes); iii) Permanent Departures (Still to be identified if needed); iv) Consent application (Still to be identified if needed); v) Establishment of an overarching Owners Association	Pending

		for the Boschendal Village.	
Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA)	National Department of Agriculture	National Minister's consent in terms of Section 4 of SALA	Pending
Advertising on Roads and Ribbon Development Act (No. 21 of 1940)	Provincial Department of Public Works and Transport	<p>In terms of both title deeds relating to the subject farm portions, conditions were imposed by the Controlling Authority in terms of Section 11(6) of Act No. 21 of 1940. These conditions are as follows and require written approval from the Controlling Authority:</p> <ul style="list-style-type: none"> <li>• The property may not be subdivided without written approval of the Controlling authority as defined in Act 21/1940.</li> <li>• No building and additions thereto apart from those in existence on the property at the date of transfer shall be erected or undertaken without the written approval of the Controlling authority as defined in terms of Act 21/1940.</li> <li>• No store or place of business whatsoever apart from those in existence on the date of transfer may be opened or conducted on the property without the written approval of the Controlling Authority as defined in terms of Act 21/1940.</li> <li>• No building or structure whatsoever apart from those in existence on the date of transfer shall be erected within a distance 95m from the centreline of Main Road 172 and 191 without the written approval of the Controlling Authority as defined in act 21/1940.</li> </ul>	Pending
National Heritage Resources Act (Act 25 of 1999)	Heritage Western Cape	Comment	Preliminary comment is included as <b>Appendix E2.</b>
National Water Act (Act 36 of 1998)	Dept. of Water and Sanitation	Water Use Licence/General Authorisation	Submitted on 10 May 2016 ( <b>Appendix J</b> )

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
Guidelines for EIA Requirements	DEA&DP
Guidelines for Public Participation	DEA&DP and DEA
Guideline on Alternatives	DEA&DP
Guideline on Need and Desirability	DEA&DP and DEA
Guideline for Involving Biodiversity Specialists in EIA Processes	DEA&DP
Guideline for Determining the Scope of Specialist Involvement	DEA&DP
Guideline for Environmental Management Plans	DEA&DP
Circular: One Environmental Management System	DEA&DP

(b) Please describe how the legislation, policies and/or guidelines were taken into account in the preparation of this Basic Assessment Report.

LEGISLATION / POLICY / GUIDELINE	DESCRIBE HOW THE LEGISLATION / POLICY / GUIDELINE WERE TAKEN INTO ACCOUNT (e.g. describe the extent to which it was adhered to, or deviated from, etc).
DEA&DP's EIA Guideline and Information Document Series	Applied to various components in the Basic Assessment process.
DEA&DP's Circular EADP 0028/2014: "One Environmental Management System"	This circular provides further detail and clarity on the procedure to be followed during the Basic Assessment process, specifically under the new EIA Regulations 2014.
National Environment Management Act (Act No. 107 of 1998) [NEMA]	The NEMA and its Regulations have prompted the need for this Basic Assessment to be undertaken. Both the NEMA Principles and the Section 28 duty of care are considered during the course of this assessment. The EIA Regulations have prompted and subsequently guide the environmental assessment process. The Regulations are being adhered to and no exemption application has been applied for.
National Heritage Resources Act (Act 25 of 1999)	The proposed development triggers Section 38 (1) of the National Heritage Resources Act (Act 25 of 1999) as it involves "the change of character of a site exceeding 5000m <sup>2</sup> " and the "rezoning of land exceeding 10 000m <sup>2</sup> ".
Provincial Spatial Development Framework (2014) PSDF	Considered in the assessment of need and desirability.
Stellenbosch Spatial Development Framework (2013) SDF	Considered in the assessment of need and desirability.
Groot Drakenstein Development Node – Stellenbosch SDF (2012)	Considered in the assessment of need and desirability.

**Please note:** Copies of any permit(s) or licences received from any other organ of state must be attached this report as **Appendix E**.

## SECTION C: PUBLIC PARTICIPATION

The public participation process must fulfil the requirements outlined in NEMA, the EIA Regulations, and if applicable the NEM: WA and/or the NEM: AQA. This Department's *Guideline on Public Participation* (August 2010) and *Guideline on Exemption Applications* (August 2010), both of which are available on the Department's website (<http://www.capegateway.gov.za/eadp>), must also be taken into account.

**Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was a deviation that was agreed to by the Department.**

1. Were all potential interested and affected parties notified of the application by –			
(a) fixing a notice board at a place conspicuous to the public at the boundary or on the fence of –			
(i) the site where the activity to which the application relates is to be undertaken; and	YES	NO	
(ii) any alternative site mentioned in the application; N/A	YES	NO	
(b) giving written notice to –			
(i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;	YES	N/A	
(ii) the occupiers of the site where the activity is to be undertaken and to any alternative site where the activity is to be undertaken;	YES	NO	
(iii) owners and occupiers of land adjacent to the site where the activity is to be undertaken and to any alternative site where the activity is to be undertaken;	YES	NO	
(iv) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;	YES	NO	
(v) the municipality which has jurisdiction in the area;	YES	NO	
(vi) any organ of state having jurisdiction in respect of any aspect of the activity; and	YES	NO	
(vii) any other party as required by the competent authority;	YES	NO	
1 placing an advertisement in –			
(i) one* local newspaper; and	YES	NO	
(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	YES	NO	N/A
(d) placing an advertisement in at least one* provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken.	YES	NO	N/A

\* **Please note:** In terms of the NEM: WA and NEM: AQA a notice must be placed in at least two newspapers circulating in the area in which the activity applied for is to be carried out.

2. Provide a list of all the state departments that were consulted:
<a href="#">Cape Nature</a>
<a href="#">DEADP: Pollution and Chemicals</a>
<a href="#">Department of Agriculture, Forestry and Fisheries</a>
<a href="#">Department of Agriculture</a>
<a href="#">Department of Water and Sanitation</a>
<a href="#">Department of Transport and Public Works</a>
<a href="#">Department of Health</a>
<a href="#">Department of Economic Development and Tourism</a>
<a href="#">SAHRA</a>
<a href="#">Heritage Western Cape</a>
<a href="#">Transnet</a>
<a href="#">Cape Winelands Municipality</a>
<a href="#">Stellenbosch Municipality</a>
<a href="#">Drakenstein Municipality</a>

3. Please provide an overall summary of the Public Participation Process that was followed. (The detailed outcomes of this process must be included in a comments and response report to be attached to the final Basic Assessment Report (see note below) as **Appendix F**).

### **PRE-APPLICATION PUBLIC PARTICIPATION**

- Identified Interested and Affected Parties (I&APs) including all adjacent landowners (as supplied by the municipality), the ward councillor, local ratepayers and landowners associations, interest groups, environmental groups, relevant Organs of State and State Departments.
- Refer to **Appendix F1** for an up-to-date list of I&APs.
- Distributed the Background Information Document to all identified I&APs and State Departments and Local Authorities. A copy of the BID is included as **Appendix F2** and proof of posting the BID to I&APs is attached as **Appendix F3**.
- Advertised the project in the Cape Times, Die Burger and The Eikestadnuus with a registration and comment period from 21 May – 11 June 2015. For a copy of the advertisements, see **Appendix F4**.
- Placed site notices on site informing the general public of the process and how to register as an I&AP. Proof of site notices – see **Appendix F5**.
- A letter drop was undertaken in order to inform occupiers of the site and adjacent land. A signed register was maintained where possible – **Appendix F6**.
- Initial concerns and issues were received. These comments are included as **Appendix F7**.
- A comments and response table was compiled summarising issues and responses to them by the project team – **Appendix F8**.
- Notification letters were posted to all registered I&APs notifying them of the availability of the 'DRAFT' Basic Assessment Report (BAR), commenting period and inviting them to attend an Open House Meeting. **Appendix F9** contains a copy of the letter and proof of sending it.
- Copies of the report were delivered to relevant State Departments and Organs of State, for their comment. See **Appendix F10** for proof.
- In addition, advertisements were placed in Die Burger (19 October 2016), the Cape Times (19 October 2016), and Eikestadnuus (20 October 2016) informing the public of the availability of the report and inviting them to attend the Open House Meeting. Refer to **Appendix F11**.
- A copy of the report was lodged at the Pniel Library (**Appendix F12**) and on our company website [www.dougjeff.co.za](http://www.dougjeff.co.za)
- An Open House Meeting was held on Wednesday 2 November 2016, in a shed on site. The proposal was presented in poster format (**Appendix F13**). Specialists and consultants were present at the meeting to answer questions raised by the public. Signed register is attached as **Appendix F14**.
- The report was available for a 30 day commenting period from 19 October to 18 November 2016.
- All comments received are attached as **Appendix F15**.
- The comments have been summarised and responded to by the project team. Refer to **Appendix F16** for a copy of the Comments and Response Table.

### **POST-APPLICATION PUBLIC PARTICIPATION (STATUTORY PROCESS):**

- Notification letters will be posted to all identified I&APs notifying them of the availability of the 'FINAL' Basic Assessment Report (BAR) and commenting period and inviting them to register as an I&AP if they have not already done so.
- Copies of the report will be delivered to relevant State Departments and Organs of State, for their comment.
- A letter drop will be undertaken in order to notify as many occupiers of adjacent land and the site, as possible.
- A site notice will be placed on site.
- Advertisements will be placed in the Cape Times, Die Burger and The Eikestadnuus, informing the public of the availability of the report for comment.
- A copy of the report will be lodged at the Pniel Library and on our company website [www.dougjeff.co.za](http://www.dougjeff.co.za)
- The report will be available for a 30 day commenting period.
- All comments received and our responses to these comments will be included in the final report that will be submitted to DEA&DP for decision.



**Please note:**

Should any of the responses be "No" and no deviation or exemption from that requirement was requested and agreed to /granted by the Department, the Basic Assessment Report will be rejected.

A list of all the potential interested and affected parties, including the organs of State, notified and a list of all the register of interested and affected parties, must be submitted with the final Basic Assessment Report. The list of registered interested and affected parties must be opened, maintained and made available to any person requesting access to the register in writing.

The draft Basic Assessment Report must be submitted to the Department before it is made available to interested and affected parties, including the relevant organs of State and State departments which have jurisdiction with regard to any aspect of the activity, for a 40-day commenting period. With regard to State departments, the 40-day period commences the day after the date on which the Department as the competent/licensing authority requests such State department in writing to submit comment. The applicant/EAP is therefore required to inform this Department in writing when the draft Basic Assessment Report will be made available to the relevant State departments for comment. Upon receipt of the Draft Basic Assessment Report and this confirmation, this Department will in accordance with Section 24O(2) and (3) of the NEMA request the relevant State departments to comment on the draft report within 40 days.

All comments of interested and affected parties on the draft Basic Assessment Report must be recorded, responded to and included in the Comments and Responses Report included as **Appendix F** to the final Basic Assessment Report. If necessary, any amendments in response to comments received must be effected in the Basic Assessment Report itself. The Comments and Responses Report must also include a description of the public participation process followed.

The final Basic Assessment Report must be made available to registered interested and affected parties for comment before submitting it to the Department for consideration. Unless otherwise indicated by the Department, a final Basic Assessment Report must be made available to the registered interested and affected parties for comment for a minimum of 21-days. Comments on the final Basic Assessment Report does not have to be responded to, but the comments must be attached to the final Basic Assessment Report.

The minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants must also be submitted as part of the public participation information to be attached to the final Basic Assessment Report as **Appendix F**.

Proof of all the notices given as indicated, as well as of notice to the interested and affected parties of the availability of the draft Basic Assessment Report and final Basic Assessment Report must be submitted as part of the public participation information to be attached to the final Basic Assessment Report as **Appendix F**.

# SECTION D: NEED AND DESIRABILITY

**Please Note:** Before completing this section, first consult this Department's *Guideline on Need and Desirability* (August 2010) available on the Department's website (<http://www.capegateway.gov.za/eadp>).

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
According to the Zoning Certificates received from the Stellenbosch Municipality, Portion 7 is zoned Agriculture Zone I in its entirety. Portion 10 is zoned primarily Agriculture Zone I with a spot zoning for Institutional Zone I (farm school) and Institutional III (health clinic) in terms of the Section 8 Zoning Scheme.			

The Village development area is to be subdivided off the main farm portions and rezoned to Subdivisional Area in accordance with the Stellenbosch Land Use Planning Bylaw. Refer to **Figure 11**.

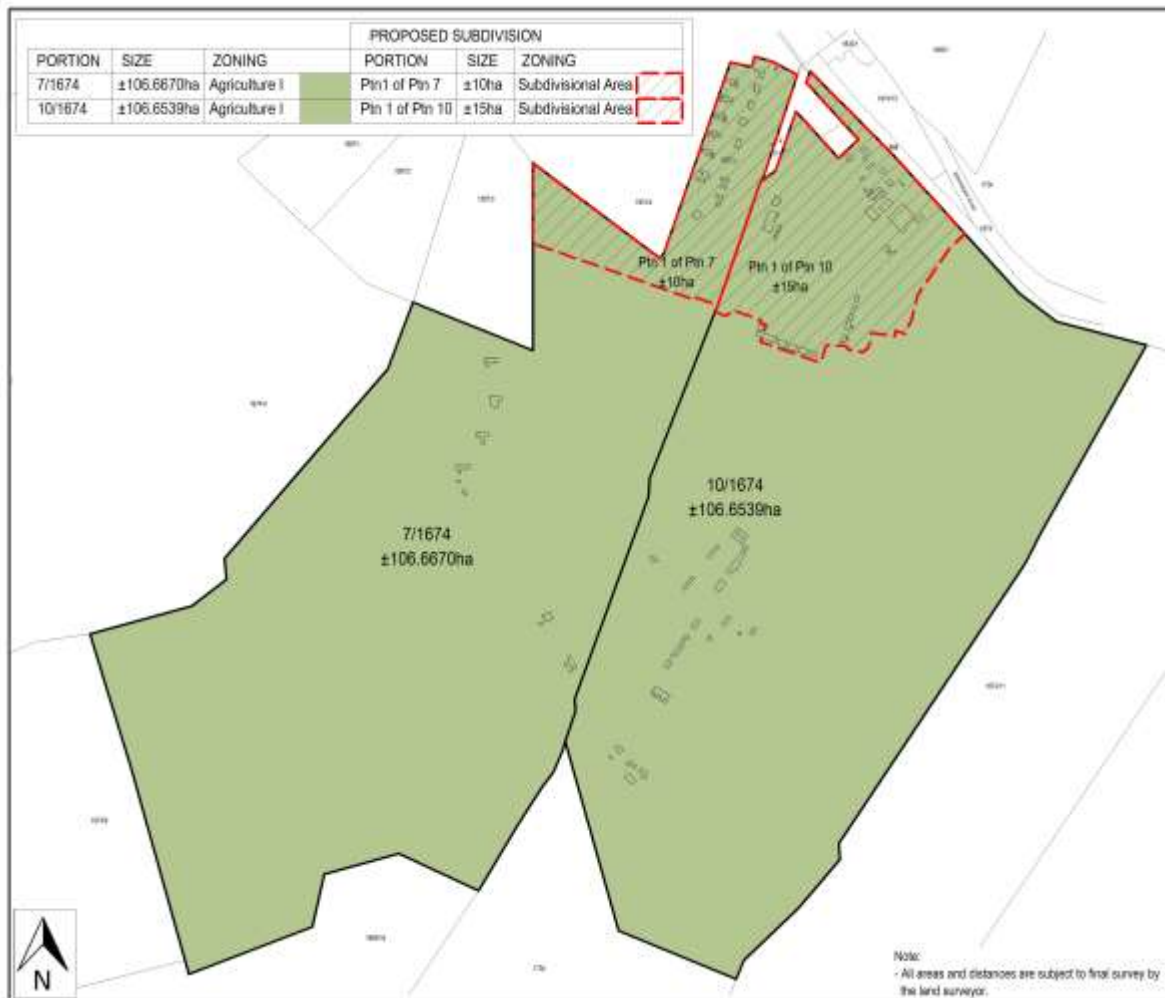


Figure 11: First Subdivision

The Village development area is to be further subdivided with a subsequent subdivision plan to create the "superblocks" which will define the structure of the village and create the outline of development phases. The appropriate zoning can be allocated to each "superblock" in accordance with the envisaged land use. This subdivision and zoning plan is illustrated in **Figure 1**. In most cases each of the "superblocks" will require further internal subdivision, but this will only be approved once a Site Development Plan is approved for each superblock.

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Below is an extract from the Planning Report summarising the policy topics which are relevant to this application with a short explanation and motivation of how the development proposal complies or intend addressing the matter.			

Policy No.	Applicable and Relevant PSDF Summary	How it is addressed/complied with by Boschendal Village
R1	<b>Protect biodiversity and ecosystem services</b>	The development does not affect any significant biodiversity areas or critical or endangered vegetation-refer to the botanical survey.
R3	<b>Safeguard agricultural and mineral resources</b> and manage sustainable use thereof; reconcile ecosystems requirements and protection of assets with opening up opportunities for improved livelihood and jobs.	The area where the Village is proposed will not affect agricultural land (except for a small portion); area consists of low potential soils; It will create significant jobs in the valley where there is significant unemployment.
R4	<b>Recycle and recover waste, clean energy,</b> shift from private to <b>public transport</b> and adapt to/mitigate climate change.	All waste from the Village will be recycled. Energy demand will also be managed and limited to ensure overall electricity supply to the Village is not exceeded.
R5	<b>Safeguard cultural and scenic assets:</b> focus on townscape/landscape making qualities; protect heritage and scenic assets - specific areas to protect include Cape Winelands.	Comprehensive HIA undertaken to inform the design of village and protect cultural landscape of the area. Also, refer to VIA.

Policy No.	Applicable and Relevant PSDF Summary	How it is addressed/complied with by Boschendal Village
E2	<p><b>Diversify and strengthen the rural economy:</b> includes land reform; allow sustainable rural activities which are compatible with agriculture and environment and which have positive socio-economic returns and which is appropriate in scale; this should serve as an incentive to facilitate other objectives e.g. agrarian transformation, biodiversity areas, protection of other assets etc.</p> <p>Criteria to be applied in assessment of proposals in rural areas:</p> <ul style="list-style-type: none"> <li>• Environmental Authorisation;</li> <li>• Compatibility of land uses with surrounding uses;</li> <li>• Not to compromise existing farming activities or high-value agri land;</li> <li>• Not to compromise current or future mineral resources;</li> <li>• Consistent with cultural and scenic landscapes;</li> <li>• Does not involve extension of municipal reticulation network/not real costs or risks to municipal service delivery;</li> <li>• Does not infringe on the authenticity of the rural landscape.</li> </ul> <p>Policy for Establishment of Agricultural holdings in the urban fringe PN415/2000 No. 5576; Policy for Settlement of Farm Workers P414/2000 No. 5572</p>	<p>The proposed Village development will diversify and strengthen the rural economy as follows:</p> <ol style="list-style-type: none"> <li>1) Provide a farmers market which provides a localised outlet for local produce;</li> <li>2) Existing farming activities are not compromised – edges of village designed to minimise impact;</li> <li>3) Development will link services to existing treatment works and upgrading and Development Contributions will also enable other development within the node to take place. Existing municipal bulk treatment plants utilised. Capacity of existing water reservoir will be increased. New external bulk link services installed by the development can serve other developments in Groot Drakenstein node, thereby benefitting the larger node.</li> </ol>
S1	<p><b>Protect, manage and enhance sense of place, cultural and scenic landscapes:</b> <u>prevent settlement encroachment into agricultural areas</u>, scenic landscapes and biodiversity areas; promote efficient use of land by containing urban sprawl, intensification of use, redevelopment within settlements; enhance economically, socially and spatially meaningful settlement hierarchy; use heritage resources and adaptive re-use to enhance character of area, create tourism opportunities; ensure interventions in heritage locations are consistent in typology, scale, massing, form and architectural idiom; conservation strategies and place specific guidelines must assist in management of settlement and landscape quality.</p>	<p>The village is located within identified settlement node and is part of the municipality's development strategy to manage urban sprawl.</p> <p>It does not affect biodiversity areas or high potential agricultural land. It forms part of the settlement hierarchy as identified in the Municipal SDF. It will create immense tourist value.</p> <p>It is carefully designed taking heritage indicators, scenic routes and the cultural landscape into consideration. It is located mostly on brownfields areas currently used for a service trade, residential and farm sheds.</p> <p>Only a small portion of cultivated land (±1.3ha) is affected by the development. The cultivated area affected by development comprises less than 0.3% of the current agriculturally farmed/irrigated/cultivated /grazing land on the Boschendal estate. On the other hand, it is envisaged that an additional ±175ha of land will be cultivated (mostly fruit and vegetable farming) in the next 2 years.</p> <p>Overall, agricultural cultivation and food production will expand on the Boschendal Farm, rather than decrease.</p> <p>A comprehensive Urban Development Framework accompanies the proposal.</p>
S2	<p><b>Improve inter and intra-regional accessibility:</b> Compacting and connecting urban development along public transport routes and clustering public facilities; curtail new settlement formation that increases average travel times; intermodal and functional linkages between villages;</p>	<p>The Village is located at the crossroads of two important main public movement routes. The principle of settlement "beads on a string" or interconnected nodes will, in the long term, make the provision of public transport more viable as densities of settlements increase.</p>

Policy No.	Applicable and Relevant PSDF Summary	How it is addressed/complied with by Boschendal Village
		<p>The settlement is located equidistant between Stellenbosch, Franschhoek and Paarl, thereby increasing the viability of public transport along these routes.</p> <p>The rural village will bring a farmer's market and limited convenience shops closer to many of the rural settlements in the valley, thereby reducing travel times to shops for many of the current local residents.</p>
S3	<p><b>Promote compact mixed use, and integrated settlements:</b> target existing economic nodes as levers for regeneration and investment; promote functional integration and mixed use as a key to counter apartheid spatial patterns; prioritise rural development investment based on role and function of settlement; delineate Integration Zones within settlements where public intervention is targeted.</p>	<p>The "Groot Drakenstein Node" currently consists of very low density, derelict, underdeveloped and unutilised land. The urban land uses which are located in the node consist of low density residential (Cannery road), low density and low income residential in the Meerlust Forestry settlement, low density industrial and service trade (Rhodes Food Group factories and the pallet factory), a clinic, a police station and the offices of the Rhodes Food Group Head Office. The proposed Village will develop the heart of the new high street, with mixed use business and associated residential which will 'kickstart' redevelopment in the remainder of the node.</p>
S4	<p><b>Balance and coordinate delivery of facilities and social services:</b> access to education and health services; enable multi-functionality, clustering and space efficiency for all facilities provision; cluster public facilities; primary school threshold 1000 households.</p>	<p>The existing clinic will be relocated to business premises constructed by the developer in a much more accessible location. It will be located next to or opposite the police station and will therefore still form a community facility cluster.</p>
S5	<p>Promote sustainable integrated and inclusive housing in formal and informal markets: the policy relates to planning, budgeting and delivery of housing at Provincial level.</p>	<p>A significant portion of the Groot Drakenstein Node is already identified for subsidised housing development at Meerlust. This proposal for middle and higher income residential accommodation will, therefore, provide a balance in the overall housing provision in the Groot Drakenstein Node. A wide range of housing options will be provided in the Village, ranging from 10% subsidised apartments for key workers, 44% apartments (open market); 41% row houses, and (5%) free-standing dwellings.</p>

The proposed development complies with the Provincial SDF, according to the planner's motivation above.

According to the Social Specialist, the Western Cape PSDF is based on a number of spatial principles that are relevant to the proposed development, namely:

- Spatial justice;
- Sustainability and resilience;
- Spatial efficiency;
- Accessibility;
- Quality and liveability.

The issue of spatial justice is to some extent addressed by the proposed development in that access to housing will be provided for historically disadvantaged (HD) individuals. The majority of opportunities will, however, largely be confined to middle and higher income groups. While the housing provided by the proposed development will not address the current housing needs of the low income sector, the 210 apartments will create opportunities for middle income members of the local community to acquire property in the area. Based on the findings of the SIA there are a limited number of properties for sale in settlements such as Pniel, Lanquedoc and Kylemore and young members of the community are forced to look elsewhere. The developers have also indicated that 10% (maximum of 47) of the total number of residential units will allocated as affordable housing for key workers.

The issues of sustainability, resilience, spatial efficiency, accessibility, quality and liveability are all addressed by the urban design framework for the proposed development, which seeks to create a spatially compact

development that caters for a range of mixed uses. The urban design framework also focuses on creating a rural village that emphasises the quality of the living environment and the importance of public access, public open spaces and cultural and scenic landscapes, while at the same time minimising the loss of high potential agricultural land. The development is also designed to be resource efficient.

For more detail, refer to the planning application (**Appendix G1**) and the Social Impact Assessment (**Appendix G11**).

(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
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In the Stellenbosch Spatial Development Framework (2012) (SSDF), as part of the system of interconnected urban nodes, a new urban settlement is proposed at the intersection of the R310 and the R45, called the Groot Drakenstein Development Node (**Figure 12**). A portion of the Boschendal village however deviates from the urban edge indicated in SMSDF, in that a minor portion of the urban development falls outside the edge. In terms of section 22(2) of Spatial Planning and Land Use Management Act (16 of 2013)(SPLUMA) the Municipality may approve a land development application that deviates from the Municipal SDF where there is site-specific justification for such deviation.

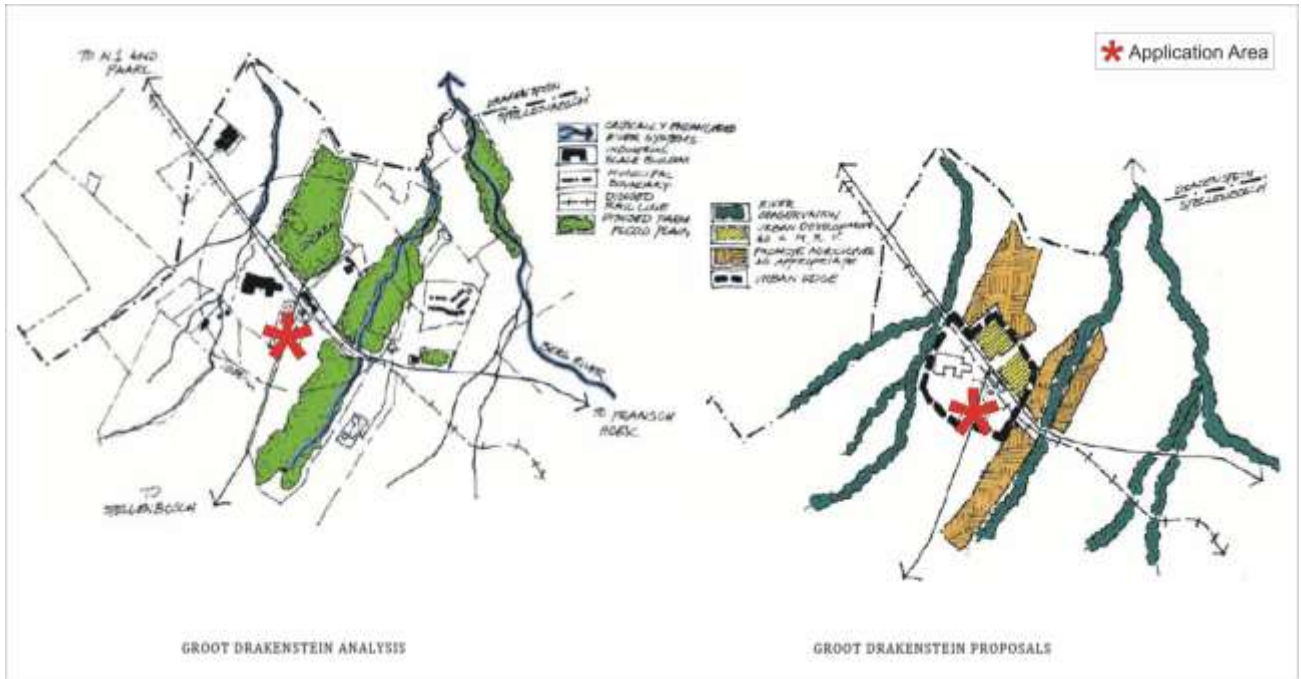


Figure 12: Groot Drakenstein Development Node (Stellenbosch SDF 2012)

The Stellenbosch Municipality confirmed during the pre-application process in 2016 that that the department drew up a detailed urban edge in the municipality's GIS based on an interpretation of the 2013 Stellenbosch Spatial Development Framework (SSDF) urban edge. A small portion the Village proposes some development outside what has been considered by the Municipal officials to be the urban edge as it is drawn in the SSDF of the urban development for the Village falls outside this re-interpreted edge. After consultation with both DEADP and the Municipality it was confirmed that a Municipal Planning Tribunal (MPT) may not approve an application which is inconsistent with a SDF (section 22(1) of SPLUMA). However, Section 22(2) of SPLUMA makes provision for a MPT to depart from an SDF in cases where site-specific circumstances justify such a departure.

The Urban Edge which was included in the 2013 SMSDF was schematically drawn with a very thick line (refer to the thick faded black dotted line in **Figure 13a**). Since this schematic representation of the Urban Edge presented problems to the municipality's planning department, the urban edge was re-interpreted based on high level information available on aerial photography. This resulted in the generation of a more nuanced line for the Urban Edge for the Groot Drakenstein Node. This line is illustrated by the blue line in **Figure 13b**.

In this regard the following should be noted:

- The thick black dotted line is the urban edge as drawn in the SDF approved in 2013.
- The red lines are cadastral boundaries.
- The blue line is the department's interpretation of the urban edge (done in 2016).
- There is no consistency as to whether the blue line is outside or inside the thick black dotted line which is the SDF 2013 urban edge.
- Neither the blue line nor the thick black dotted line follow any cadastral boundaries.
- These lines follow arbitrary features which may not even create a suitable village edge;
- The urban edge as depicted in this drawing was also not informed by any site specific informants, edge-making criteria, specialist studies or site analysis.

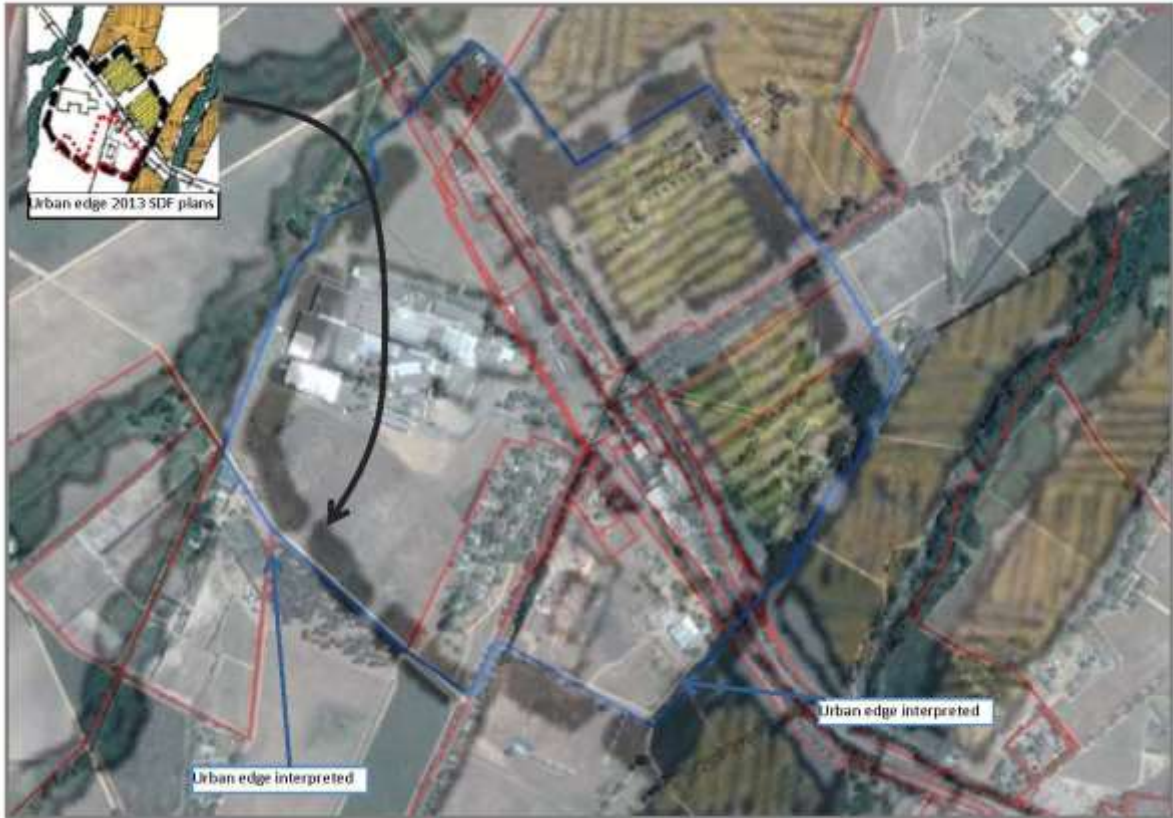


Figure 13a: The SSDF Urban edge overlaid onto an aerial photograph (source: 2016 Email: S van der Merwe -SM)



Figure 13b: Existing Urban Edge (purple) and proposed revised Urban Edge (orange)



**Site specific informants for the eastern edge of the Village:**

The following site specific informants shaped the layout design in respect of the eastern edge of the Village. On this edge a small portion of the 1:100 year flood line is filled in to accommodate the stormwater detention pond and one row of single storey free-standing dwellings. Slightly less than 1ha of the existing pear orchards will be affected. The row of single dwelling houses is a natural rounding off of the village edge and ensures an appropriate low density interface with the abutting cultivated land in the flood line, which is at a much lower level, and overlooked by dwelling houses. This is a "hard" urban edge beyond which no further development can ever be permitted in future due to the low lying nature and high agricultural value of the land outside the edge. Refer to Figure 13c for an illustration of these elements.

- The 1:100 year flood line on the eastern edge of the Village, beyond which no further development would be permitted (apart from a small infill area to round off development and provide for stormwater detention outside flood line).
- Existing transformed, built on and disturbed derelict land which was used for many years as a service industry (pallet factory).
- Existing orchards which are located below the 1:100 year flood line.
- Natural low point on the site where the detention pond can be located (and which must be above the 1:100 year flood levels).
- Existing wetlands on south-eastern edge of the Village form a natural urban edge beyond which no development should take place.
- The footprint of existing derelict cottages on the eastern side of the site should be included in Urban Edge since it creates a logical spatial layout.
- Heritage indicator requires no more than single storey dwelling houses in view cone from manor house. This is a "tread lightly zone".

**Site-specific informants on the southern urban edge of the Village –east of R310**

The southern urban edge indicated in the SDF was drawn in an arbitrary position based on an internal farm road. The SSDF urban edge does not follow cadastral boundaries, nor does it take cognisance of the existing derelict farm workers cottages, the agricultural potential of the land, water channels or existing wetlands on land. All of these physical features serve to define the possible development envelope inside which development can be permitted, and outside which, development should not be permitted. These informants are important since they serve to define a 'hard' edge, beyond which expansion of the village should not be permitted in the future.

- No development closer to the Boschendal Manor House werf wall than 300 meters to protect agrarian setting of historical Boschendal Manor House as well as the views of distant mountains north of the Werf as seen from the manor house. This is a Heritage indicator and visual impact and will not be relaxed since it protects the heritage integrity of a declared provincial heritage resource.
- An existing row of derelict cottages form a natural edge between Village and Farm. The Heritage Impact Assessment requires that the cottages be retained and stand apart from the village as reference to a previous agrarian development layer.
- The cottages also form the edge of the disturbed land due to the use of a large portion of this area for a pallet factory.
- This area has low agricultural soil potential.
- There is no natural bio-diversity on this portion of the site.
- The wetland on the south eastern corner of the village and its 30m buffer forms a natural hard edge and will be the transition between village and farm.
- The southern access to the village is a fixed point. This access point is fixed since it is where an existing public road intersects with the R310. It therefore a logical dividing line between urban development and agricultural land.

**Site-specific informants southern edge of the Village - west of R310**

West of the R310 the position of the existing minor public road (No 5230) is a determining factor on how the village can be accessed from the R310. This road also provides access to 4 other land units which are not in Boschendal ownership. In order to ensure an urban edge is created which cannot lead to future development further to the south, it is proposed to provide a definitive edge consisting of a single row of free-standing dwelling houses which would continue the existing 3 dwelling houses on portions 1367 portions 1, 2 and 3. This continuous edge of residences will protect the agricultural land from future urban expansion. The site specific indicators and

informants are the following:

- Desirability of having development on both sides of the road –more efficient use of infrastructure.
- More appropriate interface between industrial and agriculture.
- Strong edge to protect agricultural land beyond.
- Rounding off the Village with a continuous edge of low density dwellings thereby ensuring no further urban sprawl.
- It is a continuation of similar large plots as currently located along the minor public road (no 5230)(see farms 1367 portions 1-3);
- The edge will be reinforced by significant structural planting and possible agricultural water channels.
- The area where the houses are to be developed contains pine trees, which have no agricultural or cultural value.

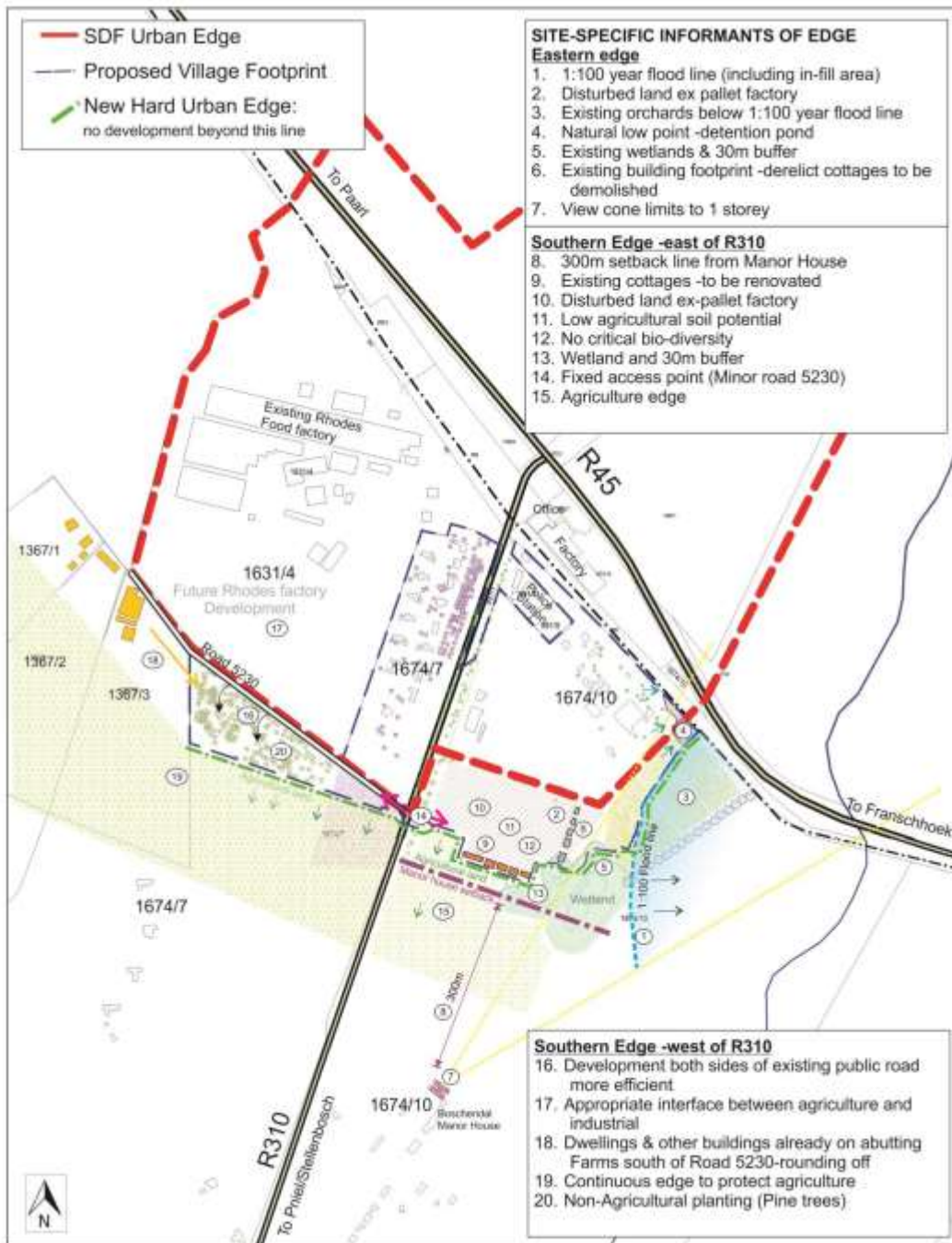


Figure 13c: Site specific informants of the Village Urban Edge

(c) Integrated Development Plan and Spatial Development Framework of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
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**Stellenbosch Municipal Spatial Development Framework (2012) (SMSDF)**

The Stellenbosch Municipal Spatial Development Framework proposes a tightly constrained system of interconnected nodes which are linked via main transport routes with one-another. The Groot Drakenstein node is a new settlement node identified at the crossroads of the R310 and R45. Some urban uses are already located at this intersection, such as a police station, a private clinic, offices, very low density residential development and industrial activities. The Boschendal Village development is located inside the area which is roughly indicated in the SDF as being this development node. The development proposals for the Village promotes the essence of the Groot Drakenstein Node as set out in the MSDF and to this end will kick-start the development of the node.

Below is an extract from the Planning Report summarising SMSDF principles which are relevant to this application with a short explanation and it is indicated where consistency or compliance is achieved.

	Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
<b>INTERCONNECTED NODES</b>	1. The Municipality should be developed as a system of tightly constrained interconnected settlements with dense internal plans. Must be linked to other settlements with road, rail, and other communication mechanisms.	The Village is located within one of the identified settlement nodes (Groot Drakenstein Node).  Compliant.
	2. Development of settlements prioritised on rail routes and then road routes.	Located close to the crossroads of R310 and R45 and next to a defunct railway line. Consistent
	3. Internal average gross densities should vary between 15du/ha for small settlements and 25du/ha for larger settlements.	Settlement gross density is 16du/ha. Compliant.

Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
4. Urban design frameworks (UDF) should be developed for each settlement recognising the unique character.	Urban Design Framework and Architectural controls and guidelines accompany this application. Compliant.
5. The principles of walking distance, functional integration, socioeconomic integration, appropriate densification and urban edge should inform settlement design.	<p>The Village edge is walking distance from the centre of the Village and facilities (and highest densities) are clustered along the R310 where they are most accessible. The design facilitates and enables walkability by providing colonnades and wide pavements.</p> <p>The proposal includes provision for a clinic and an ECD which will serve residents of the Groot Drakenstein Node as well as nearby established villages and surrounding area. The node already contains a police station as well. Compliant.</p>
6. Settlement should define strict Urban Edge outside of which no further development will be permitted.	<p>Edges are defined through a range of site-specific features and indicators:</p> <ul style="list-style-type: none"> <li>• 1:100 year flood line forms the eastern urban edge;</li> <li>• A line of existing cottages proposed to be used as Guest accommodation associated with the Boschendal Farm forms a natural edge on the southern side, beyond which the urban development cannot leapfrog.</li> <li>• Heritage indicators also prevent any development within 300m of Provincial Heritage Manor House Werf wall which will prevent any further development south of the cottages;</li> <li>• Good quality agricultural soil and existing orchards prevent development further south on the western side of the R310;</li> <li>• Structural planting to be implemented to further strengthen edges. Compliant.</li> </ul>
7. Settlement centre should be most dense with densities tapering off towards the edges.	The layout achieves this and the land use plan and height plan in the Urban Design Framework illustrates this clearly. Compliant.
8. Use of land should be based on highest and best long-term use.	The SDF plan did not make any specific development proposals for this portion of the node but is has also not indicated that no development should occur. The proposed land uses in the Village is of a mixed-use, urban nature, which is at the very least consistent with the SDF proposals for the development of nodal settlement at this point.
9. Balanced supply of low, middle and high-income households should be achieved.	The total land area for the Groot Drakenstein Node as indicated in the SDF measures ±97 ha. The area on which the Boschendal Village is proposed measures ±25ha. The Boschendal Village is therefore only a portion of the development which will eventually make up the overall Groot Drakenstein node. A significant portion of the Groot Drakenstein Node is already identified for subsidised housing development at Meerlust and there is significant lower and middle-income housing in the valley at Lanquedoc and Priel.


	Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
		This proposal is, therefore, to provide housing for the middle and upper-income groups, thereby providing a balance in the overall housing provision in the Node and valley. A range of housing options will be provided in the Village, ranging from low-middle income apartments for key workers (10%), apartments (±44%) to row houses (±41%) to free-standing dwellings (±5%). When considering wide range of the proposed housing mix (small portion of free standing houses, large percentage of apartments, and inclusion of key-workers apartments) together with other planned housing initiatives in this node, the proposal will be compliant (or at the very least consistent) with the MSDF.
	10. Development applications are to be focussed within these settlement nodes, rather than greenfield land.	The proposal is indeed located in one of the identified settlement nodes, and therefore compliant in this respect.
CAR FREE TRANSPORT	1. Settlement form must reduce demand for private cars.	The Village layout is such that a large number of community facilities, recreational amenities, and shops, are within walking distance and is therefore consistent. A certain degree of reliance on transport will still occur.
	2. Walking distance (facilities to be within 1 km from where people live).	The community facilities already located in this Node (police station and clinic) and the proposed ECD is within walking distance (1km) of the proposed new residential of this Village as well as the Meerlust settlement and the Boschendal Village will integrate these facilities into the high street where it is most accessible to all. Compliant.
	3. Pedestrian movement to be prioritised in design.	Internal pedestrian routes have been identified and will be constructed as part of the proposal and pedestrian walkways already exist along the R310. Compliant.
	4. Cycle routes to be provided on regional roads.	The recent upgrades of the Helshoogte Pass Road (R310) provides for bicycles in a widened shoulder which is coloured red. The continuance of the bicycle lanes along the R310 are recommended in the TIA in paragraph 10.2 where NMT proposals are addressed and should be included in the detailed design.
	5. Settlement densities to be increased to support public transport.	This development will increase the density of the Drakenstein Node by significantly dense infill development, thereby contributing to the viability of regional public transport which provides linkages between towns and villages. Although the settlement will accommodate middle and high-income groups who are not normally users of public transport, these households create jobs and the employees will make use of public transport. It is also intended to be a tourist destination and tourists are increasingly making use of public transport to reach destinations. Consistent.
INCLUSIVE ECONOMIC	1. Complete socio-economic cross section to be located within 1km of urban centre.	The Groot Drakenstein Node currently largely contains only low-income residential accommodation (at Meerlust) and industrial and service industrial uses. The introduction of middle and higher income groups into the node is, therefore, introducing these other socio-economic groups. Consistent with MSDF


	Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
	2. Low-income housing should be balanced with middle and upmarket housing.	The proposed development will provide the required balance since low-income/subsidised housing is already located/planned to be expanded at Meerlust. Compliant.
	3. Avoid large disparities between neighbouring income groups and avoid creating barriers between different income groups.	The existing rail line and the R45 and R310 scenic routes are pre-existing barriers. However, these routes can serve a public transport function which can also integrate the communities and the public nature of the proposed high street with the proposed clustering of business and community facilities (including police station) will ensure further integration. Consistent.
	4. Suitable land close to employment to be made available for Gap, social and middle-income housing.	Land is available for this purpose in the Groot Drakenstein node at Meerlust and this land is already in state ownership. Consistent.
	5. 20% of space in regional and neighbourhood shopping centres should be a market area which is linked to public transport drop-off points & sidewalks. To be managed subject to reasonable conditions	The major feature of this Village proposal is the farmers market which is at the heart of the “high street” and will comprise approximately 18% of the ground floor retail GLA Space (1000m <sup>2</sup> out of 5500m <sup>2</sup> ). Public transport stops are also planned on the R310 at appropriate and accessible points. Consistent.
	6. Land to be set aside for SMME’s close to CBD’s	The market will enable SMME’s to access a variety of retail opportunities. Compliant.
	OPTIMAL LAND-USE	1. Subdivision, 2nd dwellings, redevelopment of existing low-density areas, infill and brownfield development prioritised over new greenfield development
2. Land and projects for low, middle and high-income groups should be designed as part of a larger integrated settlement rather than stand-alone gated estates.		This is not a gated village although some residential neighbourhoods inside the village may be gated and secured. The design is careful to ensure that certain highly accessible areas remain publicly accessible and allow integration of the village into the larger Groot Drakenstein settlement node. Compliant.
3. Land to be used for its most sustainable and appropriate use.		Given that the land is located inside the urban edge of the Groot Drakenstein Node, this compact mixed-use village development is the most appropriate and sustainable use for the land. Compliant.
4. Consistency in decisions required about development outside urban edge.		The SDF calls for consistency about development outside the edge but does not prohibit it <i>per se</i> . The SM determined a conservative edge in 2016 (see par 5.4.3 above). A portion of the land to be developed falls outside this redefined urban. See sections below where this deviation is described in more detail.
RESO URCE	1. Rivers protected 10-30m – no urban development or intensive agriculture.	The Dwars River is not within the development area and is located more than 200m from the edge of the village development footprint. Compliant.

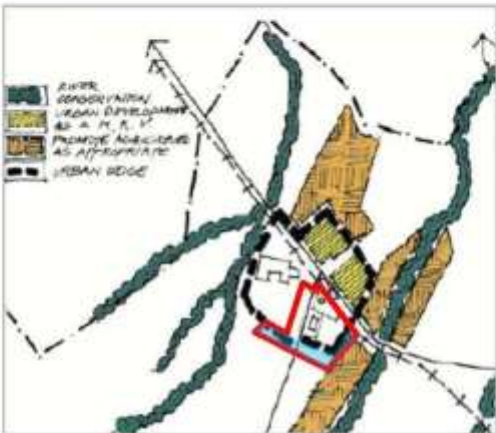
	Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
	2. No building foundations in 1:100 flood line.	No buildings building foundations will be constructed in the 1:100 year flood line. The Department of Water Affairs have granted a Water Use license to fill in a small portion of the 1:00 year flood line so that the levels will be above that of the 1:100 flood line, to accommodate the stormwater detention pond, and a small number of freestanding dwellings on the eastern edge of the development. Consistent.
	3. Greywater recycling promoted on all developments with gardens.	Green report makes this compulsory. To be incorporated into each building design. Compliant.
	4. Mandatory rainwater harvesting on all new urban developments (plus retrofit encouraged).	Green report makes this compulsory. To be incorporated into each building design. Compliant.
	5. Water conservation measures and technologies to conserve water to be implemented.	Green report makes this compulsory. To be incorporated into each building design. Compliant
	6. New nodes to be served by localised waste water treatment plants.	The node will be served by the local Pniel wastewater treatment works. Compliant.
	7. Waste separation implemented throughout at all nodes.	The proposal will involve a waste separation and recycling programme to be implemented by the master property owners association. Green report makes this compulsory. Compliant.
	8. All new housing developments must install solar geysers or similar devices.	Already required by SANS building codes. Green report makes this compulsory. To be incorporated into each building design. Compliant.
	9. Non-subsidy housing should be encouraged to install photovoltaic panels to reduce household electrical demand to below 300kWh.	Being investigated as an additional component in the Green report.
	10. SANS 10400XA energy efficiency standards to be adhered to for all planning applications, new buildings, major renovations and land use changes.	Green report makes this compulsory. To be incorporated into each building design. Compliant.
	11. Large developments to be incentivised to invest in solar energy generation equal or greater than their existing requirements.	Boschendal PTY Ltd is investigating implanting solar energy generation on the farm to release further capacity at the existing substation.
	12. Encourage use of recyclable building materials.	Can be addressed at the building stage.
FOOD AND AGRICULTURE	1. A Minimum of 10 000 ha of land should be safeguarded in the Stellenbosch Municipal Area for the cultivation of food for local consumption.	The land to be developed for the Boschendal Village is low-quality agricultural soil and, therefore, agricultural land assets are not adversely affected. Boschendal Estate will continue to contribute significant cultivated land for agriculture in the region. The extent of agriculture on the farm is comprehensively set out in section 4.5 of this report. This confirms that ±600ha was actively farmed on the Boschendal Estate in 2016. Boschendal Estate contribute 6% to the minimum set out in the SDF By 2018 it is envisaged that a total of 770ha will be actively farmed, increasing the estate’s contribution to 7.7% of the SDF minimum. The estate, therefore, makes an increasingly important contribution to the overall agricultural production in the Municipality. Compliant.
	2. Land outside existing or proposed urban settlements should be used for agriculture, biodiversity conservation, scenic quality and agri-tourism.	The balance of the Boschendal estate remains an active food producing farm. Compliant.

	Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
	3. Incentives to be developed to encourage food production on fallow land.	Boschendal has already embarked on a programme to increase food production section 4.5 of this report. Consistent.
	4. Subdivision and leasing of portions of land outside current and proposed settlements to be discouraged.	The proposed development area falls inside the Groot Drakenstein node and forms an integral part of creating this new node. The proposal is consistent with MSDf in this regard.
	5. Construction of large grocery-anchored shopping malls to be refused.	The proposal is not for a shopping mall, but for a mixed use development which will form the core of a new village. The proposal specifically does not contain a shopping mall or even a large supermarket. The proposal is for a farmers market selling fresh local produce, together with small-scale retail and convenience shops which are limited in scale which can serve the surrounding community and promote local produce over big national retailers. Compliant.
	6. Managed farmer markets selling fresh produce, arts and craft should be provided in key centres.	A farmers market is at the heart of the high street. Compliant.
HERITAGE	1. Map sensitive biodiversity areas and set up clear and appropriate guidelines.	A comprehensive sensitivity map was prepared by the heritage consultants and this area was identified as a possible development area. A biodiversity study also confirmed the site contains no sensitive vegetation or bio-diversity areas. Compliant.
	2. No buildings or intensive agriculture to be located on crest lines.	The development is not located on a crest or ridge line. Compliant.
	3. Ridgelines to be used for recreational and tourist related activities and income.	Not applicable.
	4. Viewsheds along major routes to be determined in a visual resource study.	A comprehensive sensitivity map was prepared by the heritage consultants and important views and vistas identified and taken into consideration. A comprehensive Visual Impact Assessment was undertaken which proposes significant mitigatory measures, of which Landscaping is an important element.
	5. Buildings along provincial roads to be set back, at least, 100m to preserve character of roads.	The proposal is for the development of a new urban node and the 100m setback from provincial roads in the SDF would therefore not be appropriate in the village context. However in order to acknowledge the scenic qualities of the R310, significant setbacks, and green spaces are created along the scenic whilst still maintaining sufficient sense of "openness". In this instance, most new buildings are set back ± 60m on the western side of the R310. New and existing buildings on the eastern side are screened by an existing avenue of trees and hedge, thereby preserving the notion of the scenic route. The 100m setback applies outside urban edges. Consistent
	6. Building heights and architectural style to be controlled within 200m of prominent roads.	An Urban Design Framework has been prepared to guide all future development in the Village. The Visual Impact Assessment states that although the Visual impact will be medium, this is acceptable. It concludes that the proposed Cape-style village would not be inappropriate and will even benefit the derelict nature of the site.



Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
7. Stewardship programmes and conservation of privately owned critically endangered biodiversity areas to be encouraged and made Core SPC.	Not applicable to this portion of the Boschendal Estate.
8. Tourism that reinforces the sense of place, inside and outside urban edge, to be encouraged.	The positive impact of the proposed development is confirmed in the EIA, Heritage and Socio-economic reports. The no-go option will not generate the same benefits of tourism creation and job creation.
<b>OTHER RELEVANT PROVISIONS IN MSDF</b>	
<p>Table 1 pg 12: Development infrastructure for Groot Drakenstein:</p> <p>Water – insufficient capacity                      Sewage: Sufficient                      Electricity: Eskom                      Solid Waste: Sufficient</p>	This development will construct an additional bulk water reservoir that will serve this and other development in the node, thereby contributing to the provision of bulk infrastructure for the proposed new node and other surrounding development. Link services will be constructed by the developer at his cost. Compliant
<p>Figure 1 pg 13: Proposed New Development Areas                      Groot Drakenstein Node: 16ha identified for new development in this node. This area does not include any development in the Boschendal Quadrant of the Village.</p> 	<p>The proposed village is located outside an area which was identified as "new development" on this plan. The proposal is for intensification of certain parcels which are already developed at very low densities, as well as infill development and transformation of small pockets of other vacant and derelict land. The SDF is not clear whether this type of development is "new development" or brownfields development. It is motivated that the portion inside the SM2016 conservative Urban Edge is brownfields development. The ±9ha of the village which falls outside the SM 2016 Edge could be regarded as "new development" which was not included in Figure 1 of the approved SDF and would thus be a <b>deviation</b> from the MSDF. Refer to site-specific motivation below.</p>
<b>Par 3.5 (Pg 45) GROOT DRAKENSTEIN NODE</b>	
Land around the intersection has strategic potential for a settlement.	The proposed development is located largely inside the area indicated inside the urban edge at this intersection. Consistent.
Careful development can reinforce heritage potential as a Boland Village.	A comprehensive urban design process with significant input from heritage consultants has been undertaken and care taken with design to create village, as opposed to a gated development. Compliant.
Future growth is northwards (across R45).	For future expansion of node, not relevant to the initial development of the node itself.
Development areas are the western portion of Meerlust and in the flood plain of the Dwars River outside the river corridor.	<p>The proposal is for the densification of existing residential development (west of R310) and urban development where service trade was conducted in the past. It does not appear that this development was specifically provided for on the plan of the SDF, but it is also not specifically excluded. Since it largely consists of urban development, at a new node, it is motivated that the proposal, insofar as it is inside the Urban Edge, is consistent with the SDF.</p> <p>The only portion where a deviation is required is for the small (±9ha) portion of land which is outside the SM2016 demarcated urban edge.</p>

Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. Deviations are shown in RED text
7. Stewardship programmes and conservation of privately owned critically endangered biodiversity areas to be encouraged and made Core SPC.	Not applicable to this portion of the Boschendal Estate.
8. Tourism that reinforces the sense of place, inside and outside urban edge, to be encouraged.	The positive impact of the proposed development is confirmed in the EIA, Heritage and Socio-economic reports. The no-go option will not generate the same benefits of tourism creation and job creation.
<b>OTHER RELEVANT PROVISIONS IN MSDF</b>	
<p>Table 1 pg 12: Development infrastructure for Groot Drakenstein:</p> <p>Water – insufficient capacity                      Sewage: Sufficient                      Electricity: Eskom                      Solid Waste: Sufficient</p>	<p>This development will construct an additional bulk water reservoir that will serve this and other development in the node, thereby contributing to the provision of bulk infrastructure for the proposed new node and other surrounding development. Link services will be constructed by the developer at his cost. Compliant</p>
<p>Figure 1 pg 13: Proposed New Development Areas                      Groot Drakenstein Node: 16ha identified for new development in this node. This area does not include any development in the Boschendal Quadrant of the Village.</p>  <p>The map shows a dashed line boundary for the Groot Drakenstein Node. A red circle highlights a 16ha area. A legend indicates icons for Water (red circle), Sewage (green circle), and Solid Waste (blue circle).</p>	<p>The proposed village is located outside an area which was identified as “new development” on this plan. The proposal is for intensification of certain parcels which are already developed at very low densities, as well as infill development and transformation of small pockets of other vacant and derelict land. The SDF is not clear whether this type of development is “new development” or brownfields development. It is motivated that the portion inside the SM2016 conservative Urban Edge is brownfields development. <b>The ±9ha of the village which falls outside the SM 2016 Edge could be regarded as “new development” which was not included in Figure 1 of the approved SDF and would thus be a deviation from the MSDF. Refer to site-specific motivation below.</b></p>
<b>Par 3.5 (Pg 45) GROOT DRAKENSTEIN NODE</b>	
Land around the intersection has strategic potential for a settlement.	The proposed development is located largely inside the area indicated inside the urban edge at this intersection. Consistent.
Careful development can reinforce heritage potential as a Boland Village.	A comprehensive urban design process with significant input from heritage consultants has been undertaken and care taken with design to create village, as opposed to a gated development. Compliant.
Future growth is northwards (across R45).	For future expansion of node, not relevant to the initial development of the node itself.
Development areas are the western portion of Meerlust and in the flood plain of the Dwars River outside the river corridor.	<p>The proposal is for the densification of existing residential development (west of R310) and urban development where service trade was conducted in the past. It does not appear that this development was specifically provided for on the plan of the SDF, but it is also not specifically excluded. Since it largely consists of urban development, at a new node, it is motivated that the proposal, insofar as it is inside the Urban Edge, is consistent with the SDF.</p> <p>The only portion where a deviation is required is for the small (±9ha) portion of land which is outside the SM2016 demarcated urban edge.</p>

Applicable and relevant SMSDF Summary	How it is addressed/complied with by Boschendal Village – Assessment of Consistency, Compliance or Deviation. <b>Deviations are shown in RED text</b>
Service roads are to be introduced along the R45 so that traffic is not disrupted.	Similar to the principle of service roads along the R45, it was necessary to introduce service roads along the R310. These are however integrated into the design to create attractive interface and a “Village High Street” approach.
The service lanes should be properly landscaped and pedestrianised.	Extensive landscaping is indeed proposed (refer to landscape framework plan) and in the Urban Design report the NMT orientated approach is clearly confirmed (Pg. 19 of the document 3.3.2.f. Street designs).
Water bulk infrastructure is required.	This project will provide Bulk water infrastructure in the form of water reservoir and link services that will benefit the whole node. (the provision of this infrastructure can be offset against development levies). The project will also provide bulk sewerage link services which can benefit other projects such as Meerlust in the future. Consistent.
Freshwater ecologists are to demarcate buffers around wetlands, canals, and rivers.	Refer to the independent Freshwater Ecologist report. This was indeed undertaken. (compliant).
Eco-conservation zones to be investigated on site.	There are no conservation worthy zones on this site.
 <p>Section 3.5 in the SDF shows the Urban Edge and areas identified for Urban Development as a Model Rural Village (MRV). The approximate area for the Boschendal Village development proposal is indicated in red outline on the above drawing. The approximate area outside SM2016 urban edge is highlighted in cyan. (not to scale)</p>	<p>It is clear from this plan that the SDF only focussed on new development areas in the node north of the 45 and did not make any proposals for infill development of existing residential and service industry areas south of the R45, although these areas were included and fall inside the Urban Edge.</p> <p>Since the SDF does not specifically highlight this land provide for “New Development as a MRV” the proposed Boschendal Village, although not <b>compliant</b> (i.e. 100% in accordance with the SDF, as defined in section 19(1) of LUPA). However, the principles, guidelines and development objectives of the SDF as a whole is promoted, complied with and implemented as illustrated in the table above and therefore the proposal must be seen as <b>consistent</b> with the SDF. (as per section 19(2) of the SDF.</p> <p>It should be noted that a small portion of this land (approximately 1 ha) is indicated to “promote agriculture as appropriate).</p> <p><b>The only aspect which requires a site-specific deviation from the SDF is the inclusion of a small portion of ±9ha of land into the urban edge to give better expression to edge making, heritage indicators, and urban design considerations. Approximately 1 ha of the 9ha is indicated for agriculture. It is proposed that this area be incorporated in the urban edge and be developed for urban development. Justification for the site-specific deviation is provided in Par 11.2 below.</b></p>

It is clearly motivated that the proposed Boschendal Village is **compliant** with the Stellenbosch Municipal SDF insofar as many aspects mentioned in the SDF is concerned, including that it is development within an identified urban node, the proposed density of the village, the urban nature thereof, and many of the other design guidelines contained the SDF. The proposed Village is also **consistent** with the SDF insofar as many other aspects of the SDF is concerned, for example that it is largely brownfields and infill development inside the edge, it is development at the intersection of the R310 and R45, consistent with the land use and housing mix and the socio-economic profile of future residents if the whole node is considered (not just the village in isolation) and setback form rural provincial roads.

There is one remaining aspect which **deviates** from the SMSDF, namely the urban edge. Approximately 9ha of land outside the existing urban edge is proposed to be included as part of the Village. Approximately 1 ha of this land is indicated to be preserved for agriculture in the SDF, whilst there is no SPC indicated for the rest. The designation of this land (after development) will be 'urban development'. Refer to Figures 14a and 14b below.

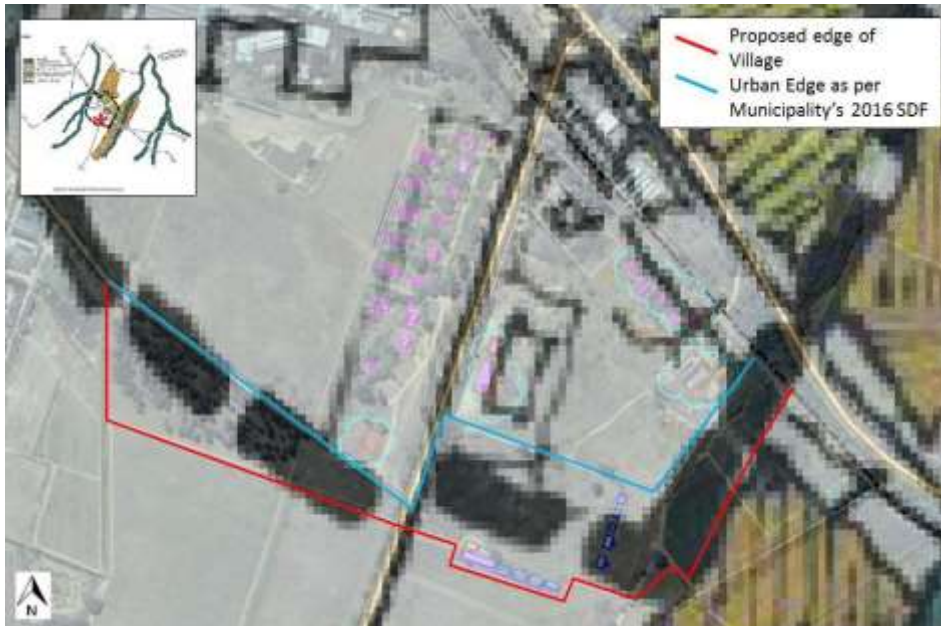


Figure 14a: Extract from SDF overlaid onto aerial photo and topo-cadastral & building survey.



Figure 14b: New Village footprint in relation to SDF Urban Edge, highlighting area of deviation

The Social Specialist states the following regarding the SDF and the proposed development:

The Stellenbosch SDF notes that the future spatial development of the Stellenbosch LM is guided by seven strategic perspectives, namely:

- Interconnected nodes;
- Car Free Transport;

- Inclusive Economic Growth;
- Optimal Land Use;
- Resource Custodianship;
- Food And Agriculture;
- Heritage.

The SDF indicates that a key feature of the greater Stellenbosch area is the historic pattern of locating settlements along strategic transport and river systems. In order to protect the areas unique character and constrain environmental damage, it would be advantageous to follow this pattern of interconnected nodes. The proposed Boschendal Mixed Use Development is located within the Groot Drakenstein Node at the junction of two established transport links, the R310 and R45. The majority of the proposed development is also located within the Groot Drakenstein Node Urban Edge.

The SDF notes that projects catering to low, middle and high income groups should be designed as larger integrated settlements rather than stand-alone townships or gated communities. While the proposed development does not cater for housing for the low income sector it is designed to create a compact, rural village that includes a mixture of commercial, retail and residential components.

The SDF notes that tourism that reinforces the municipality's sense of place should be encouraged and attractions should be developed that remain appropriate to the region's well established themes. The proposed development seeks to develop a compact, rural village that is informed by a number of heritage indicators that highlight the importance of sense of space and scale. The urban design framework also highlights the link between the proposed development and the historic Boschendal Homestead and associated werf area.

#### **The Stellenbosch Integrated Development Plan (IDP) (2015-2016)**

The IDP is underpinned by five strategic objectives, namely:

- Objective 1: Striving to make Stellenbosch the preferred destination for investment and entrepreneurship translating into jobs and prosperity.
- Objective 2: Establishing the greenest municipality which will not only make it attractive for visitors and tourists, but I also provide a desirable environment for new industries and create "green" jobs.
- Objective 3: Ensuring a dignified living for all Stellenbosch citizens, providing – acceptable living conditions, sanitation and clean drinking water.
- Objective 4: Creating a safer Stellenbosch valley, where civic pride and responsibility will replace crime and destructive behaviour.
- Objective 5: Entrenching good governance, which implies compliance with and adherence to mandatory policies and procedures, a key requirement for effective governance.

The IDP also includes development priorities defined by ward committees. Key priorities identified for Ward 3 (Pniel, Lanquedoc, Meerlust Bosbou) are the following:

- Primary Health care (clinic)
- Housing and Land for Housing
- Public Safety (Regular patrolling by law enforcement officers, mobile office and neighbourhood watch in Lanquedoc, Meerlust and Wemmershoek)
- Job Creation
- Community Development and Facilities (Free access to municipal halls for youth activities and meetings)

The proposed development will create many job opportunities during the construction and operational phases. Community facilities will be provided and developed, housing will be provided for middle to higher income brackets and the existing clinic will be moved to a more accessible location within the development. The proposal therefore complies with the IDP.

(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
Not Applicable.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
<p>The Environmental Management Framework is part of the broader framework of Integrated Environmental Management (IEM), a philosophy and process that has been designed to ensure that the environmental consequences of development are understood and adequately considered in the planning, implementation and management of all developments. IEM is intended to guide, rather than impede the development process by providing an approach to gathering and analysing information, and ensuring that it can be easily understood by all interested and affected parties. The purpose of IEM is to resolve or lessen any negative environmental impacts and to enhance positive aspects of development proposals.</p> <p>One of the many tools that can be used to assist in achieving integrated environmental management is the Environmental Management Framework (EMF). At its simplest, an EMF is a set of information that can be used by decision makers to assist them in determining the best approaches (either procedural and/or technical) to dealing with a variety of environmental challenges.</p> <p>The EMF illustrates the site as being located within a transitional area of the Cape Winelands Biosphere Reserve and within an area of moderate potential arable land. The site is not located within any protected areas.</p>			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
<p><b>Stellenbosch Municipality Strategic Framework for Local Economic Development</b></p> <p>According to the Social Specialist, a strategic Framework for Local Economic Development (LED) was prepared for the Stellenbosch Municipality in September 2013. Key SLM strengths identified in the Framework LED include:</p> <ul style="list-style-type: none"> <li>• Proximity of the sea, mountains, Cape Town and airport;</li> <li>• Location at the outer edge of the Cape Town Metropole with good access routes;</li> <li>• Diversified, high-value agriculture across the area, including the heart of South Africa's world-class wine industry;</li> <li>• Highly attractive tourism environment, capturing overseas, African, up-country and short-distance visitors;</li> <li>• The University of Stellenbosch and other higher-education and research centres;</li> <li>• A broad-based economic sector structure, including several promising niche sectors;</li> <li>• Proximity to regional and (inter-)national transport facilities (sea, air, rail, road);</li> <li>• Popular retirement destination for the skilled and high-income part of the population;</li> <li>• Base for a number of world-class corporates;</li> <li>• Attractive living environment which helps to attract and retain skilled and experienced labour; and</li> <li>• Well-developed local infrastructure.</li> </ul> <p>Identified key challenges include the following:</p> <ul style="list-style-type: none"> <li>• Addressing the need to continuously grow the local economy through developing niche sectors such as services, tourism, agri-processing, wood processing and the informal sector;</li> <li>• Increasing economic participation, in particular of the poor and other marginalised groups;</li> <li>• Changing the largely racially based land use pattern by encouraging the location of new economic opportunities where the poor are located and also locating the poor where current economic opportunity exists.</li> </ul> <p>The following LED focus areas are proposed:</p> <ul style="list-style-type: none"> <li>• Initiatives which support growth in the niche sectors with significant growth potential (i.e. services, tourism, agri-processing, wood processing, informal sector and construction);</li> <li>• Education and skills development in relation to the niche sectors identified; and</li> <li>• Enabling sustainable livelihoods, addressing poverty reduction and social welfare support.</li> </ul> <p>Initiatives proposed to strengthen the SLM's competitive advantage for sustained growth include:</p> <ul style="list-style-type: none"> <li>• Taking advantage of the proximity of the Cape Metro proximity; and</li> <li>• Promoting Stellenbosch as the best food and wine tourism experience in the Southern Hemisphere.</li> </ul>			

As is evident from the above, the focus is on niche, excellence and innovation. In addition, the scenic, agricultural and tourism components are greatly interlinked.

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?

YES

NO

Please explain

The Boschendal Village is located within the Groot Drakenstein Node, as identified in the SDF.

The SDF identifies 14 interconnected development nodes which lie at the heart of the Municipality's spatial development and land use management strategy. The system of interconnected nodes is an important tool through which the Municipality intends to provide infrastructure for development which in turn will ensure that the Municipality achieves the other objectives set out in the SDF, namely:

- Achieve shared growth;
- Increase access to opportunities, especially for disadvantaged citizens;
- Improved sustainability by minimising ecological footprint and development at gross densities of at least 15 du/ha;
- Maintain the unique sense of place.

The SDF requires that new development be focussed within the identified development nodes, of which the Groot Drakenstein Node is one such development node. This node is located at strategic road intersections and the SDF demands that uncontrolled urban sprawl at the existing main growth centres of Stellenbosch and Franschhoek be curtailed in favour of high-density nodal development at strategic intersections elsewhere in the municipality. This will conserve agricultural land assets elsewhere and improve the functioning of rural, agricultural and ecological systems.

The SDF notes that projects catering to low, middle and high income groups should be designed as larger integrated settlements rather than stand-alone townships or gated communities. While the proposed village does not cater for housing for the low income sector, it is designed to create a compact, rural village that includes a mixture of commercial, retail and residential components.

The SDF notes that tourism that reinforces the municipality's sense of place should be encouraged and attractions should be developed that remain appropriate to the region's well established themes. The proposed development seeks to develop a compact, rural village that is informed by a number of heritage indicators that highlight the importance of sense of space and scale. The urban design framework also highlights the link between the proposed development and the historic Boschendal Homestead and associated werf area.

The proposed Boschendal Village is therefore compliant and consistent with the Stellenbosch Municipal SDF. There is one remaining aspect which deviates from the SSDF, namely the urban edge. Approximately 9ha of land outside the existing urban edge is proposed to be included as part of the Village.

The proposed deviation from the SSDF will create strong urban edges which can be defended and which will ensure further urban development cannot sprawl in future towards the south and east. The proposed new urban edge was informed by several detailed studies, and constitutes a minor deviation from the original urban area indicated in the SSDF.

The extended urban development area is on land already disturbed by residential, service industry and community related activities, such as the pallet factory, housing, school and clinic and does not affect any biodiversity areas or wetlands. The proposal has a negligible impact on existing cultivated agricultural land and development is proposed on land with low soil potential for agriculture. The visual impact assessment has made recommendations on structural planting to mitigate the impact of development on the cultural and rural landscape and has even recommended that the proposed development of a Cape Village, if designed correctly will mitigate the current derelict appearance of this area. The elements of 'Scenic Route' has been acknowledged in the design layout of the village with significant landscapes open areas adjacent to the R310 and most buildings set back ± 60m from the road (except for existing retained buildings and certain new landmark buildings at the main entrance).

4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?	YES	NO	Please explain
<p>The approach to regional settlement formation was developed as part of a comprehensive planning and environmental process in order to establish where the development would be most appropriately located. The overall approach is one of consolidation and integration, and was informed by a team of heritage specialists.</p> <p>The regional settlement concept is based on the premise that settlements should be occurring in places where it strengthens the overall system and concept, where it creates synergies and where it has the least possible adverse impact on the rural environment. Settlements should take place at points of high access and on the periphery of farmland to protect the agricultural integrity of the farm, creating, supporting and strengthening the concept of the agricultural superblock. This leads to the following main principles being established:</p> <ul style="list-style-type: none"> <li>• Maintain the dominance of wilderness areas in areas of least access;</li> <li>• Maintain working agricultural farms in concentrated areas of least access;</li> <li>• Maintain and enhance continuities of green space and movement;</li> <li>• Respect the valley – no development in public view cones, steep slopes or on ridge lines;</li> <li>• Maintaining the agricultural superblock.</li> </ul> <p>Conceptually, applying the above principles to the local area, a regional settlement format or concept is developed which is clearly indicative of the suitability of this location for a village node.</p>			

5. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
<p>Business and employment opportunities will be created by the proposed development during the construction and operational phases. The provision of housing and community facilities will also be provided.</p> <p>The potential creation of employment opportunities for local HD members of the community would represent a significant social benefit given the current economic conditions and the slump in the building sector. Due to the high unemployment levels in the surrounding areas, coupled with the low income and education levels, this proposal will be a positive impact for the local community and it can be said that the community does need this activity. Given the nature of the jobs, a large percentage are also likely to be available to women.</p> <p>The proposed development also makes provision for a pre-school / crèche that will cater for both the residents of the village and local community members in the area. The existing clinic will also be upgraded and moved to a more accessible location and housed in one of the new business buildings in the village. The local communities have indicated a need for these facilities.</p>			

6. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as <b>Appendix E</b> .)	YES	NO	Please explain
<p>The necessary services with adequate capacity are currently available for water, sewage and solid waste. Confirmation of these services is included in <b>Appendix E1</b>.</p> <p>The municipal electrical department has advised that there is a 1,5MVA spare capacity available at the existing main substation in the area of the proposed development. The total estimated conventional electrical load for the proposed development is approximately 2,4 MVA. It is therefore the intention to conserve energy and reduce the demand at peak periods of the proposed village to 1,5MVA through the implementation of energy saving methods as described in the Greening Report (<b>Appendix G5</b>). The Applicant also intends reducing the Boschendal Farm's power consumption from the external supply by at least 1.0 MVA, mainly by means of solar power panels, but also by other generation methods and/or and other power saving measures, thereby making more power available for the proposed development.</p> <p>For more detail related to service provision, refer to section 1d above as well as <b>Appendix G4</b>.</p>			



7. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as <b>Appendix E.</b> )	YES	NO	Please explain
The Municipality will upgrade the power substation sub-station located on Helshoogte Road diagonally opposite the police station building, in order to house the switchgear for this Boschendal Village development.			
8. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
No this was not of national concern or importance.			

9. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
<p>The proposed site is included within the Groot Drakenstein Development Node. This node has been identified for settlement development.</p> <p>The site has been transformed and heavily disturbed by development, agricultural activities and a pallet factory (now operating as a fruit packing facility).</p> <p>The site is strategically located, it can therefore easily connect to existing services and since is located at the intersection of the R45 and R310, the site is easily accessible to the surrounding areas. The Groot Drakenstein Node currently has no link services to the bulk water and sewer works and this development will enable link services that will enable other developments to take place within the node in due course.</p> <p>The agricultural potential of the land to be developed is low. The development is therefore not affecting prime agricultural land. Most of the land, with the exception of a small portion where a pear orchard is located (which is high agricultural potential land), is not currently cultivated and has not been cultivated in the past 10 years. The land uses which abut the development to the west and north are mostly urban in nature (industrial, office use, railway line) and the proposed development will therefore not sterilise or adversely impact high-quality agricultural land on these edges.</p> <p>The proposal will result in a number of positive social benefits for the local community and the area as a whole. These include the creation of employment opportunities during the construction and operational phase, creation of commercial, training and skills development opportunities during the operational phase and the generation of funds for community based initiatives.</p> <p>Considering the above reasons, it is the opinion of the EAP that the site is suitable for the proposed development.</p>			

10. How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	YES	NO	Please explain
<p>Little or no natural vegetation is present on site. The natural vegetation that does occur on site, is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern.</p> <p>The freshwater ecosystems affected by the proposed Boschendal Village development include three hillslope seep wetlands and one depression (on site), the Dwars River (adjacent to site, but affected by services) and five small watercourses located off-site between the proposed site and Pniel (these would be impacted by the water supply mains and the sewer pipeline). The river has a high ecological importance and a very high ecological sensitivity and the wetlands are all of moderate ecological importance and sensitivity, with wetland 3 being the least important due to its probable anthropogenic origin. The development alternatives were considered to be acceptable from a freshwater perspective. With the implementation of the recommended mitigation measures, the potential impacts on the freshwater systems could be reduced to a low to moderate negative and negligible significance.</p> <p>The proposed development conforms to the identified heritage indicators and will improve the area. The overall heritage impact of the preferred alternative (Alternative 5), including the mandatory controls and guidelines specified in the Urban Design Report and recommended mitigation measures, is regarded as potentially medium-high positive. However, should these mandatory controls, guidelines and mitigation measures not be implemented, then the overall heritage impact of the proposed development is potentially medium-high negative.</p>			
11. How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)?	YES	NO	Please explain
<p>From a visual perspective, although the proposed village development would be in contrast to the rural surroundings, the site abuts an industrial canning factory, and could help to upgrade the run-down nature of the site. The proposed village development would potentially form part of the surrounding landscape and have a strong influence on the cultural landscape. Over time, with the growth of extensive new tree planting, the visual impact for the development options could be reduced to a medium-low significance.</p> <p>With respect to the sense of place, the Urban Design Framework (<b>Appendix G2</b>) for the proposed Boschendal Village was informed by a number of factors including a set of Heritage Indicators and Directives. The Heritage Indicators identify two key issues that are central to the design of the proposed Boschendal Village and that have a bearing on sense of place. The first highlights the importance of the historic cultural landscape which includes preserving the dominance of the rural landscape. The second seeks to ensure that the authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in a new settlement. The issue of sense of place therefore played a key determining role in the design of the proposed development.</p>			
12. Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	YES	NO	Please explain
<p>With mitigation measures taken into account, the proposed development will not result in any unacceptable opportunity costs.</p>			

<p>13. What will the cumulative impacts (positive and negative) of the proposed land use associated with the activity applied for, be?</p> <p><u>Positive cumulative impacts expected:</u></p> <p>Social:</p> <ul style="list-style-type: none"> <li>• Opportunity to up-grade and improve skills levels in the area.</li> <li>• Provision of key components required to promote social and economic development and improve the overall well-being of the community.</li> <li>• Opportunity to reduce unemployment levels, and up-grade and improve skills levels in the area.</li> <li>• Promotion of social and economic development and improvement in the overall well-being of the community.</li> <li>• Promotion of tourism related social and economic development and improvement in the overall well-being of the community.</li> </ul> <p><u>Neutral cumulative impacts expected:</u></p> <p>Visual:</p> <ul style="list-style-type: none"> <li>• The proposed village development would substantially increase the urban footprint of the area. The site is, however, seen as part of a planned urban node. Another consideration is the time span over which the proposed development would take place, an incremental, phased development having less of an immediate cumulative effect.</li> </ul> <p>Heritage:</p> <ul style="list-style-type: none"> <li>• The proposed village would involve a major new element in an area of high heritage significance. The cumulative impacts of the proposed development (Alternative 5) are not regarded as significant from a heritage perspective subject to the implementation of the mitigation measures. It adds to an existing development node that is consistent with the rural corridor concept identified in the heritage indicators.</li> </ul> <p><u>Negative cumulative impacts expected:</u></p> <p>Freshwater</p> <ul style="list-style-type: none"> <li>• The cumulative impacts of most concern in this area is the loss of open space, loss of wetland and river floodplain habitat, an increased number of crossings (mainly of services) over rivers and wetlands, increased water demand and use, and the discharge of treated effluent and stormwater into the Dwars River.</li> </ul> <p>Social:</p> <ul style="list-style-type: none"> <li>• Potential damage to roads results in higher maintenance costs for vehicles of other road users. The costs will be borne by road users who were not responsible for the damage.</li> <li>• Potential loss of jobs and associated impact on the local community.</li> <li>• Impacts on family and community relations that may, in some cases, persist for a long period. Also in cases where unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS, the impacts may be permanent and have long term to permanent cumulative impacts on the affected individuals and/or their families and the community. The development of other development projects in the area may exacerbate these impacts.</li> </ul>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>
<p>14. Is the development the best practicable environmental option for this land/site?</p> <p>The site is included within the Groot Drakenstein Development Node which has been identified for future urban development. The proposed development also supports a number of the provincial and local level policy and planning objectives.</p> <p>The site has been transformed by agricultural activities, residential houses, a fruit packing facility and has been heavily disturbed by development, alien vegetation and farm roads. There is therefore very little remaining vegetation on site and the little that remains is of no botanical significance.</p> <p>There are 4 wetlands on site which have been heavily impacted on by surrounding agricultural activities, roads and the railway line. The wetlands are, however, all of moderate ecological importance and sensitivity, with wetland 3 being the least important due to its probable anthropogenic origin.</p>	<p>YES</p>	<p>NO</p>	<p>Please explain</p>

The site is considered to be of low agricultural potential except for the area containing the pear orchard. The Applicant's preferred alternative retains this existing orchard which will continue to be farmed.

The proposed development will create significant opportunities and benefits for the local economy and members of the local community in the Dwars River Valley in terms of employment, business and housing opportunities as well as the provision of community facilities. The funds generated by the sale of properties associated with the proposed development will enhance the opportunities to support and fund future development initiatives in the area.

Since the site is not suitable for agriculture, is located within a development node, has little ecological significance besides the wetlands which can be protected with the recommended buffers, and since the proposal is consistent with local planning policies, and will provide many employment opportunities, it is the opinion of the EAP that the proposal is best practicable environmental option for this site.

15. What will the benefits be to society in general and to the local communities?	Please explain
<p>Business and employment opportunities will be created by the proposed development during the construction and operational phases.</p> <p>The total capital expenditure associated with the proposed development is estimated to be approximately 1.08 billion Rand. The majority of work during the construction phase is likely to be undertaken by local contractors and builders based in the Stellenbosch Municipality, Cape Winelands and Cape Metropolitan Area. The majority of the building materials associated with the construction phase is also likely to be sourced from locally based suppliers. The proposed development will therefore represent a positive benefit for the local construction and building sector and the economy. The proposed development would therefore represent a significant opportunity for the local construction and building sector. The construction phase (bulk services and development of commercial and residential units) is anticipated to extend over a period of 5-8 years depending on market.</p> <p>Roughly 770 construction related employment opportunities will be created. The majority of the employment opportunities associated with the construction phase is likely to benefit local Historically Disadvantaged (HD) members of the community. This would represent a significant opportunity for the local building sector and members of the local community who are employed in the building sector.</p> <p>The retail and commercial component, which includes the farmers market, shops, and restaurant's, places of entertainment, offices etc., will create business opportunities for local companies and entrepreneurs. These include service companies, such as cleaning, catering etc. The residential component will also create opportunities for local businesses, such as maintenance and building companies, garden service and security companies, etc. and create opportunities for new businesses to develop. Local estate agencies and legal firms would also benefit from the sale and resale of properties associated with the new development.</p> <p>The residential component has the potential to create ~ 176 employment opportunities for domestic workers and gardeners etc. The retail component has the potential to create between 500 and 600 employment opportunities, while a 100 room hotel would create ~ 80 employment opportunities. The total number of employment opportunities created during the operational phase would be in the region of 800. The majority, it not all, of the employment opportunities are likely to benefit HD members from the local community.</p> <p>The owners of Boschendal have therefore demonstrated that they are committed to employing and training community members from the area. The operational phase of the proposed development will create on-going need for training and skills development programmes that will benefit members of the local community.</p> <p>Not only will the local community benefit from business and employment opportunities but the provision of housing and community facilities will also be to their benefit.</p> <p>The housing provided by the proposed development will not address the current housing needs of the low income sector. However, the 210 apartments will create opportunities for middle to higher income members of the local community to acquire property in the area. The proposed development will therefore create opportunities for young professionals from the area to buy property in the Dwars River Valley. The developers have also indicated that 10% (maximum of 47) of the total number of residential units will allocated as affordable housing for key workers. The term "key worker" is typically defined as a public sector employee who provides an essential service. Boschendal will set aside ~ 50% of the 47 units to accommodate key Boschendal workers, while the remaining 50% will be made available at a subsidised rental to non-Boschendal key workers.</p> <p>The farmers market will provide opportunities for local producers to sell their produce. The restaurants will also create a market for local produce from the area.</p> <p>In the event that a pre-school/creche is required, it will be located at an accessible location utilising the General Business GLA. It will cater for both the residents of the village and local community members in the area. The existing clinic will also be up-graded and moved to a more accessible location and housed in one of the new business buildings in the village.</p> <p>The current owners of Boschendal have indicated that a percentage of the value of the initial sale of all properties will be allocated to supporting development initiatives in the area. In this regard the current owners of Boschendal have established a trust with a key for supporting education and skills development in the</p>	

Dwars River Valley. The income generated from the sale of properties will be used to fund the trust. The owners of Boschendal have also stressed the importance of ensuring that there is proper management of the trust and full accountability and transparency.

The current owners have also embarked on a number of community initiatives. These include the establishment of a pre-school and aftercare facility in the Dwars River Valley and a food nutrition programme for local schools that uses local produce from the farm, and the Rachelsfontein Centre, located on Boschendal Farm, which will provide a space for staff and their families to relax and interact. The centre will also include a sports field, theatre, amphitheatre, meeting rooms, lecture hall, library, etc. The option of establishing some form of Agricultural College on the farm is also being considered. The option of linking the college with the Elsenburg Agricultural College is being investigated. The college will create opportunities for members from the local community to get formal training in the field of agriculture. A bursary programme for local workers and community members will also be established.

The proposed development also seeks to attract tourists to the area. The urban design framework also stresses the importance of linking the proposed development to the historic Boschendal Manor House and werf. The development also benefits from its location relative to Boschendal, La Rhone and a number of other historic wine farms in the area, including Allée Bleue, Solms Delta, Normandie and L'Ormarins.

The proposed development will therefore create significant opportunities and benefits for the local economy and members of the local community in the Dwars River Valley. The funds generated by the sale of properties associated with the proposed development will enhance the opportunities to support and fund future development initiatives in the area. This will represent a significant socio-economic benefit for the local community.

In addition, the proposed development will not only benefit the local economy but the regional and national economy too through the provision of higher income housing and the attraction tourists to the area. This in turn will benefit Boschendal Estate as well as the surrounding farms.

16. Any other need and desirability considerations related to the proposed activity?	Please explain
No.	

(17) Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account:

The purpose of Section 23 of NEMA is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.

The general objectives were taken into account by doing the following:

- Specialists were appointed to assess the significance of the site and to identify the potential negative and positive impacts associated with the proposal.
- All significant impacts on the environment and the surrounding communities were considered and discussed in this application. Where impacts cannot be avoided, mitigation measures have been proposed to reduce the impact to acceptable limits. It is the opinion of the EAP that all impacts are within acceptable limits.
- An Environmental Management Programme has been compiled to ensure are clearing is done according to best environmental management practices.
- A public participation process (PPP) has and is being undertaken as per the EIA Regulations 2014 and DEA&DP's guidelines on PPP which allows sufficient opportunity for public consultation. Advertisements were placed in newspapers, informing members of the public of the application and available information. Details on how members of the public can register as interested and affected parties (I&APs) were included. Other stakeholders (ward councillor, local authorities, adjacent landowners, organs of state, state departments, etc.) have been identified and will be notified of the process and opportunity to comment on reports. In addition, a site notice was placed on site. See **Appendix F**.

(18) Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account:

Section 2 of the NEMA provides principles of environmental management to serve as a framework for environmental management implementation and decision making. The main and applicable principles of environmental management as set out in Section 2 of NEMA emphasizes the following:

- Environmental management placing people and their needs at forefront of its concern, and serve their physical, physiological, developmental, cultural and social interests equitably.

*I&APs and Stakeholders will be allowed the opportunity to consider and submit comment on the report, thereby ensuring that all people's needs, rights and concerns will be addressed throughout this process. In addition, an open house meeting will be held where the public will have an opportunity to view posters regarding the application and to ask the specialists and consultants any questions they may have. Heritage, visual and social specialists were appointed to assess the application and to ensure all concerns are adequately addressed. A set of Heritage Indicators were developed by the heritage specialists. The development was designed on these Indicators thereby reducing any potential impacts on heritage or visual resources.*

- Development must be socially, environmentally and economically sustainable

*The potential need and desirability of the proposed facilities has been given attention to determine whether there is a need and/or demand for the development. The proposal will be beneficial from a social and economic perspective while at the same time not negatively impacting the environment.*

- Costs of remedying pollution and environmental degradation

*The applicant has appointed specialists to assess any impacts potentially resulting from proposal and to propose mitigation measures to avoid any significant negative impacts and to identify areas that should be avoided at all costs.*

- Sensitive, vulnerable, highly dynamic or stressed ecosystems.

*The Botanist and Freshwater Ecologist have assessed any potential impacts that may be caused by the proposal and has proposed measures to mitigate negative impacts where they cannot be avoided.*

- Negative Impacts on the environment and people's environmental rights must be anticipated and prevented, and where they cannot be prevented are minimized and remedied.

*A Social Impact Assessment was undertaken to determine any potential impacts, both positive and negative, and recommended mitigation measures to reduce negative impacts where they could not be avoided or where positive impacts could be enhanced.*

- Waste avoidance, minimisation and recycling.

*A waste minimization, cradle-to-grave approach is to be implemented, with waste separation at source and recycling of solid waste.*

- Responsible and equitable use of non-renewable resources.

*Energy and water saving technology and methods have been proposed and are to be implemented. A Greening Report recommending various sustainable methods has been compiled (**Appendix G5**). The Applicant will investigate these methods and implement those that are viable.*

- Avoidance, minimisation and remedying of environmental impacts

*Where impacts could not be avoided, various precautionary and mitigation measures have been incorporated to ensure environmental impacts are kept to a minimum.*

- Interests, needs and values of interested and affected parties.

*This process provides potential interested & affected parties (I&APs) and other key stakeholders with sufficient opportunity for review, comment and input in the process. Details of the public participation process undertaken are included in **Appendix F** of this report and will be detailed in the Basic Assessment Report.*

- Access of information.

*Registered I&APs are all provided with the available documentation contained in this report.*

- Promotion of community well-being and empowerment.

*The development will result in a number of positive impacts for the local communities.*

## SECTION E: ALTERNATIVES

**Please Note:** Before completing this section, first consult this Department's *Guideline on Alternatives* (August 2010) available on the Department's website (<http://www.capegateway.gov.za/eadp>).

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

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

The NEMA prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, with respect to every application for environmental authorisation –

- ensure that the general objectives of integrated environmental management laid down in NEMA and the National Environmental Management Principles set out in NEMA are taken into account; and
- include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.

The general objective of integrated environmental management is, *inter alia*, to "identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management" set out in NEMA.

1. In the sections below, please provide a description of any identified and considered alternatives and alternatives that were found to be feasible and reasonable.

**Please note:** Detailed written proof the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exist.

- (a) Property and location/site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No location alternatives were considered. The proposed site is located within the Groot Drakenstein Node and is therefore identified for urban development.

- (b) Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Two activity alternatives were considered, however, only one was assessed. This included the original proposal that was developed during the previous planning and environmental applications, a retirement village and the new proposal, the concept of a rural village. Various iterations of the rural village concept are discussed further under layout alternatives.



**ALTERNATIVE 2: RETIREMENT VILLAGE (2011) (Figures 15a and 15b)**

This alternative was originally developed during the previous environmental process. The intention was to develop a retirement village consisting of:

- 138 erven for residential purposes
- 25 assisted living apartments under sectional title
- A frail care centre consisting of 20 beds
- A convalescence facility consisting of 12 beds
- A rehabilitation centre
- A clubhouse including dining rooms and meeting rooms
- A small commercial and information centre
- Open space and access ways

This alternative **was not assessed further** since it was not considered viable, feasible or reasonable by the project team, for the following reasons:

- Issue of gatedness and access - it was recognised that it is important for the settlement to create places of public access and not for it to be a gated village. The proposal was seen as privatising and gating large tracts of land and not creating enough public access to public facilities for the general public.
- The proposal was introverted and turns its back on the outside world. The relationship with the R310 and R45 is not sufficiently clarified.
- The proposed settlement form was predominantly suburban in nature (single unit on a single plot). The search must be to capture rural village character.
- The issue of sameness was raised by the heritage specialists - proposals had a uniformity regardless of the various indicators.
- Much of this village fell within the scenic route area along the R310.
- Development was proposed within the visually sensitive zone of the historic core.
- Uniformity in land use –i.e. retirement village was regarded as unacceptable and did not create sufficient diversity and activity to satisfy the definition of a “village” and therefore no argument could be made for integrative development which would benefit the public at large and promote development principles.

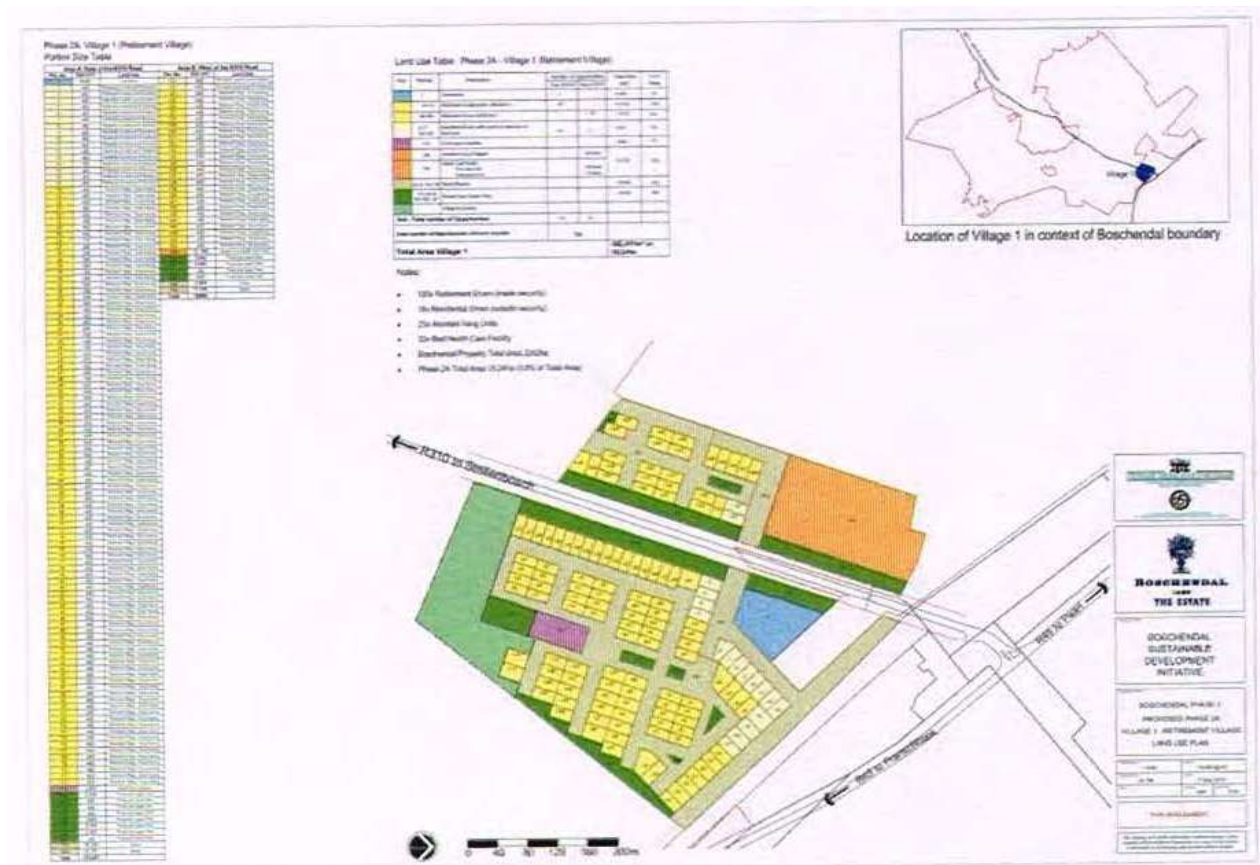


Figure 15a: Land use Concept: Alternative 2 (DMP 2011)



Figure 15b: Site Development Plan: Alternative 2 (DMP 2011)

**ALTERNATIVE 3 (September 2014) (Figure 16)**

This alternative was developed to explore the concept of rural village. It consists of the following:

- ±23 000 m<sup>2</sup> Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, a market, offices and other related businesses.
- Hotel or guest accommodation of ±110 rooms.
- 715 Residential dwelling opportunities at various densities (from single dwelling to 3 storey apartments).
- The development footprint of this proposal is 34,5 ha.

This alternative **was not assessed further**. The project team did not consider this alternative feasible or reasonable, for the following reasons:

- Access points to the Village are limited due to the classification of the R310 as a class 2 primary arterial in a semi-rural environment.
- The trips generated by this proposal could not be accommodated by the intersections.
- The densities in the village was too high which would have resulted in very compact high density urban character which was not compatible with the character of rural village.
- The densities would not have allowed for sufficient variety in urban form (ranging from very low densities at the urban edge to highest densities in the village core).
- Insufficient electrical capacity is available to accommodate this alternative and this would have required significant external infrastructure to be installed which would require crossing the Berg River.
- The proposed GLA for business was too high and it was determined that the market demand would not be suitable to warrant the investment required for this level of development.
- This development layout did not adequately take wetlands on the site into consideration.
- The central access to the focal point in the village is off-centre and does not create a balanced layout.

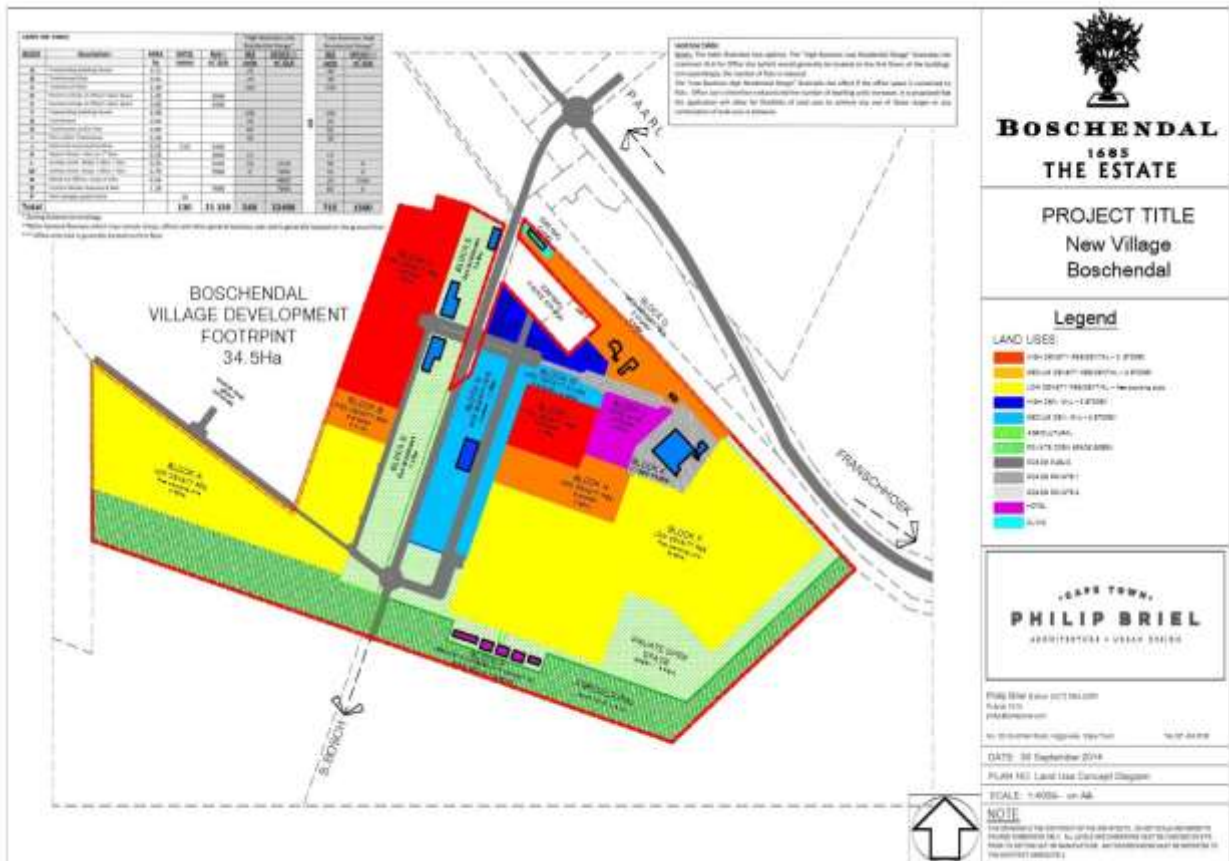


Figure 16: Land use Concept: Alternative 3 (Philip Briel 2014)

(c) Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

**ALTERNATIVE 4 (May 2015) (Figures 17a and 17b)**

Alternative 4 is similar to Alternative 3 but with a reduction in the number of residential units and a reduction in the GLA of the mixed use development area.

- The core of the development will comprise 14 500 m<sup>2</sup> Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, offices and other related businesses.
- An hotel or guest accommodation of approximately 100 rooms is proposed.
- Approximately 440 residential units are proposed as part of this application.
- A small portion of the development footprint falls within the 1:100 year flood line and requires to be filled in to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village.
- The development footprint is 27, 8 ha
- The proposal involves a detailed stormwater management proposal which takes into consideration the wetlands identified within the application area.

This alternative **was not assessed further**, for the following reason:

- The grid layout was too rigid and did not offer sufficient variation in built form.

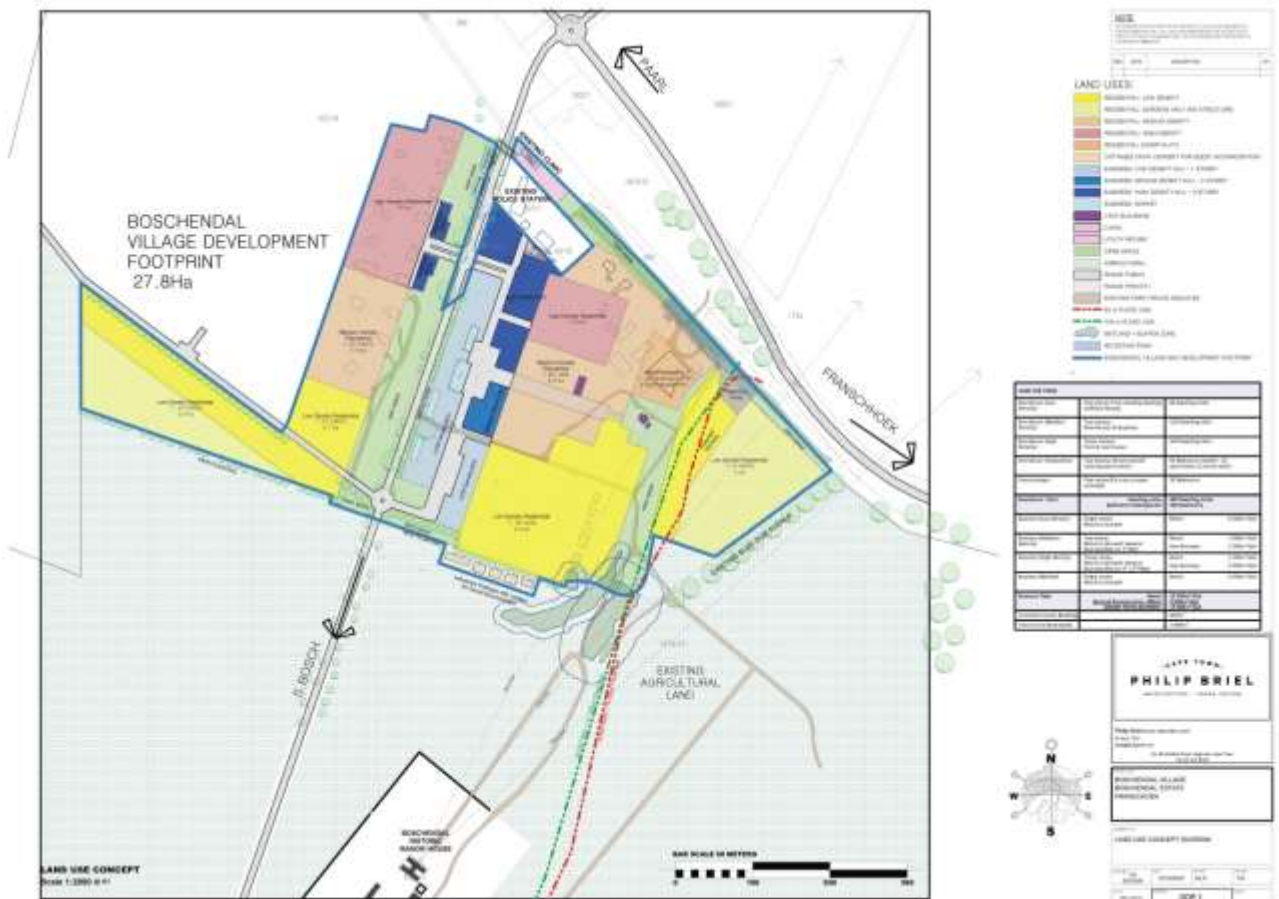


Figure 17a: Land use Concept: Alternative 4 (Philip Briel 2015)



Figure 17b: Site Development Plan Concept Alternative 4 (Clare Abrahams 2015)

**ALTERNATIVE 5a (October 2015) (Figures 18a and 18b)**

Alternative 5a is similar to Alternative 4, but the layout was refined and important design aspects introduced. Most notable being the rotated axis for the grid layout, and the large open space which becomes an open space "werf" linking with the historical werf of the Boschendal Manor on the eastern edge of the village. The clinic is to be relocated to a more appropriate location and a maintenance and refuse recycling area is introduced with access off the R310.

Land use proposals have been finalised as follows:

- Total dwelling units 425 units
- Key workers accommodation 25 units
- Guest accommodation 100 bedrooms
- Retail 4500m<sup>2</sup> Gross Leasable Area
- General Business: 9000m<sup>2</sup> Gross Leasable Area
- Civic + Community buildings: 500m<sup>2</sup>
- Clinic: 2000m<sup>2</sup>
- Refuse recycling area and maintenance: ±200m<sup>2</sup> building; ±2000m<sup>2</sup> land area.

The development footprint for this alternative is 27.45 Ha

A small portion of the development footprint falls within the 1:100 year flood line and requires infill to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village. Their large agrarian landscape gardens will form an appropriate buffer between village and agriculture. The hatched area will have specific landscaping guidelines which will limit it to agrarian landscaping or urban agriculture and a servitude will prohibit buildings within the new 1:100 flood line.

This alternative was not scoped out and has formed part of the assessment process.

Advantages of this Layout:

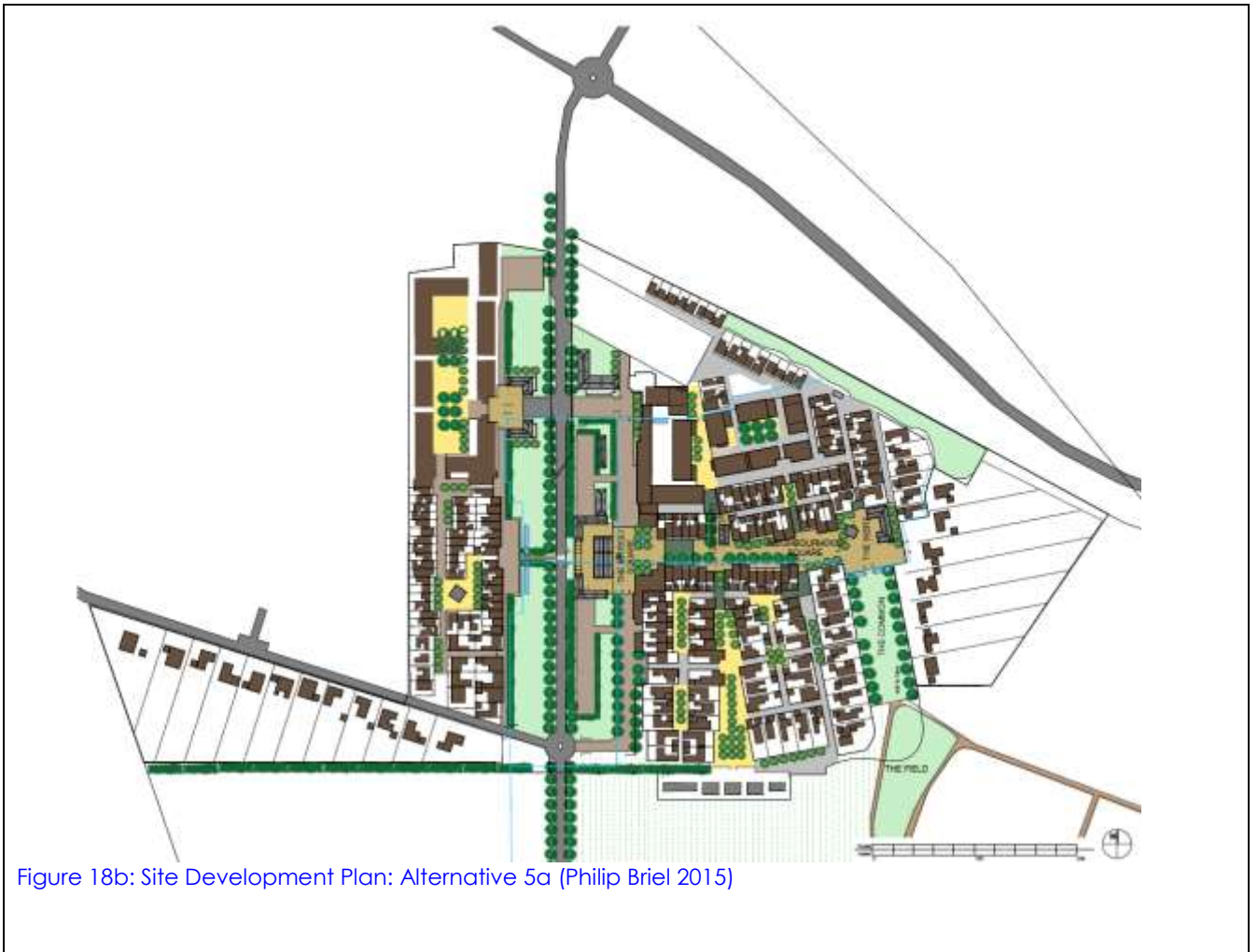
- The layout design strikes a good balance between simple grid structure (which is typical of South African village typology) and organic design features.
- The proposed row of free standing dwelling houses along the eastern edge will create much needed definition of the urban edge.
- The large gardens on the eastern and southwestern edges of the village will provide appropriate interface with agriculture thereby limiting the impact of spraying and other agricultural activities on the village. Only agrarian landscaping or urban agriculture will be permitted in these areas and no buildings will be permitted.
- The stormwater engineer confirmed that the infill of a small portion of the 1:100 flood plain is negligible and will not impact on the flood plain's ability to accommodate 1:100 year floods.
- A significant portion of land is set aside as open spaces which will serve the community and which will preserve existing wetlands.
- A waste recycling area has been identified (and will be managed by the owners association) in an appropriate accessible location in line with the principles of clustering of community facilities.
- Significant open spaces are being proposed which will provide the public with access to the open space resources of the village as a whole.
- The existing clinic will be relocated to a more accessible location (both from pedestrian and vehicular access point of view) and will be clustered with other community and business facilities in line with the principles of clustering.
- The proposed density (average of 15du/ha) is congruent with planning policies for smaller rural settlements.
- The proposed mixed use area will have a public character and will serve the residents of the village, the residents of rural settlements surrounding the area, farmers in the surrounding area as well as Boschendal farm which is the largest farm in the valley.

Disadvantage of this Layout:

- WULA approval required for infill below 1:100 flood line.



Figure 18a: Land use Concept: Alternative 5a (BOSCHENDAL) August 2017





**ALTERNATIVE 5b (October 2015) (Figure 19)**

Alternative 5b is similar to Alternative 5a but with the following amendment:

- No infill proposed below the 1:100 flood line.

The development footprint for this alternative is ± 24.85 ha.

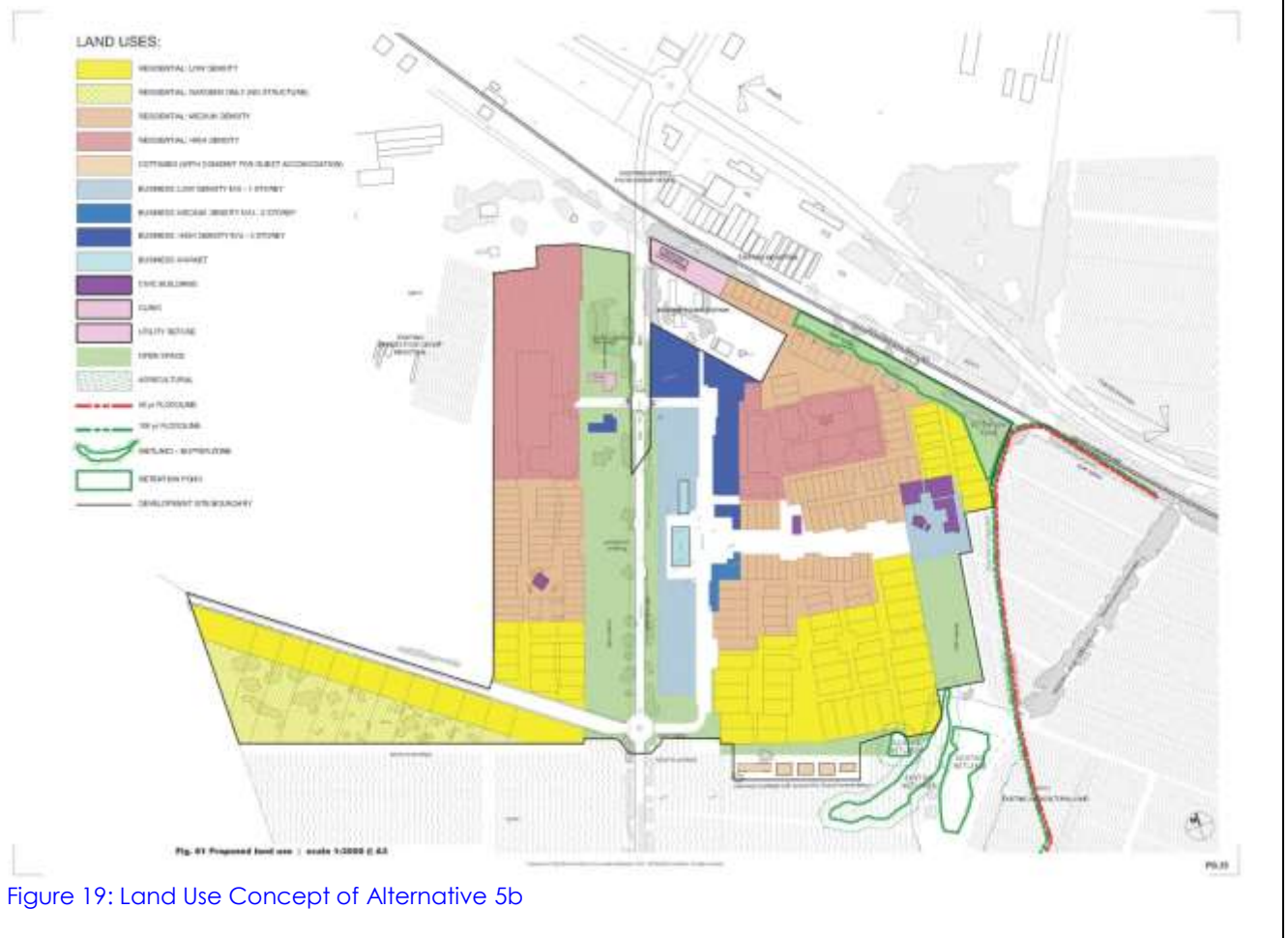
Advantages of Layout:

- No WULA approval required for infill under 1:100 flood line.
- The pear orchard will be retained which is considered to be high potential agricultural land.
- It is desirable to retain agricultural activities right up to the edge of the Village from a heritage perspective and to ensure the agricultural character of the floodplain is preserved (rather than it being domesticated).

Disadvantages of Layout

- The village does not have a sufficiently defined urban edge on the eastern edge.

Some conflicts may occur between farming activities of the pear orchard and the village activities and vice versa.



**ALTERNATIVE 5c (February 2017) (Figure 20)**

Alternative 5c is similar to Alternative 5a but with the following amendment:

- The residential erven to the east of the village are reduced in size so that they no longer have large garden spaces which are below the 1:100 flood line.
- The pear orchard (±2.5ha) on the eastern edge of the village is retained.

Since the Pre-Application Process of this Application, Alternative 5c was slightly revised in order to take the concerns raised during the public participation process, into account.

The land use proposal has been finalised as follows:

- |  |  |
|--|--|
| • Total dwelling units   | <b>475 units</b>                                   |
| <i>Free Standing Dwellings</i>   | <i>24 units</i>                                    |
| <i>Row Houses</i>  | <i>194 units</i>                                   |
| <i>Apartments</i>  | <i>210 units</i>                                   |
| <i>Key Worker Apartment</i>  | <i>10% to max of 47 units</i>                      |
| • Guest accommodation  | <b>100 bedrooms</b>                                |
| • Retail   | <b>5500m<sup>2</sup> Gross Leasable Area (GLA)</b> |
| • General Business GLA:<br>(which may include a crèche)                        | <b>9000m<sup>2</sup> GLA</b>                       |
| • Civic + Community buildings:   | <b>500m<sup>2</sup></b>                            |
| • Clinic:  | <b>2-3 consulting rooms in Business GLA</b>        |
| • Early Childhood Development and Aftercare:                                   | <b>120 children</b>                                |
| • Civic buildings (multi-purpose):<br>(which may be used by places of worship) | <b>500m<sup>2</sup> GLA</b>                        |
| • Home Owners Utility (maintenance and recycling):                             | <b>±500m<sup>2</sup> GLA</b>                       |

The development footprint for this alternative is ± 25.2 ha. The small portion of infill proposed below the 1:100 floodline is included in this option.

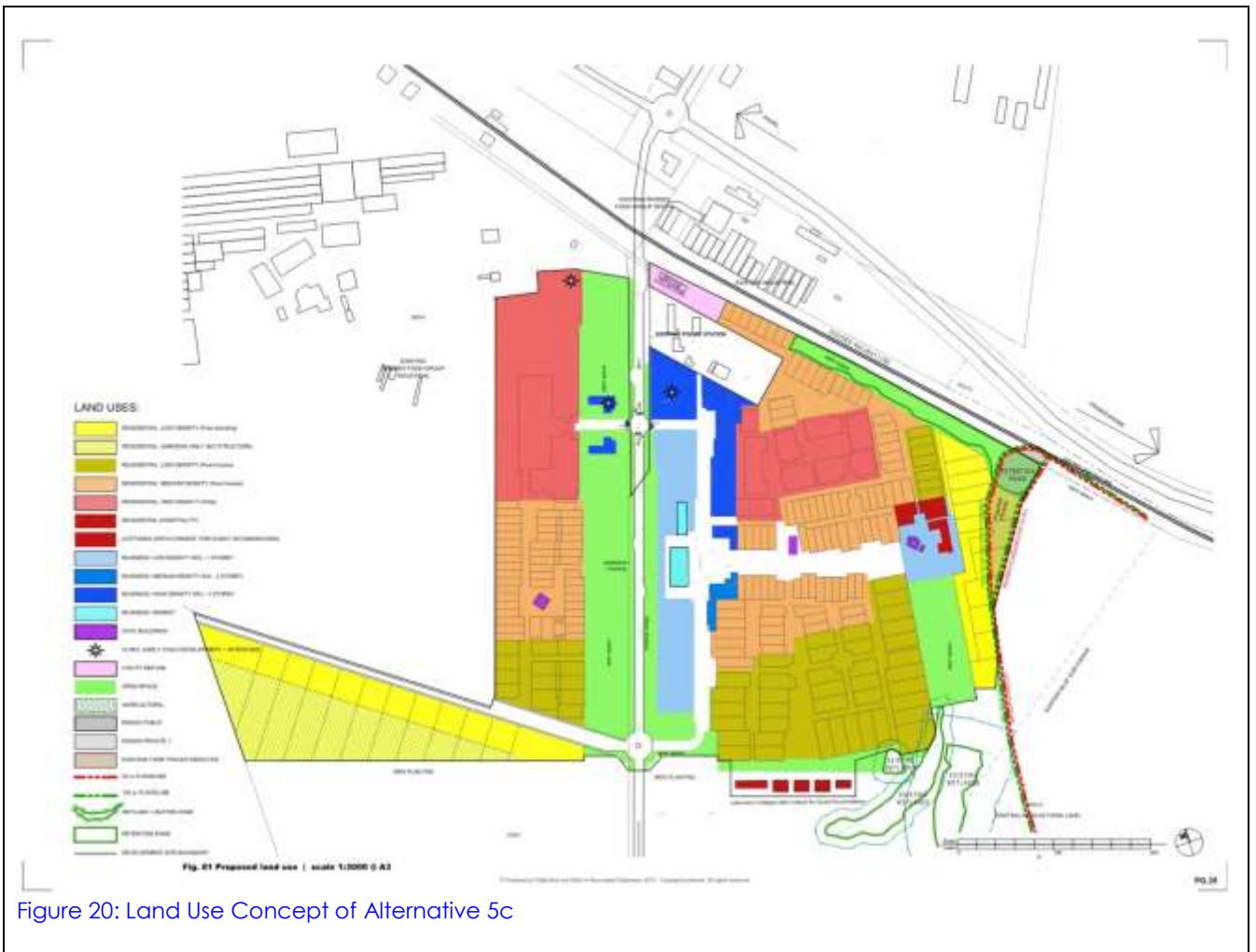
**This is the Applicant's preferred alternative.**

Advantages of this Layout:

- Almost no cultivated agricultural land will be affected by this option. Alternative 5c retains 2.5 ha pear orchard which would have become gardens space in Alternative 5a.
- The larger single residential erven on the edge of the village is retained to form a strong edge to the village.
- The proposed infill area will ensure the village urban edge is clearly defined and will ensure appropriate drainage into stormwater facility to the north of these erven which is part of the "village footprint".
- It is desirable to retain agricultural activities right up to the edge of the Village from a heritage perspective and to ensure the agricultural character of the floodplain is preserved (rather than it being domesticated).
- An Early Childhood Development facility is included in the design of the village which will cater for up to 120 children.
- Key worker apartments have increased from 25 units to a maximum of 47 units. That is, 10% (maximum of 47) of the total number of residential units will be allocated at subsidised rentals for key workers.

Disadvantages of this Layout:

- WULA application will be required for the infill of a small (negligible) portion of the flood plain.
- Management of impact on farming activities on the village and vice versa will require to be actively managed to ensure no adverse conflict arises.



(d) Technology alternatives (e.g. to reduce resource demand and resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No technological alternatives were considered.

(e) Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No operational alternatives were considered.

(f) the option of not implementing the activity (the No-Go Option):

**ALTERNATIVE 1: NO-GO OPTION**

The no-development option will result in the status quo of the site being maintained. The property comprises two farm portions which form part of the larger Boschendal Estate.

The existing zoning for the property is Agriculture Zone. On Portion 7 of Farm 1674 the area of land which forms part of the application area is occupied by low density dwelling houses and vacant land. On Portion 10 of Farm 1674 the area of land which forms part of the application area is occupied by packing sheds, derelict farm worker's cottages, a pallet factory (now operating as a fruit packing facility), clinic (in old station building), vacant underutilised land and a small portion consists of a pear orchard.

The pallet factory has been approved as a consent use (service trade) and the clinic and farm school have also been approved as spot zonings on this land. The pallet factory is now operating as a fruit packing facility. The farm school is no longer in operation, however, new Early Childhood Development Centres have been opened at various other locations on the larger estate.

The only other land use which can be exercised without any further approvals is agricultural activities.

From a social and heritage perspective, the no-go development is not a preferred option.

(g) Other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No further alternatives were considered.

(h) Please provide a summary of the alternatives investigated and the outcomes of such investigation:

**Please note:** If no feasible and reasonable alternatives exist, the description and proof of the investigation of alternatives, together with motivation of why no feasible or reasonable alternatives exist, must be provided.

**ALTERNATIVE 1: NO-GO OPTION: (THIS ALTERNATIVE WAS ASSESSED)**

The no-development option will result in the status quo of the site being maintained. The property comprises two farm portions which form part of the larger Boschendal Estate.

The existing zoning for the property is Agriculture Zone. On Portion 7 of Farm 1674 the area of land which forms part of the application area is occupied by low density dwelling houses and vacant land. On Portion 10 of Farm 1674 the area of land which forms part of the application area is occupied by packing sheds, derelict farm worker's cottages, a pallet factory (now operating as a fruit packing facility), clinic (in old station building), vacant underutilised land and a small portion consists of a pear orchard.

The pallet factory has been approved as a consent use (service trade) and the clinic and farm school have also been approved as consent uses on this land. The pallet factory now operates as a fruit packing facility. The farm school is no longer in operation, however, new Early Childhood Development Centres have been opened at various other locations on the larger estate.

The only other land use which can be exercised without any further approvals is agricultural activities.

**ALTERNATIVE 2 RETIREMENT VILLAGE (2011): THIS ALTERNATIVE WAS SCOPED OUT AND NOT ASSESSED FURTHER**

This alternative was originally developed during the previous environmental process. The intention was to develop a retirement village consisting of:

- 138 erven for residential purposes
- 25 assisted living apartments under sectional title
- A frail care centre consisting of 20 beds
- A convalescence facility consisting of 12 beds
- A rehabilitation centre
- A clubhouse including dining rooms and meeting rooms
- A small commercial and information centre
- Open space and access ways

This alternative was scoped out for the following reasons:

- Issue of gatedness and access: it was recognised that it is important for the settlement to create places of public access and not for it to be a gated village. The proposal was seen as privatising and gating large tracts of land and not creating enough public access to public facilities for the general public.
- The proposal was introverted and turns its back on the outside world. The relationship with the R310 and R45 is not sufficiently clarified.
- The proposed settlement form was predominantly suburban in nature (single unit on a single plot). The search must be to capture rural village character.
- The issue of sameness was raised by heritage assessment- proposals had a uniformity regardless of the various indicators.
- Much of this village fell within the scenic route area along the R310.
- Development was proposed within the visually sensitive zone of the historic core.
- Uniformity in land use –i.e. retirement village was regarded as unacceptable and did not create sufficient diversity and activity to satisfy the definition of a "village" and therefore no argument could be made for integrative development which would benefit the public at large and promote development principles.

**ALTERNATIVE 3 (September 2014): THIS ALTERNATIVE WAS SCOPED OUT AND NOT ASSESSED FURTHER**

This alternative was developed to explore the concept of rural village. It consists of the following:

- ±23 000 m<sup>2</sup> Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, a market, offices and other related businesses.
- Hotel or guest accommodation of ±110 rooms.
- 715 Residential dwelling opportunities at various densities (from single dwelling to 3 storey apartments).
- The development footprint of this proposal is 34,5 ha.

This alternative was scoped out for the following reasons:

- Access points to the Village are limited due to the classification of the R310 as a class 2 primary arterial in a semi-rural environment. The trips generated by this proposal could not be accommodated by the intersections.

- The densities in the village was too high which would have resulted in very compact high density urban character which was not compatible with the character of rural village.
- The densities would not have allowed for sufficient variety in urban form (ranging from very low densities at the urban edge to highest densities in the village core).
- Insufficient electrical capacity is available to accommodate this alternative and this would have required significant external infrastructure to be installed which would require crossing the Berg River.
- The proposed GLA for business was too high and it was determined that the market demand would not be suitable to warrant the investment required for this level of development.
- This development layout did not adequately take wetlands on the site into consideration.
- The central access to the focal point in the village is off-centre and does not create a balanced layout.

**ALTERNATIVE (4 May 2015): THIS ALTERNATIVE WAS SCOPED OUT AND NOT ASSESSED FURTHER**

Alternative 4 is similar to Alternative 3 but with a reduction in the number of residential units and a reduction in the GLA of the mixed use development area.

- The core of the development will comprise 14 500 m<sup>2</sup> Gross Leasable Area mixed use development which includes shops, restaurants, places of entertainment, offices and other related businesses.
- An hotel or guest accommodation of approximately 100 rooms is proposed.
- Approximately 440 residential units are proposed as part of this application.
- A small portion of the development footprint falls within the 1:100 year flood line and requires to be filled in to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village.
- The development footprint is 27, 8 ha
- The proposal involves a detailed stormwater management proposal which takes into consideration the wetlands identified within the application area.

This alternative was not assessed further since it was not considered feasible by the project team, for the following reason:

- The grid layout was too rigid and did not offer sufficient variation in built form.

**ALTERNATIVE 5a (October 2015): THIS ALTERNATIVE WAS ASSESSED**

Alternative 5 is similar to Alternative 4, but the layout was refined and important design aspects introduced. Most notable being the rotated axis for the grid layout, and the large open space which becomes an open space "werf" linking with the historical werf of the Boschendal Manor on the eastern edge of the village. The clinic is to be relocated to a more appropriate location and a maintenance- and refuse recycling area is introduced with access off the R310.

Land use proposals have been finalised as follows:

- Total dwelling units 425 units
- Key workers accommodation 25 units
- Guest accommodation 100 bedrooms
- Retail 4500m<sup>2</sup> Gross Leasable Area
- General Business: 9000m<sup>2</sup> Gross Leasable Area
- Civic + Community buildings: 500m<sup>2</sup>
- Clinic: 2000m<sup>2</sup>
- Refuse recycling area and maintenance: ±200m<sup>2</sup> building; ±2000m<sup>2</sup> land area.

The development footprint for this alternative is 27.45 Ha

A small portion of the development footprint falls within the 1:100 year flood line and requires infill to provide a platform for a row of free standing dwelling houses that will form the eastern edge of the village. Their large agrarian landscape gardens will form an appropriate buffer between village and agriculture. The hatched area will have specific landscaping guidelines which will limit it to agrarian landscaping or urban agriculture and a servitude will prohibit buildings within the new 1:100 flood line.

**ALTERNATIVE 5b (October 2015): THIS ALTERNATIVE WAS ASSESSED**

Alternative 5b is similar to Alternative 5a but with the following amendment:

- No infill proposed below the 1:100 flood line.

The pear orchard will remain and no free standing dwellings with large agrarian gardens are included in this option. The development footprint for this alternative is ± 24.85 ha.

**ALTERNATIVE 5c (February 2017): THIS ALTERNATIVE WAS ASSESSED**

Alternative 5c is similar to Alternative 5a but with the following amendment:

- The residential erven to the east of the village are reduced in size so that they no longer have large garden spaces which are below the 1:100 flood line.
- The pear orchard (±2.5ha) on the eastern edge of the village is retained.

Since the Pre-Application Process of this Application, Alternative 5c was slightly revised in order to take the concerns raised during the public participation process, into account.

The land use proposal has been finalised as follows:

- |   |  |
|---|--|
| • Total dwelling units  | <b>475 units</b>                                   |
| <i>Free Standing Dwellings</i>  | <i>24 units</i>                                    |
| <i>Row Houses</i>   | <i>194 units</i>                                   |
| <i>Apartments</i>   | <i>210 units</i>                                   |
| <i>Key Worker Apartment</i>   | <i>10% to max of 47 units</i>                      |
| • Guest accommodation   | <b>100 bedrooms</b>                                |
| • Retail  | <b>5500m<sup>2</sup> Gross Leasable Area (GLA)</b> |
| • General Business GLA:<br><i>(which may include a crèche)</i>                        | <b>9000m<sup>2</sup> GLA</b>                       |
| • Civic + Community buildings:  | <b>500m<sup>2</sup></b>                            |
| • Clinic:   | <b>2-3 consulting rooms in Business GLA</b>        |
| • Early Childhood Development and Aftercare:  | <b>120 children</b>                                |
| • Civic buildings (multi-purpose):<br><i>(which may be used by places of worship)</i> | <b>500m<sup>2</sup> GLA</b>                        |
| • Home Owners Utility (maintenance and recycling):                                    | <b>±500m<sup>2</sup> GLA</b>                       |

The development footprint for this alternative is ± 25.2 ha. The small portion of infill proposed below the 1:100 floodline is included in this option.

# SECTION F: IMPACT ASSESSMENT, MANAGEMENT, MITIGATION AND MONITORING MEASURES

**Please note:** The information in this section must be duplicated for all the feasible and reasonable alternatives (where relevant).

## 1. PLEASE DESCRIBE THE MANNER IN WHICH THE DEVELOPMENT WILL IMPACT ON THE FOLLOWING ASPECTS:

(a) Geographical and physical aspects:

The proposed activity will not result in any significant geographical impacts. The proposed activity will however result in physical changes as a currently vacant and derelict site will be transformed to a built environment. Due to the fact that the site is located within a node identified for urban development, the impact associated with this anticipated change is considered to be low and acceptable.

(b) Biological aspects:

Will the development have an impact on critical biodiversity areas (CBAs) or ecological support areas (CSAs)?	YES	NO
If yes, please describe:		
<p>A small portion of a minor CBA is located on the western boundary of the site and southern portion of the site. The purpose of these CBAs are unclear as it is located across existing agricultural land. The portion of the CBA that is located on the western boundary of the site is covered in alien trees and grass. The CBA on the southern portion of the site is covered in grass. Loss of these small CBAs will have no significant impact.</p> <p>The site has been investigated and assessed by a Freshwater Specialist and Botanist.</p> <p>ESAs are located across portions of the site. These areas are disturbed and transformed land with the exception of the wetlands found on site. These wetlands have been investigated and assessed as part of this application.</p> <p>The Dwars River, located adjacent to the site, is marked as a CBA and ESA. No other significant aquatic CBAs or ESAs are located on or near the site.</p> <p>According to the National Freshwater Ecosystem Priority Area (NFEPA) project maps, the Dwars River sub-catchment in which the project site lies is classified as a Phase 2 FEPA. Phase 2 FEPAs were identified by the NFEPA project as moderately modified rivers (C ecological category), only in cases where it was not possible to meet biodiversity targets for river ecosystems in rivers that were still in good condition (A or B ecological category). The condition of these Phase 2 FEPAs should not be degraded further, as they may in future be considered for rehabilitation once FEPAs in good condition (A or B ecological category) are considered fully rehabilitated and well managed.</p> <p>Neither of the sub-quaternary river reaches (i.e. river reaches lying in the two sub-catchments in which the project site lies) affected by the proposed development is a known location of threatened indigenous fish species.</p> <p>The two sub-quaternary catchments across which the project site lies are not of significant conservation importance as a whole, however, activities taking place in the Dwars River sub-catchment should not lead to deterioration in the condition or ecological functioning of the Dwars River.</p>		
<p>Will the development have an impact on terrestrial vegetation, or aquatic ecosystems ( wetlands, estuaries or the coastline)?</p>		
		YES
<p>If yes, please describe:</p> <p><b><u>PROBABLE IMPACTS ON VEGETATION:</u></b></p> <p>No impacts on vegetation are expected. Refer to the statement from the botanist attached as <b>Appendix G9</b>.</p>		



## **PROBABLE IMPACTS ON FRESHWATER SYSTEMS**

Below is a discussion of the potential freshwater impacts expected during the pre-construction, construction and operational phases. These impacts are further assessed in Section 6 of this report.

### **LAYOUT PHASE**

- **LOSS OF OPEN SPACE** – no matter the layout, development of the site will lead to the loss of open space around and between the natural ecosystems on the site. This connectivity is important, despite the poor condition of some of the wetlands.

The intensity of this impact is low to moderate negative for all alternatives due to the fact that the site has already been highly transformed from natural over many years. This impact will be marginally less intense for Alternative 5b, as the built footprint for this option occupies the least space, and there is no development below the 1:100 year floodline. This will effectively create an ecological corridor contiguous with the Dwars River floodplain, extending along the eastern boundary of the property, and up to and including the northern boundary.

- **LOSS OF FLOODPLAIN AREA** – Alternatives 4, 5a and 5c would require a small area of Dwars River floodplain to be filled in in order to provide a platform for a row of houses. All alternatives will also require a small platform to be filled in for the construction of the sewage pump station.

Although the engineers have asserted that these activities will not impact on the floodplain's capacity to accommodate floodwaters nor will they alter the flow in the river, this does represent a small loss of natural floodplain, which is considered part of the natural watercourse.

- **HARDENING OF THE BANKS OF THE DWARS RIVER**, in order to stabilise the stormwater outlet structure and to construct gabion drop structures to take up the level difference between the stormwater pipe outlet and the river. This will be required for all alternatives.

### **CONSTRUCTION PHASE**

- **DUMPING OF BUILDING MATERIALS** (sand, soil, bricks etc) in sensitive areas – such dumping would damage the soil structure, and would destroy or shade out plants growing in and around these ecosystems. Dump areas frequently lead to the compaction of soils, which can influence re-growth of plants. Invasive alien plants frequently take advantage of disturbed areas such as these.
- **POLLUTION OF THE WETLANDS OR DWARS RIVER** through leakage of fuels, oils, etc. from construction machinery. Due to the fact that the wetlands are seasonal, with little or no inundation in summer and flushing only in winter, it is likely that pollutants will accumulate and persist for some time.
- **DESTRUCTION OR DETERIORATION OF FRESHWATER HABITAT AS A RESULT OF FOOT AND VEHICULAR TRAFFIC** – access across and around the wetlands and drainage channels onto and across the building site, and for road construction and pipe laying, is likely to lead to damage of soils and vegetation. Regular use of a particular area will lead to the compaction of soils.
- **EXCAVATION AND / OR INFILLING** of the wetlands or the floodplain of the Dwars River – this will be required in order to prepare the site for the construction of stormwater detention ponds (such as that envisaged in Wetland 4), and for pipe crossings that do not follow existing disturbed footprints (e.g. roads/bridges).
- **DISTURBANCE OF FRESHWATER FAUNA AND FLORA** – the presence of construction teams and their machinery will lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.
- **INCREASED INPUT OF SEDIMENTS** – construction activities in the wetlands, smaller watercourses along the pipeline routes or Dwars River floodplain or channel may lead to increased input of mobile sediments, especially during the wet winter months.

- **INTRODUCTION AND SPREAD OF INVASIVE ALIEN PLANTS** – top material brought onto the site, for filling and landscaping can lead to the introduction of alien or invasive seedbanks.

**OPERATIONAL PHASE**

- **INCREASED WATER DEMAND AND WATER SUPPLY INFRASTRUCTURE**

Water for the development will come from the Wemmershoek bulkwater pipeline, which carries water from the Berg River catchment to City of Cape Town. The Berg River catchment is considered a water stressed catchment.

- **DECREASE IN WATER QUALITY**

A decrease in water quality can follow from discharge of stormwater into the Dwars River. Residential stormwater is generally not heavily polluted, but does contain oil and petrol and, of greater significance, nutrients such as nitrates and phosphates. These nutrients can lead to the proliferation of algae in areas of standing water, which can be problematic and unsightly.

Pollution from leaks from the sewer pipe or from manholes, especially close to the watercourses and ditched located along the pipeline route will lead to severe pollution of the watercourse or ditch, and ultimately of the Dwars River.

This impact is likely to impact both the site area and any downstream areas should this polluted water leave the property.

- **INCREASE IN WATER QUANTITY**

The hardened surfaces of the development will lead to an increase in stormwater runoff generated by the site, thus increasing pre-development volumes. Discharge of stormwater into seasonal wetlands will lead to a loss of habitat quality, as these systems will be inundated for longer and will lose their seasonal character.

- **DISTURBANCE OF FAUNA AND FLORA**

Disturbance is likely as a result of the proximity of houses to the wetlands, including noise, light, trampling, domestic pets, etc.

- **SPREAD AND ESTABLISHMENT OF INVASIVE ALIEN PLANTS**

Seeds and seedlings can be transported onto site for landscaping. Alien vegetation is also well adapted to establishing on previously disturbed soils and road verges.

For more detail, refer to the Freshwater Report – **Appendix G10**.

Will the development have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species?	YES	NO
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If yes, please describe:

No threatened plant or animal species will be impacted on by this proposed development.

Please describe the manner in which any other biological aspects will be impacted:

No other biological aspects were impacted.

(c) Socio-Economic aspects:

What is the expected capital value of the activity on completion?	1.08 billion (2016 rand values)	
What is the expected yearly income or contribution to the economy that will be generated by or as a result of the activity?	Unknown	
Will the activity contribute to service infrastructure?	YES	NO
How many new employment opportunities will be created in the construction phase of the activity?	<p>Phase 1 will create ~ 50 employment opportunities. Phase 2 and 3 will create ~ 300 employment opportunities per annum over a three to four year period. Of this total ~ 180 (60%) would be available to low skilled workers, ~ 30 (10%) to semi-skilled workers and 90 (30%) to skilled workers. Phase 4 will create ~ 120 employment opportunities per annum over a three year period. Of this total ~ 60% (72) would be low skilled workers, 10% (12) semi-skilled workers and the remaining 30% (36) skilled workers.</p>	
What is the expected value of the employment opportunities during the construction phase?	Estimated wage bill is R 241 million (2016 rand values)	
What percentage of this will accrue to previously disadvantaged individuals?	95 %	
How will this be ensured and monitored (please explain):	<p>The majority of the employment opportunities associated with the construction phase is likely to benefit local Historically Disadvantaged (HD) members of the community. This would represent a significant opportunity for the local building sector and members of the local community who are employed in the building sector. The potential creation of employment opportunities for local HD members of the community would represent a significant social benefit given the current economic conditions and the slump in the building sector since 2008.</p> <ul style="list-style-type: none"> <li>• The developer must inform the local authorities, local community leaders, organizations and councillors of the project and the potential job opportunities for local builders and contractors;</li> <li>• The developer must consult with the SLM and DLM with regards to the establishment of a database of local construction companies in the area, specifically SMME's owned and run by HDI's. However, while the use of local building contractors and workers is recommended, it is recognised that a competitive tender process may not guarantee the employment of local companies and labour during the construction phase;</li> <li>• The developer in consultation with the appointed contractor/s must look to employ a percentage of the labour required for the construction phase from local area in order to maximize opportunities for members from the local HD communities.</li> </ul>	
How many permanent new employment opportunities will be created during the operational phase of the activity?	<p>The residential component has the potential to create ~ 176 employment opportunities for domestic workers and gardeners etc. The retail component has the potential to create between 500 and 600 employment opportunities, while a 100 room hotel would create ~ 80 employment opportunities. The total number of employment opportunities created during the operational phase would be in the region of 800.</p>	
What is the expected current value of the employment opportunities during the first 10 years?	unknown	
What percentage of this will accrue to previously disadvantaged individuals?	95 %	
How will this be ensured and monitored (please explain):		

The majority, if not all, of the employment opportunities are likely to benefit HD members from the local community. Given the high unemployment levels in the surrounding areas, coupled with the low income and education levels, this would represent a positive social impact. Given the nature of the jobs a large percentage are also likely to be available to women.

- The developer should liaise with the SLM and DLM and stakeholders regarding the potential job opportunities associated with the different components associated with the operational phase of the development;
- The developer should, where possible, implement a policy aimed at employing members from the local communities in the study area, specifically Pniel, Lanquedoc (Old and New), Kylemore, Meerlust and Simondium;
- The developer continue to implement training and skills development programme for local community members aimed at enhancing their chances of being employed during the operational phase;
- The developer should liaise with the SLM and DLM with regard to establishing a database of local service providers in the area, specifically SMME's owned and run by HDI's. These companies should be notified of the potential opportunities associated with the operational phase of the development.

Any other information related to the manner in which the socio-economic aspects will be impacted:

## **SOCIAL IMPACTS**

Based on the findings of the SIA, there are no material differences between the nature and significance of the social impacts associated with Alternative 5a, 5b and 5c. In this regard the three alternatives are essentially identical with the exception that Alternative 5b requires no in-fill below the 1:100 flood-line. This will have no bearing on the findings of the SIA. The findings of the SIA therefore apply to Alternative 5a, 5b and 5c. This applies for both the construction and operational phase.

### **Policy and Planning Fit**

The key policy and planning documents pertaining to the proposed Boschendal Mixed Use Development include:

- Western Cape Provincial Spatial Development Framework (2014);
- Stellenbosch Draft Integrated Development Plan 2015/ 2016;
- Stellenbosch Municipal Spatial Development Framework (2013); and
- Stellenbosch Municipality Strategic Framework for Local Economic Development (2013).

The Western Cape PSDF lists a number of spatial principles that are relevant to the proposed Boschendal Mixed Use Development (BMUD), namely:

- Spatial justice;
- Sustainability and resilience;
- Spatial efficiency;
- Accessibility;
- Quality and liveability.

The issue of spatial justice is to some extent addressed by the proposed Boschendal Village Mixed Use Development in that access to land and housing will be provided for historically disadvantaged communities. However, this access will be confined to middle and higher income groups. However, the developers have indicated that 10% (maximum of 47) of the total number of residential units will be allocated as affordable housing for key workers. The term "key worker" is typically defined as a public sector employee who provides an essential service. Boschendal will set aside ~ 50% of the 47 units to accommodate key Boschendal workers, while the remaining 50% will be made available at a subsidised rental to non-Boschendal key workers.

While the housing provided by the proposed development may not necessarily address the current housing needs of the low income sector, the 210 apartments will create opportunities for middle income members of the local community to acquire property in the area. Based on the findings of the SIA there are a limited number of properties for sale in settlements such as Pniel, Lanquedoc and Kylemore and young members of the community are forced to look elsewhere.

In terms of sustainability, resilience, spatial efficiency, accessibility, quality and liveability the urban design framework for the proposed development seeks to create a spatially compact development that caters for a range of mixed uses. The urban design framework also focuses on creating a rural village that emphasises the quality of the living environment and the importance of public access, public open spaces and cultural and scenic landscapes, while at the same time minimising the loss of high potential agricultural land. The development is also designed to be resource efficient.

The PSDF also highlights the need to develop integrated and sustainable settlements. The policy objectives listed to achieve this include; protecting and enhancing sense of place and settlement patterns; improving accessibility at all scales; promoting an appropriate land use mix and density in settlements; ensuring effective and equitable social services and facilities; and supporting inclusive and sustainable housing.

### **Sense of place and settlement patterns**

The PSDF refers to the importance of scenic landscapes, historic settlements and the sense of place, which underpins the quality of settlements and their associated competitive value associated with a services economy and tourism. The PSDF also highlights the importance of urban edges as an essential tool for protecting key settlement heritage, landscape and urban form assets from the encroachment of further urban development and protecting the visual setting of historical settlements.

The proposed Boschendal Village seeks to develop a compact, rural village informed by a number of heritage indicators that highlight the importance of sense of space and scale. The majority of the proposed Boschendal Village is also located within the Groot Drakenstein Node urban edge.

#### Appropriate land use and density

Settlements in the rural regions of the Province lack land use diversity, and hence economic and social resilience. In growth areas, new development has been largely mono-functional in nature dominated by dormitory townships, gated residential developments and shopping centres. The proposed Boschendal Village development is mostly located within the urban edge, and is designed to create a compact, rural village that includes a mix commercial, retail and residential components. The SLM Planner, Mr de la Bat, noted that the proposed mix of residential, retail and business opportunities would assist to address the concerns associated with developing gated, residential developments.

#### Accessibility and inclusive housing

The housing opportunities associated with the proposed Boschendal Mixed Use Development cater for middle and high income groups. However, the development does create opportunities for community members from the study area that fall within these income groups to acquire property in an area where there is a shortage of opportunities. The urban design framework also stresses that the importance of public accessibility and the establishment of public spaces. Provision is also made for the establishment of a public transport pick-up and drop-off area. The proposed development will not be designed as a security village that controls and limits public access.

The Stellenbosch SDF notes that the future spatial development of the Stellenbosch LM is guided by seven strategic perspectives, namely:

- Interconnected nodes;
- Car Free Transport;
- Inclusive Economic Growth;
- Optimal Land Use;
- Resource Custodianship;
- Food And Agriculture;
- Heritage.

#### Interconnected nodes

The SDF indicates that a key feature of the greater Stellenbosch area is the historic pattern of locating settlements along strategic transport and river systems. In order to protect the areas unique character and constrain environmental damage, it would be advantageous to follow this pattern. The proposed Boschendal Mixed Use Development is located at the junction of two established transport links, the R310 and R45.

#### Inclusive economic growth and optimal land use

The SDF notes that projects catering to low, middle and high income groups should be designed as larger integrated settlements rather than stand-alone townships or gated communities. The proposed Boschendal Village Mixed Use Development does not cater for housing for the low income sector. However, the proposed Boschendal Village development is mainly located within the urban edge, and is designed to create a compact, rural village that includes a mix commercial, retail and residential components.

#### Heritage

The SDF notes that tourism that reinforces the municipality's sense of place should be encouraged and attractions should be developed that remain appropriate to the region's well established themes. The proposed Boschendal Village Mixed Use Development seeks to develop a compact, rural village informed by a number of heritage indicators that highlight the importance of sense of space and scale. The urban design framework also highlights the link between the development and the historic Boschendal Homestead and associated werf area.

Based on the findings of the review the proposed Boschendal Mixed Use Development conforms with and supports the majority of key policy and land use planning principles and objectives contained in the Western Cape PSDF and Stellenbosch SDF. In this regard the proposed development seeks to develop a compact, mixed use rural village informed by a number of heritage indicators that highlight the importance of sense of

space and scale. The majority of the proposed Boschendal Village Mixed Use Development is also located within the Groot Drakenstein Node urban edge. The area has therefore been identified as suitable for development.

### **POTENTIAL SOCIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE**

Below is a discussion of the potential social impacts expected during the construction and operational phases. These impacts are further assessed in Section 6 of this report.

Potential positive impacts

- Creation of business and employment and opportunities for the local economy.

Potential negative impacts

- Risks to social and family networks posed by construction workers;
- Safety and security risks posed by construction workers;
- Noise, dust and safety impacts associated with construction related activities and the movement of heavy vehicles.

- **CREATION OF LOCAL BUSINESS AND EMPLOYMENT AND OPPORTUNITIES**

- **Business opportunities**

The construction phase of the proposed Boschendal Village Mixed Use Development will consist of four phases, namely:

- Phase 1: Bulk Services (12 Months)
- Phase 2: Commercial buildings (24 months)
- Phase 3: Medium and high density residential component (24 months)
- Phase 4: Low density residential component (individual homes): (24-36 Months)

Based on the above information the construction phase will extend over a period of 5 to 8 years. However, there is likely to be some overlap between the timing of Phase 2, 3 and 4 depending on market conditions.

The capital expenditure associated with Phase 1 is estimated to be ~ R85.5 million (2016 rand values). Phase 2, the commercial component, will consist of a shopping centre with a Gross Lettable Area (GLA) of ~3 000m<sup>2</sup> and a further ~15 000m<sup>2</sup> GLA for other retail operations. The capital expenditure associated with the construction of Phase 2 is estimated to be in the region of R 143 million (2016 rand values). The capital expenditure for Phase 3, the medium and high density component, will be ~ R 476 million rand (2016 rand values). The capital expenditure for Phase 4, the low density component will depend on the type and size of the individual houses built. Based on the assumption of an average size of 300m<sup>2</sup> and building costs of R 15 000/m<sup>2</sup>, the average cost will be ~ 4.5 million per house. The capital expenditure costs for Phase 4 would therefore be in the region of R 374 million (2016 rand values).

The total capital expenditure costs for the Boschendal Mixed Use Development would therefore be in the region of 1.08 billion (2016 rand values).

The majority of work during the construction phase is likely to be undertaken by local contractors and builders based in the SLM, Cape Winelands and Cape Metropolitan Area. The proposed development will therefore represent a positive benefit for the local construction and building sector in the SLM and DLM and the surrounding areas. The majority of the building materials associated with the construction phase is likely to be sourced from locally based suppliers in Stellenbosch, Paarl and surrounds. This will represent a positive injection of capital into the local economy of the SLM, DLM and Western Cape as a whole.

The project should also be viewed within the context of the slump in the construction and building sector in the wake of the 2008 global financial crisis. Since 2008 there has been a slowdown in development of large, residential and mixed use developments in the SLM and DLM. The proposed development would therefore represent a significant opportunity for the local construction and building sector. The construction phase (bulk services and development of units) is anticipated to extend over a period of 5-8 years depending on market up-take.

### ➤ **Employment opportunities**

Based on information provided by the client the estimate of employment opportunities for each of the first three phases:

- Phase 1: Bulk Services, ~ 50
- Phase 2: Commercial buildings, ~ 150
- Phase 3: Medium and high density residential component, ~ 250

Based on the above assumptions the total number of employment opportunities for the first year (bulk services) would be ~ 50. The employment opportunities associated with the commencement of the construction of the commercial and high and medium density residential component would be ~ 400 per annum over a three to four year period. However, it is likely that a number of workers are likely to work on more than one component of the development at a time. For the purposes of the assessment it is therefore assumed that 25% of the workers employed will work on more than one component or residential unit at a time. The total number of employment opportunities associated with the commercial and high and medium density residential component would therefore be ~ 300 per annum over a three to four year period. Of this total ~ 60% (180) would be low skilled workers, 10% (30) semi-skilled workers and the remaining 30% (90) skilled workers. The employment opportunities associated with Phase 4, the construction of individual, low density houses, will vary from house to house. However, for the purposes of the assessment it is assumed that each unit would take ~ 8 months to construct and employ ~ 20 people (including sub-contractors) at any given time. Of this total 8 (40%) would be low skilled workers, 8 (40%) semi-skilled artisans and 4 (20%) would be skilled builders and sub-contractors. If one assumes that the 24 free standing units are developed over a three year period this would equate to ~ 8 units per annum. The construction of the free standing, up-market units therefore has the potential to create in the region of 160 construction related employment opportunities per annum over a three year period. However, for the purposes of the assessment it is assumed that 25% of the workers employed will work on more than one residential unit at a time. The total number of employment opportunities associated with the low density residential component would therefore be ~ 120 per annum over a three year period. Of this total ~ 60% (72) would be low skilled workers, 10% (12) semi-skilled workers and the remaining 30% (36) skilled workers.

The majority of construction related employment opportunities are likely to benefit local Historically Disadvantaged (HD) members of the community. This would represent a significant opportunity for the local building sector and members of the local community who are employed in the building sector. The potential creation of employment opportunities for local HD members of the community is therefore regarded as an important social benefit given that slump in the building sector since 2008.

The employment opportunities associated with the construction phase are frequently regarded as temporary employment. However, while these jobs may be classified as "temporary" it is worth noting that the people employed in the construction industry by its very nature rely on "temporary" jobs for their survival. In this regard "permanent" employment in the construction sector is linked to the ability of construction companies to secure a series of temporary projects over a period of time. Each development, such as the proposed development, therefore contributes to creating "permanent" employment in the construction sector.

The estimated total wage bill for Phase 1, 2, 3 and 4 is R 241 million (2016 rand values). This is broken down into R17 million for Phase 1, R 29 million for Phase 2, R95 million for Phase 3 and R100 million for Phase 4. Of this total ~ 70 % (R 169 million) will be earned by low and semi-skilled workers, the majority of whom would be HD member from the local community and surrounding areas in the SLM and DLM. In addition a percentage of the wage bill will be spent in the SLM and DLM. This will benefit the local economy and business in the area.

According to the social specialist, the potential for employment creation, specifically for members from the local communities in the area was highlighted by councillors for Ward 3 (Meerlust, portion Pniel, Lanquedoc) and 4 (Kylemore, Pniel, Banhoek), Mr August and Johnson respectively. Mr Lewis Conradie from Meerlust Bosbou also stressed the need to create employment opportunities for members from the local community.

#### Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity in terms of the creation of employment and business opportunities and the provision of housing, commercial and community facilities.



### **Risk posed to family and social networks**

The presence of construction workers can pose a potential risk to local communities located in the vicinity of the site. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can affect the local community. In the case of local communities the most significant negative impact is associated with the disruption of existing family structures and social networks. This risk is linked to the potential behaviour of male construction workers, including: An increase in alcohol and drug use;

- An increase in crime levels;
- An increase in teenage and unwanted pregnancies;
- An increase in prostitution; and
- An increase in sexually transmitted diseases (STDs).

The impact on individual members of the community who are affected by the behavior of construction workers has the potential to be high, specifically if they are affected by crime and STDs etc. The potential risk posed by construction workers to individuals cannot be completely eliminated. The focus of the assessment is therefore on the potential impact on the community as whole.

Based on the experience of the social consultants the potential impacts on local communities associated with construction workers are typically associated with projects located in rural areas or small towns where large numbers of construction workers from outside the area are employed. Given the location of the proposed development the majority, if not all, of the workers are likely reside in the local towns in the area, such as Pniel, Lanquedoc, Kylemore, Meerlust, Simondium, Klappmuts, Stellenbosch, Paarl and Franschoek. As such they will return to their homes on a daily basis. Based on this the overall impact of construction workers on the local community with mitigation is likely to be low. While the potential threat posed by construction workers to the community as a whole is likely to be low, the impact on individual members who may be affected by the behavior of construction workers has the potential to be high, specifically if they are affected by STDs etc.

### **Assessment of No-Go option**

Current status quo would be maintained. This option would represent a lost opportunity in terms of the creation of employment and business opportunities and the provision of housing, commercial and community facilities.

### **Safety, security and potential for increased crime**

The presence of construction workers in the area has the potential to impact on the safety and security of local residents in the area, specifically the residents of Pniel and Meerlust Bosbou and farms and smallholdings in the vicinity of the site, specifically Allée Bleue, Solms Delta, Lekkerwijn, Microprop (Dr Farranger) etc. Dr Farranger, who lives on a small holding to the west of the R310, indicated that the presence of construction workers did pose a potential threat. The representatives from RFF and Imibala did not raise any concerns regarding potential threat posed to safety and security during the construction phase.

The presence of construction workers can result in an increase in petty crime and theft. This is linked to the ability of the construction workers to monitor the movements of local residents and take advantage of their absence from the property. The majority of the crime is therefore opportunistic and linked to theft and house break-ins. Warrant Officer Daniels from the Groot Drakenstein Police Station indicated that the area was a low risk crime area. However, Mr Flaaten and Dr Simon Pickstone-Taylor indicated that petty crime, which was often linked to substance abuse, specifically TIK, was a problem in the area. Mr Flaaten indicated that the capacity of the local Drakenstein Police station would need to be increased if the proposed development proceeded.

Based on the findings and recommendations of the SIA access to the site should, as far as possible, be from the R45 (Paarl-Franschoek Road). This combined with the mitigation measures listed below will reduce the potential risk to the residents of Pniel and Meerlust and the adjacent farms, specifically Allée Bleue, Solms Delta, Lekkerwijn etc.

### **Assessment of No-Go option**

Current status quo would be maintained. This option would represent a lost opportunity in terms of the creation of employment and business opportunities and the provision of housing, commercial and community facilities.

- **IMPACT OF CONSTRUCTION RELATED ACTIVITIES**

Construction related activities can impact negatively on adjacent landowners and communities. The typical impacts include dust, noise and safety. The movement of heavy construction vehicles along the R45 and R310 may also pose potential safety risks to other road users and school children who walk to and from school etc. As indicated above, school children from Meerlust walk to schools located in Simondium. However, there is a pedestrian path located along the northern side of the R45 which would assist to reduce the risk to school children and other pedestrians. The movement of heavy construction vehicles also pose potential safety risks to tourists and visitors to the area, specifically tourists travelling to Franschoek and local wine farms in the area, such as Allée Bleue and Solms Delta etc. The potential safety risks posed by heavy vehicles will be exacerbated by the intersection between the R45 and R310 opposite the entrance to Allée Bleue. There have been a number of accidents at this intersection.

Safety issues relating the R45-R310 intersection were raised by a number of key stakeholders in the area, including Dr Farranger (Chairperson of Groot Drakenstein Land Owners Association), Dr Simon Pickstone-Taylor (Lekkerwijn), Councillors August (Ward 3) and Johnston (Ward 4), Mr Craig McGilliwaray (Solms Delta) and Mr Ansgar Flaaten (Allée Bleue). However, the current intersection will be up-graded as part of the proposed development of the Boschendal Village Development. It is assumed that the intersection will be upgraded prior to the start of the construction phase.

The R310 which links Stellenbosch to the south passes through Pniel is flanked by houses. The movement of heavy construction vehicles through Pniel would pose a safety risk for local residents, specifically children who walk to Pniel Primary School, which is located on the northern side of the village. The movement of heavy construction vehicles through Pniel would also create noise and dust impacts for local residents. In order to address these impacts it is recommended that access for heavy construction vehicles should be via the R45. However, it is recognised that workers based in Stellenbosch and Kylemore would need to access the site via the R310.

Site clearing for the development can also increase the risk of dust, specifically during dry, windy summer months. In this regard the Drakenstein Police Station, the clinic, RFG and Imibala are located immediately to the north of the site and may potentially be impacted during the summer months when the prevailing wind direction is from the south east. Other properties located to the north of the site include Allée Bleue, Lekkerwijn and Solms Delta. However, the potential risks can be addressed by implementing the recommended mitigation measures.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity in terms of the creation of employment and business opportunities and the provision of housing and community facilities.

**POTENTIAL SOCIAL IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PREFERRED ALTERNATIVE**

Potential positive impacts:

- Creation of rural village, including provision of housing and community facilities;
- Creation of employment, training and business opportunities;
- Generation of funds for community development initiatives;
- Promotion of tourism.

Potential negative impacts:

- Impact on adjacent properties in the area;
- Impact on rural sense of place.

In addition to the above, the section also comments on the issues and concerns raised by the Boschendal Treasury Trust (BTT).

- **PROVISION OF HOUSING, RETAIL AND COMMUNITY FACILITIES**

The proposed Boschendal Village Mixed Use Development includes a residential component, farmers market, shops, and restaurants, places of entertainment, offices and other related businesses. The mixed use core of the village will be surrounded by the 475 unit residential component consisting of 210 apartments, 194 row houses, 24 free standing houses and 47 apartment units (10 % of total number of residential units) allocated for key worker accommodation.

- **Housing**

The majority of the high-density and, to a lesser degree, the medium density units will be targeted at middle income groups. The low density units will fall within the high income market. The developers have also indicated that 10% (maximum of 47) of the total number of residential units will allocated as affordable housing for key workers. The term "key worker" is typically defined as a public sector employee who provides an essential service. Examples include municipal officials, health workers, teachers, police officers, social workers, fire-fighters etc. The term is often used in the United Kingdom in the context of essential workers who may find it difficult to rent or buy property in the area where they work. As a result many local authorities and other public sector bodies face major problems recruiting and retaining their workers due to the high property cost and rentals. Boschendal will set aside ~ 50% of the 47 units to accommodate key Boschendal workers, while the remaining 50% will be made available at a subsidised rental to non-Boschendal key workers. The intention is also to enable "key workers" to purchase their properties after a stipulated period of time. However, in order to ensure that there is always accommodation available to key workers ~ 50% of the 47 units will remain under the control of Boschendal. The proposed development will therefore provide housing. However, no low income or gap housing is included in the development. In addition, the farm workers that currently live in the farm cottages located to the west of the R310 will also be accommodated in the development.

While the housing provided by the proposed development may not necessarily address the current housing needs of the low income sector, the 210 apartments and 194 row houses will create opportunities for middle to higher income members of the local community to acquire property in the area. Based on the findings of the SIA there are a limited number of properties for sale in settlements such as Pniel, Lanquedoc and Kylemore and young members of the community are forced to look elsewhere. The proposed Boschendal Village Mixed Use Development will therefore create opportunities for young professionals from the area to buy property in the Dwars River Valley in a compact, well-designed mixed use development that includes landscaped public open spaces, shops and restaurants etc. However, it is recognised that the majority of homeowners are likely to come from outside of the Dwars River Valley.

➤ **Commercial and retail facilities**

The commercial component includes a farmers market, shops, and restaurants, places of entertainment, offices and other related businesses. The intention is to establish a regular farmers market that will provide opportunities for local producers to sell their produce. The market will also serve as an outlet for produce from Boschendal Farm, including vegetables, fruit, poultry and meat. The restaurants will also create a market for local produce from the area. Local crafts will also be sold at the market. Based on the findings of the SIA there is also a need for shop, such as a Spar or Pick and Pay, to serve the local communities in the area. The local residents in the area indicated that the closest shops were in Stellenbosch, Paarl and Franschoek. The majority of local residents do not have access to private transport and rely on public transport to access shops in these towns. The need for a shop/s that meets the needs of the local community was also highlighted by the SLM town planner, Mr de la Bat, who indicated that while the concept of a market and shops selling local farm produce was commendable, there was a potential risk that the focus would be on meeting the needs of higher income groups and tourist and not the local community.

Mr de la Bat also noted that the proposed mix of residential, retail and business opportunities was seen as important as this would counter the natural tendency of a purely residential development to become a privileged enclave. The retail component would also serve to reduce some of the through-traffic between Stellenbosch and Franschoek in the Dwars River Valley, thus potentially providing an anchor from which the broader Dwars River Valley and its communities could benefit.

➤ **Community facilities**

Based on the information contained in the Urban Design Framework (UDF) and discussions with Mr Rob Lunde, acting on behalf of the developers, it is reasonable to assume that the developers of the Boschendal Village Mixed Use Development are committed to the establishment of a well designed, rural village type development that incorporates public open spaces that will be open to and accessible to the public, including the local communities in the area. This includes the market place and general werf area. The market square forms the heart of the proposed development and will also serve as a commercial node for both the development and the broader area. The land uses associated with the high street include shops, galleries, offices, restaurants, and open public space for relaxation. The developers have also indicated that they will provide the necessary funding and resources to maintain the public open spaces as this would not only benefit the development but also the historic Boschendal Estate. In terms of public access, the UDF stress the importance of creating spaces that are open and accessible to the public, and notes that this principle is important in terms of the authenticity of place. In this regard the report notes that "gated and security complexes, no matter how architecturally well-designed or well-laid out, can never amount to villages, as they lack a public and civic realm". The majority of new residential developments in the vicinity of the site are gated security estates that control and limit public access. These include Pearl Valley and Val de Vie in the DLM and de Zalze in the SLM. While access to certain residential areas will be controlled the proposed Boschendal Village development highlights the importance of public access. In addition, it encourages the public to access the area by providing public open spaces that will be maintained and secure.

While the UDF highlights the importance of public access and the provision of public spaces, care will need to be taken to ensure that members from the local community are encouraged to access and use these spaces. In this regard there is a risk that members from the local community may be made to feel unwelcome, which would, in turn limit the benefits of these spaces for the local community. The relocation of the early child development centre to the Village area will create opportunities for integration.

The proposed development also makes provision for a pre-school / crèche that will cater for both the residents of the village and local community members in the area. The developers have indicated the existing early child development centre on Boschendal will be relocated to the village and will be expanded to accommodate ~ 100 children. Relocating the centre to the village will support integration and create an opportunity for children from the Dwars River Valley to mix with children from the proposed Boschendal Mixed Use Village. This will also create opportunities for the parents to meet each other and integrate.

The existing clinic will be up-graded and moved to a more accessible location and housed in one of the new business buildings in the village. Based on the findings of the SIA there is also a need for a high school in the area.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity in terms of the benefits associated with the provision of housing, educational and community facilities.

- **CREATION OF EMPLOYMENT, TRAINING AND BUSINESS OPPORTUNITIES**

- **Employment**

Residential component

The establishment of 475 middle-to-upper income housing units will create employment opportunities, specifically domestic workers and gardeners etc. Based on the assumption that all of the 24 free standing unit, 80% of the row houses (194) and 40% of the apartments (210) will employ a domestic worker and or gardener, this would translate into ~ 263 employment opportunities. The majority, if not all of these opportunities are likely to be taken up by Historically Disadvantaged Individuals (HDIs) members from the local community. Given the high unemployment levels in the areas coupled with the low income and education levels, this would represent a positive social impact.

Retail and commercial component

Based on information collected from other studies undertaken by the authors the total number of people employed at 2 500-3 000 m<sup>2</sup> GLA shopping centre is in the region of 160 full time employees. This works out to ~ 0.06 people employed for each m<sup>2</sup> of GLA. Based on this figure the total employment potential associated with the 4 500m<sup>2</sup> and 9 000m<sup>2</sup> GLA for retail and General Business respectively would be ~ 810. The number may however lower given that large supermarkets are labour intensive when compared to other retail operations. A more realistic figure is likely to be 500-600 depending on the type of business activities established.

Hotel

The number of staff employed by the hotel will depend on the type of services provided. Based on industry data, the staff to room ratio can range from 0.5 staff per room up to 1.5 staff per room, or even higher. For example exclusive, full-service hotels staff that include a restaurant, 24 hour service, conference facilities, grounds to be maintained, spas etc. have ratios of around 1.5 employees per room. For the purposes of the assessment it is assumed that the ratio will be 0.8 staff per room. Based on this figure a 100 room hotel has the potential to create ~ 80 employment opportunities. Given the location of the hotel the majority of the employment opportunities are likely to benefit residents from the local community, the majority of whom will be HDIs. The majority, if not all, of the employment opportunities associated with hotels are also available to women.

Based on the above information, the total number of employment opportunities created during the operational phase of the development would be in the region of 800. The majority, if not all, of the employment opportunities are likely to benefit Historically Disadvantaged Individuals (HDIs) from the local community. Given the high unemployment levels in the surrounding areas, coupled with the low income and education levels, this would represent a positive social impact.

- **Training opportunities**

The developments undertaken by the new owners of Boschendal since 2012, which include the development of the Deli, Werf Restaurant, wine tasting facilities, and Olive Press function venue, have resulted in the number of staff being employed on the farm increasing from 90 in 2012 to 350 in 2015. The majority of the employees are HDIs that live in the Dwars River Valley. In addition, as indicated in Section 1.5, ~ 300 staff members have benefitted from training and skills development over the period 2014-2015. The training programmes are designed to provide employees with the necessary skills to further their careers both at Boschendal and in the broader economy. The owners of Boschendal have therefore demonstrated that they are committed to employing and training community members from the area. The operational phase of the proposed Boschendal Mixed Use Development will create on-going need for training and skills development programmes that will benefit members of the local community.

➤ **Business opportunities**

The retail and commercial component, which includes the farmers market, shops, and restaurants, places of entertainment, offices etc., will create business opportunities for local companies and entrepreneurs. These include service companies, such as cleaning, catering etc. Boschendal have already established a laundry to service its guest accommodation facilities. The intention is to bring in a locally based partner and relocate the facility to the proposed village. The residential component will also create opportunities for local businesses, such as maintenance and building companies, garden services and security companies, etc. and create opportunities for new businesses to develop. As indicated above, the Silver Mine Security Company already employs 37 permanent employees. The intention is to use their services for the proposed village. Local estate agencies and legal firms would also benefit from the sale and resale of properties associated with the new development.

The proposed Boschendal Village Mixed Use Development will therefore create significant opportunities and benefits for the local economy and members of the local community in the Dwars River Valley.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity in terms of the benefits associated with the provision of housing, community and commercial facilities.

• **SUPPORT FOR LOCAL DEVELOPMENT INITIATIVES**

The vision of the current owners of Boschendal is "to make Boschendal into a top agricultural farm and the Winelands epicenter of sought after ethically and naturally produced farm to table food and wine; a farm where our natural environment thrives and where local people benefit from our prosperity". A key element of the vision is support the upliftment of local communities.

As indicated below, the developers are commitment to allocating a percentage of the value of the initial sale of all properties to supporting development initiatives in the area. This is in line with the agreements set out in the Boschendal Sustainable Development Initiative (SDI) that was prepared by the previous owners of Boschendal. However, the funds will be managed by the trustees of the newly established trust set up by the current owners of Boschendal.

The current owners have embarked on a number of community initiatives. These include the establishment of a pre-school and aftercare facility in the Dwars River Valley and a food nutrition programme for local schools that uses local produce from the farm. The Rachelsfontein Centre located on the Boschendal Farm which will provide a space for staff and their families to relax and interact and will include a sports field, theatre, amphitheatre, meeting rooms, lecture hall, library, etc. The option of establishing some form of Agricultural College on the farm is also being considered. The option of linking the college with the Elsenburg Agricultural College or Farmers Apprentice Facility is being investigated. The facility will create opportunities for members from the local community that do not qualify for institutions such as Elsenburg to get formal training in the field of agriculture. A bursary programme for local workers and community members will also be established.

The new owners have also established a security company, Silver Mine Protection Services. The company employs 37 staff and is owned and run by two local HDI operators that used to work as security personnel on the farm. The company provides security on the farm and is also providing services to other customers in the area. A small egg business that is 70% owned by a local HDI from Stellenbosch has also been established. Boschendal have also gone into partnership with one of its local farm managers to rent and service mountain bikes. The intention is to relocate the facility to the Village.

The current owners of Boschendal have therefore demonstrated that they are committed to supporting development initiatives in the Dwars River Valley. The funds generated by the sale of properties associated with the proposed Boschendal Mixed Use Development will enhance the opportunities to support and fund future development initiatives in the area.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity to generate income to fund development initiatives in the area.

- **SUPPORT AND PROMOTE TOURISM**

As indicated above, the vision for Boschendal is “to make Boschendal into a top agricultural farm and the Winelands epicenter of sought after ethically and naturally produced farm to table food and wine; a farm where our natural environment thrives and where local people benefit from our prosperity”. Hospitality is one of the three primary components that underpin the vision. The other two components are agriculture and land development. The land development component entails the proposed Boschendal Village Mixed Use Development.

The hospitality component has involved the establishment of the new Werf Restaurant, which overlooks the vegetable garden, and the Deli and Farm Shop on Boschendal Farm. A new function venue, the Olive Press, has also been established on Boschendal Farm. A number of old farm workers cottages have been renovated to provide accommodation for guests. In addition, the Rhone Homestead Restaurant has been up-graded and a new picnic area has also been opened at the Rhone Werf area. The two wine tasting venues on the farm have also been up-graded. In addition, a bakery and butchery have been established to serve Boschendal's retail and hospitality requirements. A series of new nature trails have also been developed on the farm that cater for hiking, running and mountain biking. Horse rides and horse drawn carriage rides around the farm have also been introduced.

In terms of the land development component, the UDF highlights the importance of the historic cultural landscape and ensuring that the authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in the proposed Boschendal Village Mixed Use Development. The proposed development also seeks to attract people to the area by incorporating a farmers market, shops, restaurants, open spaces and places of entertainment into the development. The UDF also stresses the importance of linking the proposed development to the historic Boschendal Manor House and werf.

It is therefore clear that the proposed Boschendal Mixed Use Development provides a number of facilities that are designed to attract tourists and visitors to the area. The development also benefits from its location relative to Boschendal, La Rhone and a number of other historic wine farms in the area, including Allée Bleue, Solms Delta, Normandie and L'Ormarins.

Mr Flaaten from Allée Bleue indicated that the proposed development would increase the number of visitors to the area, which would in turn benefit the existing operations. The existing operations would also benefit from the permanent residents and workers associated with the residential and commercial component of the development respectively. This in turn would create opportunities to expand existing operations and hire more staff. In this regard the tourism sector one of the most labour intensive economic sectors. The development of the tourism sector would also create opportunities for skills development and training for local members of the community.

Ms Denise Johnson, from Dwars River Tourism, indicated that the proposed development would benefit tourism in the area and create an opportunity to increase the exposure of Boschendal and the Dwars River Valley to tourists.

Mr Koeglenberg, from Franschoek Wine Valley and Tourism, expressed concern that the proposed development had the potential to impact on the areas rural sense of place, which in turn, would impact negatively on tourism. However, as indicated above, the UDF highlights the importance of the historic cultural landscape and ensuring that the authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in the proposed Boschendal Village Mixed Use Development. The development is also mostly located within the Groot Drakenstein Node Urban Edge and has therefore been identified as suitable for development.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity to support and develop tourism in the area and the associated benefits, include job creation.

- **IMPACT ON ADJACENT PROPERTIES**

The proposed Boschendal site is bordered on the north by RFG factory, which is located to the west of the R310, and the Imibala packing operations, which are located between the site and the R45. Concerns were raised by Mr Henderson (RFG) and Cooke (Imibala) with regard to potential complaints by residents that may impact on their operations. RFGs activities at their Drakenstein factory are associated with ready-meals and employ ~ 500 workers. RFG are planning to open to two new factories adjacent to existing factory, which would create an additional 500 jobs. Imibala/Dwarsrivier Packers employ 85 workers for 9 months of the year. The workers are involved in fruit packing (cold storage facility) and manufacturing of vegetable chips for Woolworths. The concerns expressed by RFG and Imibala are that their operations may be impacted by nuisance complaints (food odours, noise from compressor forklifts at night), especially residents and hotel guests. These complaints may result in shut downs, which in turn, would impact on productivity, and potential job losses.

Mr Henderson (RFG) and Cooke (Imibala) indicated that the planners and developers need to be aware of the existing operations that border onto the site and that the right of these operations to carry on operating should be recognised and acknowledged by the developers. The right of these operations to expand should also be acknowledged by the developers.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity in terms of the benefits associated with the provision of housing, community and commercial facilities.

- **IMPACT ON RURAL SENSE OF PLACE**

The potential impact on the proposed development on the areas rural sense of place was raised as a concern by Mr Hein Koegelenberg from the Franschoek Wine Valley and Tourism Association. In this regard it was noted that the establishment of a "new node" may impact on the areas historic landscape and sense of place. The R310-R45 represents the key access to the Franschoek Valley.

As indicated above, the UDF for the proposed Boschendal Village is informed by a number of factors including a set of Heritage Indicators and Directives prepared by Baumann et al. (Baumann, Winter, Dewar, Louw, 2015). The Heritage Indicators identify two key issues that are central to the design of the proposed Boschendal Village and that have a bearing on sense of place. The first highlights the importance of the historic cultural landscape which includes preserving the dominance of the rural landscape. The second seeks to ensure that the authenticity and the dominance of agriculture is retained in the existing historic cultural landscape, and appropriately reflected in a new settlement. The issue of sense of place therefore plays a key determining role in the design of the proposed development.

The current rural character to the site itself has also been altered, and includes the RFG factory complex, RFG administrative buildings, the police station, clinic and Imibala packing sheds. In addition, the majority of the site falls within the Groot Drakenstein Node Urban Edge and has therefore been identified as suitable for development. The potential impact of the proposed development on the rural sense of place is therefore likely to be low.

Assessment of No-Go option

Current status quo would be maintained. This option would represent a lost opportunity associated with provision of housing, community and commercial facilities.



### **Comment on the Sustainable Development Initiative (SDI)**

Representatives from the Boschendal Treasury Trust (BTT) raised a number of concerns and objections to the proposed Boschendal Village Mixed Use Development. The section below comments on the issues raised that have a bearing on the SIA. In order to comment on the issues raised by the BTT requires some background on the BTT and the Sustainable Development Initiative (SDI). Due to the nature of the comments no assessment of the significance is made. It should also be noted that the SIA is not in a position to comment on the legal status of the SDI and the BTT.

The current owners of Boschendal have meet with representatives from the BTT and confirmed that they are committed to paying 5% of the value of the initial sale of all properties and 0.5% of all subsequent sales to the BTT. These funds will be used to support development in the Dwars River Valley.

A number of unsuccessful attempts were made to contact Mr Quint and Adams. The comments discussed in this section are therefore based on the comments submitted by the BTT as part of the EIA Scoping Process.

#### **Background to the SDI**

The Boschendal Sustainable Development Initiative (SDI) was prepared as part of the sale of the 2 242 Boschendal lands to Boschendal (Pty) Ltd (the previous owners) by Anglo American in 2000. The SDI refers to the initiative collectively formulated by Boschendal, Two Rivers and Anglo American Farms (AAF) and the affected communities of the Dwars River Valley linked to an array of land transactions and agreements. The implementation of the SDI revolves around seven integrated development and management programmes that collectively form the 'mechanisms' through which the goals and objectives of the SDI will be achieved. The seven programmes are:

- Land development;
- Agriculture and Agri-industry;
- Tourism and leisure;
- Commerce;
- Culture and heritage;
- Environmental rehabilitation and management;
- Social development.

Of these seven programmes the Land Development programme represented the critical make or break component underpinning the SDI. The remaining six programmes were all dependent upon the success of the Land Development Programme. With regard to the 2 242 ha Boschendal lands, the development vision contained in the SDI envisaged development taking place in two phases:

**Phase 1: The Boschendal Founders Estate:** This project involved the consolidation of 4 existing farms (Portions 2, 5, 8 and 9 of Farm 1674) totaling approximately 420 ha and the re-subdivision thereof into 19 farms of approximately 20 hectares each. An EIA for Phase 1 was undertaken and Phase 1 was approved in April 2008. However, to date it would appear that only two of the properties have been sold.

**Phase 2: The Boschendal Development Precinct:** Phase 2 involved the proposed development on the balance of land (1 821.84 ha) sold to Boschendal (Pty) Ltd. The development prepared by DMP for Phase 2 consisted of a residential component, retirement village, 120-room hotel and a commercial node. The total number of units was ~ 1 000 units.

In 2012 new shareholders invested in the farm and reviewed the previous proposals and there were subsequently revised in favour of the current, Boschendal Village Mixed Use Development, the majority of which is located within the Groot Drakenstein Node Urban Edge.

Central to the SDI was the establishment of *Public Benefit Organisations* (PBOs) to manage and control the interests of the various beneficiaries of the Boschendal SDI. Figure 4.1 (Diagram 6 in the SDI) illustrates the proposed structure.

In terms of the SDI the Boschendal Treasury Trust (BTT) was established to act as an overarching entity for the structure. The main objective of the BTT was to serve as a vehicle through which the various proposed programmes and projects identified in the SDI would be implemented and managed for the benefit of the various beneficiaries and stakeholders in the Dwars River Valley.

The funding mechanism for the generation of revenue for the BTT was also a key component of the SDI. In terms of the SDI, 5% of the value of the initial sale of all properties and 0.5% of all subsequent sales would be transferred to the BTT. Initial estimates contained in the SDI documents indicated that the potential revenue generated for the BTT via this mechanism would be in excess of R100 million. However, critically, in terms of the SDI model the benefits to the community in terms the estimated revenue flows to the BTT were dependent upon the approval of the core projects and the subsequent sale of erven, i.e., the Land Development Programme.

#### Assessment of the Boschendal SDI

The Social Impact Assessment undertaken as part of the EIA process for Phase 2 (Barbour and van der Merwe, November 2009) undertook an assessment of the SDI. The assessment looked at the approach to and mechanisms that underpinned the SDI. The compatibility of the SDI approach in terms of the relevant policy and planning documents pertaining to the development, specifically the Western Cape Provincial Spatial Development Framework (WCPSDF), was also assessed.

The findings of the review of the SDI indicated:

- o Compatibility with key land use policy and planning requirements

The findings of the review indicated that the SDI approach adopted for the Boschendal Development Phase 2 did not comply with the key principles contained in the WCPSDF and other relevant planning documents, such as the Stellenbosch Spatial Development Framework (SDF). In this regard the WCPSDF specifically sought to prevent large-scale, freehold development outside the urban edge, while the SDI was essentially underpinned by the development of a large-scale development outside the Stellenbosch Urban Edge.

- o Precedent for land use planning

As indicated above, the six programmes designed to benefit the local community were dependent upon the success of the Land Development Programme, i.e. the approval of Phase 2. The findings of the review indicated that if the SDI model proposed for the Boschendal Development was accepted as an approach for evaluating large scale developments located outside the urban edge, then this would have the potential for establishing a dangerous precedent for future land use planning and decision making both in the Western Cape and South Africa as a whole. The SIA also noted that the fact that Boschendal was recognized both locally and internationally as one of South Africa's most historic farms only served to heighten the potential risk of setting such a precedent and undermining the key conditions outlined in the PSDF that related to development beyond the urban edge.

- o Creation of expectations

The review found that the SDI approach had the potential for creating expectations amongst local communities that may not be met. As noted above, the SDI document indicated that in excess of R 100 million would be generated for the BTT. In addition, the figures contained in the economic assessment undertaken by Urban Econ as part of the SDI indicated that the proposed Land Development component of the SDI would result in total capital investment of R3.5 billion, R 11.5 billion in new business sales and the creation of 20 400 additional employment opportunities during the construction phase. The figures associated with the operational phase included R 1.8 billion per annum in new business sales, 2 520 employment opportunities and R 1.1 billion per annum in additional income to the Stellenbosch Municipality. While the consultation process associated with the SDI resulted in broad buy in from the local community, it also created a set of expectations amongst communities within the Dwars River Valley. These expectations were in all likelihood heightened by the financial and employment figures contained in the SDI documents. The SDI approach adopted for the Boschendal Development therefore not only had the potential to set a bad precedent in terms of land use planning, it has also created a set of expectations amongst the local community that may not be realised. This only serves to further highlight the inherent dangers associated with a model that requires the approval of a large-scale development located outside the urban edge in order to achieve the promised benefits.

Issues raised by the BTT

It would appear that the comments raised by the BTT are largely linked to the SDI, which in turn was linked to the approval of a large-scale development (Phase 2) located outside of the urban edge. The findings of SIA for Phase 2 in 2009 (Barbour and van der Merwe, 2009) indicated that SDI had the potential to create a set of expectations amongst the local communities in the area. A number of the comments submitted by the BTT appear to be linked to the expectations that were created by the SDI and the flow of benefits that would have been associated with the previously proposed Phase 2 development.

In addition, as indicated above, the current owners of Boschendal have meet with representatives from the BTT and confirmed that they are committed to paying 5% of the value of the initial sale of all properties and 0.5% of all subsequent sales to the BTT. These funds will be used to support development in the Dwars River Valley. It is therefore reasonable to assume that the majority of the concerns raised by the BTT have been addressed.

**ASSESSMENT OF NO-DEVELOPMENT OPTION**

The no-development alternative would result in a lost opportunity to create employment and business opportunities associated with the construction and operational phase of the proposed development. The no-development option would also result in a lost opportunity to create a well-designed mixed use development that provides a mix of housing opportunities for middle and high income households, combined with retail and public facilities. The majority of the proposed development is also located within the Groot Drakenstein Node Urban Edge. The no-development option is therefore not supported. However, the recommendations listed in the SIA and other key specialist studies, such as the Heritage Assessment and Visual Impact Assessment, should be implemented.

Refer to the Social Impact Assessment – **Appendix G11**.

**TRAFFIC IMPACTS**

The intersections in the study area are currently operating adequately. These intersections include:

- Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access)
- Helshoogte Road (R310) / Rhodes Food Access / Police Station Access
- Helshoogte Road (R310) / Rhodes Food Offices Access
- Helshoogte Road (R310) / Wood Place Access
- R45 / Bien Donne Road
- R45 / Boschendal Access
- R45 / Delta Road
- R45 / Factory Food Shop Access
- R45 / Helshoogte Road (R310) / Allee Blueue Access
- R45 / Meerlust Access

The Helshoogte Road (R310) / R45 intersection is starting to approach capacity in the peak periods.

A single-lane roundabout is proposed on Helshoogte Road (R310) at the Minor Road 6/4 (New Oaks Access) intersection. A double-lane roundabout is proposed at the intersection of the Helshoogte Road (R310) and the R45. This is preferred to a signalised intersection due to the traffic calming characteristics of the roundabout. A full central access is proposed with opposing right-turn lanes (on Helshoogte Road (R310)) entering the site and stop controls on the side roads with separate right and left-turn lanes.

The proposed roundabouts will operate well during both AM and PM peak hours. The proposed central access right-turn movements will operate poorly during both the AM and PM peak hours. The sub-standard delays experienced are caused by the high volumes of through traffic along Helshoogte Road (R310). This type of access is still preferred due to the flexibility it offers during off-peak periods and weekends. Vehicles wishing to exit via right-turn movement can utilise the alternative roundabout during peak periods.

Refer to the Traffic Impact Assessment attached as **Appendix G3**.

### **Construction Phase Traffic**

During the construction phase there is a potential for temporary impacts on the local traffic and pedestrians. The construction phase will generate traffic onto the surrounding road network through delivery of materials/equipment to the site and the construction workforce travelling to and from the site on a daily basis.

#### Construction Vehicles

It is assumed that an average of 10 construction vehicles (heavy vehicles/trucks) will access the site during the peak periods, however, the impact of the trucks during the peak periods is considered to be minimal and negligible. Construction vehicles may at times affect the flow of local traffic, but the vehicles will only make use of the R310 and the R45 to access/exit the site. Construction vehicles will operate within the boundary of the site, making use of the service roads situated parallel to the R310 and the internal roads of the proposed development. In addition, vehicles will also be able to access the site via the Rhodes entrance off Lanquedoc Road. Traffic management procedures should be implemented to ensure that the impacts of the construction vehicles are minimised and safety and protection measures are implemented to reduce the risks of collisions.

#### Construction Staff Transport and Visitors to the site

It is anticipated that the Contractor will provide transport for unskilled workers to and from the site (common practice), while the skilled workers will travel to the site by private vehicles. It is not expected that the trips generated by vehicles transporting the labourers, skilled staff and visitors to the site will exceed 25 vehicles during the AM and PM peak periods. The existing road network has sufficient capacity to accommodate these vehicles and the impact of these vehicles on the overall operation of the road network is therefore considered to be minimal and negligible. Given the distance from the site to the residential areas, it is unlikely that any of the workers will commute to work on foot.

#### Pedestrians

The construction is expected to generate minimal pedestrians. The existing sidewalks along the existing road network, however, will be able to accommodate existing and additional pedestrians if required. Although no mitigation or remedial measures will be required with regards to pedestrians, it is necessary for the Contractor to ensure that safety and protection measures are implemented where pedestrians are within the construction site boundary. This will form part of the construction traffic management plan.

(d) Cultural and historic aspects:

## **HERITAGE-RELATED DESIGN INDICATORS**

It is widely accepted that Boschendal is one of the 'jewels in the crown' of the Cape Winelands, The sub-region also plays a very significant role on the regional economy of the Western Cape, via the tourism and agricultural sectors.

It is also apparent that the spatial quality of the sub-region is being rapidly eroded, particularly through the inappropriate location of new development (particularly incremental scatter), inappropriate forms of development (particularly suburban, as opposed to rural, forms) and inappropriate forms of urban, as opposed to rural, infrastructure.

Two central starting points have informed the assessment which follows. The first is that the real heritage value of the broader site lies in the totality, not only in the parts. It is the historical dynamic balance between the three landscapes of society (wilderness, rural and urban) which lies at the heart of its value. In terms of this, it is the wilderness and rural landscapes which have historically been, and must remain, dominant. The erosion of value currently being experienced is the result of increasing dominance of urban and suburban landscapes at the expense of the others.

The second is the principle of authenticity. This has a number of implications:

- Wilderness landscapes should remain as pristine as possible.
- Rural landscapes must take the form of working farms, with the infrastructure, noises and smells which accompany this – it cannot be substituted by artificial green forms such as gardens.
- Infrastructure forms should be rural, not urban.
- The historical cultural landscape should be conserved and celebrated (the cultural landscape takes the form of appropriate human responses to the place over time and includes built forms, objects, planting and geometries). Of particular importance in terms of geometries is retaining the orthogonal geometries of rural landscapes and the promotion of horizontality to retain the dominance of sky and agricultural planes.
- Settlement should capture qualities of village, not suburbia.

## **LOCATIONAL INDICATORS: WHERE DEVELOPMENT SHOULD NOT GO**

A set of indicators was developed for the broader Boschendal site in three categories: natural systems, the cultural landscape and public structural and design informants. All of these were mapped and a composite constraints and informants map was produced for each category. See Figures 16 -23 in the HIA – **Appendix G12**.

An approach to settlement formation in regional space was then conceptualized. This conceptualization is again based on the principle of authenticity. It is underpinned by a number of central principles, based on international theory and precedent.

- Development should not be scattered but should gravitate towards the main regional sub-routes (in this case, the R45 and the R310).
- Development along these routes should not be continuous, but should take the form of an hierarchical system of 'beads on a string', with the highest order settlement clusters corresponding with points of highest accessibility. These points correspond with cross-over points, where local agricultural superblocks interconnect with the higher order routes. In this way, discontinuous regional corridors of development emerge over time. The maximum width of the corridor should be defined by comfortable walking distance (750 meters).
- The highest order regional routes should appropriately be rural scenic routes. These routes should run continuously through the rural and wilderness landscapes of which they are a part. Appropriately, therefore, settlement should not occur on these routes, but should be set-back a minimum of 75 meters from them. Similarly, in order to create continuities of agriculture, settlement should not be two-sided, traversing the route, but should be one-sided only, switching from side to side. In this way, the scenic experience is optimized.

This conceptual approach is expressed diagrammatically in Figure 19 in the HIA (**Appendix G12**) and is diagrammatically applied to the broader context of the site in Figure 20 in the HIA.

All the indicators (natural systems, cultural landscape, existing public structure and design factors and settlement) were overlain, in order to produce a composite constraints and informants map (Figure 21 in the HIA).

This was then interpreted to identify development potential in terms of three categories: 'no-go' areas (where no development should be allowed); 'tread lightly' areas (where some low impact development could be considered, subject to strict controls); and 'full development potential' (where more concentrated development could be considered) (Figure 22 in the HIA).

### **SUB-REGIONAL INDICATORS**

Given that the location of the village is acceptable, the setting of the development must respect the following sub-regional indicators:

- The broader cultural landscape context should be respected (Figure 23 in the HIA).
- Within the rural corridors along the R45 and the R310, the scenic route parameters, in conjunction with the view cones associated with the Boschendal Homestead and its setting, must be respected.
- The northern edge of the village should be set-back from the R45, in order to acknowledge the scenic nature of the R45.
- The southern-most edge of the village should be no closer than 300 meters from the Boschendal homestead werf wall, in order to celebrate its setting and the agricultural context.
- Agricultural activity associated with Boschendal should be brought hard against the edges of the village, in order to reinforce the agricultural context of the werf and homestead.
- Planting mitigation measures should be used to 'edge' the village, to clarify its domain and to contribute to the cultural landscape expression.
- The settlement should be announced by strategically located measures which contribute to the creation of a gateway, a sense of arrival, the effect of 'pauseway' and traffic calming. These should be consistent with measures previously introduced at Pniel, thereby extending design language as a 'family' of elements in the broader valley. Traffic circles (in an appropriate rural form) should announce entry into the settlement both from the R45 and the R310. The speed limit within the village should not exceed 60 kilometres an hour.
- Access into the village should respect the safety requirements of the Provincial Roads Engineer.
- The southern and eastern portions of the village should be buffered by 'tread lightly' zones of development in order to protect long views from the homestead and from the scenic routes.

### **VILLAGE INDICATORS**

The central, non-negotiable, challenge with respect to settlement is to create qualities of 'village', not 'suburbia'.

#### Qualities of Village

Positively performing villages internationally exhibit a number of qualities.

- Their location is accessible in term of regional movement infrastructure.
- They are relatively small.
- They are mixed-use (for convenience), although the main activities are residential.
- Their economies are supported by the local region, while they predominantly provide goods and services to the local region.
- They are compact: they do not sprawl, although they allow easy pedestrian access into the surrounding countryside.
- They are social entities, not just a collection of houses: they require places for social gathering and expression.
- There is a clear distinction between more public and more private activities, with more public activities gravitating towards the most accessible locations.
- The qualities of street space are central to the overall quality of the village.
- Pedestrian and NMT movement is dominant, although vehicular access to all parts of the site is possible.
- They are safe, in the sense that there is no residual space that lacks surveillance.
- They offer diverse living conditions to a demographically wide range of inhabitants.
- Large parts of the village are widely accessible: only the most private places may have controlled access.
- Their infrastructure is rural, not urban.
- Their country setting is brought into daily life through 'inside-out' views.

#### Village Spatial Indicators

- The form of the village should be compact, to discourage sprawling forms, now or in the future. However, cul-de-sacs are discouraged, to enable easy pedestrian access to the countryside.
- Large parts of the village (particularly the more public parts) should be accessible to the public. Some security control may be exercised in more private precincts.

- There should be a range and mix of activities. Non-residential activities should be small-scale and occur on the ground floor in central zones, to encourage a vibrant street life in the central areas.
- There should be a range of choices both in terms of lifestyle (from quite public to very private living), housing types and affordability levels.
- The settlement should be organized around a hierarchical 'family' of public or social spaces, with the level of hierarchy largely corresponding to levels of accessibility.
- The highest order space should be the primary gathering space (the village green) for the entire village and for visitors.
- There should be a clear hierarchy of public routes, with the hierarchy corresponding with degrees of continuity of the route.
- The highest order route should be a mixed-use high street.
- The movement hierarchy should be pedestrian and NMT-dominant, while vehicular access should be possible to all parts of the development.
- The movement network must promote permeability. It should take the form of a grid, although the grid may be distorted to soften it.
- The pattern of sub-division should reinforce active street boundaries and prevent 'dead-edges' (edges which lack surveillance) from fronting onto the public domain. To this end, buildings facing onto public streets should be brought to the front of the plot and 'build-to' lines should be defined to make the street in terms of important routes. This system also promotes primarily green hollow blocks.
- The rural and wilderness settings of the village should be brought into the daily lives of inhabitants by using streets as viewing corridors opening up important vistas.
- Higher order public institutions and activities should be used to reinforce patterns of access and higher order spaces. Similarly, a gradation of height should reinforce the hierarchy of publicness. No building should exceed 3 storeys. These occur only in the densest parts. There should be a minimum height of two storeys in the more embedded private areas and one storey in the 'tread lightly' zones.
- The stormwater run-off system should be designed as a network and should occur on the surface (as a place-making element), in the form of 'grachts' or swales).
- Rural elements of infrastructure (for example, grachts and tree canopies), should be used, as opposed to urban elements such as kerbs or high walls.
- Building types should be used structurally in appropriate places to reinforce structure (for example, street-liners, T-Junctions buildings, corner buildings, pavilions).
- No rears of buildings should front onto any form of public space.
- Planting mitigation measures (for example, avenues and wind-breaks) should be used to 'finish-off' the southern edge of the village, while at the same time consolidating the northern edge of the agricultural setting of the Boschendal homestead and werf precinct. Structural planting should also be used to reinforce the structural hierarchy. Wherever possible, orthogonal geometries should be used to give expression to the cultural landscape of the Winelands of the Cape.

### **STREET INDICATORS**

Street space contributes the largest amount of public space in almost any settlement. The quality of the streetscape, therefore, impacts on the quality of the entire settlement. The challenge lies in defining a movement network that reflects qualities of 'street', not 'road'. There is a fundamental difference - 'roads' are largely mono-functional conduits or 'pipes' for the movement of vehicles; 'streets' are multifunctional spaces which accommodate a range of human activities, including different modes of movement. When they are positive, they reflect a number of characteristics: they are defined, humanly-scaled, multi-functional and they are subject to surveillance.

- The street hierarchy should be clear and legible, with the dominance of the 'high street' apparent.
- Blocks should be relatively small to promote permeability.
- Street edges must be clearly defined (by building fronts, verandas, low walls, fences, hedges and so on). Almost all buildings should be background buildings, the primary role of which is to define public space, including street space. Buildings should be used structurally to define streets.
- Street must be humanly scaled (the height of defining elements on the edges should be appropriate to the width of the street).
- Streets must ensure surveillance in the sense of having 'human eyes' over the street space. By definition, therefore, front-defining edges must allow for a degree of transparency.

- Streets should be multi-functional: they should be able to accommodate a range of human conditions. By definition, then, they should not be scaled only to accommodate movement. Part of this is accommodating a range of movement modes in different places.
- The threshold between public street space and private residential space must be clear (frequently scaling elements such as stoeps and pergolas can be used as modulating devices in house-street relationships).
- Minor streets should be a minimum of 7 meters to allow vehicles to turn.
- Kerbs and other suburban elements of streetscape should not be used.

#### **VISUAL INDICATORS**

The visual indicators outlined here have been derived from the Visual Impact Assessment (VIA) (**Appendix G13**). The heritage indicators and directives are supported by the VIA as these have significant visual implications. Specifically, these include:

- Maintaining a visual setback along the R45 scenic route.
- Maintaining a 300m agricultural setback from the Boschendal homestead werf wall.
- Bringing agriculture to the edge of the proposed village.
- Using avenues and windbreaks to define edges for the proposed village;

Other general urban design, landscaping and architectural guidelines include the following:

#### Building Heights:

- Generally restrict buildings to 2 storeys to minimise visual intrusion above tree canopies.
- 3-storey buildings could be strategically used in commercial areas to emphasize focal points.
- 1-storey buildings should be used in visually sensitive areas (such as those immediately visible from the Boschendal homestead or R310).

#### Open Space and Landscaping:

- The village open spaces should ideally be laid out as a continuous system of both hard and soft spaces to ensure functional continuity and visual legibility, as opposed to a patchwork of fragmented spaces.
- The community open spaces and general landscaping should be designed in sympathy with the strongly orthogonal cultural/agricultural landscape and werf-type layout typical in the Winelands. Excessively gardenesque-type landscaping should be avoided.
- The services of a professional landscape architect should be employed at an early stage of the project to ensure appropriate external design.

#### Streets and Parking:

- Streets should also be laid out in sympathy with the orthogonal pattern of the farmlands, tree belts and irrigation canals. Curvilinear or diagonal street layouts should be avoided.
- Parking areas fronting onto the scenic routes should be avoided, and parking should preferably be screened with buildings, walls, berms and/or trees. Parking should ideally be organised into small parking courts of about 20 cars to avoid visually bland and climatically exposed parking lots.
- Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Streets and parking should ideally have dish channels or grassed swales. Parking areas could have gravel to minimise runoff and the need for stormwater structures. Landscaped detention ponds with litter and silt traps could be used.

#### Lighting and Signage:

- Outdoor lighting should generally be discrete to maintain the rural ambience of the area. Low-level bollard-type lights and reflectors should be used to minimise light spillage.
- Advertising signage, banners and flags should be avoided, particularly along the scenic routes. The use of low-level signs, or fixing signs to walls, helps to minimise visual clutter.

#### Environmental management:

- An Environmental Management Plan (EMP) should be prepared to ensure that visual mitigation measures are implemented and damage to environmental and heritage resources minimised, particularly during the construction period.



## ARCHITECTURAL INDICATORS AND CONTROLS

Two levels of concern are addressed in this section:

- Generic indicators; these logically flow from the preceding settlement-orientated indicators. However, the focus shifts to individual or complexes of buildings. Particular emphasis is placed on how each building 'works' with its neighbour, in order to contribute jointly towards the character of the villages as a whole.
- Mandatory controls to achieve the generic indicators. These generally relate to the public interface and fronts of the units (that portion of the unit which is visible from the street) as well as aspects relating to roof silhouette and sky-lines.

### Generic architectural indicators

- All new buildings should reflect recessive architecture (they should be background buildings).
- More important public buildings should not mimic the architecture of the past (e.g. the use of gables etc.). They should be modern in their architecture. Nevertheless, the 'wall-plate' architecture of the Cape should dominate.
- No architectural themes (e.g. Tuscan).
- Buildings, structures, built elements and landscaping should promote the natural, rural, historical and architectural character of the broader Boschendal precinct within the Valley.
- Existing architecturally significant buildings and homesteads of historical or aesthetic importance, including their landscape settings, should be conserved and, where necessary, enhanced.
- The character of new buildings and associated elements must reflect qualities of 'Capeness' and 'ruralness', expressed in the spirit of contemporary design.
- Buildings must be designed to optimize their spatial and design structural role (e.g. gateway buildings, corner buildings, landmark buildings, street-liners, pavilions).
- Most buildings must be designed as background buildings, to make them as unobtrusive and recessive as possible. More prominent buildings should be used strategically (for example, as landmarks or as terminating elements for important axes).
- Buildings and their associated elements (walls, hedges, etc.) must contribute to defining, and thus making, the street along which they are located.
- The geometries of horizontality reflected in the landscape, must be respected, especially in considerations of roof silhouettes.
- Buildings generally must be kept low but height should be used to reinforce spatial structure.
- Roof silhouettes must be as unobtrusive as possible.
- Proportions must be elegant, with wall surfaces dominating openings and cut-outs (apertures). The apertures should be vertically proportioned;
- Surveillance over public space, including the street, is compulsory: no dead-edges are allowed.
- Colours must be muted.
- Where appropriate, use barnyard architecture to define space.

### Mandatory Controls

- Buildings should not occur at an angle to the street boundary.
- Compulsory build-to lines should be defined to ensure that buildings play their spatial and design structural role most effectively, (e.g. buildings close to the street).
- The maximum height is three storeys in dense areas, two storeys in the more embedded areas and one storey in the tread-lightly zones.
- No more than ground floor plus one more floor for flat roofed buildings.
- All flat roofed buildings should have a parapet on three sides order to create a 'boxed feeling. No gutters should appear on the front of the unit but should occur to the rear.
- For pitched-roof buildings, ground floor only is permitted. Upper floor accommodation must be within the pitch.
- When roofs are pitched, the allowable range is between 35° - 45°.
- No mono-pitched roofs are allowed.
- No tiled roofs are allowed.
- Significant interruptions to the horizontality promoted by the roof silhouettes (e.g. high chimneys) are not allowed.
- No expressed gable ends (parapets) are allowed. Roof materials must project over the end walls and finish flush with the outside face.
- No dormer windows are allowed in the roof of upper floor accommodation in pitched-roof buildings facing the public street.

- The use of skylights is acceptable if not visible from the road.
- Windows in the dominant facade must be vertically proportioned, consistent with the traditions of walled architecture.
- Process is important in enhancing diversity: no one designer should be allowed to design more than four contiguous building, to prevent monotony.

### **HERITAGE IMPACTS**

Below is a discussion of the potential heritage impacts expected during the construction and operational phases. These impacts are further assessed in Section 6 of this report.

- **OVERARCHING PRINCIPLES: DOMINANCE OF WILDERNESS AND RURAL LANDSCAPES AND AUTHENTICITY**

#### Alternative 1: No Go Option

The No Go alternative (Alternative 1) reveals no dynamic balance between the three landscapes identified (wilderness, rural and urban). It is neither wilderness, rural nor urban. It is essentially a relic landscape, containing remnants of previous agro-industrial activities which are no longer functioning.

#### Alternative 4: May 2014

While the alternative does begin to address qualities of a rural village, the village morphology and the nature of the spatial organisation of the proposed village is primarily geometric, strictly orthogonal and rigid in conception. It has more of an urban quality than that of a rural village. The dynamic balance between the three landscapes referred to above is thus not clear.

#### Alternative 5: October 2015

The preferred alternative, Alternative 5, addresses many of the limitations of the previous alternative. The grid is looser, more organic and informal and there is a greater sense of fit with the rural landscape. The emphasis is on the continuity of public and common spaces for most of the village which binds the various precincts together and integrates the village into the surrounding landscape.

A dynamic balance is evident between the three landscapes referred to. The historical cultural landscape is conserved and celebrated. The loose orthogonal geometrics of rural landscapes are integrated into the layout and the sense of horizontality is retained and enhanced. Village qualities, rather than suburban qualities are evident in the village morphology.

- **LOCATIONAL INDICATORS: REGIONAL AND SUBREGIONAL**

#### Alternative 1: No Go Option

The highest order settlements should cluster at the points of highest accessibility. The No-Go Option represents no positive response to the development potential of the site in terms of the conceptual approach to the rural settlement pattern. The intersection of the R45 and R310 does establish a development opportunity within the constraints identified and the no development option does not present a positive response to the opportunity established.

#### Alternative 4 and 5

Alternative 4 and 5 are assessed together as there are no discernible differences with regard to regional and sub-regional locational criteria. Both respond positively to the rural settlement pattern, the pattern of natural systems, the cultural landscape and the public structural and design informants. Development is appropriately set back from the R310 scenic route and the view cone towards the Boschendal homestead is respected.

The southernmost edge of the village is not closer than 300m to the Boschendal homestead werf wall as established in the heritage indicators. To emphasize the agricultural context agricultural activity is brought up hard against the edges of the village. Similarly the southern and eastern portions of the village are buffered by "tread lightly" zones of development in order to protect long views from the homestead and from the scenic routes as required by the heritage indicators.

The Urban Design Framework, dated November 2015, indicates a positive response to "traffic calming measures and design elements to create a sense of arrival, e.g. traffic circles that are rural in form and the imposition of speed limits".

The VIA concludes that the proposed siting of low-density residential development on the eastern and western edges of the village in Precincts F2 and F3 (see precinct information in the Urban Design Report, **Appendix G2**) could result in a suburban visual effect. These developments thus need to be mitigated by the retention of the existing orchard and introduction of tree belts. Of particular concern is the removal of the orchard located on the eastern edge of the village and its replacement with low-density single residential erven. The orchard provides visual screening and contributes to the rural context of the village. It is thus recommended that these residential erven be reduced in size to exclude the existing orchard from the proposed development. From a heritage perspective, these development pockets are consistent with the 'tread-lightly' areas to protect long views from the homestead and from the scenic routes. The building grain of the village establishes a graduation from fine grain in the centre to loose grain towards the edges, which is consistent with village morphology. However, the HIA concurs with the findings and recommendation of the VIA that in order to retain the productive agricultural character of the eastern edge of the village, that the proposed residential erven in Precinct F2 be made smaller to exclude the existing orchard, as currently shown in Alternative 5c.

- **VILLAGE QUALITIES AND SPATIAL INDICATORS**

#### Alternative 1: No Go Option

As no development is indicated in this option there is no assessment related to village scale indicators.

#### Alternative 4: May 2014

Alternative 4 to a large extent addresses many of the village spatial indicators.

- Easy pedestrian access to the countryside is evident.
- Large parts of the village are accessible to the public.
- A range and mix of activities is evident. Non-residential activities are proposed to be small-scale in nature and occur on the ground floor in the central zones to encourage a vibrant street life in these areas.
- A range of choice is evident, from public to private living, with a range of housing types and affordability levels.
- The village is organized around a hierarchical 'family' of public or social spaces, with the level of hierarchy largely corresponding to levels of accessibility.
- The highest order space is the primary gathering space (the village green) for the entire village and for visitors in Alternatives 4 and 5. This primary public space or village green is located along a route running parallel to the R310.
- A clear hierarchy of public routes is evident with a mixed use high street located at a right angle to the major green space parallel to the R310 and aligned through the centre of gravity of the village.
- The movement hierarchy indicates a pedestrian and non-motorised transport dominance but with the possibility of vehicular access to all parts of the development.

While both Alternatives 4 and 5 positively address the village spatial qualities referred to above, the primary difference between the two alternatives relates to the response to the rural context, and the rural qualities embedded in the village morphology which is more evident in Alternative 5 than Alternative 4.

The nature of the spatial organization of the village is clearly more informal, looser and less rigid in Alternative 5 than in Alternative 4.

In Alternative 4 the pattern of sub-division reinforces active street boundaries to a lesser extent and the possibility of 'dead-edges' from fronting onto the public domain is more pronounced. While buildings facing onto public streets are brought to the front of the plot and 'build-to' lines are evident, there is a sense of monotony in the uniformity of the building lines which contributes to a sense of urbanity rather than the rural quality required. A denser, more urban morphology is illustrated rather than the looser, primarily green hollow blocks referred to in the Indicators section.

While heights are not specified in the Alternatives presented it is evident from previous submissions, including elevations, that Alternative 4 indicates a degree of uniformity in heights with a higher incidence of 3 storeys than illustrated in Alternative 5. A greater variation in density is evident in Alternative 5 compared to Alternative 4.

The denser, more formal layout of Alternative 4 allows for less opportunity for rural elements of infrastructure to be implemented ('grachts', 'swales' and tree canopies).

#### Alternative 5

As indicated above, both Alternatives 4 and 5 respond positively to many of the village spatial indicators. The primary difference between the two alternatives is the response to the rural context and the rural village morphology and nature of the spatial organization, more evidently rural in quality in Alternative 5 compared to Alternative 4. Alternative 5 is thus considered to be an evolution of Alternative 4, to loosen the strictly orthogonal geometry of the latter, and to provide a greater variety of building forms and public spaces.

In Alternative 5 building types are used structurally in appropriate places (street corners, T-junction, buildings, corner buildings etc.) to reinforce the public spatial structure and to add texture and variety to the village form. The kinks in the grid, the generally smaller blocks and the hierarchy and variety of public and common spaces contribute to a more complex and intimate village than is evident in Alternative 4.

The VIA supports the general layout and design principles proposed in Alternative 5. It raises a visual concern with the building massing of three storeys in Precincts E1 and E2, as this could detract from the rural character of the area. More refined articulation of building elevations and roofscapes in these Precincts, by expressing individual units, is recommended at the next stage of design development, i.e. at the precinct plan level. The HIA supports this recommendation.

- **STREET INDICATORS**

#### Alternative 1: No Go Option

As no development is indicated in this option there is no assessment relative to street scale indicators.

#### Alternative 4 and 5

As the alternatives are illustrated primarily at the site area scale, and minimal indication of street scale treatment is provided, the assessment of the two alternatives is integrated in this section. Both alternatives address the following:

- A clear and legible street hierarchy, with the dominance of the 'high street'.
- Relatively small cadastral defined development blocks to promote permeability.
- Clearly defined street edges, with a gradation of public, semi-public, semi-private and private interfaces.
- Predominantly humanly-scaled streets, with heights of buildings generally related to street widths.
- Multi-functional use of street spaces, particularly higher-order streets such as the 'high-street'.

However, in all of the above instances, the qualities of rural village are more pronounced in Alternative 5 than in Alternative 4. Blocks are smaller and there is thus more permeability. There is a greater variety in building form and the nature of public spaces in the former compared to the latter. Alternative 5 has a more distinctive rural village morphology and spatial organisation than Alternative 4.

- **OPEN SPACE AND LANDSCAPING INDICATORS**

#### Alternative 1: No Go Option

As no development is indicated in this option there is no assessment relative to open space and landscaping indicators.

#### Alternative 4 and 5

The nature and extent to which the open space and landscaping indicators are addressed are more positive in Alternative 5 than in Alternative 4.

- The village open space system illustrated in Alternative 5 is more continuous and diverse than that illustrated in Alternative 4. Open space systems have different forms and shapes and the axial relationships set up by the distorted grid provides a range of near and long views mostly associated with prominent landmarks in the context, namely the landmark Boschendal homestead and the surrounding mountain peaks, which contribute to the binding of the village into the rural context. Functional continuity and visual legibility are more apparent in Alternative 5 than in Alternative 4.

- While an orthogonal form in response to the structure apparent in the surrounding cultural/ agricultural landscape and werv-type layouts typical in the Winelands is respected, the orthogonal grid is distorted in Alternative 5 to provide a greater sense of fit with the landscape and to provide a more complex spatial syntax than is evident in Alternative 4.
- A sense of a more ornamental, as opposed to a productive/functional landscape treatment, is also more evident in Alternative 4 than in Alternative 5.

The HIA concurs with the VIA recommendation that the proposed village development be softened through major site rehabilitation and landscape mitigation that is appropriate for the cultural and agricultural setting, and that a Landscape Framework Plan be prepared as part of rural settlement making. This should be prepared as part of the next planning iteration and by a professional landscape architect with proven professional experience working in a rural landscape context of high heritage significance.

- **STREETS AND PARKING INDICATORS**

#### Alternative 1: No Go Option

As no development is indicated in this option there is no assessment related to roads and parking indicators.

#### Alternative 4 and 5

As with the above, the extent to which the indicators are addressed is more positive in Alternative 5 than in Alternative 4. While in both alternatives streets are laid out in sympathy with the orthogonal pattern of the farmlands, tree belts and irrigation canals, the distorted and looser grid evident in Alternative 5 provides a greater sense of fit and a more nuanced response to the particularities of the site and the context.

With regard to parking provision there is a sense that parked cars could possible dominate the streetscape in Alternative 4 whereas in Alternative 5 greater use is made of internal parking courts which would remove the parked cars from the predominantly public space system.

The VIA identifies the use of the green buffers on both sides of the R310 for parking lots, and the need for screening of large parking lots to be a visual concern. A number of visual mitigations are recommended to minimise the effects of parking, as well as lighting, signage and construction activities relating to the development. These include the following:

- Parking areas along the R310 should be set back from the scenic route to allow multiple rows of trees for screening.
- Parking should be screened with buildings, walls, berms and/or trees, where possible.
- Parking should be organised into smaller parking courts of about 20-30 cars to avoid visually and climatically exposed parking lots.
- Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Parking areas could have gravel surfaces for visual informality and to minimise stormwater runoff.
- Stormwater should consist of dish channels and grassed swales, or traditional furrows (as indicated in the proposed Urban Design Framework).
- From both a heritage and visual perspective, screening should not imply 'blocking out', but should rather filter sight lines and views, thereby promoting transparency and layering.

#### **SIGNAGE, LIGHTING AND ARCHITECTURAL INDICATORS**

The Urban Design Framework provides insufficient detail at site and precinct scales to enable the assessment of the extent to which the alternatives, in particular Alternative 5 addresses the rural village qualities emphasized in the heritage indicators section. It is recommended that an Integrated Environmental Management Plan be formulated to address the mandatory controls and guidelines related to lighting, signage and architectural and landscaping treatment as formulated in Section 5 of the Urban Design Framework (**Appendix G2**).

#### **IMPLEMENTATION**

It is recommended that precinct plans, which include detailed site and transportation planning, design and landscaping for these five focus areas be subject to further more detailed heritage assessment in terms of a 'package of plans' approach which is regarded as an appropriate process in terms of the complexity of the design proposal and the high heritage significance of the Cape Winelands cultural landscape context.

The HIA and VIA concur that proposals be formulated for the phasing of the development to ensure an integrated form of development and that is tied in with landscape mitigation. This would address the potential visual and heritage impacts of uncompleted phases associated with a large-scale project resulting in vacant land and the visual detracting of a building site. Each phase should be implemented as a completed development as far as possible, including all landscaping. To this end a Phasing Plan should be prepared. As a first step, planting and other elements of edge-making to define the overall site, should be undertaken as soon as possible.

### **SUMMARY OF IMPACTS**

Alternative 1, the No Go option does not address the opportunities evident in the site location and the derelict nature of existing site conditions. The overall heritage impact of this alternative is thus regarded as medium negative.

The overall heritage impact of Alternative 5, including the mandatory controls and guidelines specified in the Urban Design Report and recommended mitigation measures, is regarded as potentially medium-high positive. Should these mandatory controls, guidelines and mitigation measures not be implemented then the overall heritage impact of Alternative 5 is potentially medium-high negative.

### **OUTCOME OF THE PUBLIC CONSULTATION PROCESS**

Comments were received from:

- The Vernacular Architecture Society of South Africa and the Cape Institute of Architecture (joint submission).
- The Stellenbosch Interest Group.
- The Boschendal Treasury Trust (Desmond Adams representing Kylemore).
- Heritage Western Cape (HWC)
- SAHRA

Refer to Section 12 of the HIA (**Appendix G12**) for a summary of these comments as well as the Heritage Specialists responses to them.

### **HERITAGE IMPACTS RELATIVE TO SUSTAINABLE SOCIAL AND ECONOMIC BENEFITS**

The social impact assessment identifies a number of positive social-economic impacts of the proposed development:

- Business opportunities
- Employment opportunities (construction phase)
- Employment (operation phase)
- Housing
- Provision of community facilities:
- Training and skills development programmes to benefit members of the local communities.
- Generation of funds for community development initiatives.
- Other community initiatives (as per the SIA):
  - Pre-school and aftercare facility.
  - Food nutrition programme for local schools.
  - Racheisfontein social centre for local staff and their families, including sports fields, theatre, amphitheatre, meeting rooms, lecture halls, library etc.
  - The formation of an Agricultural College, possibly in association with Elsberg Agricultural College.

The SIA concludes that the development is supported on condition that the recommended mitigation measures relating primarily to procedural issues are implemented.

**VISUAL IMPACTS**

Refer to the photographic montages in Figures 8 to 12 of the VIA (**Appendix G13**) which provides an indication of potential visual impacts resulting from the proposed village development, and the scale of the impacts.

- Despite being an identified node, the overall village development would increase the urban footprint and result in a change to the area.
- The overall scale of the fully completed village development, particularly if implemented in one intensive phase, could potentially signify a significant visual change in the character of the area.
- The proposed siting of low-density single residential developments on the eastern and western edges of the village in Precincts F2 and F3 could result in a more suburban visual effect than that of the compact residential types.
- The proposed 'high-density' residential and commercial components of the development, particularly large building massing of 3 storeys in Precincts E1 and E2, could potentially detract from the rural character of the area.
- The proposed large parking lots located in the green buffer to the east of the R310 in Precincts A2 and A3 could be visually intrusive on the rural scenic route.
- The overflow parking in the green buffer strip to the west of the R310, would similarly be visually intrusive, and could too easily become a formalised parking lot.
- Street and outdoor lighting could potentially create light 'pollution' and sky-glow in the rural setting.
- Uncontrolled signage could create visual 'clutter', particularly along the R310 and R45 scenic routes.
- Construction activities could result in visual intrusion on the surroundings, including excavation equipment, trucks, dust and noise.
- Uncompleted phases could result in vacant land and the visual detraction of a building site.

**2. WASTE AND EMISSIONS**

(a) Waste (including effluent) management

Will the activity produce waste (including rubble) during the construction phase?	YES	NO
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type?	Unknown M <sup>3</sup>	
The construction phase will generate inert waste: rubble and construction waste. No hazardous waste will be generated during the construction phase.		

Will the activity produce waste during its operational phase?	YES	NO
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type? <b>General Waste</b>	24 tons per week	

Where and how will the waste be treated / disposed of (describe)? The development will have a central refuse collection facility, located between the police station and the railway on the eastern side of the Helshoogte Road. It will be the responsibility of the Homeowners Association(s) to transport the refuse from the individual units/precincts to this point.  The refuse will be stored in standard bulk sized bins for collection by the Municipality. The collection point for the Municipality will be off the Helshoogte Road at this location, and designed to Municipal requirements to accommodate their vehicles.		
If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the development? The proposed development will generate approximately 24 tons of domestic waste per week.		
Has the municipality or relevant authority confirmed that sufficient capacity exist for treating / disposing of the waste to be generated by this activity(ies)? If yes, provide written confirmation from Municipality or relevant authority. <b>Appendix E1</b>	YES	NO
Will the activity produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream?	YES	NO

If yes, has this facility confirmed that sufficient capacity exist for treating / disposing of the waste to be generated by this activity(ies)? Provide written confirmation from the facility and provide the following particulars of the facility:	YES	NO
Does the facility have an operating license? (If yes, please attach a copy of the license.)	YES	NO
Facility name:		
Contact person:		
Postal address:		
	Postal code:	
Telephone:	Cell:	
E-mail:	Fax:	

Describe the measures that will be taken to reduce, reuse or recycle waste:

The following measures will be implemented:

- Household kitchen wet waste (including commercial buildings) could be composted locally at each dwelling unit or alternatively centrally (e.g. for the apartments and commercial buildings).
- If biogas digesters are installed, then the kitchen wet waste would be deposited directly into the digester with the energy produced (methane) for use in individual dwellings or alternatively compost could be used on local food gardens or general landscaping.
- Separation and recycling should occur at each dwelling with regular collection to a central point in the village.

Should Environmental Authorisation be granted for this application, a precinct wide waste recycling management plan must be developed.

For more detail, refer to Green Report attached as **Appendix G5**.

(b) Emissions into the atmosphere

Will the activity produce emissions that will be disposed of into the atmosphere?	YES	NO
If yes, does it require approval in terms of relevant legislation?	YES	NO
Describe the emissions in terms of type and concentration and how it will be treated/mitigated:		

**3. WATER USE**

Please indicate the source(s) of water for the activity by ticking the appropriate box(es)

<input checked="" type="checkbox"/> Municipal	<input type="checkbox"/> Water board	<input type="checkbox"/> Groundwater	<input type="checkbox"/> River, Stream, Dam or Lake	<input type="checkbox"/> Other	<input type="checkbox"/> The activity will not use water
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If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

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Please provide proof of assurance of water supply (eg. Letter of confirmation from municipality / water user associations, yield of borehole) [Please refer to Appendix E1 for a copy of the confirmation of water supply.](#)

Does the activity require a water use permit / license from DWAF?  YES  NO

If yes, please submit the necessary application to Department of Water Affairs and attach proof thereof to this application. [Refer to Appendix J for a copy of the General Authorisations.](#)

Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:

The following measures will be implemented:

- Buildings will install low flow sanitary fittings, rainwater harvesting and greywater recycling.
- Rainwater storage at each building can be used for toilet flushing and showering.
- Recycled greywater can be used for landscape irrigation.
- Leak detection is a key component of successful potable water reduction thus the provision of strategically located water meters should be considered.
- Meters should be connected to a site wide monitoring system (similar to the energy monitoring system).

Suggested maximum flow rates for sanitary fittings:

- Dual flush toilet – 3/6 litre
- Urinals – 1litre per flush



- Showers – 7litres per minute
- Taps - kitchen 10litres per minute
- Taps – washbasin 6litres per minute.

For more detail, refer to Green Report attached as **Appendix G5**.

#### 4. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Stellenbosch Municipality.

The total estimated conventional electrical load for the Boschendal Development is approximately 2,4 MVA - (11 000 V). The municipal electrical department has advised that there is a 1,5MVA spare capacity available at the existing main substation in the area. It is intended to conserve energy and reduce the demand at peak periods to 1,5MVA.

Should the demand increase in future from this development and other developments in the area, additional bulk power will need to be obtained. Apart from master planning being done by the Municipality for the area as a whole to bring in more power, additional power will also become available at the Helshoogte Road substation due to the existing surrounding farms reducing their power consumption off the external supply. The Applicant has indicated that he intends to reduce the farm's power consumption from the external supply by at least 1,0 MVA, mainly by means of solar power panels, but also by other generation methods and/or and other power saving measures.

The Municipality has indicated that once this is in place, an additional 0.5 MVA will become available from the above-mentioned substation opposite the police station, thus reducing reliance on the required load control interventions considerably.

If power supply is not available, where will power be sourced from?

For more detail, refer to Green Report attached as **Appendix G5**.

It is intended to conserve energy and reduce the demand at peak periods to 1,5MVA by means of the following:

- The approach is the reduction in energy consumption in the building through passive design and energy efficiency. In terms of passive design, the buildings should aim to be naturally ventilated wherever possible (including business office and retail). The main focus of passive design is the reduction in internal heat gain controlled by adequate external shading, insulation, glazing ratio and properties, and optimised orientation towards the north (reduction in east and west facades).
- The focus on energy efficiency would centre on hot water generation using heat pumps or preferably solar water heaters (SWH) with backup heating using LPG water heater. In denser residential areas (e.g. apartments) consideration should be given to a centralised district hot water storage system. For cooking, the use of a LPG hob and possibly a LPG oven in place of the electric oven. All lighting should be LED (linked to motion sensors and HVAC in commercial buildings). If the developer has control over appliances these should be low energy (A or B in European Commission energy rating labelling system). Localised roof-mounted PV could be considered to supplement the municipal electrical supply.
- Monitoring and control of energy consumption is a key element in successful energy efficiency programs thus the provision of smart metering should be considered. Meters (in commercial buildings but also residential) should be connected to a monitoring system (a site wide monitoring system and strategy could be developed).

## 5. ENERGY EFFICIENCY

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

Conventionally the power required for this development would be approximately 2,4MVA. However, it is intended to conserve energy and reduce the demand at peak periods to 1,5MVA by means of the following:

- An Energy Management system
- Energy saving / controlling devices fitted to each consumer distribution board to limit the maximum power to the design limits
- Lighting fittings shall be fitted with LED lamps only
- Hot water generation by means solar panel together with LPG gas geyser back-up. In the case of three storey apartments, solar hot water units combined with gas geyser will be provided.
- In the case of the hotel, a centralised heat pump unit will be provided.
- The Municipality advised that a control relay be provided to control each hot water unit. This relay will be controlled by the Municipality by switching it OFF during peak electricity consumption periods and switching it ON after the peak period. This will apply where a separate heat pump unit is provided for each separate hot water unit.

Further power savings will be achieved by means of the following:

- Installation of stoves with gas heating hob and gas oven
- Inclusion of smart meters and relay switches to limit consumption to non-essential appliances. Appliances like washing machines or driers are switched off in the event that the development load is exceeded or the dwelling unit power allocation be exceeded.
- In the case of the hotel and retail areas, conservation of electricity in terms of mechanical ventilation will have to be applied by the Mechanical Engineer.
- Power will be supplemented by means of Photo-Voltaic (solar energy panels) where possible.

For more detail, refer to Green Report attached as **Appendix G5**.

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

- Gas appliances will be used where possible.
- Solar heating of water will be considered.

## 6. DESCRIPTION AND ASSESSMENT OF THE SIGNIFICANCE OF IMPACTS PRIOR TO AND AFTER MITIGATION

**Please note:** While sections are provided for impacts on certain aspects of the environment and certain impacts, the sections should also be copied and completed for all other impacts.

- (a) **Impacts that may result from the planning, design and construction phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the planning, design and construction phase.**

Potential impacts on geographical and physical aspects:	<u>All Alternatives</u>
Nature of impact:	No geographical or physical impacts are expected.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation	

Potential impact on biological aspects:	<u>All Alternatives</u>
Nature of impact: <b>BOTANY</b>	No botanical impacts are expected by the proposed development on site. Refer to the letter from the botanist attached as <b>Appendix G9</b> .
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation	

	<u>All Alternatives</u>
Nature of impact: <b>BOTANY</b>	The pipelines are unlikely to disturb any patches of intact, significant natural vegetation, and 98% of the route in fact passes through road reserve, dense alien vegetation or agricultural land of no conservation value. The remaining 2% of the route passes through heavily degraded Boland Granite Fynbos of Medium sensitivity. Refer to the letter from the botanist attached as <b>Appendix G9</b> .
Extent and duration of impact:	Site specific and temporary
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Low negative
Significance rating of impact prior to mitigation	Low negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> <li>Replacement of the topsoil as soon as possible after pipeline completion.</li> </ul>
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation	Negligible

	Alternative 1	Alternative 4	Alternative 5a	Alternative 5b	Alternative 5c
Nature of impact: <b>FRESHWATER</b>	<b>Loss of open space</b>				
Extent and duration of impact:	N/A	Local area and permanent	Local area and permanent	Local area and permanent	Local area and permanent
Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly irreplaceable	Partly irreplaceable	Partly irreplaceable	Partly irreplaceable
Cumulative impact prior to mitigation:		Low to moderate negative	Low to moderate negative	Low to moderate negative	Low to moderate negative
Significance rating of impact prior to mitigation		Low to moderate negative	Low to moderate negative	Low negative	Low to moderate negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1.</li> <li>Allow for an ecological corridor to connect all of the wetlands, preferably with a connection to the Dwars River and its floodplain (i.e. contiguous with the 1:100 year floodline, below which no development should occur).</li> </ul>			
Cumulative impact post mitigation:		Low to moderate negative	Low to moderate negative	Low negative	Low to moderate negative
Significance rating of impact after mitigation		Low negative	Low negative	Negligible	Low negative

	<b>Loss of floodplain area</b>				
Nature of impact:					
Extent and duration of impact:	N/A	Local area and permanent	Local area and permanent	Local area and permanent	Local area and permanent
Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly irreplaceable	Partly irreplaceable	Partly irreplaceable	Partly irreplaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Low to moderate negative	Low to moderate negative	Low negative	Low to moderate negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Where filling in of the floodplain is unavoidable (Alternatives 4, 5a and 5c), hardened surfaces (buildings, roads) must be kept out of the "revised" 1:100 year floodline.</li> <li>The filled area must be kept as natural as possible, with indigenous planting and minimisation of additional</li> </ul>			

		hardened surfaces (e.g. roads, parking areas).			
Cumulative impact post mitigation:		Low to moderate negative	Low to moderate negative	Low to moderate negative	Low to moderate negative
Significance rating of impact after mitigation		Low	Low negative	Negligible to low negative	Low negative

Nature of impact:		<b>Hardening of river bank to construct gabion drop structure</b>			
Extent and duration of impact:	N/A	Local area and permanent	Local area and permanent	Local area and permanent	Local area and permanent
Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly irreplaceable	Partly irreplaceable	Partly irreplaceable	Partly irreplaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>The gabions must be placed in such a way as to avoid erosion on the river banks and floodplain.</li> <li>The size of the structure should be minimised as far as possible, in order to minimise the hardening of the river bank and loss of natural vegetation.</li> <li>The drop structure must be placed outside of the active channel.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative

Nature of impact:		<b>Dumping of building material in sensitive areas</b>			
Extent and duration of impact:	N/A	Site and Short-term	Site and Short-term	Site and Short-term	Site and Short-term
Probability of occurrence:		Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:		Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Low to moderate	Low to moderate	Low to moderate	Low to moderate
Significance rating of impact prior to mitigation		Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be mitigated:		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Ensure that all building materials are stored at least 50m away from the edges of the wetlands, as demarcated prior to construction. Storage areas should be bunded adequately to prevent contaminated runoff from entering the wetlands or the Dwars River.</li> <li>Materials should be stored in piles that do not exceed 1.5m in height and should be protected from the</li> </ul>			

		wind, to prevent spread of fine materials across the site. • Sensitive areas that are impacted by the dumping of materials must be ripped and re-planted after construction is complete.			
Cumulative impact post mitigation:		Low negative to negligible	Low negative to negligible	Low negative to negligible	Low negative to negligible
Significance rating of impact after mitigation		Negligible	Negligible	Negligible	Negligible

Nature of impact:	<b>Pollution of the wetlands or Dwars River</b>				
Extent and duration of impact:	N/A	Local area and medium term	Local area and medium term	Local area and medium term	Local area and medium term
Probability of occurrence:		Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Construction close to sensitive areas should take place during the dry season, to reduce the risks of contamination of the ecosystems through rainfall and runoff.</li> <li>Machinery prone to oil or fuel leakage must be located at least 50m away from any freshwater ecosystem, and the area adequately bunded in order to contain leakages.</li> <li>Water pumps and cement mixers shall have drip trays to contain oil and fuel leaks – these must be cleaned regularly.</li> <li>Suitable toilet and wash facilities must be provided to avoid the use of sensitive areas for these activities. These service areas must be maintained, and toilets emptied on at least a weekly basis.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative

Nature of impact:	<b>Destruction or deterioration of freshwater habitat as a result of foot and vehicular traffic</b>				
Extent and duration of impact:	N/A	Site and short term	Site and short term	Site and short term	Site and short term
Probability of occurrence:		Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:		Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Low to moderate	Low to moderate	Low to moderate	Low to moderate
Significance rating of impact prior to mitigation		Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated

mitigated:					
Proposed mitigation:		<ul style="list-style-type: none"> <li>• Pathways and access roads must be routed around the wetlands and should cross drainage channels as seldom as possible.</li> <li>• Sensitive areas must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process.</li> <li>• Affected areas must be ripped and re-planted after construction, to the satisfaction of the ECO.</li> </ul>			
Cumulative impact post mitigation:		Low negative to negligible	Low negative to negligible	Low negative to negligible	Low negative to negligible
Significance rating of impact after mitigation		Negligible	Negligible	Negligible	Negligible

Nature of impact:	<b>Excavation and/or infilling of wetlands or floodplain</b>				
Extent and duration of impact:	N/A	Local area and medium term	Local area and medium term	Local area and medium term	Local area and medium term
Probability of occurrence:		Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>• Excavation and infilling must be restricted to areas where this is necessary.</li> <li>• Any such work must be done during the dry season, to minimise impacts on the freshwater fauna and flora.</li> <li>• Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (directional drilling) under the river or stream and outside the riparian zone, rather than trenching, in order to minimise disturbance to flow, and the bed and banks of any freshwater ecosystem.</li> <li>• The sensitive areas (i.e. the edges of the buffers around the wetlands, river banks) not affected by construction must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process, except where work is occurring.</li> <li>• Affected areas must be rehabilitated after construction, to the satisfaction of the ECO, and according to a construction EMP.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative

Nature of impact:	<b>Disturbance of freshwater fauna and flora</b>				
Extent and duration of impact:	N/A	Local area and short term	Local area and short term	Local area and short term	Local area and short term

Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>The construction site and pathways must avoid sensitive areas. If lights are used, these must be directed away from all sensitive areas.</li> <li>The sensitive areas (i.e. the edges of the buffers around the wetlands, river banks) not affected by construction must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process, except where work is occurring.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Negligible	Negligible	Negligible	Negligible

Nature of impact:	<b>Increased input of sediments</b>				
Extent and duration of impact:	N/A	Local area and medium term	Local area and medium term	Local area and medium term	Local area and medium term
Probability of occurrence:		Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Construction in and around the wetlands and Dwars River (e.g. sewage pump station) should take place during the dry season, to reduce the risks of contamination through rainfall, runoff and erosion.</li> <li>Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (horizontal directional drilling) under the watercourse, rather than trenching.</li> <li>Special care should be taken around storm and heavy rain events. The construction site should be inspected for erosion damage at these times.</li> <li>If construction areas are to be pumped of water (e.g. after rains), this water must first be pumped into a settlement area, and not directly into a natural ecosystem.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative



Nature of impact:	<b>Introduction and spread of invasive alien plants</b>				
Extent and duration of impact:	N/A	Local area and medium term	Local area and medium term	Local area and medium term	Local area and medium term
Probability of occurrence:		Highly probable	Highly probable	Highly probable	Highly probable
Degree to which the impact can be reversed:		Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:		Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:		Moderate to high negative	Moderate to high negative	Moderate to high negative	Moderate to high negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Fully mitigated	Fully mitigated	Fully mitigated	Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>• All soils and top material must be bought from reliable sources, and must be free of alien seeds or grass runners.</li> <li>• Constant monitoring of the construction site by the Site Engineer and ECO must occur, and all alien plant species removed from or destroyed on the site.</li> </ul>			
Cumulative impact post mitigation:		Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative

Potential impacts on socio-economic aspects: <b>SOCIAL</b>	Alternative 1	Alternatives 5 a - c
Nature of impact:	<b>No employment or business opportunities during the construction phase</b>	<b>Creation of employment and business opportunities during the construction phase</b>
Extent and duration of impact:	Local to Regional and medium-term	Local to Regional and medium-term
Probability of occurrence:	Highly Probable	Highly Probable
Degree to which the impact can be reversed:	Reversible	Not need to reverse it.
Degree to which the impact may cause irreplaceable loss of resources:	No loss	No loss
Cumulative impact prior to mitigation:	High negative	Medium positive
Significance rating of impact prior to mitigation	High negative	Medium positive
Degree to which the impact can be mitigated:	N/A	N/A
Proposed mitigation: <b>Enhancement</b>	N/A	<ul style="list-style-type: none"> <li>The developer should inform the local authorities, local community leaders, organizations and councillors of the project and the potential job opportunities for local builders and contractors;</li> <li>The developer should consult with the SLM and DLM with regards to the establishment of a database of local construction companies in the area, specifically SMME's owned and run by HDI's. However, while the use of local building contractors and workers is recommended, it is recognised that a competitive tender process may not guarantee the employment of local companies and labour during the construction phase;</li> <li>The developer in consultation with the appointed contractor/s should look to employ a percentage of the labour required for the construction phase from local area in order to maximize opportunities for members from the local HD communities.</li> </ul>
Cumulative impact post mitigation:	N/A	High positive
Significance rating of impact after mitigation	N/A	High positive
Nature of impact:	<b>Potential impacts on family structures and social networks associated with the presence of construction workers</b>	
Extent and duration of impact:	N/A	Local and medium-term
Probability of occurrence:		Probable
Degree to which the impact can be reversed:		Irreversible
Degree to which the impact may cause irreplaceable loss of resources:		Significant Loss
Cumulative impact prior to mitigation:		Low negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)		Low negative
Degree to which the impact can be mitigated:		Medium
Proposed mitigation: †		<ul style="list-style-type: none"> <li>The developer should seek as far as is possible to appoint local or regional contractor/s from the area for the bulk services, commercial and housing contracts;</li> <li>The developer in consultation with the</li> </ul>

		<p>appointed contractor/s must implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase;</p> <ul style="list-style-type: none"> <li>• The construction site should be fenced off prior to the start of construction;</li> <li>• The movement of construction workers on and off the site should be closely managed and monitored by the contractors. In this regard no construction workers should not be permitted to leave the construction site during operating hours and the contractor/s should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis;</li> <li>• No construction workers, with the exception of security personnel, should be permitted to stay overnight on the site.</li> </ul>
Cumulative impact post mitigation:		Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)		Low negative
Nature of impact:	<b>Potential safety and security risk posed by presence of construction workers on site.</b>	
Extent and duration of impact:	N/A	Local and medium-term
Probability of occurrence:		Probable
Degree to which the impact can be reversed:		Irreversible
Degree to which the impact may cause irreplaceable loss of resources:		Complete Loss
Cumulative impact prior to mitigation:		No impact
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)		Medium negative
Degree to which the impact can be mitigated:		Medium to High
Proposed mitigation:		<p>The developer and or contractors cannot be held responsible for the off-site, after-hours behaviour of all construction employees. However, the contractors appointed by the developer must ensure that all workers employed on the project are informed at the outset of the construction phase that any construction workers found guilty of theft will be dismissed and charged. All dismissals must be in accordance with South African labour legislation. In addition, the following mitigation measures are recommended:</p> <ul style="list-style-type: none"> <li>• No construction workers, with the exception of security personnel, may be allowed to stay on site overnight.</li> <li>• Building contractors appointed by the developer must ensure that workers are transported to and from the site on a daily basis.</li> <li>• Construction related activities must comply with all relevant building regulations. In this regard activities on site must be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays.</li> <li>• No work must be permitted on Sundays</li> </ul>

		and Public Holidays.
Cumulative impact post mitigation:		No impact
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)		Low negative
Nature of impact:	<b>Potential noise, dust and safety impacts associated with movement of construction related traffic to and from the site.</b>	
Extent and duration of impact:	N/A	Local and medium-term
Probability of occurrence:		Probable
Degree to which the impact can be reversed:		Partially Reversible
Degree to which the impact may cause irreplaceable loss of resources:		No Loss
Cumulative impact prior to mitigation:		Medium negative
Significance rating of impact prior to mitigation		Medium negative
Degree to which the impact can be mitigated:		Medium to High
Proposed mitigation:		<ul style="list-style-type: none"> <li>• Access to the site for heavy construction vehicles should be where possible is via the R45. The movement of heavy construction vehicles transporting material etc. to the site via the R310 through Priel must be minimised as far as possible;</li> <li>• The intersection between the R45 and R310 should be up-during phase 4 of the phasing of the development.</li> <li>• Construction related activities must comply with all relevant building regulations. In this regard activities on site must be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays. No work must be permitted after 13h00 on Saturdays and on Sundays or Public Holidays;</li> <li>• Drivers must be made aware of the potential risk posed to school children and other road users along the R45 and R310. All drivers must ensure that speed limit of 60 km per hour is enforced;</li> <li>• Any abnormal loads along the R45 must be timed to avoid peak traffic hours, specifically early mornings;</li> <li>• Dust suppression measures must be implemented when site clearing takes place, such as wetting of exposed areas;</li> <li>• Dust suppression measures must be implemented to reduce impacts associated with the movement of construction vehicles, including wetting of gravel roads and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers;</li> <li>• All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits.</li> </ul>
Cumulative impact post mitigation:		Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)		Low negative
	<b>Alternative 1</b>	<b>Alternative 5 (a, b and c)</b>
Nature of impact: <b>TRAFFIC</b>	Traffic and heavy construction vehicles	
Extent and duration of impact:	No impact N/A	Local/District area. Duration is short term (when construction occurs).

Probability of occurrence:		High probability. Construction traffic cannot be avoided.
Degree to which the impact can be reversed:		Fully reversible. Construction vehicles will leave the area when construction is completed.
Degree to which the impact may cause irreplaceable loss of resources:		No loss of resources is expected.
Cumulative impact prior to mitigation:		Medium to High negative
Significance rating of impact prior to mitigation		Medium negative
Degree to which the impact can be mitigated:		Fully mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>On-site traffic management plans and appropriate signage can be implement to reduce the overall impact of the construction vehicles during the construction phase</li> </ul>
Cumulative impact post mitigation:		Low negative
Significance rating of impact after mitigation		Low negative

<b>Impacts on the cultural-historical aspects: HERITAGE</b>	<b>Alternative 1</b>	<b>Alternative 5 (a, b and c)</b>
Nature of impact:	Impacts on heritage resources	
Extent and duration of impact:	Local and long-term	Local and long-term
Probability of occurrence:	Probable	Highly Probable
Degree to which the impact can be reversed:	Reversible	No need to reverse
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	Marginal Loss
Cumulative impact prior to mitigation:	Medium negative	Medium – High negative
Significance rating of impact prior to mitigation	Medium negative	Medium – High negative
Degree to which the impact can be mitigated:	Low	High
Proposed mitigation:	N/A	<ul style="list-style-type: none"> <li>The design development must proceed in accordance with the Urban Design Framework dated November 2015 and the Heritage Indicators.</li> <li>The proposed residential erven in Precinct F2 must be reduced in extent to exclude the existing orchard from the proposed development, as shown in Alternative 5c.</li> <li>More refined articulation of building elevations and roofscapes in Precincts E1 and E2 must be undertaken at the precinct plan level.</li> <li>The Landscape Framework Plan must be implemented. Precinct plans showing landscaping detail will be subject to further heritage review at the detailed design phase.</li> <li>An Integrated Environmental Management Plan must be formulated to address mandatory controls and guidelines related to lighting, signage and architectural and landscaping treatment as formulated in Section 5 of the Urban Design Framework.</li> <li>The five focus or action areas identified in Figure 24 of Urban Design Report, relate to the more public parts of the scheme. In accordance with the 'package of plans' approach these focus areas must be subject to detailed precinct plans, which include detailed site and transportation planning, design and landscaping. Precinct plans for these areas must return to HWC for</li> </ul>

		<p>approval.</p> <ul style="list-style-type: none"> <li>• A Phasing Plan must be prepared to ensure an integrated form of development that is tied in with landscape mitigation. Each phase should be implemented as a completed development as far as possible, including all landscaping. As a first step, planting and other elements of edge-making to define the overall site, should be undertaken as soon as possible.</li> </ul>
Cumulative impact post mitigation:	Medium negative	Medium-High positive
Significance rating of impact after mitigation	Medium negative	Medium-High positive

Potential visual impacts:	Alternative 1	Alternative 5a	Alternative 5b	Alternative 5c
Nature of impact:	<b>Construction could result in additional visual intrusion from construction equipment, trucks, dust and noise.</b>			
Extent and duration of impact:	N/A	Local and short term	Local and short term	Local and short term
Probability of occurrence:		Highly probable	Highly probable	Highly probable
Degree to which the impact can be reversed:		Reversible	Reversible	Reversible
Degree to which the impact may cause irreplaceable loss of resources:		Marginal Loss	Marginal Loss	Marginal Loss
Cumulative impact prior to mitigation:		Medium-high negative	Medium-high negative	Medium-high negative
Significance rating of impact prior to mitigation		Medium-high negative	Medium-high negative	Medium-high negative
Degree to which the impact can be mitigated:		High	High	High
Proposed mitigation:		<ul style="list-style-type: none"> <li>An environmental management plan (EMP) must be prepared and included in all contract documentation, particularly during the construction period.</li> <li>A suitably qualified Environmental Control Officer (ECO) must be employed to manage potential environmental and visual impacts on the site.</li> <li>Each phase must be implemented as a completed development as far as possible, including all the landscaping, particularly if there is a long time period before another phase is undertaken.</li> </ul>		
Cumulative impact post mitigation:		Medium negative	Medium negative	Medium negative
Significance rating of impact after mitigation		Medium negative	Medium negative	Medium negative

- (b) Impacts that may result from the **operational phase** (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

<b>Potential impacts on the geographical and physical aspects:</b>	<b>All Alternatives</b>
Nature of impact:	No geographical or physical impacts are expected.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential impact on biological aspects: BOTANY</b>	<b>All Alternatives</b>
Nature of impact:	No botanical impacts are expected.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	



	Alternative 1	Alternative 4	Alternative 5a	Alternative 5b	Alternative 5c
Nature of impact: <b>FRESHWATER</b>	<b>Increased water demand and water supply infrastructure</b>				
Extent and duration of impact:	N/A	Regional and Permanent	Regional and Permanent	Regional and Permanent	Regional and Permanent
Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Irreplaceable	Irreplaceable	Irreplaceable	Irreplaceable
Cumulative impact prior to mitigation:		High negative	High negative	High negative	High negative
Significance rating of impact prior to mitigation		Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Landscaped areas and gardens must be planted with species that do not require much watering.</li> <li>Water demand management must be implemented within the development, as specified in the Provincial and Stellenbosch Municipality SDFs.</li> <li>Rainwater storage tanks should be built on every erf.</li> <li>Care must be taken in the location of water supply infrastructure, in order to avoid sensitive areas.</li> <li>Where pipes must cross the river channel or wetlands on the property, this must be done using areas that will be disturbed, such as roads or tracks.</li> </ul>			
Cumulative impact post mitigation:		Low to moderate negative	Low to moderate negative	Low to moderate negative	Low to moderate negative
Significance rating of impact after mitigation		Negligible to low negative	Negligible to low negative	Negligible to low negative	Negligible to low negative

	<b>Decrease in water quality</b>				
Nature of impact:	<b>Decrease in water quality</b>				
Extent and duration of impact:	Regional and Permanent	Regional and Permanent	Regional and Permanent	Regional and Permanent	Regional and Permanent
Probability of occurrence:	Definite	Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:	Fully reversible	Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:	Irreplaceable	Irreplaceable	Irreplaceable	Irreplaceable	Irreplaceable
Cumulative impact prior to mitigation:	High negative	High negative	High negative	High negative	High negative
Significance rating of impact prior to mitigation	Low negative	Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Stormwater must be allowed to flow along unlined channels before discharge into either natural or created wetland areas. This will allow some infiltration of water into the ground, so reducing the quantity of runoff and improving the quality.</li> <li>Wetland 4 can be used for stormwater detention.</li> </ul>			

		<ul style="list-style-type: none"> <li>Sand filters must be constructed, which effectively trap oil and grease.</li> <li>Hardened areas must be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (&lt;6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system.</li> <li>The sewer pipe must be regularly (at least once a month) checked for leaks.</li> <li>Leaks in the sewer pipe, or at manholes, must be fixed immediately.</li> </ul>			
Cumulative impact post mitigation:	N/A	Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact after mitigation	N/A	Low to Moderate negative	Low to Moderate negative	Low to Moderate negative	Low to Moderate negative

Nature of impact:		<b>Increase in water quantity</b>			
Extent and duration of impact:	N/A	Regional and Permanent	Regional and Permanent	Regional and Permanent	Regional and Permanent
Probability of occurrence:		Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:		Partly reversible	Partly reversible	Partly reversible	Partly reversible
Degree to which the impact may cause irreplaceable loss of resources:		Irreplaceable	Irreplaceable	Irreplaceable	Irreplaceable
Cumulative impact prior to mitigation:		High negative	High negative	High negative	High negative
Significance rating of impact prior to mitigation		Moderate negative	Moderate negative	Moderate negative	Moderate negative
Degree to which the impact can be mitigated:		Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Effort must be made to minimise the hardening of surfaces. Natural areas, gardens and road verges are areas where water can filter into the ground. The predominantly sandy soils of the site will allow this to occur.</li> <li>Stormwater must not be conveyed directly into either wetland 1 or 2, but rather into detention/retention ponds and/or wetland 4, permeable areas, bioswales and/or constructed wetlands.</li> <li>Wherever possible, parking areas must be constructed of permeable materials to allow for infiltration of water.</li> <li>As a principle, hardened areas must be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (&lt;6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system.</li> </ul>			
Cumulative impact post mitigation:		Low to moderate negative	Low to moderate negative	Low to moderate negative	Low to moderate negative
Significance rating of impact after mitigation		Low negative	Low negative	Low negative	Low negative

Nature of impact:	<b>Disturbance of fauna and flora</b>				
Extent and duration of impact:	Local area and permanent	Local area and permanent	Local area and permanent	Local area and permanent	Local area and permanent
Probability of occurrence:	Probable	Definite	Definite	Definite	Definite
Degree to which the impact can be reversed:	Fully reversible	Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:	Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:	Moderate negative	Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation	Low negative to negligible	Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be mitigated:	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:	<ul style="list-style-type: none"> <li>All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1.</li> <li>Lighting must face away from the wetland areas.</li> <li>Domestic pets must be discouraged from entering the wetlands and their buffers, through the wise use of fencing and gates.</li> </ul>				
Cumulative impact post mitigation:	N/A	Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation	N/A	Negligible	Negligible	Negligible	Negligible

Nature of impact:	<b>Spread and establishment of invasive alien plants</b>				
Extent and duration of impact:	Local area and long term	Local area and short term	Local area and short term	Local area and short term	Local area and short term
Probability of occurrence:	Probable	Probable	Probable	Probable	Probable
Degree to which the impact can be reversed:	Fully reversible	Fully reversible	Fully reversible	Fully reversible	Fully reversible
Degree to which the impact may cause irreplaceable loss of resources:	Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable	Partly replaceable
Cumulative impact prior to mitigation:	Moderate negative	Moderate negative	Moderate negative	Moderate negative	Moderate negative
Significance rating of impact prior to mitigation	Low negative to negligible	Low negative	Low negative	Low negative	Low negative
Degree to which the impact can be mitigated:	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated	Partly mitigated
Proposed mitigation:	<ul style="list-style-type: none"> <li>All newly planted areas must be planted with indigenous plants. Alternative grasses for lawns include <i>Stenotaphrum secundatum</i>, <i>Paspalum vaginatum</i> and <i>Cynodon dactylon</i>.</li> <li>Alien and invasive plants (including kikuyu) must be kept out of wetlands and rivers.</li> <li>The spread of alien plant species into all natural areas must be prevented and monitored.</li> <li>Road verges must be monitored for alien species.</li> </ul>				
Cumulative impact post mitigation:	Low negative	Low negative	Low negative	Low negative	Low negative
Significance rating of impact after mitigation	Negligible	Negligible	Negligible	Negligible	Negligible

<b>Potential impacts on the socio-economic aspects: SOCIAL</b>	<b>Alternatives 5 a - c</b>
Nature of impact:	<b>Provision of housing, retail and community facilities</b>
Extent and duration of impact:	Local to regional and long-term
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	No need to be reversed.
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Low positive
Significance rating of impact prior to mitigation	Low positive
Degree to which the impact can be mitigated:	High
Proposed mitigation: Enhanced	<ul style="list-style-type: none"> <li>• The developer must ensure that the retail component of the development takes into account the needs of the local community. In this regard the findings of the SIA highlighted the need for a shop, such as a Spar or Pick and Pay, in the study area;</li> <li>• The food outlets associated with the proposed development must cater for the local community and not only tourists;</li> <li>• Public access to and use of all public open spaces within the development must be provided and guaranteed;</li> <li>• Activities and events that create opportunities for and encourage the use of the public spaces by the local community must be held on a regular basis. These include school outings, picnic's, music events etc.;</li> <li>• Adequate space must be provided for the establishment of the crèche and community facilities. The possible need to develop a primary school must also be investigated;</li> <li>• The recommendations contained in the landscaping plan and other specialist studies, including the Heritage Impact Assessment and Visual Impact Assessment, must be implemented;</li> <li>• A Management and Maintenance Plan and programme for the public open spaces and play areas must be developed and implemented;</li> <li>• The proponent must ensure that the required funding and resources are made available to implement a Management and Maintenance Plan.</li> </ul>
Cumulative impact post mitigation:	Medium positive
Significance rating of impact after mitigation	Medium positive
Nature of impact:	<b>Creation of employment, training and business opportunities during operational phase.</b>
Extent and duration of impact:	Local to regional and long-term
Probability of occurrence:	Highly Probable
Degree to which the impact can be reversed:	No need to be reversed.
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Medium positive
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium positive
Degree to which the impact can be mitigated:	High
Proposed mitigation: Enhanced	<ul style="list-style-type: none"> <li>• The developer must liaise with the SLM and DLM and stakeholders regarding the potential job opportunities associated with the different components associated with the operational phase of the development;</li> <li>• The developer must, where possible, implement a policy aimed at employing members from the local communities in the study area, specifically Priel, Lanquedoc (Old and New), Kylemore, Meerlust and Simondium;</li> <li>• The developer continue to implement training and skills development programme for local community members aimed at enhancing their chances of being employed during the operational phase;</li> <li>• The developer must liaise with the SLM and DLM with regard to establishing a database of local service providers in the area, specifically SMME's owned and run by HDI's. These companies must be notified of the potential opportunities associated with the operational</li> </ul>

	phase of the development.
Cumulative impact post mitigation:	High positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive

Nature of impact:	<b>Support and fund local development initiatives in the Dwars River Valley that are aimed at benefiting the local community</b>
Extent and duration of impact:	Local and long-term
Probability of occurrence:	Highly Probable
Degree to which the impact can be reversed:	No need to be reversed.
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Low positive
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive
Degree to which the impact can be mitigated:	High
Proposed mitigation: <b>Enhanced</b>	<ul style="list-style-type: none"> <li>The owners of Boschendal must liaise with the SLM and local stakeholders to identify potential development initiatives aimed at addressing the needs and challenges facing the Dwars River Valley.</li> </ul>
Cumulative impact post mitigation:	High positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive

Nature of impact:	<b>Support and promote tourism and create opportunities for job creation and economic development in the area</b>
Extent and duration of impact:	Local and long-term
Probability of occurrence:	Highly Probable
Degree to which the impact can be reversed:	No need to be reversed.
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Low positive
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive
Degree to which the impact can be mitigated:	Medium
Proposed mitigation: <b>Enhanced</b>	<ul style="list-style-type: none"> <li>The owners of Boschendal must liaise with the SLM, Dwars River Tourism and other tourist destinations in the area to promote the area;</li> <li>The developer must identify SMME's that are qualified to provide services to the tourism based activities associated with the proposed development;</li> <li>The developer must continue to implement the training and skills development programmes to enable members from the local community to qualify for tourism related jobs created by the proposed development.</li> </ul>
Cumulative impact post mitigation:	Medium positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium positive

Nature of impact:	<b>Impact of the proposed development on existing operations in the vicinity of the site</b>
Extent and duration of impact:	Local and long-term
Probability of occurrence:	Highly Probable
Degree to which the impact can be reversed:	Partially Reversible
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Medium negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> <li>The developer and planners need to take into account the existing operations that border onto the site in the final design and layout. Potentially sensitive land uses, such as hotels and residential areas must be designed and planned accordingly;</li> <li>The developer must recognise and acknowledge the right of these operations to carry on operating and the right to expand their operations in the future;</li> <li>Prospective homeowners and business owners must be informed of the existing operations that border onto the site and that they will continue to operate in</li> </ul>

	the area, and may expand at some future date.
Cumulative impact post mitigation:	Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Nature of impact:	<b>Impact on the visual character of the area and its sense of place</b>
Extent and duration of impact:	Local and long-term
Probability of occurrence:	Highly Probable
Degree to which the impact can be reversed:	Irreversible
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	Medium negative
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	The recommendations contained in the Heritage and Visual Assessment must be implemented.
Cumulative impact post mitigation:	Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

	<b>Alternative 1 (No-Go Option)</b>
Nature of impact: <b>SOCIAL</b>	<b>The no-development option would result in the lost opportunity for the local economy the SLM and residents who would benefit from the development.</b>
Extent and duration of impact:	Local to regional and long-term
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Highly reversible
Degree to which the impact may cause irreplaceable loss of resources:	No loss
Cumulative impact prior to mitigation:	High negative
Significance rating of impact prior to mitigation	High negative
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The development of the proposed Boschendal Mixed Use Development would represent an enhancement measure. However, the potential issues identified by the SIA and other studies undertaken as part of the EIA must be addressed by the proposed development.
Cumulative impact post mitigation:	High positive
Significance rating of impact after mitigation	High positive

	<b>Alternative 1</b>	<b>Alternatives 5a</b>	<b>Alternatives 5b, 5c</b>
Nature of impact: <b>AGRICULTURE</b>	No agricultural land will be lost. However, the majority of the site consists of rocky soils with a low water retention capacity and low cation exchange capacity.	Loss of agricultural land for farming purposes. A small portion of existing agricultural land will be lost for Alternatives 5b and 5c (approximately 1.3 ha); however, most of the pear orchard will be retained. This orchard is located on high agricultural potential land. The remainder of the site consists of soils that are rocky terraces with a low water retention capacity and low cation exchange capacity.	
Extent and duration of impact:	Local and permanent	Local and permanent	Local and permanent
Probability of occurrence:	Definite	Definite	Definite
Degree to which the impact can be reversed:	Irreversible	Irreversible	Irreversible
Degree to which the impact may cause irreplaceable loss of resources:	No Loss	Complete Loss	Complete Loss
Cumulative impact prior to mitigation:	Low positive	Medium negative	Low negative
Significance rating of impact prior to mitigation	Low positive	Medium negative	Low negative
Degree to which the impact can be mitigated:	Low	Low	Low
Proposed mitigation:	No mitigation is proposed since the site is located within a node identified for urban development.	N/A	The entire or a portion of the pear orchard will be retained.
Cumulative impact post mitigation:	Low positive	Medium negative	Low negative
Significance rating of impact after mitigation	Low positive	Medium negative	Low negative

	<b>Alternative 1</b>	<b>Alternatives 5 (a, b and c)</b>
Nature of impact: <b>TRAFFIC</b>		
Extent and duration of impact:	No Impact	Local/District area. Duration is permanent
Probability of occurrence:	N/A	High probability.
Degree to which the impact can be reversed:		Irreversible
Degree to which the impact may cause irreplaceable loss of resources:		Marginal
Cumulative impact prior to mitigation:		Low negative
Significance rating of impact prior to mitigation		Low negative
Degree to which the impact can be mitigated:		Mostly mitigated
Proposed mitigation:		<ul style="list-style-type: none"> <li>Correct upgrade of access intersections according to Western Cape Government guidelines.</li> </ul>
Cumulative impact post mitigation:		Low negative
Significance rating of impact after mitigation		Low negative

<b>Potential impacts on cultural-historical aspects:</b>	<b>All Alternatives</b>
Nature of impact:	<p>No archaeological impacts are expected (refer to Archaeology Report – <b>Appendix G14</b>). No mitigation required.</p> <p>No significant heritage impacts are expected during the Operational Phase of the proposal.</p>
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential noise impacts:</b>	
Nature of impact:	No more than that generated by the surrounding landuses.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Potential visual impacts:	Alternative 1	Alternative 5a	Alternative 5b	Alternative 5c
Nature of impact:	Status quo maintained. Vacant, derelict land lacks visual amenity, but could be rehabilitated.	Density and building massing could visually intrude on rural / cultural setting, but could be partly offset by greater articulation of elevations and roofscape.  Single residential suburban-type development on the eastern and western edges could erode the principle of a small, compact village, but could be mitigated if orchards are retained and tree belts introduced.	Density and building massing could visually intrude on rural / cultural setting, but could be partly offset by greater articulation of elevations and roofscape.  Limited infill below the 1:100 year line, and retention of existing orchards (Preferred alternative in visual terms).	Density and building massing could visually intrude on rural / cultural setting, but could be partly offset by greater articulation of elevations and roofscape.
Extent and duration of impact:	N/A	Local and long term	Local and long term	Local and long term
Probability of occurrence:	Highly probable	Probable	Probable	Probable
Degree to which the impact can be reversed:	Reversible	Reversible	Reversible	Reversible
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	Marginal Loss	Marginal Loss	Marginal Loss
Cumulative impact prior to mitigation:	Low negative	Medium-high negative	Medium-high negative	Medium-high negative
Significance rating of impact prior to mitigation	Low negative	Medium-high negative	Medium-high negative	Medium-high negative
Degree to which the impact can be mitigated:	N/A	Medium	Medium	Medium
Proposed mitigation:	N/A	<ul style="list-style-type: none"> <li>The proposed village development should be softened through major site rehabilitation and landscape planting, appropriate for the cultural and agricultural setting.</li> <li>A precinct phasing plan should be prepared as part of the planning application.</li> <li>The stated principle of a 'well-contained, small and compact' village, including 'urban edge-making' should be emphasized.</li> <li>The existing orchards should be retained, as currently proposed in Alternative 5c, as they provide useful visual screening, and constitute the essential rural context.</li> <li>The proposed filling of the floodplain on the eastern edge should be avoided or minimised, as these corridors provide an essential hydrological and biological function, as well as being part of the larger landscape framework.</li> <li>The stated principle of a 'Cape tradition of village-building' and an 'authentic Cape village' should be emphasized.</li> <li>Preferably limit buildings to 2 or 2.5 storeys to minimise visual intrusion above tree canopies. (3-storey structures could be strategically used to emphasize focal points).</li> <li>Long or slab-like buildings should be more articulated and varied to express individual units, both in their elevation and in roofscape, to create more of a Cape village fabric.</li> <li>Parking areas along the R310 should be set back from the scenic route to allow multiple rows of trees for screening.</li> <li>Parking should be screened with buildings, walls, berms and/or trees, where possible.</li> </ul>		



		<ul style="list-style-type: none"> <li>• Parking should be organised into smaller parking courts of about 20-30 cars to avoid visually and climatically exposed parking lots. (The 2 parking lots to the east of the R310 should ideally have exits to allow for hunting and circulation).</li> <li>• Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Parking areas could have gravel surfaces for visual informality and to minimise stormwater runoff.</li> <li>• Stormwater should consist of dish channels and grassed swales, or traditional furrows (as indicated in the proposed Urban Design Framework).</li> <li>• Street and outdoor lighting should be discrete to maintain the rural ambience of the area. Outdoor lighting should be fitted with reflectors to minimise light spillage.</li> <li>• Low-level bollard type lights could be used for parking areas and pedestrian paths.</li> <li>• Advertising signage, banners and flags should be avoided,</li> <li>• Low-level signs are less visually intrusive. Signs should be fixed to walls where possible to minimise the visual clutter of support poles.</li> <li>• Each phase should be implemented as a completed development as far as possible, including all the landscaping, particularly if there is a long time period before another phase is undertaken.</li> </ul>		
Cumulative impact post mitigation:	Low negative	Medium negative	Medium negative	Medium negative
Significance rating of impact after mitigation	Low negative	Medium negative	Medium negative	Medium negative

- (c) **Impacts that may result from the decommissioning and closure phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase.**

**It is highly unlikely / improbable that the proposed development, should it be approved, would need to be closed or decommissioned once it be built and in operation. Such closure would result in the lost opportunity for the local economy and the local residents in the area.**

**Demolition of existing buildings and the closure of the existing pallet factory/fruit packing facility will have no significant impacts since no chemical or harmful substances are used in these buildings and they buildings are not located near any ecological areas. This is dealt with in the EMP (Appendix H).**

<b>Potential impacts on the geographical and physical aspects:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential impact biological aspects:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential impacts on the socio-economic aspects:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential impacts on the cultural-historical aspects:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	

Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential noise impacts:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

<b>Potential visual impacts:</b>	
Nature of impact:	N/A
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

(d) **Any other impacts:**

Potential impact:	N/A
Nature of impact:	
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

## 7. SPECIALIST INPUTS/STUDIES AND RECOMMENDATIONS

**Please note:** Specialist inputs/studies must be attached to this report as **Appendix G**. Also take into account the Department's Guidelines on the Involvement of Specialists in EIA Processes available on the Department's website (<http://www.capegateway.gov.za/eadp>).

Specialist inputs/studies and recommendations:

A comprehensive Urban Design Framework (**Appendix G2**) has been prepared as part of formulating of the development proposals. This Urban Design Framework sets the following important guiding development parameters:

### **Height**

The height of the buildings ranges between 1 and 3 storeys. No buildings in the Village, apart from the tower vertical structures, may exceed 3 storeys. One storey buildings are located on the edges of the village whilst 3storey buildings are located closer to the centre of the Village.

### **Landmark Buildings**

Certain landmark buildings are identified which will create architectural variety in the Village landscape. These are located on key corner sites and are clearly indicated in the Urban Design Framework plan.

### **Compulsory Colonnades**

The aim of this Village is to create a walkable town. Compulsory colonnades provide protection against the elements (rain, sun) and are essential for the architectural character of the Village.

### **Culverts, Gateways and Water Elements**

The concept is very much rooted in the creation of rural gateways (low walls) which announce the arrival at an entrance or traversing over a channel. As part of the natural topography, water traverses the site towards the Dwarsriver and the design ensures the 'bringing to the surface' of water (instead of piping) in line with the designs found in other traditional rural towns in South Africa.

### **Compulsory Build-to-lines**

The framework identifies certain compulsory "build-to-lines" to ensure that the required public interface, built form and grain is achieved. It should be noted that these should be adhered to at all times to ensure the desired urban form is achieved.

### **Vertical Tower Structures**

The identified vertical structures are inserted into the layout to provide architectural points of interest which add variety and diversity to the development.

### **Existing Vegetation to be retained**

There are a number of existing mature trees and a hedge which are to be retained.

### **Compulsory Structural Planting vs indicative landscaping**

Over and above retaining of existing trees, there is significant landscaping which will be undertaken by the developer when developing the Village. These are:

- i) Structural planting which is the planting of avenues or hedges which are critical to visual screening, lining of important avenues or creating important edges;
- ii) Green open space which is extensive landscaping of a rural/agrarian character (not fine gardens);
- iii) Wetland rehabilitation and stormwater ponds which requires the introduction, rehabilitation and restoration of wetland vegetation in certain areas; and
- iv) Indicative landscaping which indicates the developer's intent but is not compulsory.

### **Urban Open Space and Neighbourhood Open Square.**

This is a hardened space which serves the surrounding land uses such as the farmers market and other urban land uses and these are indicated as Urban Open Spaces on the plan.

### **Compulsory Street Frontage**

Compulsory street frontage relates to where buildings must present a positive interface onto the street. For

dwelling houses, this means a front door and windows. For business properties, this means a front door where patrons can gain access and windows where goods can be displayed or where the interior of the shop is visible to passers-by.

#### **Gateway**

Indicates where access can be exercised and when shown into a superblock, it means access to a private space beyond.

#### **Articulated Corner Treatment**

This relates to the architectural treatment of the corner of a building and roof which will distinguish it from the rest of the buildings in the row.

#### **Compulsory Activity Street Garden Zone and Compulsory Stoep Zones**

This area indicates where compulsory gardens and stoeps have to be provided to ensure an active street front and façade is presented to streets which are external to the superblock. These are important design elements to ensure development is not internalised to the superblocks.

#### **Visually Permeable Fencing**

Visually permeable fencing is proposed throughout and solid walls are not encouraged unless they form part of a building.

#### **CONSTRUCTION PHASE:**

#### **BOTANIST'S RECOMMENDATIONS**

- Replacement of the topsoil, as soon as possible, after pipeline completion.

#### **FRESHWATER SPECIALIST'S RECOMMENDATIONS**

- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN INCLUDED IN ALTERNATIVES 5a-c.
- Allow for an ecological corridor to connect all of the wetlands, preferably with a connection to the Dwars River and its floodplain (i.e. contiguous with the 1:100 year floodline, below which no development should occur).
- Where filling in of the floodplain is unavoidable (Alternatives 4, 5a and 5c), hardened surfaces (buildings, roads) must be kept out of the "revised" 1:100 year floodline.
- The filled area must be kept as natural as possible, with indigenous planting and minimisation of additional hardened surfaces (e.g. roads, parking areas).
- The gabions must be placed in such a way as to avoid erosion on the river banks and floodplain.
- The size of the structure must be minimised as far as possible, in order to minimise the hardening of the river bank and loss of natural vegetation.
- The drop structure must be placed outside of the active channel.
- Ensure that all building materials are stored at least 50m away from the edges of the wetlands, as demarcated prior to construction. Storage areas must be bunded adequately to prevent contaminated runoff from entering the wetlands or the Dwars River.
- Materials must be stored in piles that do not exceed 1.5m in height and must be protected from the wind, to prevent spread of fine materials across the site.
- Construction close to sensitive areas must take place during the dry season, to reduce the risks of contamination of the ecosystems through rainfall and runoff.
- Machinery prone to oil or fuel leakage must be located at least 50m away from any freshwater ecosystem, and the area adequately bunded in order to contain leakages.
- Water pumps and cement mixers shall have drip trays to contain oil and fuel leaks – these must be cleaned regularly.
- Suitable toilet and wash facilities must be provided to avoid the use of sensitive areas for these activities. These service areas must be maintained, and toilets emptied on at least a weekly basis.
- Pathways and access roads must be routed around the wetlands and must cross drainage channels as seldom as possible.

- Sensitive areas must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process.
- Affected areas must be ripped and re-planted after construction, to the satisfaction of the ECO.
- Excavation and infilling must be restricted to areas where this is necessary.
- Any such work must be done during the dry season, to minimise impacts on the freshwater fauna and flora.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (directional drilling) under the river or stream and outside the riparian zone, rather than trenching, in order to minimise disturbance to flow, and the bed and banks of any freshwater ecosystem.
- The sensitive areas (i.e. the edges of the buffers around the wetlands, river banks) not affected by construction must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process, except where work is occurring.
- Affected areas must be rehabilitated after construction, to the satisfaction of the ECO, and according to a construction EMP.
- The construction site and pathways must avoid sensitive areas. If lights are used, these must be directed away from all sensitive areas.
- Construction in and around the wetlands and Dwars River (e.g. sewage pump station) must take place during the dry season, to reduce the risks of contamination through rainfall, runoff and erosion.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (horizontal directional drilling) under the watercourse, rather than trenching.
- Special care should be taken around storm and heavy rain events. The construction site should be inspected for erosion damage at these times.
- If construction areas are to be pumped of water (e.g. after rains), this water must first be pumped into a settlement area, and not directly into a natural ecosystem.
- All soils and top material must be bought from reliable sources, and must be free of alien seeds or grass runners.
- Constant monitoring of the construction site by the Site Engineer and ECO must occur, and all alien plant species removed from or destroyed on the site.

#### **SOCIAL SPECIALIST'S RECOMMENDATIONS**

- The developer must inform the local authorities, local community leaders, organizations and councillors of the project and the potential job opportunities for local builders and contractors.
- The developer must consult with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) with regards to the establishment of a database of local construction companies in the area, specifically SMME's owned and run by HDI's. However, while the use of local building contractors and workers is recommended, it is recognised that a competitive tender process may not guarantee the employment of local companies and labour during the construction phase.
- The developer in consultation with the appointed contractor/s must look to employ a percentage of the labour required for the construction phase from local area in order to maximize opportunities for members from the local HD communities.
- The developer must seek as far as is possible to appoint local or regional contractor/s from the area for the bulk services, commercial and housing contracts.
- The developer in consultation with the appointed contractor/s must implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase.
- The construction site must be fenced off prior to the start of construction.
- The movement of construction workers on and off the site must be closely managed and monitored by the contractors. In this regard, no construction workers may be permitted to leave the construction site during operating hours and the contractor/s must be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis.
- No construction workers, with the exception of security personnel, may be permitted to stay overnight on the site.
- Access to the site for heavy construction vehicles must be, where possible, via the R45. The movement of heavy construction vehicles transporting material etc. to the site via the R310 through Pniel must be minimised as far as possible.

- The intersection between the R45 and R310 should be up-during phase 4 of the phasing of the development.
- Construction related activities must comply with all relevant building regulations. In this regard activities on site must be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays. No work must be permitted after 13h00 on Saturdays and on Sundays or Public Holidays.
- Drivers must be made aware of the potential risk posed to school children and other road users along the R45 and R310. All drivers must ensure that speed limit of 60 km per hour is enforced.
- Any abnormal loads along the R45 must be timed to avoid peak traffic hours, specifically early mornings.
- Dust suppression measures must be implemented when site clearing takes place, such as wetting of exposed areas.
- Dust suppression measures must be implemented to reduce impacts associated with the movement of construction vehicles, including wetting of gravel roads and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits.

#### **HERITAGE SPECIALIST'S RECOMMENDATIONS**

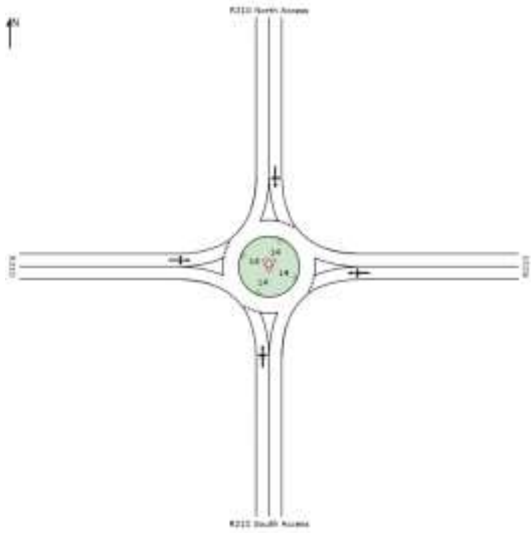
- The design development must proceed in accordance with the Urban Design Framework dated November 2015 (**Appendix G2**) and the Heritage Indicators in Section 8 (pages 14-22) of the HIA report (**Appendix G12**).
- The proposed residential erven in Precinct F2 must be reduced in extent to exclude the existing orchard from the proposed development, as shown in Alternative 5c.
- More refined articulation of building elevations and roofscapes in Precincts E1 and E2 must be undertaken at the precinct plan level.
- The Landscape Framework Plan prepared by CNdV Landscape Architects must be implemented (**Appendix G7**).
- An Integrated Environmental Management Plan must be formulated to address mandatory controls and guidelines related to lighting, signage and architectural and landscaping treatment as formulated in Section 5 of the Urban Design Framework (**Appendix G2**).
- The five focus or action areas identified in Figure 24 of the Urban Design Framework relate to the more public parts of the scheme. In accordance with the 'package of plans' approach these focus areas must be subject to detailed precinct plans, which include detailed site and transportation planning, design and landscaping. Precinct plans for these areas must return to HWC for approval.
- The conclusions and recommendations of the Traffic Impact Assessment including the proposed geometries must be subject to detailed design particularly with respect to place-making qualities, pedestrian access, non-motorised transport and public transport, and be incorporated into precinct level plans and heritage assessment referred to above.
- A Phasing Plan must be prepared to ensure an integrated form of development that is tied in with landscape mitigation. Each phase should be implemented as a completed development as far as possible, including all landscaping. As a first step, planting and other elements of edge-making to define the overall site, should be undertaken as soon as possible.

#### **VISUAL SPECIALIST'S RECOMMENDATIONS**

- An environmental management plan (EMP) should be prepared and included in all contract documentation, particularly during the construction period.
- A suitably qualified Environmental Control Officer (ECO) should be employed to manage potential environmental and visual impacts on the site.

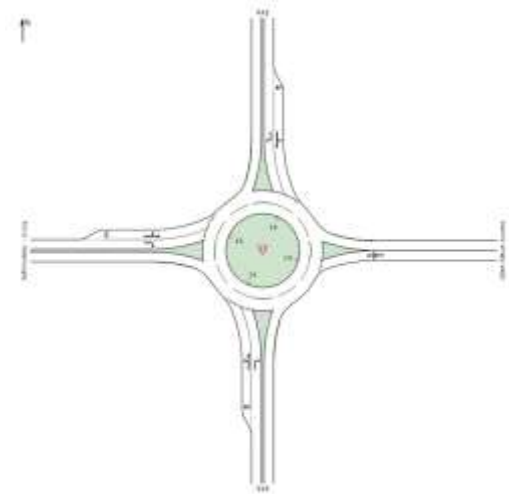
#### **TRAFFIC SPECIALIST'S RECOMMENDATIONS**

- The geometry of the roundabout at Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access) intersection be constructed as shown in the figure below.



Roundabout at R310 / Minor Road 6/4 (New Oaks Access)

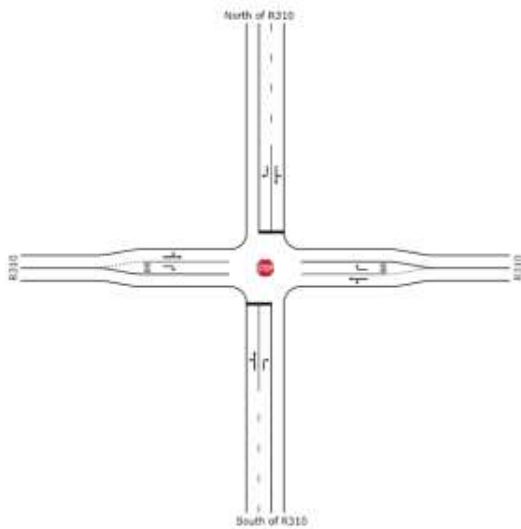
- The geometry of the roundabout at the R45 / Helshoogte Road (R310) is constructed as shown in Figure below.



Roundabout at R45 / Helshoogte Road (R310)



- The geometry of the central access is constructed as shown in Figure below. Although the analysis results indicate that the right-turn exiting movements will operate poorly in the peak periods, the few motorists experiencing these poor conditions can divert to the adjacent Minor Road 6/4 (New Oaks Access) roundabout, which has ample spare capacity during peak periods.



New Central Access

- The Rhodes Food Group factory and retail facility entrances remain temporarily until these sites are developed. The PGWC can, at this stage, request that these access points are regularised in terms of the applicable road access spacing guidelines.
- The Police station access remains as a minor driveway access for strategic and operational reasons.
- New public transport facilities are provided along Helshoogte Road (R310) in the form of taxi embayments adjacent to the proposed central access on either side of the road (downstream). A pedestrian crossing should be provided linking the two public transport facilities and advanced warning signs should be provided to notify motorists of the pedestrian crossing
- Sidewalks are provided along both sides of the Helshoogte Road (R310) along the frontage of the development and along the R45 in the vicinity of the roundabout. These sidewalks should be minimum 1.5m wide and should link seamlessly to the internal pedestrian network. The shoulder along Helshoogte Road (R310) be maintained along the frontage of the development unless it is linked to an off-road cycle facility for safety purposes.
- During the construction phase, ensure that safety and protection measures are implemented where pedestrians are within the construction site boundary.
- The following parking ratios, as per LUPO Section 8 Scheme regulations, should be applied:
  - Residential - Low density : 2 bays / unit
  - Residential - Medium density: : 2 bays / unit
  - Residential - High Density: : 1.25 bays / unit
  - Hotel : 0.7 bays / room + 20 additional bays
  - General Retail : 4 bays / 100m<sup>2</sup> GLA
  - General offices - Suburban : 4 bays / 100m<sup>2</sup> GLA
  - Guest accommodation : 0.7 bays / room
  - Civic / Community Building : 1 bay/8 fixed seats or persons
  - Clinic : 3 bays/consulting room
  - Crèche/ECD : 1 bay/classroom + 1 bay/15 students

The total parking requirement amounts to 1 491 bays; however, it should be noted that the proposed development is mixed-use in nature and therefore a degree of shared parking is likely to take place.

- The parking ratio for the Residential High Density land use originally includes an additional 0.25 bays/unit for visitors. It is, however, proposed that visitors use the parking provided for offices after hours.
- Furthermore, the number of parking bays required for the clinic can be reduced by 50% to account for the sharing of parking between land-uses.
- A refuse embayment measuring no less than 3m by 12m should be provided on the Helshoogte Road

adjacent to the proposed refuse facility (at the old clinic site).

- A construction traffic management plan, containing the layout of temporary signage, requirement for flagmen and the management of heavy vehicles will be submitted to the authorities for approval during the detailed design submission phase. This plan is required to ensure that the impacts of the construction vehicles are minimised and safety and protection measures are implemented to reduce the risks of collisions.
- The proposed road infrastructure upgrades must be considered in the precinct plans and precinct level heritage assessments for the approval of Heritage Western Cape.

## **OPERATIONAL PHASE**

### **FRESHWATER SPECIALIST'S RECOMMENDATIONS**

- Landscaped areas and gardens must be planted with species that do not require much watering.
- Water demand management must be implemented within the development, as specified in the Provincial and Stellenbosch Municipality SDFs.
- Rainwater storage tanks should be built on every erf.
- Care must be taken in the location of water supply infrastructure, in order to avoid sensitive areas.
- Where pipes must cross the river channel or wetlands on the property, this should be done using areas that will be disturbed, such as roads or tracks.
- Stormwater should be allowed to flow along unlined channels before discharge into either natural or created wetland areas. This will allow some infiltration of water into the ground, so reducing the quantity of runoff and improving the quality.
- Wetland 4 can be used for stormwater detention.
- Sand filters should be constructed, which effectively trap oil and grease.
- Hardened areas should be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (<6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system.
- The sewer pipe must be regularly (at least once a month) checked for leaks.
- Leaks in the sewer pipe, or at manholes, must be fixed immediately.
- Effort should be made to minimise the hardening of surfaces. Natural areas, gardens and road verges are areas where water can filter into the ground. The predominantly sandy soils of the site will allow this to occur.
- Stormwater should not be conveyed directly into either wetland 1 or 2, but rather into detention/retention ponds and/or wetland 4, permeable areas, bioswales and/or constructed wetlands.
- Wherever possible, parking areas should be constructed of permeable materials to allow for infiltration of water.
- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN DONE FOR ALTERNATIVE 5a-c.
- Lighting must face away from the wetland areas.
- Domestic pets must be discouraged from entering the wetlands and their buffers, through the wise use of fencing and gates.
- All newly planted areas must be planted with indigenous plants. Alternative grasses for lawns include *Stenotaphrum secundatum*, *Paspalum vaginatum* and *Cynodon dactylon*.
- Alien and invasive plants (including kikuyu) must be kept out of wetlands and rivers.
- The spread of alien plant species into all natural areas must be prevented and monitored.
- Road verges must be monitored for alien species.

### **SOCIAL SPECIALIST'S RECOMMENDATIONS**

- The developer must ensure that the retail component of the development takes into account the needs of the local community. In this regard the findings of the SIA highlighted the need for a shop, such as a Spar or

Pick and Pay, in the study area.

- The food outlets associated with the proposed development must cater for the local community and not only tourists.
- Public access to and use of all public open spaces within the development must be provided and guaranteed.
- Activities and events that create opportunities for and encourage the use of the public spaces by the local community must be held on a regular basis. These include school outings, picnic's, music events etc.
- Adequate space must be provided for the establishment of the crèche and community facilities. The possible need to develop a primary school should also be investigated.
- A Management and Maintenance Plan and programme for the public open spaces and play areas must be developed and implemented.
- The proponent must ensure that the required funding and resources are made available to implement a Management and Maintenance Plan.
- The developer must liaise with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) and stakeholders regarding the potential job opportunities associated with the different components associated with the operational phase of the development.
- The developer should, where possible, implement a policy aimed at employing members from the local communities in the study area, specifically Pniel, Lanquedoc (Old and New), Kylemore, Meerlust and Simondium.
- The developer must continue to implement training and skills development programme for local community members aimed at enhancing their chances of being employed during the operational phase.
- The developer must liaise with the SLM and DLM with regard to establishing a database of local service providers in the area, specifically SMME's owned and run by HDI's. These companies should be notified of the potential opportunities associated with the operational phase of the development.
- The owners of Boschendal should liaise with the SLM and local stakeholders to identify potential development initiatives aimed at addressing the needs and challenges facing the Dwars River Valley.
- The owners of Boschendal must liaise with the SLM, Dwars River Tourism and other tourist destinations in the area to promote the area.
- The developer must identify SMME's that are qualified to provide services to the tourism based activities associated with the proposed development.
- The developer must continue to implement the training and skills development programmes to enable members from the local community to qualify for tourism related jobs created by the proposed development.
- The developer and planners need to take into account the existing operations that border onto the site in the final design and layout. Potentially sensitive land uses, such as hotels and residential areas should be designed and planned accordingly.
- The developer must recognise and acknowledge the right of these operations to carry on operating and the right to expand their operations in the future.
- Prospective homeowners and business owners must be informed of the existing operations that border onto the site and that they will continue to operate in the area, and may expand at some future date.

#### **TRAFFIC SPECIALIST'S RECOMMENDATIONS**

- Correct upgrade of access intersections according to Western Cape Government guidelines.

#### **VISUAL SPECIALIST'S RECOMMENDATIONS**

- The proposed village development should be softened through major site rehabilitation and landscape planting, appropriate for the cultural and agricultural setting.
- A Landscape Framework Plan should be prepared as part of the current planning application by a professional Landscape Architect. THIS HAS BEEN DONE.
- An incremental or phased approach should be considered for the development of the proposed village, to minimise the visual effect of a large-scale development. THIS HAS BEEN DONE.
- A precinct phasing plan should be prepared as part of the planning application. THIS HAS BEEN DONE.
- The stated principle of a 'well-contained, small and compact' village, including 'urban edge-making' should be emphasized.
- The existing orchards should be retained, as currently proposed in Alternative 5c, as they provide useful visual screening, and constitute the essential rural context.

- The proposed filling of the floodplain on the eastern edge should be avoided or minimised, as these corridors provide an essential hydrological and biological function, as well as being part of the larger landscape framework.
- The stated principle of a 'Cape tradition of village-building' and an 'authentic Cape village' should be emphasized.
- Preferably limit buildings to 2 or 2.5 storeys to minimise visual intrusion above tree canopies. (3-storey structures could be strategically used to emphasize focal points).
- Long or slab-like buildings should be more articulated and varied to express individual units, both in their elevation and in roofscape, to create more of a Cape village fabric.
- Parking areas along the R310 must be set back from the scenic route to allow multiple rows of trees for screening.
- Parking must be screened with buildings, walls, berms and/or trees, where possible.
- Parking must be organised into smaller parking courts of about 20-30 cars to avoid visually and climatically exposed parking lots. (The 2 parking lots to the east of the R310 should ideally have exits to allow for hunting and circulation).
- Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Parking areas could have gravel surfaces for visual informality and to minimise stormwater runoff.
- Stormwater should consist of dish channels and grassed swales, or traditional furrows (as indicated in the proposed Urban Design Framework).
- Street and outdoor lighting must be discrete to maintain the rural ambience of the area. Outdoor lighting should be fitted with reflectors to minimise light spillage. Low-level bollard type lights could be used for parking areas and pedestrian paths.
- Advertising signage, banners and flags must be avoided.
- Low-level signs are less visually intrusive. Signs should be fixed to walls where possible to minimise the visual clutter of support poles.
- Each phase must be implemented as a completed development as far as possible, including all the landscaping, particularly if there is a long time period before another phase is undertaken.

## 8. IMPACT SUMMARY

Please provide a summary of all the above impacts.

Impact	Construction Phase							
	No-Go Alternative (Alt 1)		Alternative 5a		Alternative 5b		Alternative 5c	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Loss of vegetation	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Loss of open space	N/A	N/A	Low to moderate negative	Low to moderate negative	Low negative	Low negative	Low to moderate negative	Low to moderate negative
Loss of floodplain area	N/A	N/A	Low to moderate negative	Low negative	Low negative	Negligible to low negative	Low to moderate negative	Low negative
Hardening of river bank to construct gabion drop structure	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Dumping of building material in sensitive areas	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Pollution of the wetlands or Dwars River	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Destruction or deterioration of freshwater habitat as a result of foot and vehicular traffic	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Excavation and/or infilling of wetlands or floodplain	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Disturbance of freshwater fauna and flora	N/A	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Increased input of sediments	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Introduction and spread of invasive alien plants	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Creation of employment and business opportunities during the construction phase	High negative	N/A	Medium positive	High positive	Medium positive	High positive	Medium positive	High positive
Potential impacts on family structures and social networks associated with the presence of construction workers	N/A	N/A	Low negative	Low negative	Low negative	Low negative	Low negative	Low negative
Potential safety and security risk posed by presence of construction workers on site.	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
Potential noise, dust and safety impacts associated with movement of construction related traffic to and from the site.	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative

Doug Jeffery Environmental Consultants

Traffic	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
Impacts on heritage resources	Medium negative	Medium negative	Medium – High negative	Medium-High positive	Medium – High negative	Medium-High positive	Medium – High negative	Medium-High positive
Construction could result in additional visual intrusion from construction equipment, trucks, dust and noise.	N/A	N/A	Medium-high negative	Medium negative	Medium-high negative	Medium negative	Medium-high negative	Medium negative
<b>Operational Phase</b>								
Increased water demand and water supply infrastructure	N/A	N/A	Low negative	Negligible to low negative	Low negative	Negligible to low negative	Low negative	Negligible to low negative
Decrease in water quality	Low negative	N/A	Moderate negative	Low to moderate negative	Moderate negative	Low to moderate negative	Moderate negative	Low to moderate negative
Increase in water quantity	N/A	N/A	Moderate negative	Low negative	Moderate negative	Low negative	Moderate negative	Low negative
Disturbance of fauna and flora	Low negative to negligible	N/A	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Spread and establishment of invasive alien plants	Low negative to negligible	Negligible	Low negative	Negligible	Low negative	Negligible	Low negative	Negligible
Provision of housing, retail and community facilities	N/A	N/A	Low positive	Medium positive	Low positive	Medium positive	Low positive	Medium positive
Creation of employment, training and business opportunities during operational phase.	N/A	N/A	Medium positive	High positive	Medium positive	High positive	Medium positive	High positive
Support and fund local development initiatives in the Dwars River Valley that are aimed at benefiting the local community	N/A	N/A	Low positive	High positive	Low positive	High positive	Low positive	High positive
Support and promote tourism and create opportunities for job creation and economic development in the area	N/A	N/A	Low positive	Medium positive	Low positive	Medium positive	Low positive	Medium positive
Impact of the proposed development on existing operations in the vicinity of the site	N/A	N/A	Medium negative	Low negative	Medium negative	Low negative	Medium negative	Low negative
The no-development option would result in the lost opportunity for the local economy the SLM and residents who would benefit from the development.	High negative	High positive	N/A	N/A	N/A	N/A	N/A	N/A
Loss of Agricultural Land	Low positive	Low positive	Medium negative	Medium negative	Low negative	Low negative	Low negative	Low negative
Traffic	N/A	N/A	Low negative	Low negative	Low negative	Low negative	Low negative	Low negative
Visual Impact	Low negative	Low negative	Medium-high negative	Medium negative	Medium-high negative	Medium negative	Medium-high negative Low negative	Medium negative

## 9. OTHER MANAGEMENT, MITIGATION AND MONITORING MEASURES

(a) Over and above the mitigation measures described in Section 6 above, please indicate any additional management, mitigation and monitoring measures.

- A precinct wide waste recycling management plan must be developed at the detailed design phase of the proposal.
- An Environmental Control Officer (ECO) must be appointed to oversee the construction phase (including the implementation of the Environmental Management Programme (EMP) and any applicable Conditions of Authorisation).
- All mitigation measures detailed in the EMP (**Appendix H**) must be adhered.

(b) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The applicant is able to implement all management, mitigation and monitoring measures as detailed in the report.

**Please note:** A draft **ENVIRONMENTAL MANAGEMENT PROGRAMME** must be attached this report as **Appendix H**.

## SECTION G: ASSESSMENT METHODOLOGIES AND CRITERIA, GAPS IN KNOWLEDGE, UNDERLYING ASSUMPTIONS AND UNCERTAINTIES

(a) Please describe adequacy of the assessment methods used.

The assessment methods used are anticipated to be adequate for the nature of the application and the site.

(b) Please describe the assessment criteria used.

The criteria is based on the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989 and the Department of Environmental Affairs and Development Planning, Guidelines for involving Biodiversity Specialists in EIA Processes, 2005.

These criteria include:

### **Nature of the impact**

This is an appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

### **Extent of the impact**

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region, or will have an impact on a national scale or across international borders.

### **Duration of the impact**

The specialist should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

### **Intensity**

The specialist should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The specialist study must attempt to quantify the magnitude of the impacts and outline the rationale used.

### **Probability of occurrence**

The specialist should describe the probability of the impact actually occurring and should be described as improbable/unlikely (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

### **Reversibility**

- Completely reversible – the impact can be reversed with the implementation of minor mitigation measures.
- Partly reversible – the impact is reversible but more intense mitigation measures are required
- Barely reversible – the impact is unlikely to be reversed even with intense mitigation measures
- Irreversible – the impact is irreversible and no mitigation measures exist

### **Irreplaceable loss of resources**

Describes the degree to which resources will be irreplaceably lost due to the proposed activity. It can be no loss of resources, marginal loss, significant loss or complete loss of resources.

### **Cumulative effect**

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development. The cumulative effect can be:

- Negligible – the impact would result in negligible to no cumulative effect
- Low – the impact would result in insignificant cumulative effects



- Medium – the impact would result in minor cumulative effects
- High – the impact would result in significant cumulative effects

**Significance**

Significance of impacts are determined through a synthesis of the assessment criteria and is described as –

- Low negative– where it would have negligible effects and would require little or no mitigation
- Low positive – the impact will have minor positive effects
- Medium negative – the impact will have moderate negative effects and will require moderate mitigation
- Medium positive – the impact will have moderate positive effects
- High negative – the impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact
- High positive – the impact will have significant positive effects
- Very high negative – the impact will have highly significant effects and are unlikely to be able to be mitigated adequately
- High positive – the impact will have highly significant positive effects

(c) Please describe the gaps in knowledge.

There are no significant gaps in knowledge.

(d) Please describe the underlying assumptions.

- The assumption is made that the information on which this report is based (project information, planning report, engineering reports and specialist input) is correct, factual, and truthful.
- It is assumed that all the relevant mitigation measures specified in this report will be implemented in order to ensure minimal negative impact on the site and surrounding social and biophysical environment.

Freshwater Specialist:

Mapping was done with a hand-held GPS in order to save time and costs. Accuracy is estimated as being approximately 2-3m. Delineation of wetlands was done using the indicators described in the DWAF (2005) guidelines for delineation of wetlands and riparian areas. None of the wetlands were sufficiently inundated to collect primary data, such as water quality, invertebrates and algae, for a more detailed assessment of present ecological state. However, the visual assessment done for this baseline assessment is considered sufficient for the purposes of this project.

Social Specialist:

**Fit with planning and policy requirements**

Legislation and policies reflect societal norms and values. The legislative and policy context therefore plays an important role in identifying and assessing the potential social impacts associated with a proposed development. In this regard a key component of the SIA process is to assess the proposed development in terms of its fit with key planning and policy documents. As such, if the findings of the study indicate that the proposed development in its current format does not conform to the spatial principles and guidelines contained in the relevant legislation and planning documents, and there are no significant or unique opportunities created by the development, the development cannot be supported.

Based on the findings of the SIA the majority of the site is located within the Groot Groot Drakenstein Node Urban Edge as defined in the Stellenbosch SDF. The area has therefore been identified as being suitable for development.

**Assessment of alternatives**

Alternative 2 and 3 were identified as not being suitable and have been scoped out (dropped) from the EIA assessment. Based on input from the Heritage specialists Alternative 4 was also deemed to be unsuitable and was also dropped from the assessment process. Given the location of the proposed development importance

of heritage no assessment of Alternative 4 has been undertaken.

Based on the findings of the SIA, there are no material differences between the nature and significance of the social impacts associated with Alternative 5a and 5b. In this regard the two alternatives are essentially identical with the exception that Alternative 5b requires no in-fill below the 1:100 floodline. This will have no bearing on the findings of the SIA. The findings of the SIA therefore apply to both Alternative 5a and 5b. This applies for both the construction and operational phase.

Heritage and Visual Specialists:

The HIA is based on the Urban Design Framework, which included typical sections and architectural controls. The final architectural treatment is not known at this stage and no architectural elevations or 3D models were available.

(e) Please describe the uncertainties.

There are no identified uncertainties.

## SECTION H: RECOMMENDATION OF THE EAP

In my view (EAP), the information contained in this application form and the documentation attached hereto is sufficient to make a decision in respect of the activity applied for.	<input checked="" type="radio"/> YES	<input type="radio"/> NO
If "NO", list the aspects that should be further assessed through additional specialist input/assessment or whether this application must be subjected to a Scoping & EIR process before a decision can be made:		
N/A		
If "YES", please indicate below whether in your opinion the activity should or should not be authorised:		
Activity should be authorised:	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Please provide reasons for your opinion		
<p>The site is included within the Groot Drakenstein Development Node which has been identified for future urban development. The proposed development also supports a number of the provincial and local level policy and planning objectives.</p> <p>The site has been transformed by agricultural activities, residential houses, the old pallet factory and has been heavily disturbed by alien vegetation and farm roads. Any natural vegetation present on site is of very low diversity, and made up of resilient, widespread species of no botanical conservation concern. No plant Species of Conservation Concern were recorded on site and none are likely to occur here.</p> <p>The freshwater ecosystems affected by the proposed Boschendal Village development include three hillslope seep wetlands and one depression on site, the Dwars River (adjacent to site, but affected by services) and five small watercourses (channels &lt; 5m across) located off-site between the proposed site and Pniel (these would be impacted by the water supply mains and the sewer pipeline). The wetlands were found to be fairly heavily impacted by the surrounding agricultural activities, roads and the railway line. Wetland 1 lies in a category C in terms of present ecological status (PES) while the other three wetlands are in poorer condition. The wetlands are all of moderate ecological importance and sensitivity, with wetland 3 being the least important due to its probable anthropogenic origin. The wetlands could provide functional (both in terms of biodiversity and ecological processes, primarily related to infiltration of water) value to the development, if conserved in an ecological corridor. The Dwars River has a PES category C or moderately modified. The river has a high ecological importance and a very high ecological sensitivity. The natural channels affected by pipe crossings off-site, are all fairly modified from their natural state, due to the proximity of roads, houses, agricultural activities and infestations of acacias.</p> <p>From a freshwater ecological perspective, there are fewer impacts associated with Alternative 1, the status quo, and is obviously the preferred alternative. The wetlands on the site are being maintained by current runoff, and support some wetland plants and probably animals. The Dwars River floodplain is cultivated to some extent, and there is polluted runoff entering the river from current activities on the site, however these are all of lesser negative significance compared with any of the development options. Given the development pressures of the area, the likelihood of the site remaining as is, is relatively low.</p> <p>From a freshwater ecological perspective, the preferred <i>development</i> option is Alternative 5b, as this option will lead to less fragmentation of the landscape, and of the connectivity between the wetlands on the site and the Dwars River floodplain. The difference between this option and the others (Alternatives 5a and 5c) is marginal and generally does not translate into a shift in the significance of impacts, apart from those associated with the layout – loss of open space, and loss of floodplain area – where the significance could be lowered to negligible, with effective implementation of the recommended mitigation measures. All development alternatives are therefore acceptable, with the implementation of the proposed mitigation measures, from a freshwater perspective.</p> <p>From a social perspective, there are no material differences between the nature and significance of the social impacts associated with Alternative 5a, 5b and 5c. The findings of the Social Impact Assessment (SIA) indicate that the construction and operational phase of the proposed development will result in a number of positive social benefits for the local community and the area as a whole. These include the creation of employment opportunities during the construction and operational phase, creation of commercial, training and skills development opportunities during the operational phase and the generation of funds for community based initiatives.</p>		

Alternatives 5 a - c are supported, from a socio-economic perspective, on the condition that the recommended enhancement and mitigation measures are implemented. Positive social impacts can be enhanced to a medium and high positive significance and the negative impacts can be mitigated to an acceptable low negative significance.

The no-development alternative would result in a lost opportunity to create employment and business opportunities associated with the construction and operational phase of the proposed development. The no-development option would also result in a lost opportunity to create a well-designed mixed use development that provides a mix of housing opportunities for middle and high income households, combined with retail and public facilities. The no-development option is therefore not supported, from a socio-economic perspective.

The heritage specialists formulated a comprehensive set of heritage indicators and directives which followed a rigorous process of analysis and against which the development proposals have been assessed. According to the heritage specialists, this method recognises that the site cannot be assessed in isolation, that indicators should relate to the region as a totality and that the assessment should occur across scales. It is foregrounded by the principle of maintaining the dominance of wilderness and rural landscapes as opposed to the increasing dominance of urban and suburban landscapes, and the principle of authenticity. It sets out criteria for where development should not occur and establishes an acceptable argument for the location of a village at the intersection of the R45 and the R310. It then provides a set of indicators for what constitutes a rural village in terms of its relationship with its setting, spatial structure, patterns of access and use.

Alternatives 5 a – c conform to the identified heritage indicators and will improve the area. The No-Go option does not address the opportunities evident in the site's location and the derelict nature of existing site conditions. The overall heritage impact of the No-Go alternative (Alternative 1) is thus regarded as medium negative. The overall heritage impact of Alternative 5 (a, b or c), including the mandatory controls and guidelines specified in the Urban Design Report and recommended mitigation measures, is regarded as potentially medium-high positive. However, should these mandatory controls, guidelines and mitigation measures not be implemented, then the overall heritage impact of the proposed development is potentially medium-high negative.

From a visual impact point of view, Alternatives 5 a – c could be mitigated to a medium negative significance. However, over time, with the growth of extensive new tree planting, the visual impact could reduce further to medium-low significance, which is considered acceptable considering the context of the site. Although the No-Go Option is visually undesirable, the vacant, derelict land could be rehabilitated but this cannot be enforced. Alternative 1 would therefore have a neutral significance.

The No-Go Option (Alternative 1) is only preferred by the freshwater specialist. From a social and heritage perspective, the No-Go Option is not supported, as discussed above.

Alternative 5 (a, b or c) is the preferred alternative by the heritage and social specialists and would result in numerous positive impacts, with the adherence to the mitigation measures proposed. From a traffic perspective, Alternative 5a, 5b and 5c are feasible, provided the recommendations in the TIA are implemented.

Of the development alternatives, Alternative 5b is preferred by the freshwater specialist. However, the difference between Alternative 5b and Alternatives 5a and 5c is marginal and the associated impacts can be mitigated to a negligible significance. Therefore, Alternatives 5a, 5b and 5c are acceptable from a freshwater perspective.

Alternative 5b and 5c is preferred from an agricultural point of view since the pear orchard will be retained in Alternative 5b and only 0,9 ha of the pear orchard will be lost in Alternative 5c. Refer to **Figure 21** below.

**Alternatives 5b and 5c are preferred by the EAP. It is therefore the recommendation of the EAP that Alternative 5c, the Applicant's preferred alternative, be approved, with adherence to the mitigation measures listed below.**



Figure 21: Existing agricultural land lost in Alternative 5c

If you are of the opinion that the activity should be authorised, then please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an authorisation.

**CONSTRUCTION PHASE:**

**BOTANIST'S RECOMMENDATIONS**

- Replacement of the topsoil, as soon as possible, after pipeline completion.

**FRESHWATER SPECIALIST'S RECOMMENDATIONS**

- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN INCLUDED IN ALTERNATIVES 5a-c.
- Allow for an ecological corridor to connect all of the wetlands, preferably with a connection to the Dwars River and its floodplain (i.e. contiguous with the 1:100 year floodline, below which no development should occur).
- Where filling in of the floodplain is unavoidable (Alternatives 4, 5a and 5c), hardened surfaces (buildings, roads) must be kept out of the "revised" 1:100 year floodline.
- The filled area must be kept as natural as possible, with indigenous planting and minimisation of additional hardened surfaces (e.g. roads, parking areas).
- The gabions must be placed in such a way as to avoid erosion on the river banks and floodplain.
- The size of the structure must be minimised as far as possible, in order to minimise the hardening of the river bank and loss of natural vegetation.
- The drop structure must be placed outside of the active channel.
- Ensure that all building materials are stored at least 50m away from the edges of the wetlands, as demarcated prior to construction. Storage areas must be bunded adequately to prevent contaminated runoff from entering the wetlands or the Dwars River.
- Materials must be stored in piles that do not exceed 1.5m in height and must be protected from the wind, to

prevent spread of fine materials across the site.

- Construction close to sensitive areas must take place during the dry season, to reduce the risks of contamination of the ecosystems through rainfall and runoff.
- Machinery prone to oil or fuel leakage must be located at least 50m away from any freshwater ecosystem, and the area adequately bunded in order to contain leakages.
- Water pumps and cement mixers shall have drip trays to contain oil and fuel leaks – these must be cleaned regularly.
- Suitable toilet and wash facilities must be provided to avoid the use of sensitive areas for these activities. These service areas must be maintained, and toilets emptied on at least a weekly basis.
- Pathways and access roads must be routed around the wetlands and must cross drainage channels as seldom as possible.
- Sensitive areas must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process.
- Affected areas must be ripped and re-planted after construction, to the satisfaction of the ECO.
- Excavation and infilling must be restricted to areas where this is necessary.
- Any such work must be done during the dry season, to minimise impacts on the freshwater fauna and flora.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (directional drilling) under the river or stream and outside the riparian zone, rather than trenching, in order to minimise disturbance to flow, and the bed and banks of any freshwater ecosystem.
- The sensitive areas (i.e. the edges of the buffers around the wetlands, river banks) not affected by construction must clearly be demarcated and fenced off (using temporary fencing and danger tape) before any construction work or site preparation begins. These are no-go areas during the construction process, except where work is occurring.
- Affected areas must be rehabilitated after construction, to the satisfaction of the ECO, and according to a construction EMP.
- The construction site and pathways must avoid sensitive areas. If lights are used, these must be directed away from all sensitive areas.
- Construction in and around the wetlands and Dwars River (e.g. sewage pump station) must take place during the dry season, to reduce the risks of contamination through rainfall, runoff and erosion.
- Pipe crossings over the Dwars River or any watercourses, if entirely necessary, should follow existing roads or be attached to existing bridges. If a new crossing must be constructed, this should be done using thrust-boring (horizontal directional drilling) under the watercourse, rather than trenching.
- Special care should be taken around storm and heavy rain events. The construction site should be inspected for erosion damage at these times.
- If construction areas are to be pumped of water (e.g. after rains), this water must first be pumped into a settlement area, and not directly into a natural ecosystem.
- All soils and top material must be bought from reliable sources, and must be free of alien seeds or grass runners.
- Constant monitoring of the construction site by the Site Engineer and ECO must occur, and all alien plant species removed from or destroyed on the site.

#### **SOCIAL SPECIALIST'S RECOMMENDATIONS**

- The developer must inform the local authorities, local community leaders, organizations and councillors of the project and the potential job opportunities for local builders and contractors.
- The developer must consult with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) with regards to the establishment of a database of local construction companies in the area, specifically SMME's owned and run by HDI's. However, while the use of local building contractors and workers is recommended, it is recognised that a competitive tender process may not guarantee the employment of local companies and labour during the construction phase.
- The developer in consultation with the appointed contractor/s must look to employ a percentage of the labour required for the construction phase from local area in order to maximize opportunities for members from the local HD communities.
- The developer must seek as far as is possible to appoint local or regional contractor/s from the area for the bulk services, commercial and housing contracts.
- The developer in consultation with the appointed contractor/s must implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase.

- The construction site must be fenced off prior to the start of construction.
- The movement of construction workers on and off the site must be closely managed and monitored by the contractors. In this regard, no construction workers may be permitted to leave the construction site during operating hours and the contractor/s must be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis.
- No construction workers, with the exception of security personnel, may be permitted to stay overnight on the site.
- Access to the site for heavy construction vehicles must be, where possible, via the R45. The movement of heavy construction vehicles transporting material etc. to the site via the R310 through Pniel must be minimised as far as possible.
- The intersection between the R45 and R310 should be up-during phase 4 of the phasing of the development.
- Construction related activities must comply with all relevant building regulations. In this regard activities on site must be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays. No work must be permitted after 13h00 on Saturdays and on Sundays or Public Holidays.
- Drivers must be made aware of the potential risk posed to school children and other road users along the R45 and R310. All drivers must ensure that speed limit of 60 km per hour is enforced.
- Any abnormal loads along the R45 must be timed to avoid peak traffic hours, specifically early mornings.
- Dust suppression measures must be implemented when site clearing takes place, such as wetting of exposed areas.
- Dust suppression measures must be implemented to reduce impacts associated with the movement of construction vehicles, including wetting of gravel roads and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits.

#### **HERITAGE SPECIALIST'S RECOMMENDATIONS**

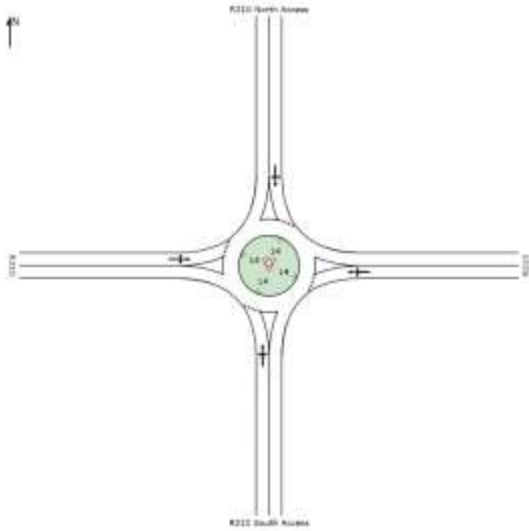
- The design development must proceed in accordance with the Urban Design Framework dated November 2015 (**Appendix G2**) and the Heritage Indicators in Section 8 (pages 14-22) of the HIA report (**Appendix G12**).
- The proposed residential erven in Precinct F2 must be reduced in extent to exclude the existing orchard from the proposed development, as shown in Alternative 5c.
- More refined articulation of building elevations and roofscapes in Precincts E1 and E2 must be undertaken at the precinct plan level.
- The Landscape Framework Plan prepared by CNdV Landscape Architects must be implemented (**Appendix G7**).
- An Integrated Environmental Management Plan must be formulated to address mandatory controls and guidelines related to lighting, signage and architectural and landscaping treatment as formulated in Section 5 of the Urban Design Framework (**Appendix G2**).
- The five focus or action areas identified in Figure 24 of the Urban Design Framework relate to the more public parts of the scheme. In accordance with the 'package of plans' approach these focus areas must be subject to detailed precinct plans, which include detailed site and transportation planning, design and landscaping. Precinct plans for these areas must return to HWC for approval.
- The conclusions and recommendations of the Traffic Impact Assessment including the proposed geometries must be subject to detailed design particularly with respect to place-making qualities, pedestrian access, non-motorised transport and public transport, and be incorporated into precinct level plans and heritage assessment referred to above.
- A Phasing Plan must be prepared to ensure an integrated form of development that is tied in with landscape mitigation. Each phase should be implemented as a completed development as far as possible, including all landscaping. As a first step, planting and other elements of edge-making to define the overall site, should be undertaken as soon as possible.

#### **VISUAL SPECIALIST'S RECOMMENDATIONS**

- An environmental management plan (EMP) should be prepared and included in all contract documentation, particularly during the construction period.
- A suitably qualified Environmental Control Officer (ECO) should be employed to manage potential environmental and visual impacts on the site.

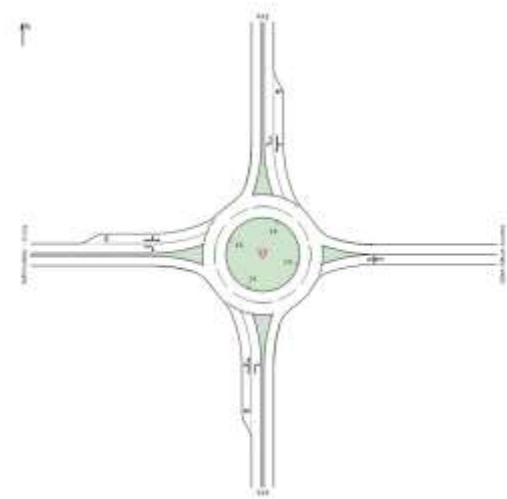
**TRAFFIC SPECIALIST'S RECOMMENDATIONS**

- The geometry of the roundabout at Helshoogte Road (R310) / Minor Road 6/4 (New Oaks Access) intersection be constructed as shown in the figure below.



Roundabout at R310 / Minor Road 6/4 (New Oaks Access)

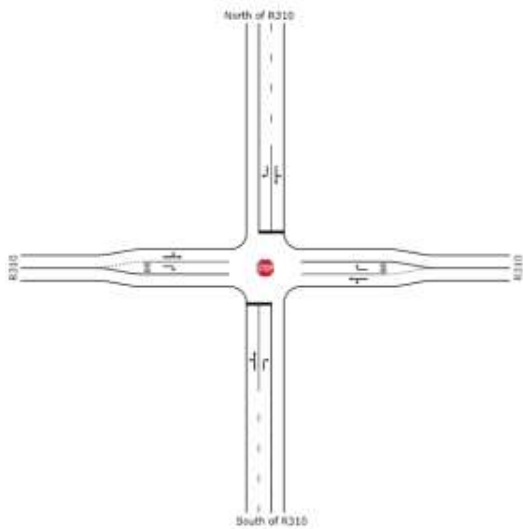
- The geometry of the roundabout at the R45 / Helshoogte Road (R310) is constructed as shown in Figure below.



Roundabout at R45 / Helshoogte Road (R310)



- The geometry of the central access is constructed as shown in Figure below. Although the analysis results indicate that the right-turn exiting movements will operate poorly in the peak periods, the few motorists experiencing these poor conditions can divert to the adjacent Minor Road 6/4 (New Oaks Access) roundabout, which has ample spare capacity during peak periods.



New Central Access

- The Rhodes Food Group factory and retail facility entrances remain temporarily until these sites are developed. The PGWC can, at this stage, request that these access points are regularised in terms of the applicable road access spacing guidelines.
- The Police station access remains as a minor driveway access for strategic and operational reasons.
- New public transport facilities are provided along Helshoogte Road (R310) in the form of taxi embayments adjacent to the proposed central access on either side of the road (downstream). A pedestrian crossing should be provided linking the two public transport facilities and advanced warning signs should be provided to notify motorists of the pedestrian crossing
- Sidewalks are provided along both sides of the Helshoogte Road (R310) along the frontage of the development and along the R45 in the vicinity of the roundabout. These sidewalks should be minimum 1.5m wide and should link seamlessly to the internal pedestrian network.
- The shoulder along Helshoogte Road (R310) be maintained along the frontage of the development unless it is linked to an off-road cycle facility for safety purposes.
- During the construction phase, ensure that safety and protection measures are implemented where pedestrians are within the construction site boundary.
- The following parking ratios, as per LUPO Section 8 Scheme regulations, should be applied:
  - Residential - Low density : 2 bays / unit
  - Residential - Medium density: : 2 bays / unit
  - Residential - High Density: : 1.25 bays / unit
  - Hotel : 0.7 bays / room + 20 additional bays
  - General Retail : 4 bays / 100m<sup>2</sup> GLA
  - General offices - Suburban : 4 bays / 100m<sup>2</sup> GLA
  - Guest accommodation : 0.7 bays / room
  - Civic / Community Building : 1 bay/8 fixed seats or persons
  - Clinic : 3 bays/consulting room
  - Crèche/ECD : 1 bay/classroom + 1 bay/15 students

The total parking requirement amounts to 1 491 bays; however, it should be noted that the proposed development is mixed-use in nature and therefore a degree of shared parking is likely to take place.

- The parking ratio for the Residential High Density land use originally includes an additional 0.25 bays/unit for visitors. It is, however, proposed that visitors use the parking provided for offices after hours.
- Furthermore, the number of parking bays required for the clinic can be reduced by 50% to account for the sharing of parking between land-uses.
- A refuse embayment measuring not less than 3m by 12m should be provided on the Helshoogte Road

adjacent to the proposed refuse facility (at the old clinic site).

- A construction traffic management plan, containing the layout of temporary signage, requirement for flagmen and the management of heavy vehicles will be submitted to the authorities for approval during the detailed design submission phase. This plan is required to ensure that the impacts of the construction vehicles are minimised and safety and protection measures are implemented to reduce the risks of collisions.
- The proposed road infrastructure upgrades must be considered in the precinct plans and precinct level heritage assessments for the approval of Heritage Western Cape.

## **OPERATIONAL PHASE**

### **FRESHWATER SPECIALIST'S RECOMMENDATIONS**

- Landscaped areas and gardens must be planted with species that do not require much watering.
- Water demand management must be implemented within the development, as specified in the Provincial and Stellenbosch Municipality SDFs.
- Rainwater storage tanks should be built on every erf.
- Care must be taken in the location of water supply infrastructure, in order to avoid sensitive areas.
- Where pipes must cross the river channel or wetlands on the property, this should be done using areas that will be disturbed, such as roads or tracks.
- Stormwater should be allowed to flow along unlined channels before discharge into either natural or created wetland areas. This will allow some infiltration of water into the ground, so reducing the quantity of runoff and improving the quality.
- Wetland 4 can be used for stormwater detention.
- Sand filters should be constructed, which effectively trap oil and grease.
- Hardened areas should be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (<6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system.
- The sewer pipe must be regularly (at least once a month) checked for leaks.
- Leaks in the sewer pipe, or at manholes, must be fixed immediately.
- Effort should be made to minimise the hardening of surfaces. Natural areas, gardens and road verges are areas where water can filter into the ground. The predominantly sandy soils of the site will allow this to occur.
- Stormwater should not be conveyed directly into either wetland 1 or 2, but rather into detention/retention ponds and/or wetland 4, permeable areas, bioswales and/or constructed wetlands.
- Wherever possible, parking areas should be constructed of permeable materials to allow for infiltration of water.
- All sensitive ecosystems must be allowed a development setback or buffer, in order to provide some protection from the impacts of the development. It is recommended that a 10 m buffer be allowed around wetlands 2, 3 and 4, and a 30 m buffer around wetland 1. THIS HAS BEEN DONE FOR ALTERNATIVE 5a-c.
- Lighting must face away from the wetland areas.
- Domestic pets must be discouraged from entering the wetlands and their buffers, through the wise use of fencing and gates.
- All newly planted areas must be planted with indigenous plants. Alternative grasses for lawns include *Stenotaphrum secundatum*, *Paspalum vaginatum* and *Cynodon dactylon*.
- Alien and invasive plants (including kikuyu) must be kept out of wetlands and rivers.
- The spread of alien plant species into all natural areas must be prevented and monitored.
- Road verges must be monitored for alien species.

### **SOCIAL SPECIALIST'S RECOMMENDATIONS**

- The developer must ensure that the retail component of the development takes into account the needs of the local community. In this regard the findings of the SIA highlighted the need for a shop, such as a Spar or Pick and Pay, in the study area.
- The food outlets associated with the proposed development must cater for the local community and not

only tourists.

- Public access to and use of all public open spaces within the development must be provided and guaranteed.
- Activities and events that create opportunities for and encourage the use of the public spaces by the local community must be held on a regular basis. These include school outings, picnic's, music events etc.
- Adequate space must be provided for the establishment of the crèche and community facilities. The possible need to develop a primary school should also be investigated.
- A Management and Maintenance Plan and programme for the public open spaces and play areas must be developed and implemented.
- The proponent must ensure that the required funding and resources are made available to implement a Management and Maintenance Plan.
- The developer must liaise with the Stellenbosch Municipality (SLM) and Drakenstein Municipality (DLM) and stakeholders regarding the potential job opportunities associated with the different components associated with the operational phase of the development.
- The developer should, where possible, implement a policy aimed at employing members from the local communities in the study area, specifically Pniel, Lanquedoc (Old and New), Kylemore, Meerlust and Simondium.
- The developer must continue to implement training and skills development programme for local community members aimed at enhancing their chances of being employed during the operational phase.
- The developer must liaise with the SLM and DLM with regard to establishing a database of local service providers in the area, specifically SMME's owned and run by HDI's. These companies should be notified of the potential opportunities associated with the operational phase of the development.
- The owners of Boschendal should liaise with the SLM and local stakeholders to identify potential development initiatives aimed at addressing the needs and challenges facing the Dwars River Valley.
- The owners of Boschendal must liaise with the SLM, Dwars River Tourism and other tourist destinations in the area to promote the area.
- The developer must identify SMME's that are qualified to provide services to the tourism based activities associated with the proposed development.
- The developer must continue to implement the training and skills development programmes to enable members from the local community to qualify for tourism related jobs created by the proposed development.
- The developer and planners need to take into account the existing operations that border onto the site in the final design and layout. Potentially sensitive land uses, such as hotels and residential areas should be designed and planned accordingly.
- The developer must recognise and acknowledge the right of these operations to carry on operating and the right to expand their operations in the future.
- Prospective homeowners and business owners must be informed of the existing operations that border onto the site and that they will continue to operate in the area, and may expand at some future date.

#### **TRAFFIC SPECIALIST'S RECOMMENDATIONS**

- Correct upgrade of access intersections according to Western Cape Government guidelines.

#### **VISUAL SPECIALIST'S RECOMMENDATIONS**

- The proposed village development should be softened through major site rehabilitation and landscape planting, appropriate for the cultural and agricultural setting.
- A Landscape Framework Plan should be prepared as part of the current planning application by a professional Landscape Architect. THIS HAS BEEN DONE.
- An incremental or phased approach should be considered for the development of the proposed village, to minimise the visual effect of a large-scale development. THIS HAS BEEN DONE.
- A precinct phasing plan should be prepared as part of the planning application. THIS HAS BEEN DONE.
- The stated principle of a 'well-contained, small and compact' village, including 'urban edge-making' should be emphasized.
- The existing orchards should be retained, as currently proposed in Alternative 5c, as they provide useful visual screening, and constitute the essential rural context.
- The proposed filling of the floodplain on the eastern edge should be avoided or minimised, as these corridors provide an essential hydrological and biological function, as well as being part of the larger landscape framework.
- The stated principle of a 'Cape tradition of village-building' and an 'authentic Cape village' should be

emphasized.

- Preferably limit buildings to 2 or 2.5 storeys to minimise visual intrusion above tree canopies. (3-storey structures could be strategically used to emphasize focal points).
- Long or slab-like buildings should be more articulated and varied to express individual units, both in their elevation and in roofscape, to create more of a Cape village fabric.
- Parking areas along the R310 must be set back from the scenic route to allow multiple rows of trees for screening.
- Parking must be screened with buildings, walls, berms and/or trees, where possible.
- Parking must be organised into smaller parking courts of about 20-30 cars to avoid visually and climatically exposed parking lots. (The 2 parking lots to the east of the R310 should ideally have exits to allow for hunting and circulation).
- Excessive use of asphalt and barrier kerbs should be avoided to retain the rural character of the area. Parking areas could have gravel surfaces for visual informality and to minimise stormwater runoff.
- Stormwater should consist of dish channels and grassed swales, or traditional furrows (as indicated in the proposed Urban Design Framework).
- Street and outdoor lighting must be discrete to maintain the rural ambience of the area. Outdoor lighting should be fitted with reflectors to minimise light spillage. Low-level bollard type lights could be used for parking areas and pedestrian paths.
- Advertising signage, banners and flags must be avoided,
- Low-level signs are less visually intrusive. Signs should be fixed to walls where possible to minimise the visual clutter of support poles.
- Each phase must be implemented as a completed development as far as possible, including all the landscaping, particularly if there is a long time period before another phase is undertaken.
- An Environmental Control Officer (ECO) must be appointed to oversee the construction phase (including the implementation of the Environmental Management Programme (EMP) and any applicable Conditions of Authorisation).
- All mitigation measures detailed in the EMP (**Appendix H**) must be adhered.

Duration and Validity:

Environmental authorisations are usually granted for a period of three years from the date of issue. Should a longer period be required, the applicant/EAP is requested to provide a detailed motivation on what the period of validity should be.

The construction of the proposed development will be phased, some phases may run concurrently while others will be phased consecutively, this will depend on a number of market related and economic variables. Once the proposed activities have commenced, the intention is to complete the construction of the proposed village within a period of 20 years, the completion target date being March 2038.

## SECTION I: APPENDICES

The following appendices must be attached to this report:

Appendix		Tick the box if Appendix is attached
Appendix A:	Locality map	✓
Appendix B:	Site plan(s)	✓
Appendix C:	Photographs	✓
Appendix D:	Biodiversity overlay maps	✓
Appendix E:	E1: Services Confirmation Letter E2: HWC and SAHRA Comments	✓
Appendix F:	F1: List of I&APs F2 – BID F3 – Proof Of BID Notification F4 –Advertisements (BID Phase) F5 – Site Notice And Proof (BID Phase) F6 – Signed Register F7 – Comments Received on BID F8 – Comments & Response Document (BID) F9 – Notification Letter and Proof F10 – Proof of Notifying State Departments (Draft BAR) F11 – Advertisements (Draft BAR) F12 – Library Letter F13 – Posters F14 – Attendance Register F15 – Comments Received on Draft BAR F16 – Comments and Response Table (Draft BAR)	✓
Appendix G:	G1: Planning Report G2: Urban Design Framework G3: Traffic Impact Assessment G4: Services Report G5: Greening Report G6: Stormwater Management Plan G7: Landscape Plan G8: Soil Study G9: Botanical Letter G10: Freshwater Assessment G11: Social Impact Assessment G12: Heritage Impact Assessment G13: Visual Impact Assessment G14: Archaeological Report	✓
Appendix H :	Environmental Management Programme (including Maintenance Management Plan)	✓
Appendix I:	EAP CV	✓
Appendix J:	General Authorisations in terms of NWA	✓


## DECLARATIONS

### THE APPLICANT

I ROBERT LUNDIE..... in my personal capacity or duly authorised (please circle the applicable option) by BOSCHENDAL (PTY) LTD..... thereto hereby declare that I:

- regard the information contained in this report to be true and correct, and
- am fully aware of my responsibilities in terms of the National Environmental Management Act of 1998 ("NEMA") (Act No. 107 of 1998), the Environmental Impact Assessment Regulations ("EIA Regulations") in terms of NEMA (Government Notice No. R. 543 refers), and the relevant specific environmental management Act, and that failure to comply with these requirements may constitute an offence in terms of the environmental legislation;
- appointed the environmental assessment practitioner as indicated above, which meet all the requirements in terms of regulation 17 of GN No. R. 543, to act as the independent environmental assessment practitioner for this application;
- have provided the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the environmental legislation including but not limited to –
  - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
  - costs incurred in respect of the undertaking of any process required in terms of the regulations;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the regulations;
  - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
  - the provision of security to ensure compliance with the applicable management and mitigation measures;
- am responsible for complying with the conditions that might be attached to any decision(s) issued by the competent authority;
- have the ability to implement the applicable management, mitigation and monitoring measures;
- hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of, inter alia, the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Please Note:** If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.



Signature of the applicant:

BOSCHENDAL (PTY) LTD

Name of company:

2/6/2017

Date:

**THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**

I Lindsay Speirs Du Toit, as the appointed independent environmental practitioner ("EAP") hereby declare that I:

- act/ed as the independent EAP in this application;
- regard the information contained in this report to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the application was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all interested and affected parties were considered, recorded and submitted to the competent authority in respect of the application;
- have kept a register of all interested and affected parties that participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

Lindsay Speirs Du Toit

Signature of the environmental assessment practitioner:

Doug Jeffery Environmental Consultants

Name of company:

7 August 2017

Date:

**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I DAVID DEWAR, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

  
\_\_\_\_\_  
Signature of the specialist:

LOWE AND DEWAR  
\_\_\_\_\_  
Name of company:

5 JUNE, 2017  
\_\_\_\_\_  
Date:



**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I ..... Kate Snaddon ....., as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.



Signature of the specialist:

Freshwater Consulting cc

Name of company:

5th June 2017

Date:

**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I, NICOLAS BAUMANN, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

N. Baumann  
Signature of the specialist:

Nicolas Baumann Urban Construction & Planning  
Name of company:

6 JUNE 2017  
Date:

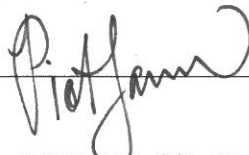
**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I, PIET LOUW, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

Signature of the specialist:



PIET LOUW ARCHITECTS · URBAN DESIGNER · CITY PLANNER

Name of company:

5.6.2017

Date:

**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I ....., as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

*S. Winter*

Signature of the specialist:

Name of company:

*Sarah Winter*

Date:

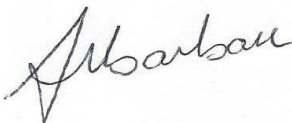
*June 2017*

**THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS**

I ...**Tony Barbour**..., as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.



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Signature of the specialist:

**Tony Barbour Environmental Consulting & Research**

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Name of company:

**09 June 2017**

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Date: