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SECTION A

LETTERS OF SUPPORT FROM THE DEPTS. OF AGRICULTURE

Western Cape Government
Agriculture

Cor Van Der Walt
LandUse Management
Email: LandUse.Elsenburg@elsenburg.com
tel: +27 21 808 5099 fax: +27 21 808 5092

OUR REFERENCE : 20/9/2/5/6/071 & STELLENBOSCH SDF
YOUR REFERENCE : -
ENQUIRIES : Cor van der Walt

TV3
97 Dorp Street
STELLENBOSCH
7600

Att: Clifford Heyes

PLAAS BRANDWACHT NO 1049 DIVISION STELLENBOSCH

The Western Cape Department of Agriculture (WCDoA) commented on the Stellenbosch Municipal Spatial Development Framework (MSDF) of February 2019 and June 2019 as part of the Steering Committee on the MSDF.

In letters dated 2019/04/17 and 2019/07/02 the WCDoA had no objection to the inclusion of Remainder of Farm BRANDWACHT no 1049, Stellenbosch for residential development, respectively.

Please note:

- That this is comment to the relevant deciding authorities in terms of the Subdivision of Agricultural Land Act 70 of 1970.

- Kindly quote the above-mentioned reference number in any future correspondence in respect of the application.

- The Department reserves the right to revise initial comments and request further information based on the information received.

Yours sincerely

Mr. CJ van der Walt
LANDUSE MANAGER: LANDUSE MANAGEMENT
2021-05-03

Copies:
Department of Environmental Affairs & Development Planning (Kobus Munro)
1 Dorp Street
Cape Town
8000

Stellenbosch Municipality (B de la Bat)
PO Box 17
STELLENBOSCH
7599

agriculture, land reform
& rural development
Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Private Bag X120, Pretoria, 0001
Delpen Building, C/o Annie Botha & Union Street, Riviera, 0084

From: Directorate Land and Soil Management
Tel: 012-319-7634 **Fax:** 012-329-5938 Email: Annettes@dalrrd.gov.za/Francinamo@dalrrd.gov.za
Website: www.dalrrd.gov.za
Enquiries: Helpdesk **Ref:** 2023_01_0057

TV3 Architects
1st floor La Gratitude Office Building
97 Dorp Street
STELLENBOSCH
7600

Email: clifford@tv3.co.za

Attention: Clifford Heys

APPLICATION FOR THE REZONING OF THE REMAINDER OF THE FARM BRANDWACHT NO. 1049, DIVISION STELLENBOSCH, WESTERN CAPE PROVINCE

Your email dated 21 July 2022 refers.

With reference to the above-mentioned matter, the Department has no objection against the proposed Rezoning for a township from an agricultural point of view.

This comment does not exempt any person from any provision of any other law and does not purport to interfere with the rights of any person who may have an interest in the agricultural land.

Yours faithfully

MR D SERAGE
ACTING DEPUTY DIRECTOR GENERAL:
AGRICULTURAL PRODUCTION,
BIOSECURITY AND NATURAL RESOURCES MANAGEMENT
DELEGATE OF THE MINISTER:
DATE: 2023/02/07

SECTION B

TIA REPORT

Date: 15 November 2024

Our Ref: UDS620/Reports/TIA

tv3 Architects, Town Planners & Urban Designers
La Gratitude Office Building
97 Dorp Street
STELLENBOSCH
7600

ATTENTION: Mr Clifford Heys

Dear Sir,

RE: APPLICATION FOR PROPOSED DEVELOPMENT OF REMAINDER FARM BRANDWACHT NO. 1049, STELLENBOSCH: TRAFFIC IMPACT ASSESSMENT FOR PURPOSE OF ENVIRONMENTAL APPLICATION

This company was appointed by *Brandwacht Land Development (Pty) Ltd* to prepare a Traffic Impact Assessment (TIA) for the proposed residential development on Remainder Farm 1049, Stellenbosch.

1. BACKGROUND AND LOCALITY

The subject property is situated between Paradyskloof and Brandwacht (Brandwacht-Aan-Rivier and Brandwacht 'Proper'), Stellenbosch. See the attached ***Locality Plan***.

Conceptual alignments of the 'Eastern Link Road', which is a proclaimed Provincial Main Road (MR 169), traverses the subject property, resulting in two portions – one to the east- and one to the west of the said link road. Stellenbosch Municipality appointed a project team for the relevant designs and applications for the extension of Wildebosch Road (in Paradyskloof) up to Trumali Road, which follows the alignment of a section of the said 'Eastern Link Road'. The said link provides a similar function to the existing Schuilplaats Road link between Paradyskloof Road and Trumali Road.

This TIA accompanies the application for the proposed development of Remainder Farm Brandwacht No. 1049, Stellenbosch.

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Offices
CESA
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2. PROPOSED DEVELOPMENT

2.1 Proposed Development

The proposed development is residential in nature, with an accompanying commercial pocket on the remainder piece of the property abutting the existing *Brandwacht Office Park* to the one side and Ben du Toit Drive to the other. Two alternatives are currently being considered:

***Table 1** : Development proposal*

Development Proposal:	Commercial	Phase I Residential	Phase II Residential
Preferred Alternative	0,27 ha site	146 erven	9 erven
		155 erven (total)	
Alternative Option	0,27 ha site	167 erven	61 erven
		228 erven (total)	

The layouts of the two proposals are attached hereto (both prepared by *tv3 Architects, Town Planners & Urban Designers*):

Preferred Alternative: ***Proposed Subdivision*** *(Plan no. 1, 28/08/2024)*; and

Alternative Option: ***Concept SDP*** *(Plan no. 2, 29/08/2022)*

2.2 Access to the Property

Access to the subject property is currently informally obtained via Trumali Road as well as Ben du Toit Drive. Access to the proposed development will be along Trumali Road (residential pocket) and Ben du Toit Drive (commercial pocket), detail of which will be further discussed in *paragraph 4* below.

3. TRAFFIC

3.1 Available Traffic

Traffic counts were conducted on Thursday, 22 September 2022 from 06h00 to 09h00 and again from 16h00 to 19h00 at the following intersections:

1. R44/Blaauwklippen Road
2. R44/Paradyskloof Road
3. R44/Trumali Road
4. R44/Elsie du Toit Drive
5. R44/Van Reede Road
6. Trumali Road/Schuilplaats Road
7. Trumali Road/Ben du Toit Drive

The peak hour volumes derived from the abovementioned counts are indicated in ***Figure 1*** attached.

The TIA which accompanied the 'Wildebosch Road extension project' (as included in the package of information available as part of the project's environmental application) included updated traffic counts at some of the intersections as listed above, conducted on Monday 30 October- and Tuesday 31 October 2023. However, as the Stellenbosch University examinations, as well as the Matric exams, started on Monday 30 October 2023, these counts were not considered representative of normal weekdays in- and around Stellenbosch, and the available 2022 counts were used for the purpose of the analyses included in this report.

3.2 Traffic Growth

To account for average traffic growth (in line with the rates contained in the TMH17), a growth rate of 3% per annum was applied to the traffic along the R44, whilst slightly lower rates of 2%- and 1% per annum were applied to the side streets, as these areas are relatively built-up. The 2022 peak hour volumes were increased for seven (7) years to obtain the estimated 2029 peak hour volumes and thereby assess a five-year-horizon (from date of report). The said 2029 peak hour volumes are indicated in ***Figure 2*** attached.

Reference is made in the TIA of the 'Wildebosch Road extension project' of an assumption of 50% of right-turning traffic along the eastern approach of the R44/Blaauwklippen Road intersection making use of the R44/Trumali Road intersection after the implementation of the 'link road', whilst similar mention is also made regarding a 50% of the left-turning traffic along the northern approach. However, it is not clear from the said report what the expected traffic along the Wildebosch Road extension would be, therefore, the impact thereof could not be included in the analyses hereafter.

3.3 Trip Generation

Trip generation rates as contained in the TMH17 *South African Trip Data Manual* were consulted to calculate the potential peak hour traffic that can be generated by the proposed development. The TMH17 suggests 1,0 trip per single dwelling unit during the peak hours (25/75 in/out during the AM peak hour and 70/30 during the PM peak hour). For the purpose of this report, the commercial portion of the development was assessed as offices, as it is expected that, at this stage, it would most likely be developed similarly to the existing *Brandwacht Office Park*. The commercial pocket is ± 0,27 ha in size – for the purpose of trip generation calculations, it was assumed that a bulk of 1,0 would be applicable, thus 2 295 m^2 Gross Leasable Area (GLA) (2 700 m^2 x 1,0 bulk x 0,85 GLA-factor = 2 295 m^2 GLA).

The TMH17 suggests a 20% reduction applicable to offices in mixed use areas (i.e. accommodating for residents in the immediate vicinity of the offices traveling to/from the proposed offices and thus not additional trips attracted from the external road network). However, to assess a worst-case scenario, no trip reduction factors were applied in this report.

Based on the above, the two proposed development options would have the potential to generate the following peak hour trips:

***Table 2** : Total peak hour trip generation: Preferred Alternative*

Trip Generation	AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out
Residential (*155 erven*)	155	39	116	155	109	46
Commercial (*2 295 m^2 GLA*)	48	41	7	48	10	38
Total	**203**	**80**	**123**	**203**	**119**	**84**

***Table 3** : Total peak hour trip generation: Alternative Option*

Trip Generation	AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out
Residential (*228 erven*)	228	57	171	228	160	68
Commercial (*2 295 m^2 GLA*)	48	41	7	48	10	38
Total	**276**	**98**	**178**	**276**	**170**	**106**

3.4 Trip Distribution

From the development-access, the trips that can potentially be generated by the proposed development was distributed along Trumali Road to the external road network. At the external intersections, the traffic was assumed to distribute based on the existing directional split in peak hour traffic at the respective intersections. The residential trips that can potentially be generated by the proposed development were assumed to travel to/from the R44 via Trumali Road and Elsie du Toit Drive, whilst a small portion of the commercial trips were expected to be attracted from Paradyskloof. These assumptions were applied to both development proposals.

The distributed peak hour volumes (for both development proposals) are indicated in ***Figure 3*** attached (3A: preferred alternative; 3B: alternative option), whilst these volumes added to the background traffic (***Figure 2***) are indicated in ***Figure 4*** attached (4A: preferred alternative; 4B: alternative option).

3.5 Traffic Analysis

Traffic analyses of the intersections were done by means of the Sidra Intersection 9.1 software. Service levels A to D are considered acceptable, with D the critical.

The intersections analysed consist of lane layouts as follows:

R44/Blaauwklippen Road intersection:

This intersection is currently signalised with dedicated turning lanes on all approaches – see the lane layout below.

***Diagram 1** : Existing R44/Blaauwklippen Road intersection lane layout*

R44/Paradyskloof Road intersection:

This intersection was changed to a left-in/left-out (LILO) intersection a few years ago, with right-turn movements allowed for vehicles to/from the Golf Course-access to the opposite side of the R44 by way of dedicated right-turn lane and acceleration lane – see the lane layout below.

***Diagram 2** : Existing R44/Paradyskloof Road intersection lane layout*

R44/Trumali Road intersection:

This intersection is currently signalised with dedicated turning lanes on all approaches. The southern R44-approach, as well as the Trumali Road-approach consists of two dedicated right-turn lanes recently constructed. See the lane layout below.

***Diagram 3** : R44/Trumali Road intersection lane layout*

R44/Elsie du Toit Drive intersection:

This intersection is a left-in only from the R44 – see the lane layout below.

***Diagram 4** : Existing R44/Elsie du Toit Drive intersection lane layout*

R44/Van Reede Road intersection:

This intersection is currently signalised, with dedicated right-turn lanes on all approaches, and left-turn lanes on all but the western Van Reede Road-approach. The southern R44-approach consists of two dedicated right-turn lanes, whilst the eastern Van Reede Road-approach consists of a continuous left-slip lane. See the lane layout below.

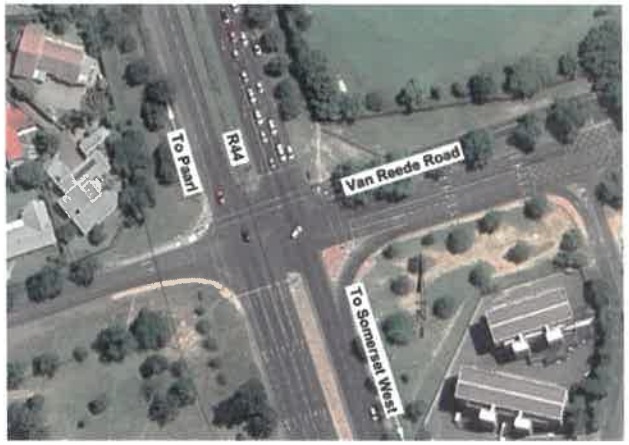


***Diagram 5** : R44/Van Reede Road intersection lane layout*

Trumali Road/Schuilplaats Road intersection:

This intersection is a roundabout with single circulating lane. See the lane layout below.

Diagram 6 : *Existing Trumali Road/Schuilplaats Road roundabout layout*

Trumali Road/Ben du Toit Drive intersection:

This intersection is currently a T-intersection, with stop-control on the Ben du Toit Drive-approach, and free-flow conditions along Trumali Road. See the lane layout below. It is expected that changes to this intersection would become required with the further extension of Trumali Road/possible implementation of the 'Eastern Link Road'.

Diagram 7 : *Existing Trumali Road/Ben du Toit Drive intersection*

3.5.1 Analysis of Available and Estimated Peak Hour Volumes (excluding proposed development)

Link volumes:

The peak hour link volumes along Trumali Road were in the order of 530 to 660 vehicles (total two-way traffic) between Schuilplaats Road and the R44 during the available 2022 peak hours. During the estimated 2029 peak hours, based on the annual growth rates discussed above, these can be expected to increase to between 572 and 707 vehicles. The said link volumes are still within the capacity of the existing Trumali Road.

R44/Blaauwklippen Road intersection:

According to the Sidra analyses of the intersection in isolation, acceptable service levels D and above are indicated on all movements during the available AM and PM peak hours.

It should, however, be noted that on-site during peak periods, congestion is currently experienced at this intersection due to the high volumes of through traffic along the R44, the too short length of the existing dedicated right-turn lane along the R44 (from Somerset West), and the close proximity of the Spar- and Engen-accesses along Blaauwklippen Road to the R44. As mitigating measures, road widening was previously proposed along the Blaauwklippen Road-approach to accommodate a second dedicated right-turn lane, and to define two exit lanes to provide space for vehicles traveling along Blaauwklippen Road to pass right-turning vehicles waiting to turn towards the Spar-access. The proposal also included the extension of the dedicated right-turn lane along the R44 (from Somerset West) up to 75 metres in length (excluding taper). These upgrades are indicated in ***Diagram 8*** below.

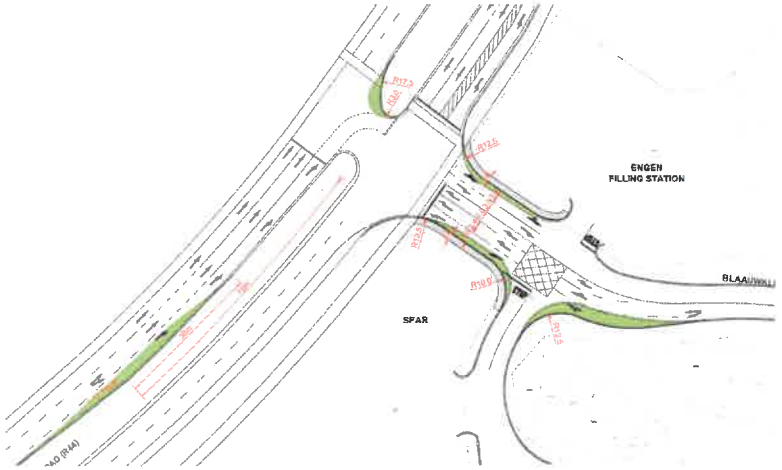


Diagram 8 : *Previously proposed upgrades to R44/Blaauwklippen Road intersection to improve traffic flow*

During the estimated 2029 peak hours (prior to development of the subject property), the abovementioned conditions can be expected to remain during the AM peak hour, however, during the PM peak hour, unacceptable service levels can be expected along the R44 southbound due to the high volumes of peak hour traffic.

As part of the R44 Safety Project of Western Cape Government (WCG), a report was compiled by *ITS* in August 2015*: "Operational Analysis of the Upgrade Alternatives proposed for the R44 between Somerset West and Stellenbosch"*, which recommended that more through lanes should be considered at the signalised intersections through Stellenbosch to add capacity for a design life of 10 to 15 years, whereafter a by-pass should be considered. Addressing the accommodation of the through traffic along the R44 is thus a future network matter to be addressed by the Road Authorities.

It can thus be concluded that to accommodate the background traffic at the R44/Blaauwklippen Road intersection, the upgrades previously proposed at the intersection to improve traffic flow, be considered for implementation. It is further suggested that the Road Authorities consider the additional through lanes at the signalised intersection as per the recommendation of the 'R44 operational analysis report' (as part of the WCG Safety Project).

R44/Paradyskloof Road intersection:

According to the Sidra analyses of this intersection, acceptable service levels are experienced on all movements during the available AM and PM peak hours, expect the right-turn movements to/from the Golf Course. These are as result of the high volumes through traffic along the R44, however, the volumes traveling to/from the Golf Course during the peak hours of the adjacent road are relatively low, and the said vehicles are assisted by way of the dedicated right-turn- and acceleration lanes. No further upgrades to this intersection are therefore considered necessary to accommodate the background traffic.

It can thus be concluded that to accommodate the background traffic at the R44/Paradyskloof Road intersection, no further upgrades are considered necessary.

R44/Trumali Road intersection:

According to the Sidra analyses of the intersection in isolation, acceptable service levels D and above are experienced on all movements during the available AM and PM peak hours and can be expected to continue as such during the estimated 2029 peak hours (prior to development of the subject property).

It can thus be concluded that to accommodate the background traffic at the R44/Trumali Road intersection, no further upgrades are considered necessary.

R44/Elsie du Toit Drive intersection:

According to the Sidra analyses of this intersection, acceptable service levels are experienced on all movements during the available AM and PM peak hours and can be expected to continue as such during the estimated 2029 peak hours (prior to development of the subject property).

It can thus be concluded that to accommodate the background traffic at the R44/Elsie du Toit Drive intersection, no upgrades are considered necessary.

R44/Van Reede Road intersection:

According to the Sidra analyses of the intersection in isolation, service levels D and above are indicated on all movements during the available AM and PM peak hours and can be expected to continue as such during the estimated 2029 peak hours (prior to development of the subject property).

It should, however, be noted that the acceleration/merging lane (along the R44) of the existing continuous left-slip lane from Van Reede Road is substandard. It would thus be suggested that the said acceleration lane be extended up to the length required to accommodate the merging of the left-turn traffic from Van Reede Road to the R44 during peak hours, and that along with the said upgrade, the painted guidelines for the two northbound right turning lanes into Van Reede Road be corrected accordingly. To further increase capacity on the side street, additional turning lanes could be considered along the western Van Reede Road-approach (resulting in the approach consisting of dedicated left-, through- and right-turn lanes).

As mentioned above, as part of the R44 Safety Project of Western Cape Government (WCG), a report was compiled by *ITS* in August 2015: *"Operational Analysis of the Upgrade Alternatives proposed for the R44 between Somerset West and Stellenbosch"*, which recommended that more through lanes should be considered at the signalised intersections through Stellenbosch to add capacity for a design life of 10 to 15 years, whereafter a by-pass should be considered. Addressing the accommodation of the through traffic along the R44 is thus a future network matter to be addressed by the Road Authorities.

It can thus be concluded that to accommodate the background traffic at the R44/Van Reede Road intersection, the existing substandard acceleration lane along the R44 be extended and additional turning lanes be considered along the western Van Reede Road-approach. It is further suggested that the Road Authorities consider the additional through lanes at the signalised intersection as per the recommendation of the 'R44 operational analysis report' (as part of the WCG Safety Project).

Trumali Road/Schuilplaats Road intersection:

According to the Sidra analyses of this intersection, acceptable service levels are experienced on all movements during the available AM and PM peak hours and can be expected to continue as such during the estimated 2029 peak hours (prior to development of the subject property).

It can thus be concluded that to accommodate the background traffic at the Trumali Road/Schuilplaats Road intersection, no further upgrades are considered necessary.

Trumali Road/Ben du Toit Drive intersection:

According to the Sidra analyses of this intersection, acceptable service levels are experienced on all movements during the available AM and PM peak hours and can be expected to continue as such during the estimated 2029 peak hours (prior to development of the subject property).

It can thus be concluded that to accommodate the background traffic at the Trumali Road/Ben du Toit Drive intersection, no upgrades are considered necessary.

3.5.2 Analysis of Expected Peak Hour Volumes (including proposed development)

Link volumes:

With the addition of the proposed development traffic, the link volumes along the relevant section of Trumali Road as previously referred to, can be expected to increase to about 750 to 890 vehicles for the preferred alternative, and 820 to 960 for the alternative option, which are all still within the capacity of the existing Trumali Road. The widening of a section of the road will be required between Ben du Toit Drive and the proposed development access.

Intersections:

With the addition of the proposed development: preferred alternative traffic, the abovementioned service levels can be expected to remain during the AM and PM peak hours (with intersections upgraded to accommodate the background traffic as discussed above), with marginal increase in queuing/delays at the intersections.

With the addition of the alternative option-traffic, the majority of intersections can be expected to also remain operating as above, except that R44/Trumali Road- and R44/Van Reede Road intersections. At the R44/Trumali Road intersection, the increased right-turn movement along the Trumali Road-approach can be expected to change from service level D to E, whilst at the R44/Van Reede Road intersection, the right-turn movement along the southern R44-approach and the opposing through movement (southbound) along the R44 changes to unacceptable service levels. The alternative option would thus apply further pressure to address the increase in capacity for the through traffic along the R44.

As mentioned above, a recommendation of a report compiled by *ITS* in 2015 recommended that additional through lanes be considered at the signalised intersections along the R44 through Stellenbosch, and that thereafter, a by-pass should be considered to address the through traffic along the R44 through Stellenbosch, which is considered a future network matter to be addressed by the Road Authorities.

It can thus be concluded that no external road/intersection upgrades are considered necessary as result of the proposed development traffic, but that the Road Authorities consider the additional through lanes at the signalised intersections as per the recommendation of the 'R44 operational analysis report' (as part of the WCG Safety Project).

4. GEOMETRY AND PARKING

Access to the proposed development would remain via Trumali Road. The said road is currently accessed via the R44, the Elsie du Toit/Ben du Toit Drive-link and Schuilplaats Road. In future, an additional link via the Wildebosch Road extension (from Paradyskloof) would be possible, and eventually via the 'Eastern Link Road' towards the Stellenbosch CBD and the R44/Techno Park intersection, if implemented. The classification of these roads is indicated below (based on the Stellenbosch Municipality *Road Master Plan (2022)*).

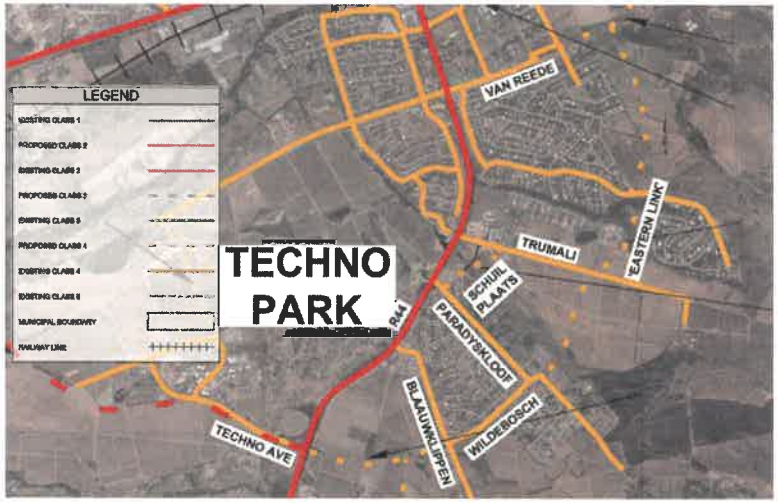


***Diagram 9** : Stellenbosch Road Network Plan – extract (overlay on aerial photo with added notes)*

During 2023, consultants were appointed by Stellenbosch Municipality to further investigate the design and implementation of the Wildebosch Road extension in a northwestern direction (also referred to as the 'Eastern Link Road'). As per the analyses above, the said link road to the Stellenbosch CBD is not yet considered a requirement for the development of the subject property as currently proposed.

Trumali Road is currently a two-lane road (one lane per direction) between the R44 and Ben du Toit Drive, from where it narrows east thereof. With the development of the subject property, the existing width of Trumali Road between the R44 and Ben du Toit Drive will have to be continued up to and including the development access(es).

The proposed development access to Trumali Road is indicated on the attached plan with a 25 metre wide road reserve to accommodate two lanes inbound and two lanes outbound. Internal streets consist of 16 metre, 13 metre, 12 metre and 10 metre road reserves. The internal streets all terminate in culs-de-sac adjacent to the private open space/'green belts' within the proposed residential development. These are applicable to both development proposals. Detail on the internal street widths and turning spaces will be addressed during further design/application stages.

Similar to the above, detail with regard to refuse removal and parking requirements/layouts will be addressed during further design/application stages.

It is expected that access to the commercial pocket will be via Ben du Toit Drive as available spacing along Trumali Road is limited for the extent of the property boundary abutting the said road. Detail

on the position and layout of the commercial access will be determined during further design/application stages.

5. PUBLIC- AND NON-MOTORISED TRANSPORT

Sidewalks currently exist along both sides of Trumali Road from the R44 (where it ties in with the facilities along the R44) up to the Schuilplaats Road-roundabout (where the sidewalk along the southern side of Trumali Road ties in with the sidewalk along the west of Schuilplaats Road). From the said intersection, a sidewalk currently exists along the northern side of Trumali Road up to- and along Ben du Toit Drive. It would be suggested that this sidewalk along the northern side of Trumali Road be extended up to the proposed development-access.

With the implementation of the Wildebosch Road extension, the available information on the project shows two alternative cross-sections for Trumali Road, one including sidewalks along both sides of the road plus cycle lanes within the roadway along both sides, and the other shows the said facilities along one side of the road whilst the other side is shown to include a shared NMT facility separated from the roadway.

Detail on internal accommodation of pedestrians/bicycles are to be addressed during further design/application stages.

Public transport embayments exist along the R44 at the Trumali Road intersection. It is expected that the accommodation of public transport along Trumali Road would be addressed along with the overall Eastern Link Road planning. The 'Wildebosch Road extension project' information available does not currently include detail on public transport accommodation.

At this stage, accommodation for public transport has not yet been included in the development proposal, however, this is to be further explored/addressed during further design/application stages.

6. CONCLUSIONS

The following can be concluded from the report:

1) That this TIA accompanies the environmental application for the development of remainder Farm Brandwacht no. 1049, situated between Paradyskloof and Brandwacht (Brandwacht-Aan-Rivier and Brandwacht 'Proper'), Stellenbosch;
2) That the proposed development is residential in nature (preferred alternative: 155 erven; alternative option: 228 erven), with an accompanying commercial pocket (± 0,27 ha);
3) That access to the subject property is via Trumali Road and Ben du Toit Drive;
4) That the proposed development would have the potential to generate the following peak hour traffic:
   a) Preferred alternative: 203 peak hour trips (80 in, 123 out during the AM peak hour and 119 in, 84 out during the PM peak hour); or
   b) Alternative option: 276 peak hour trips (98 in, 178 out during the AM peak hour and 170 in, 106 out during the PM peak hour), without allowing for trip reduction factors;
5) That to accommodate the background traffic:
   a) Mitigating upgrades to the R44/Blaauwklippen Road intersection are considered necessary in the form of road widening along Blaauwklippen Road to allow for additional turning lanes as well as the extension of the existing right-turn lane along the R44; and
   b) At the R44/Van Reede Road intersection the currently substandard acceleration/merging lane along the R44 be extended, and it be further considered providing additional turning lanes on the western Van Reede Road-approach to increase capacity;
   c) The Road Authorities consider the additional through lanes recommended by the 'R44 operational analysis report' at the signalised intersections along the R44 through Stellenbosch;
6) That no additional external road upgrades, over and above those considered necessary to accommodate the background traffic, are considered necessary to accommodate the proposed development traffic, but that with the alternative option, further pressure is applied to address the increase in capacity for the through traffic along the R44; and
7) That detail regarding the internal layout, refuse removal, parking, public- and non-motorised transport will be addressed during further design/application stages.

7. RECOMMENDATIONS

From the above, it is recommended that the proposed development on Remainder Farm Brandwacht no 1049, Stellenbosch, be supported from a traffic point of view.

To address background issues, mitigating upgrades are suggested at the R44/Blaauwklippen Road- and R44/Van Reede Road intersections. It is further suggested that the Road Authorities consider the additional through lanes at the signalised intersections as per the recommendation of the 'R44 operational analysis report' (as part of the WCG Safety Project).

For the proposed development, the widening of Trumali Road east of Ben du Toit Drive, up to the development-access, will be required (continuation of existing cross-section between R44 and Ben du Toit Drive).

We trust that the Traffic Impact Assessment will be to your satisfaction and will gladly provide any additional information required on request.

Yours faithfully,

Compiled by: Yolandi Obermeyer (B Eng)

Piet van Blerk Pr Eng

UDS AFRICA

Attachments:

Locality Plan
Proposed Subdivision (Plan no. 1, 28/08/2024) (*tv3 Architects, Town Planners & Urban Designers*)
Concept SDP (Plan no. 2, 29/08/2022) (*tv3 Architects, Town Planners & Urban Designers*)

Figure 1	Available AM/PM Peak Hour Traffic Volumes
Figure 2	Estimated 2029 AM/PM Peak Hour Traffic Volumes
Figure 3A	Distribution of Peak Hour Traffic : preferred alternative
Figure 3B	Distribution of Peak Hour Traffic : alternative option
Figure 4A	Expected 2029 AM/PM Peak Hour Traffic Volumes : preferred alternative
Figure 4B	Expected 2029 AM/PM Peak Hour Traffic Volumes : alternative option

udp africa

Locality Plan

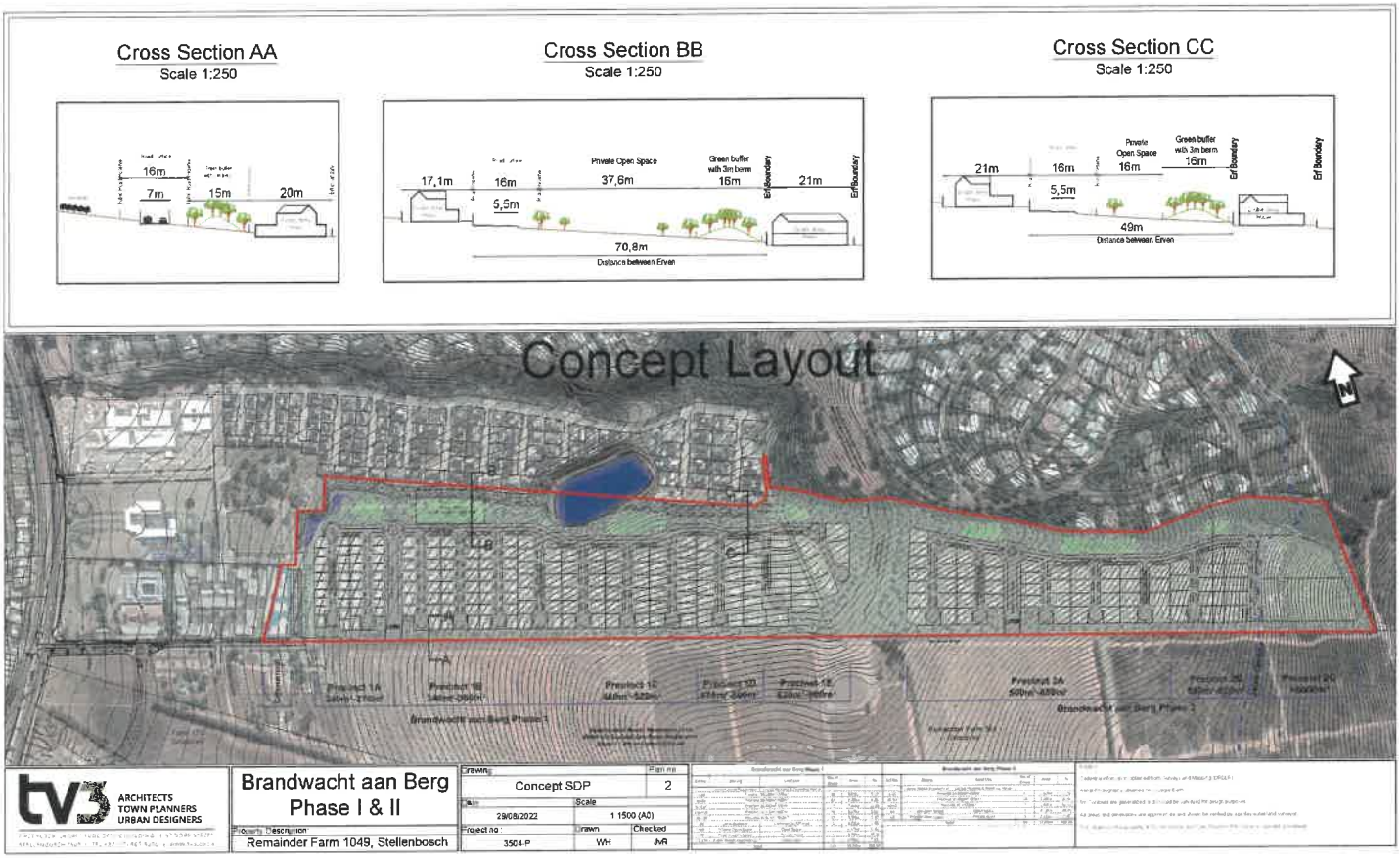
Brandwacht aan Berg Phase I					
Erf No.	Zoning	Land Use	No. of Erven	Area	%
1 - 146	Conventional Residential	Group Housing & Dwelling House	146	[illegible]	28.13
156	Local Business	Commercial [illegible]	1	[illegible]	1.48
157	Private Open Space	Open Space	1	[illegible]	41.22
158	Private Open Space	Private Road	1	[illegible]	[illegible]
160	Public Roads and Parking	Public Road	1	[illegible]	[illegible]
Total			[illegible]	[illegible]	[illegible]

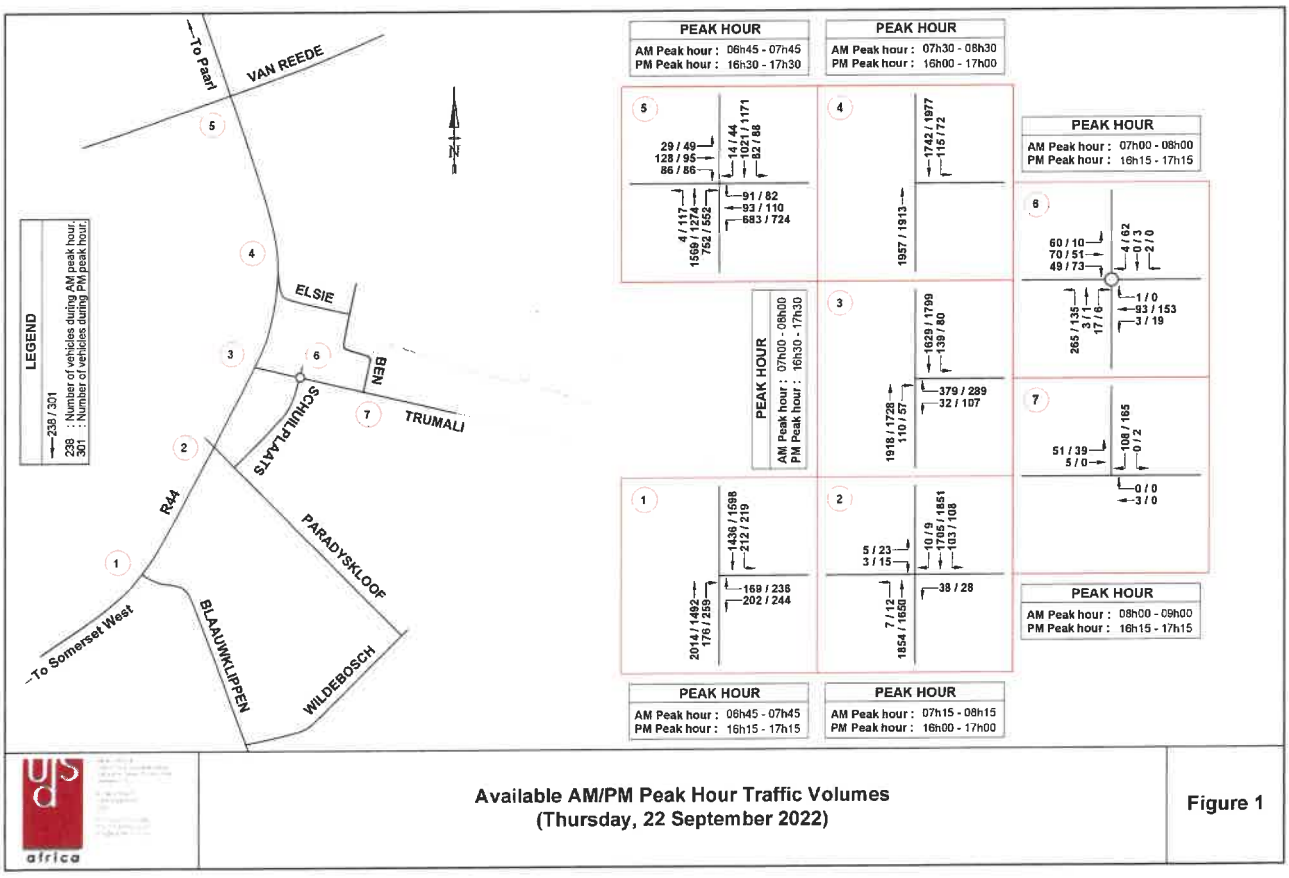
Brandwacht aan Berg Phase II					
Erf No.	Zoning	Land Use	No. of Erven	Area	%
147 - 155	Conventional Residential	Dwelling House	9	[illegible]	[illegible]
159	Private Open Space	Private Road	1	[illegible]	[illegible]
Total			[illegible]	[illegible]	[illegible]

tv3 ARCHITECTS TOWN PLANNERS URBAN DESIGNERS

Brandwacht aan Berg Phase I & II	Drawing: Proposed Subdivision		Plan no: 1
	Date: 28/08/2024	Scale: 1:2000 (A1)	
Property Description: Remainder Farm 1049, Stellenbosch	Project no.: 3504-P	Drawn: WH	Checked: JvR

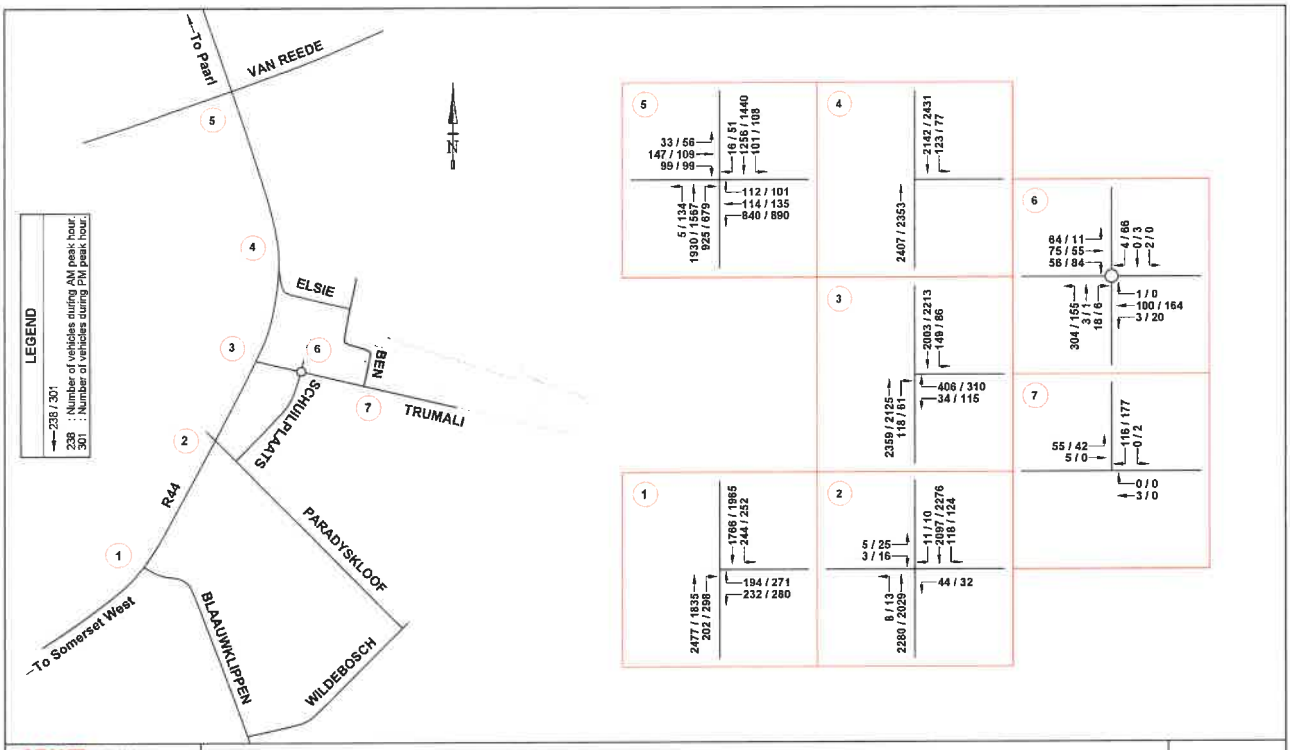
Notation:
Cadastral information obtained from Surveys and Mapping (DRDLR).
Aerial Photography obtained on Google Earth.
1m Contours are generalized and should be surveyed for design purposes
All areas and dimensions are approximate and should be verified by a professional land surveyor.
This drawing is the property of TV3 Architects and Town Planners (Pty) Ltd and copyright is reserved.





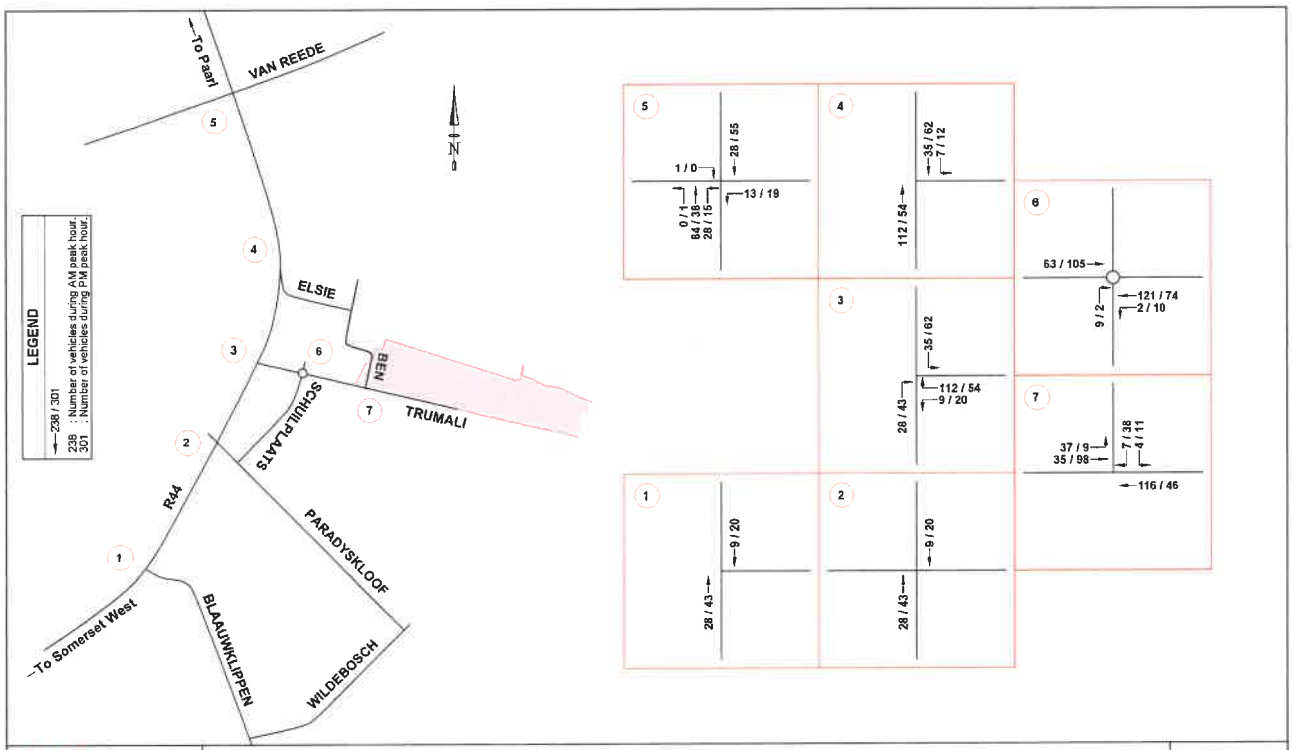
Available AM/PM Peak Hour Traffic Volumes
(Thursday, 22 September 2022)

Figure 1



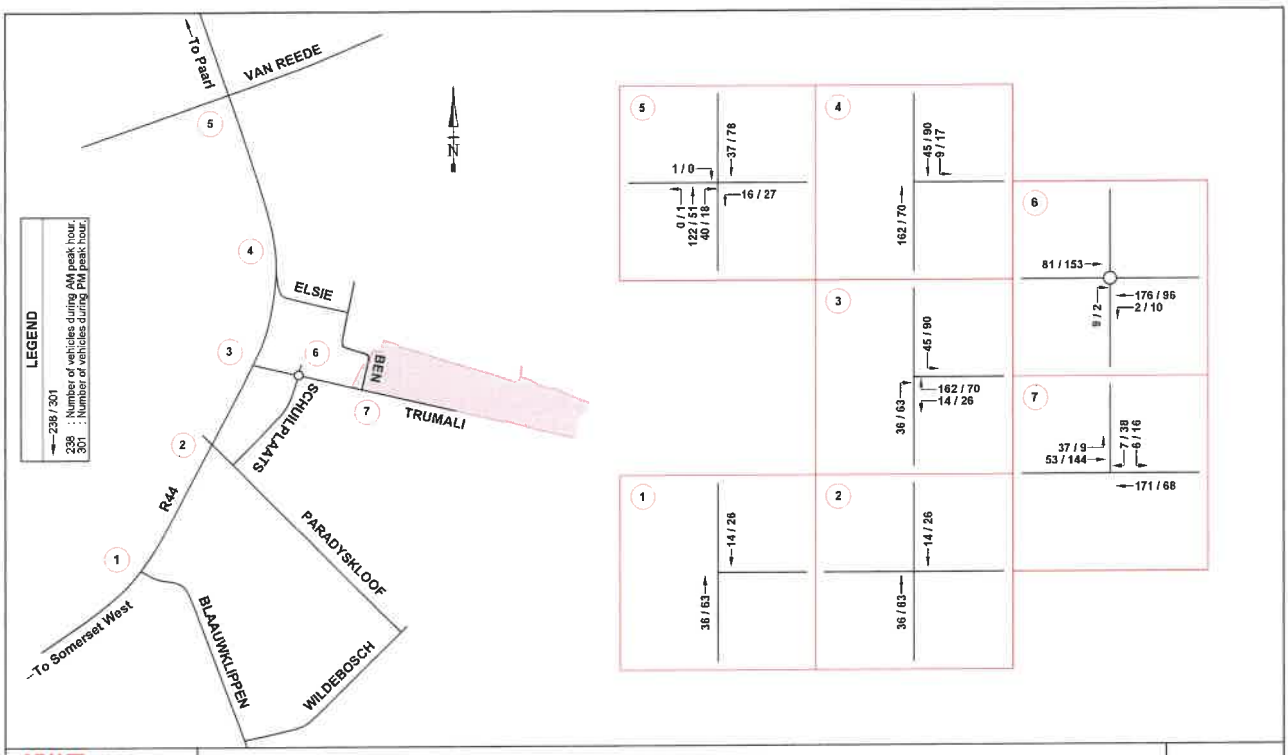
Estimated 2029 AM/PM Peak Hour Traffic Volumes
('background traffic', including annual traffic growth)

Figure 2



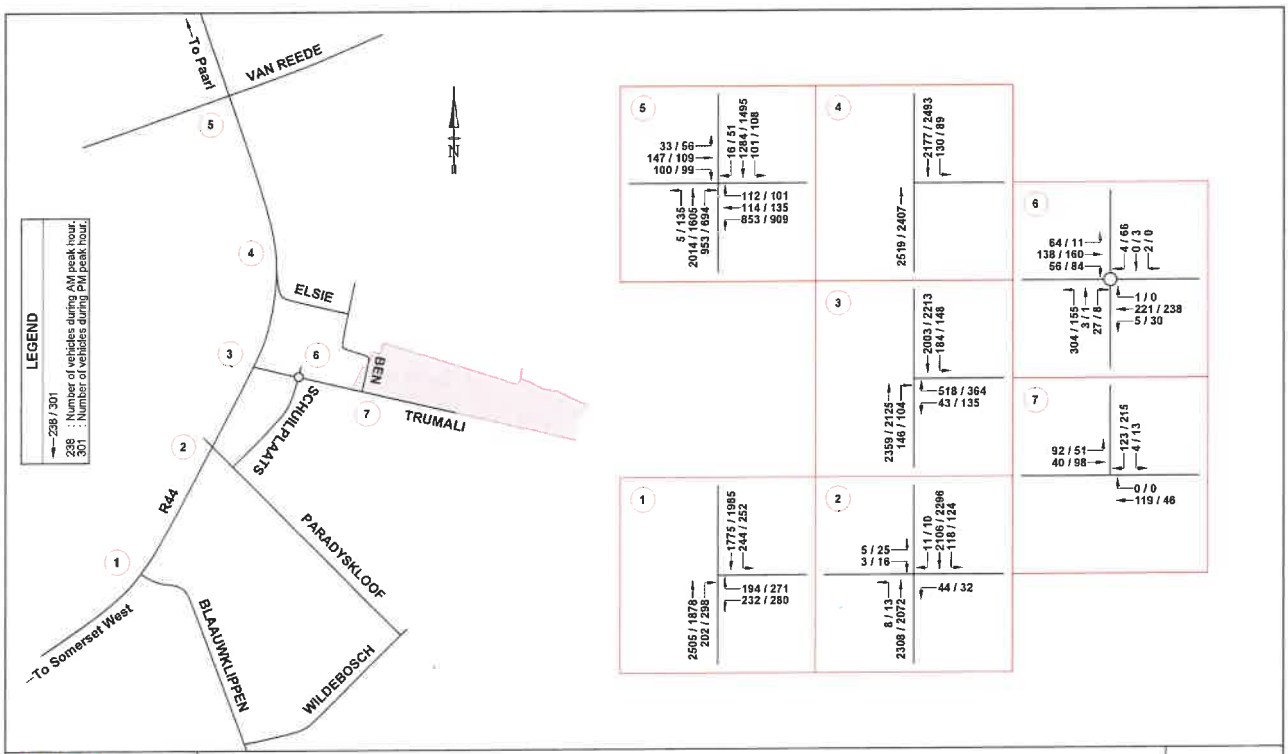
Distribution of Peak Hour Traffic Potentially Generated by Proposed Development
(preferred alternative)

Figure 3A



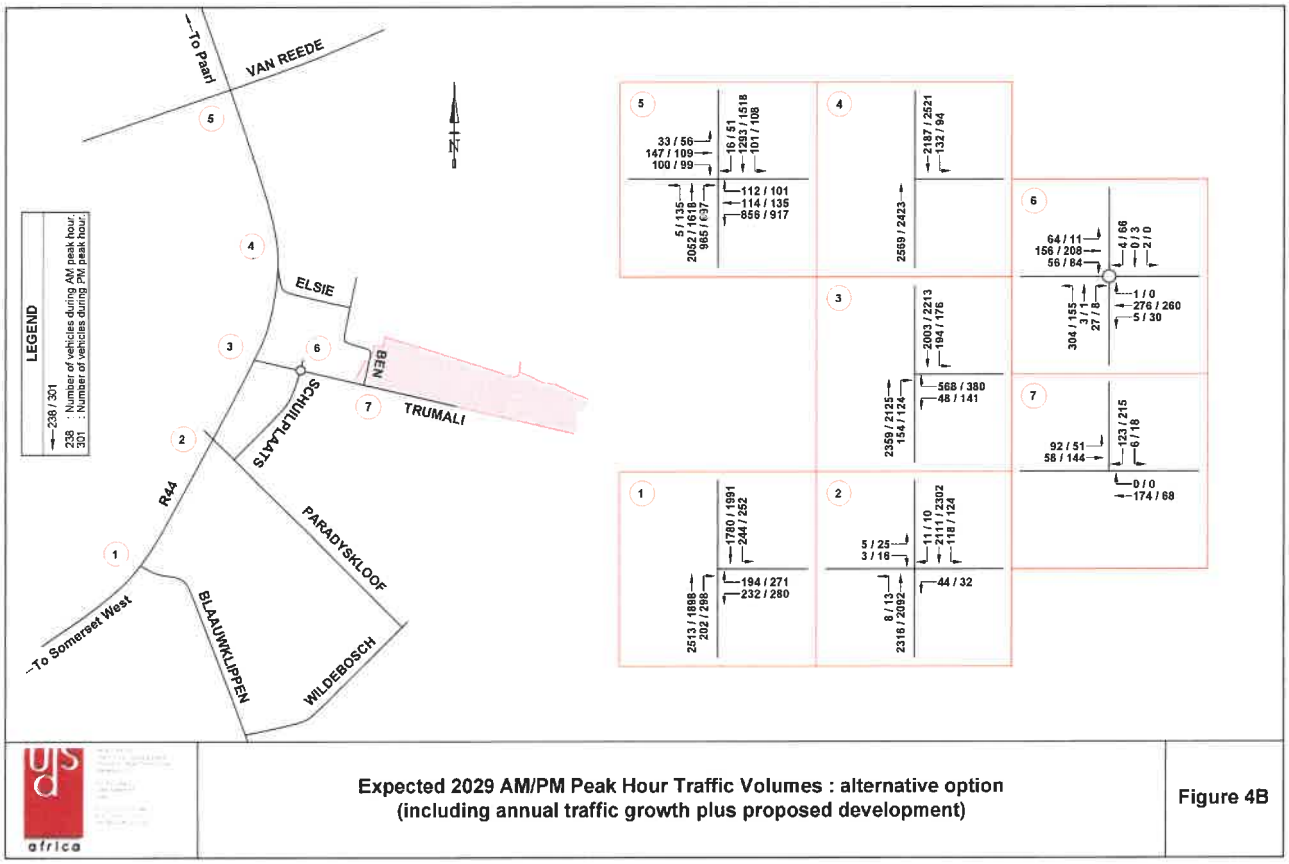
Distribution of Peak Hour Traffic Potentially Generated by Proposed Development
(alternative option)

Figure 3B



Expected 2029 AM/PM Peak Hour Traffic Volumes : preferred alternative
(including annual traffic growth plus proposed development)

Figure 4A



Expected 2029 AM/PM Peak Hour Traffic Volumes : alternative option
(including annual traffic growth plus proposed development)

Figure 4B

SECTION C

CIVIL SERVICES REPORT

BSi CONSULT | CIVIL & STRUCTURAL ENGINEERS

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12 Alexander Street, Stellenbosch

Our Reference: 1377 / A3 Rev.1
19 December 2024

PROPOSED RESIDENTIAL DEVELOPMENT ON REMAINDER OF FARM BRANDWACHT No. 1049, STELLENBOSCH

REPORT ON PROVISION OF CIVIL ENGINEERING SERVICES

1. INTRODUCTION

The proposed residential development on Remainder of Farm Brandwacht No. 1049, Stellenbosch comprises ±228 residential erven of varying sizes in a private estate, as well as ±2000 m² of office space. This report summarises the current situation with regard to the provision of the basic civil engineering services, i.e. water supply, sewerage, stormwater drainage and solid waste removal to the proposed development.

The development proposals are indicated on the plans by TV3 Planners & Architects in Annexure B. The concept civil engineering services for the development proposals are as indicated on Drawings 1377/01A and 1377/02 in Annexure C.

2. SITE LOCATION AND DESCRIPTION

The property is located in the Brandwacht area of Stellenbosch.

The property is bordered to the north by Brandwacht-aan-Rivier residential estate, the Upper Brandwacht suburb and the Brandwacht Spruit, to the west by Brandwacht Office Park and the Brandwacht Manor House property, to the south by Trumali Road, and to the east by the foothills of Stellenbosch Mountain.

The site has a moderate to steep fall of approximately 1 in 10 in a north westerly direction.

The property houses an irrigation dam that will be retained. The farming structures on the property will be demolished.

3. WATER SUPPLY

3.1 Demand :

The demand for potable water for the proposed development is calculated as follows:

Group Residential	228 units @ 0,60 kl/unit/day	=	136,8 kl/day
Commercial – Offices	2000 m² GLA @ 0,45 kl/day/100m² GLA	=	9,0 kl/day
	Total	=	145,8 kl/day

The development is classified as a "low-risk" fire protection area, with a required fire flow of 15 ℓ/s at 10m minimum residual head.

3.2 GLS Water Supply Analysis :

The development proposal with higher density was evaluated by GLS Consulting, the Municipality's master planning consultant, against the Municipality's 2024 Water Master Plan. GLS confirmed that the subject property has been taken into consideration in the master planning by way of future development areas S65 and S66.

3.3 Distribution Zones / Reservoir Capacity :

GLS indicated that the development will be serviced with potable water from two pressure zones due to the substantial level difference across the site. The lower portion of the development will be serviced from the Municipality's Paradyskloof 2 reservoir system at TWL (Top Water Level) = 222.5m. The higher portion of the development will be serviced from the Municipality's Brandwacht reservoir system at TWL = 280m. The existing Paradyskloof 2 and Brandwacht reservoirs have sufficient capacity to provide 48 hours emergency storage to the supply area.

The bulk supply from the Paradyskloof 2 reservoir to the Brandwacht reservoir has sufficient spare capacity to accommodate the higher lying erven of the proposed development. There is, however, insufficient capacity in the existing 200 mm Ø bulk supply pipeline between the Paradyskloof Water Treatment Plant (WTP) and the Paradyskloof 2 reservoir to accommodate the proposed development. The bulk upgrade proposed by GLS to augment bulk water supply to the Paradyskloof 2 reservoir is as follows:

Item 2 : 135 m x 450 mm Ø bulk supply pipeline

3.4 Supply :

Supply of potable water to the development from the existing Paradyskloof 2 and Brandwacht reservoirs will require implementation of the following supply items:

Item 1 : 325 m x 200 mm Ø supply pipeline
SSW2.3 : 290 m x 160 mm Ø supply pipeline
SSW22.1 : 180 m x 160 mm Ø supply pipeline

The routes of the proposed pipelines are schematically shown on GLS "Figure 1" included as Annexure D.

4. SEWERAGE

4.1 Run-off :

Sewage run-off from the proposed development is calculated as follows:

Group Residential	228 units @ 0,45 kl/unit/day	=	102,6 kl/day
Commercial – Offices	2000 m² GLA @ 0,40 kl/day/100m² GLA	=	8,0 kl/day
	Total	=	110,6 kl/day

4.2 GLS Sewerage Analysis :

Similarly as for water supply, the subject property has been taken into consideration in the 2024 Sewer Master Plan by way of future development areas S65 and S66.

4.3 Drainage :

The master planning indicated that the proposed development should be accommodated in the existing Adam Tas drainage area. The proposed connection to the existing sewer system is to the existing 150 mm Ø gravity pipeline along Trumali Road, or alternatively to the 150 mm Ø gravity pipeline along Ben du Toit Avenue located to the west of the proposed development.

The routes of the proposed sewer connection pipelines are schematically shown on GLS "Figure 2" included as Annexure E.

4.4 Treatment :

Sewage from the development will be treated at the Municipality's Waste Water Treatment Works in Devon Valley. The treatment capacity of the WWTW has recently been upgraded, and sufficient spare capacity exist to accommodate this development.

5. STORMWATER DRAINAGE

5.1 General

The general stormwater drainage direction of the property is to the north and northwest as indicated on the concept engineering services plan. The Brandwacht Spruit is the natural drainage system of the area, and all stormwater run-off needs to reach the Brandwacht Spruit via existing pipe of overland draining routes. One of these draining routes is across Farm 1049/3 (Manor House property) and careful consideration will be given during the detail planning for protection of the said property.

5.2 Peak Run-off

The 50-year stormwater run-off from the undeveloped site is estimated at 0.89 m³/s. The 50-year stormwater run-off from the fully developed site is calculated at 4.16 m³/s, thus an increase of 3.27m³/s from the pre-development run-off.

5.3 Peak Stormwater Attenuation

Stormwater run-off from the development will be drained through attenuation ponds on route towards the Brandwacht Spruit.

Our calculations indicate that a total storage volume of 5 480 m³ will be required to attenuate the post-development 50-year run-off to be in line with the pre-development run-off from the site. We propose that the stormwater attenuation be achieved by way of three separate attenuation facilities, one of them the existing dam. The proposed locations of the attenuation facilities and their storage volumes are as indicated on the concept engineering services plan in Annexure C.

6. SOLID WASTE REMOVAL

Solid waste generated by the development is calculated as follows:

Group Residential	228 units @ 0,04 t/unit/week	=	9,1 t/week
Commercial – Offices	2000 m² GLA @ 0,02 t/100m² GLA/week	=	0,4 t/week
	Total	=	9,5 t/week

The Stellenbosch Municipality indicated that they can provide a waste removal service to the development. The Municipality's refuse truck does not enter private estates and a refuse bin storage area needs to be provided at the entrance to the estate. Alternatively, the development will make use of a suitable, private, waste collection company for the removal of solid waste from the development.

7. CONCLUSION

From the above it is concluded that:

The required basic civil engineering services for the proposed development, i.e. potable water, sewerage and solid waste removal can be accommodated by the Stellenbosch Municipality in their existing infrastructure, alternatively in the upgrades according to the master planning.

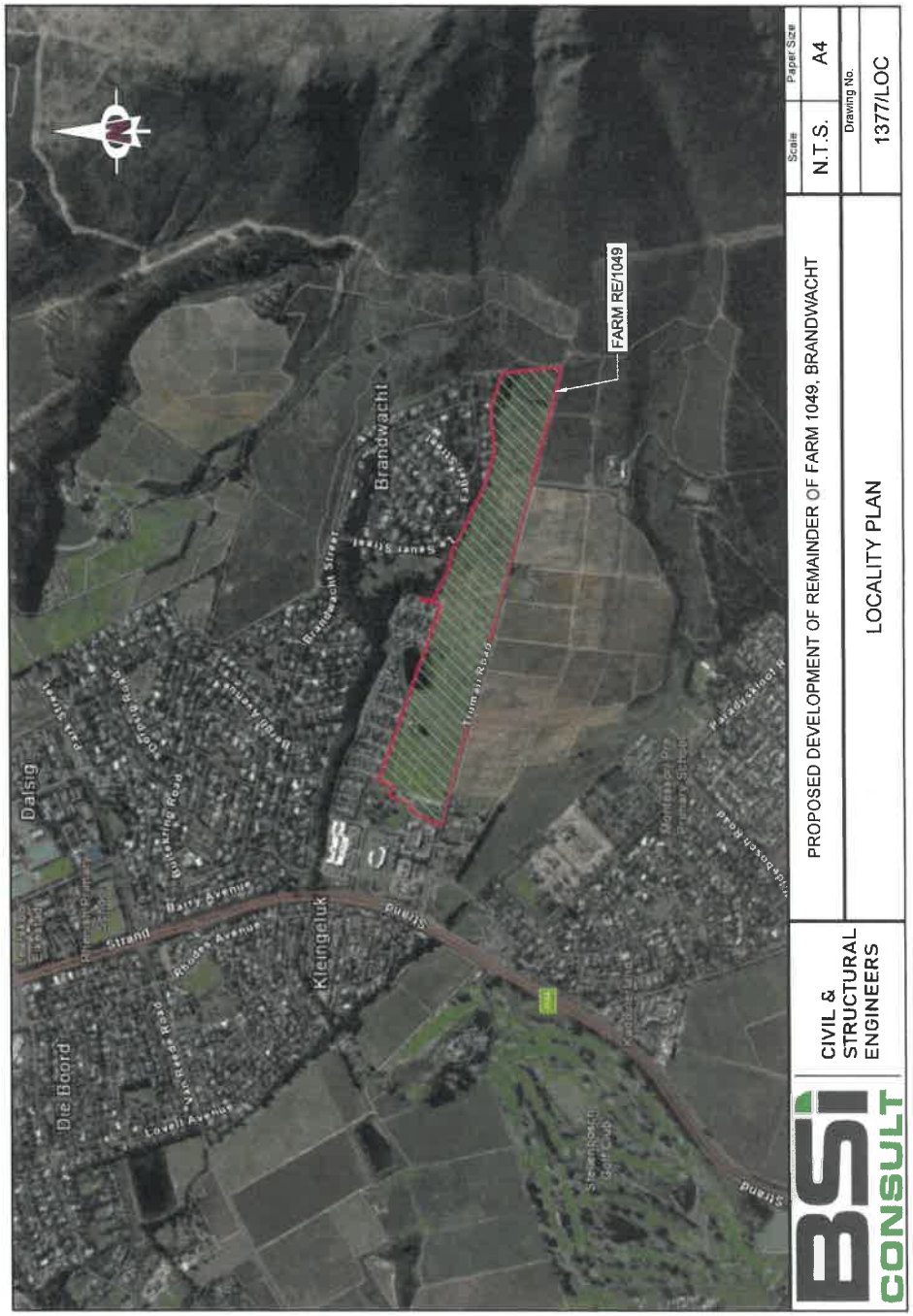
Attenuation of peak stormwater run-off from the developed site will be implemented on site by way of three storage ponds.

On behalf of BSI CONSULT

L J Louw Pr. Eng.

ANNEXURE A

LOCALITY PLAN

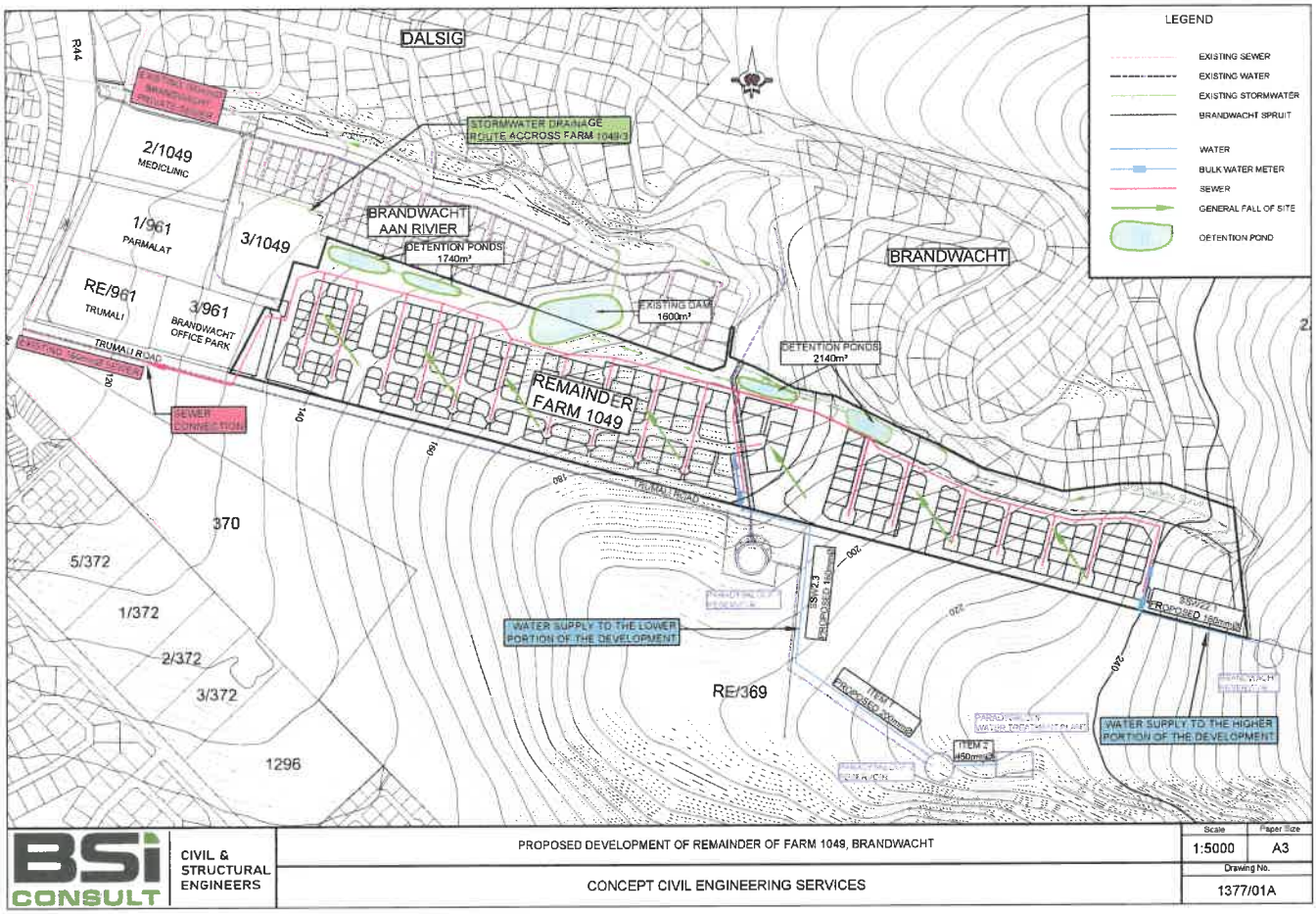


ANNEXURE B

DEVELOPMENT PROPOSALS

ANNEXURE C

CONCEPT CIVIL ENGINEERING SERVICES



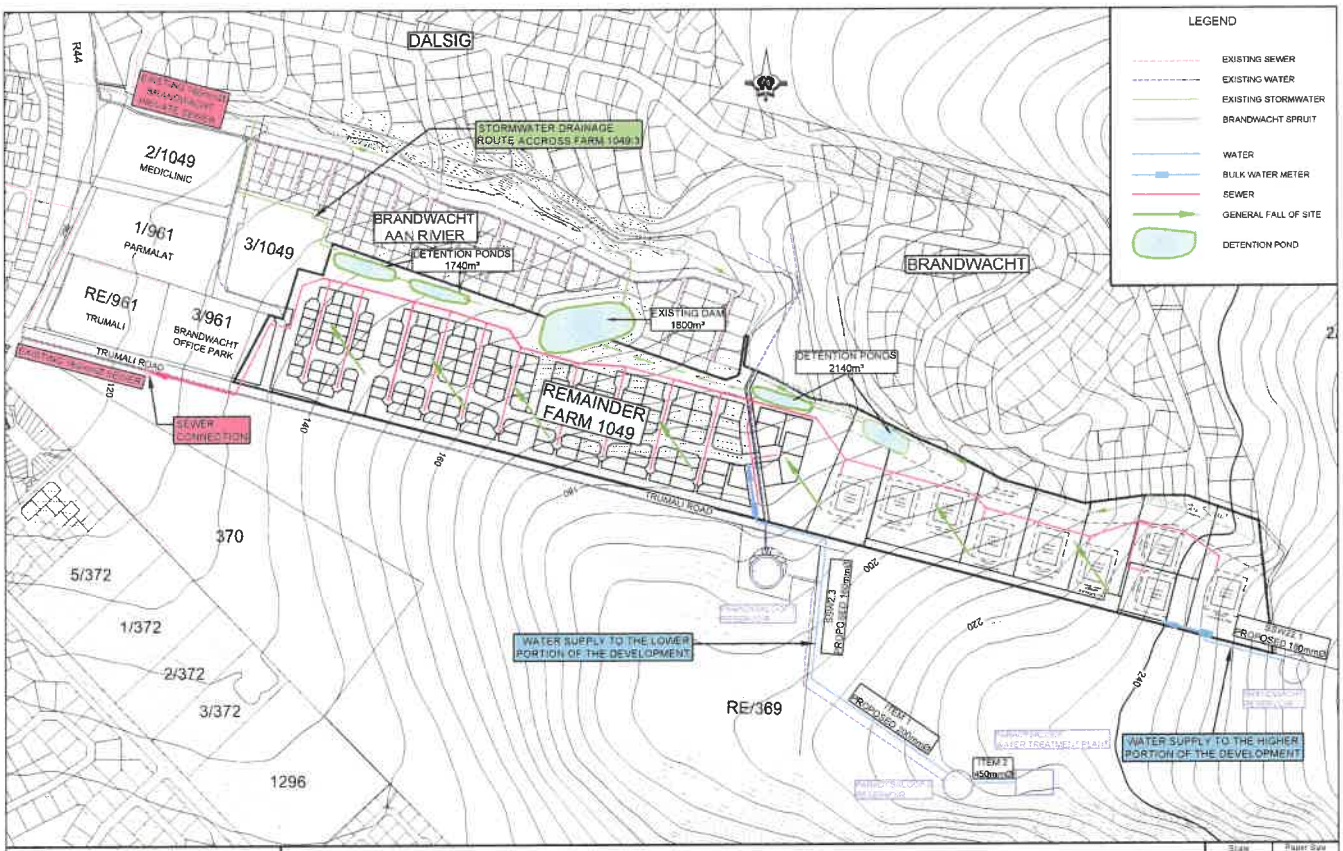
BSi CONSULT — CIVIL & STRUCTURAL ENGINEERS

PROPOSED DEVELOPMENT OF REMAINDER OF FARM 1049, BRANDWACHT

CONCEPT CIVIL ENGINEERING SERVICES

Scale	Paper Size
1:5000	A3

Drawing No. 1377/01A



BSi CONSULT — CIVIL & STRUCTURAL ENGINEERS

PROPOSED DEVELOPMENT OF REMAINDER OF FARM 1049, BRANDWACHT

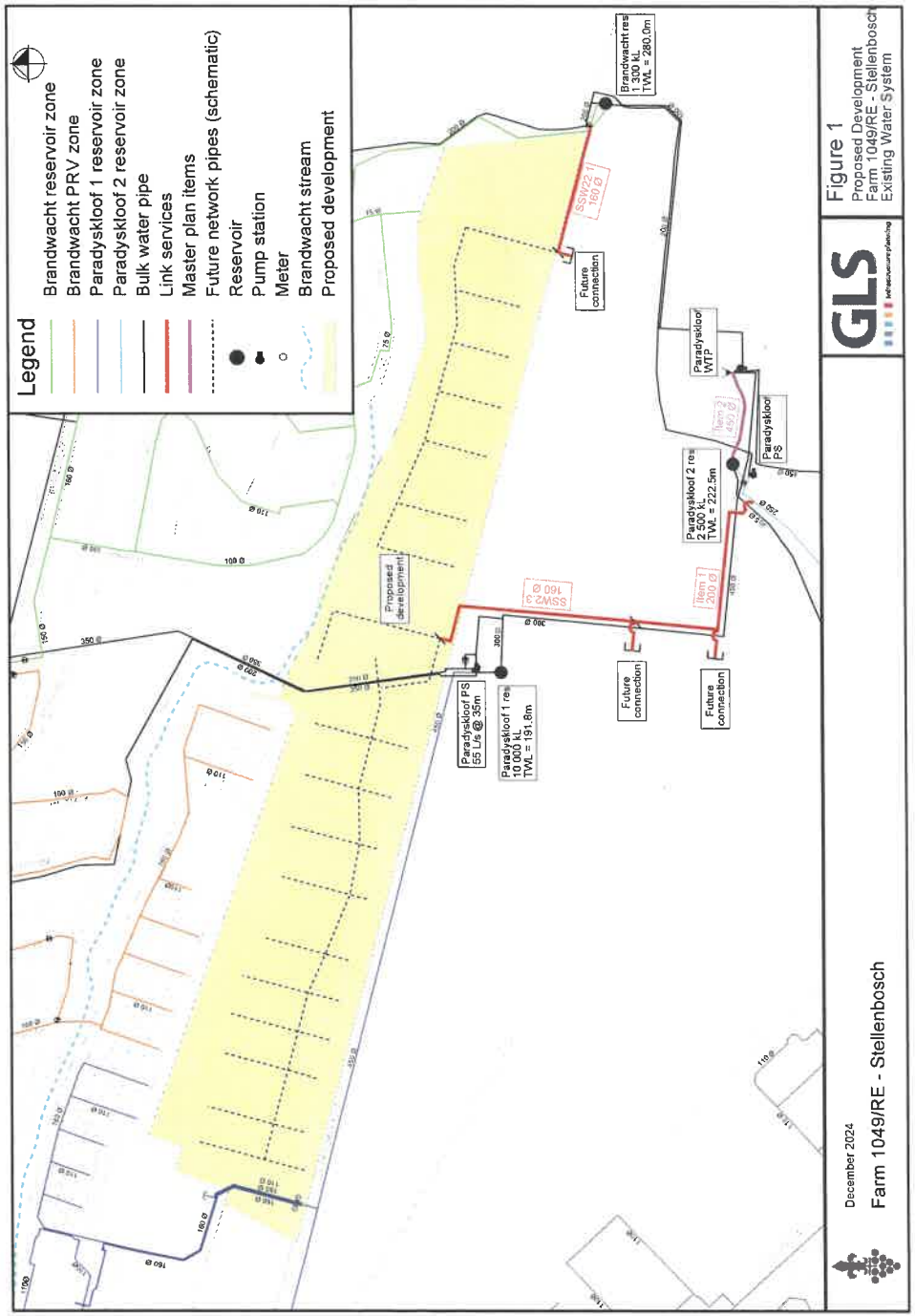
CONCEPT CIVIL ENGINEERING SERVICES

Scale	Paper Size
1:5000	A3

Drawing No. 1377/02

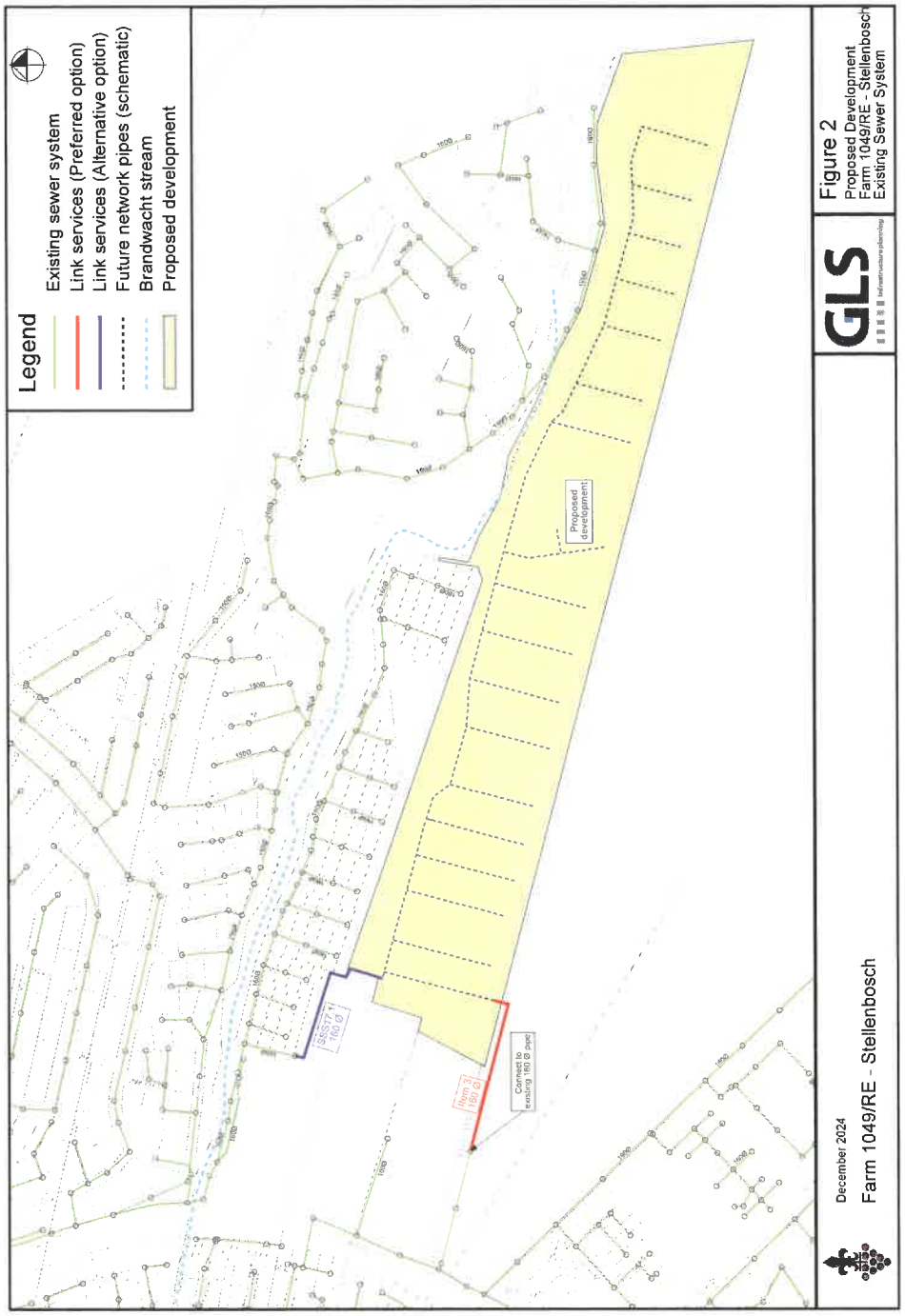
ANNEXURE D

GLS - BULK WATER ANALYSIS (FIGURE 1)



ANNEXURE E

GLS - BULK SEWERAGE ANALYSIS (FIGURE 2)



SECTION D

SOCIO-ECONOMIC IMPACT ASSESSMENT REPORT

MULTI-PURPOSE
BUSINESS SOLUTIONS

Draft Socio-Economic Impact Assessment for the proposed Brandwacht-Aan-Berg Residential Development, Stellenbosch

Draft Consultative Report

prepared by
Dr Jonathan Bloom

for Guillaume Nel Environmental Consultants

November 2024

MULTI-PURPOSE BUSINESS SOLUTIONS CC
1479 Val de Vie Estate, Paarl 7646
Tel (021) 880 0774 ; Fax 086 500 2546; Mobile 083 299 8523 ; Email: jbloom@mpbs.co.za
www.mpbs.co.za

Executive Summary

The proponent, Brandwacht Land Development (Pty) Ltd, proposes a residential development with 155 residential units on Remainder Farm 1049, Stellenbosch. The site is bordered by the existing Brandwacht-Aan-River residential development to the north and the Brandwacht Office Park directly west of the site. The site is currently zoned Agricultural but with limited agricultural production. Three development alternatives are assessed:

1) **No-Go Alternative** – no development, i.e. the *status quo* is maintained
2) **Preferred Alternative 1** – 155 residential units
   - Phase 1: 146 housing units (7.21 ha), Commercial/Offices (0.27 ha), open space (7.6 ha), Private and Public Roads (3.35 ha)
   - Phase 2: 9 residential units (11.20 ha), Private open space (0.54 ha)
3) **Alternative 2** – 228 residential units
   - Phase 1: 167 housing units (7.2 ha), Commercial/Offices (0.27 ha), open space (6.17 ha), Private and Public Roads (4.7ha)
   - Phase 2: 61 residential units (5.13 ha), Private open space (6.69 ha)

Fit with spatial planning

In keeping with the Guidelines for Economic and Social Specialist input into EIA Processes (CSIR, 2005 and Department of Environmental Affairs and Development Planning, 2007), the project should fit with planning frameworks and is desirable from a societal cost-benefit perspective. It is clear from both national and provincial policy, strategies and programmes that the proposed development upholds the current spatial planning and enhances the strategic objectives of the planning context at the national, provincial and local levels. The proposed Brandwacht-Aan-Berg development subscribes to the NDP principles by offering residential, some commercial and employment opportunities in Stellenbosch Town. The proposed development will provide housing opportunities in the Stellenbosch area at the higher end of the market, add revenue and employment in the construction sector during the construction period and further strengthen growth in the local economy.

The project site is farmland adjacent to the existing Brandwacht-Aan-Rivier residential development. The project underpins the principles of the Stellenbosch Economic Development Strategy and subscribes where applicable to the Spatial principles and IDP of the Municipality. The planning documents (IDP and SDF) and associated policies of the Municipality prioritise affordable housing across the municipal area, as well as the need for social inclusion and addressing apartheid spatial patterns by fostering integrated urban forms. The Municipality adopted an Inclusionary Housing Policy in 2023. It is incumbent on the Brandwacht-Aan-Berg developers to be cognisant of the policy principles and options to address the inclusionary housing requirement. The development approval by Stellenbosch Municipality would likely be subject to one of the inclusionary zoning options stipulated in the Policy.

Impact assessment

The question that needs to be addressed in the context of perceptions and concerns raised by I&APs is whether the proposed development is desirable from a societal cost-benefit perspective? Several issues of a social nature are raised and discussed in this report. It was determined that there will be both positive and negative socio-economic consequences and the need thus exists to determine whether mitigation of the negative impacts could be implemented.

To provide a perspective of the net societal benefits and costs associated with the various alternatives for the proposed project, the following table summarises the different socio-economic impacts associated with the proposed development and their respective significance after the implementation of mitigation measures (i.e. the residual impact) as proposed by the relevant specialists. Note that only impacts not rated by other specialists are indicated in the table. For the No-Go Alternative, the *status quo* is maintained with none of the listed impacts.

Nature of the Impact	Rating after mitigation (Residual impact)		
	Alternative 1	Alternative 2	Cumulative
Construction			
Traffic flows along access roads	No Traffic Impact Assessment		
Nuisance factors (dust and noise)	Medium (-)	Medium (-)	Medium (-)
Influx of job-seekers	Low (-)	Low (-)	Medium (-)
Construction workers – local communities	Low (-)	Low (-)	Medium (-)
Increase in local crime	Low (-)	Low (-)	Medium (-)
Economic income and employment opportunities	Medium (+)	Medium (+)	Medium (+)
Operations			
Provision of thigh-end housing opportunities	Medium (+)	Medium (+)	Medium-High (+)
Traffic flows along access roads	No Traffic Impact Assessment		
Sense of place	Medium (-)	Medium (-)	Medium-High (-)
Surrounding property values	Low (+)	Low (+)	Low (-)
New employment opportunities	Medium (+)	Medium (+)	Medium (+)
Revenue accruing to public authorities	Medium (+)	Medium (+)	Medium-High (+)

Cumulative impacts

Cumulative impacts refer to any other developments and existing activities within the immediate area that could compound any positive or negative impacts of the proposed development. The potential **negative impacts** would be compounded if additional developments were introduced in the immediate and surrounding areas. These impacts typically relate to sense of place, traffic, crime and nuisance factors. Similarly, other developments could compound employment and economic income **benefits**.

Mitigation measures

Many potential impacts could be mitigated by introducing the measures proposed by various specialists; these must be considered and implemented by the developer. Monitoring and evaluating socio-economic impacts and continuously assessing the outcomes would further inform the social and economic fabric and the impact on surrounding land users. The following mitigation measures related to the **socio-economic context** are proposed and should be consolidated into an Implementation Plan as part of the Construction Environmental Management Plan (CEMP) and/or Operational Environmental Management Plan (OEMP).

Pre-construction (CEMP)
Procurement Strategy that includes the following and applies to the project: (a) Initiate the activity during the first phase of the development; (b) The strategy is the responsibility of the contractor(s) collectively under the guidance of the Municipality; (c) Focus on opportunities for local labour in the surrounding areas and businesses as a priority. Contractors are required to indicate the geographical location of sub-contractors (businesses) and local labour; and Local contractors invited to tender for work in the context of the terms and conditions included in RFP documentation, which would include skills development, on-site training, gender equality, etc.

Pre-construction & Construction (CEMP)	
Communication Protocols that address directly and indirectly affected residents and surrounding landowners, with specific reference to activities, timelines and intended impacts related to the construction phase and all related activities associated with the implementation of the project (i.e. during the operational phase). • **Objectives** - To orientate, generate awareness and gain positive attitudes among stakeholders as far as possible; and - To engage and inform stakeholders of progress regarding all phases of construction. • **Target audience** - Property owners and users of the land portions directly surrounding the proposed activity; and - Other stakeholders and property owners that may be affected. • **Major types of messages** - Inform directly affected residents on the periphery of the development site and others that would frequent the area; - The commencement date for construction activities related to the project; - Duration and extent of the construction activities and details of individual construction activities; - Progress updates, including any delays in a construction-related activity; and - Introduce appropriate signage to warn persons frequenting the area and those residing adjacent to the development area.	
Construction phase	
Nuisance factors (dust and noise)	Dust and noise emissions during the construction period should be minimised through a Construction Environmental Management Plan (CEMP).
Influx of job seekers, impact on local communities	Contractors need to employ people from the immediate area whenever possible.
Increase in local crime	Co-operation between the Developer and contractors is essential to ensure that the area around the proposed development remains secured during construction. On-site security measures, such as perimeter fencing, controlled access and security guards and patrols will minimise the risk.
Operational phase	
Sense of place, residential property values	Implement recommendations by relevant specialists to mitigate negative impacts related to visual, traffic, nuisance factors, etc..

Impact statement

Several **socio-economic impacts** of the proposed development were identified. The Preferred Alternative 1 will add 155 high-end residential units to the Stellenbosch housing market with an estimated initial investment of R1,85 billion over five years in nominal terms. The latter could generate R4,8 billion in new business sales, adding R366 million (net of import leakage) to the Stellenbosch economy annually over the envisaged construction period of five years. The project could sustain about 6 743 direct, indirect and induced employment opportunities during construction, with a net movement of 1 011 employment opportunities, while increasing household incomes by R790 million over the 5 years of construction. An unknown number of new opportunities will also be created during operations, mainly linked to direct employment by households and small business opportunities such as garden services, electricians, plumbers and handmen.

Alternative 2 (255 residential units) will generate R781 million (R156 million per annum on average) more in production output than Preferred Alternative 1, R297 million more in local economic income during construction, and R128 million more in household income. Furthermore, Alternative 2 will create a net number of 164 more jobs

during construction, and an estimated R18,6 million more in property rates revenue for the Stellenbosch Municipality over the first 10 years of operations in nominal terms.

Potential **negative impacts** include traffic flows, sense of place, nuisance factors, crime and construction workers who may impact local communities. However, if the site is properly managed and mitigation measures are implemented, the significance of these impacts will be low to moderate. Alternative 2 will have a higher density than Preferred Alternative 1, resulting in a higher impact on the sense of place to surrounding residents based on the Visual Impact Assessment and assumed increase in traffic (no Traffic Impact Assessment was available). However, the significance of both Alternatives' residual impact will be medium based on the impact assessment criteria.

Our assessment indicates that the socio-economic benefits of the preferred development alternative outweigh the potential -costs, and no fatal floors from a socio-economic perspective are identified or envisaged whether the preferred or alternative development option is considered.

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1 BACKGROUND

1.1 Introduction

The proponent, Brandwacht Land Development (Pty) Ltd, proposes a residential development with 155 residential units on Remainder Farm 1049, Stellenbosch. The site is bordered by the existing Brandwacht-Aan-River residential development to the north and the Brandwacht Office Park directly west of the site. The site is currently zoned Agricultural but has been used only for limited agricultural production.

Dr Jonathan Bloom of Multi-Purpose Business Solutions was commissioned as an independent consultant to prepare a Socio-Economic Impact Assessment of the proposed development. Dr Bloom (PhD, Corporate Finance) is the principal member of Multi-Purpose Business Solutions and was a professor of real estate at Stellenbosch University until 2013. He has conducted more than 100 socio-economic impact and other assessments as an independent consultant for real estate and other Southern Africa developments. Jonathan has research skills in designing and implementing research projects from a qualitative and quantitative perspective. He majored in statistics and business economics, and his background in statistical modelling of economic aspects and cost-benefit assessments has been used to assist clients with evaluating socio-economic impacts associated with projects. Refer to **Annexures C and D** for a declaration of independence and his *curriculum vitae*, respectively.

1.2 Terms of Reference

The Socio-Economic Impact Assessment includes the following:

1. Description and understanding of the nature and scope of the proposed project, location, layout, etc.;
2. An overview of the economic development patterns in the Stellenbosch and Cape Winelands District municipalities;
3. A socio-demographic and -economic profile of the population (and communities) residing within specified concentric zones from the site;
4. Place the envisaged project in the context of spatial planning regulations and other guideline documents and assess the fit from an economic perspective;
5. Identify possible social and economic impacts / consequences / implications associated with the proposed development;
6. Ascertain the overall monetary benefits, i.e. Gross Value Added (GVA) and job creation potential during construction and operations; and
7. Proposals for a framework for monitoring and evaluation of the socio-economic impacts.

1.3 Approach & Methodology

Our approach for assessing the socio-economic impacts of the proposed development is presented in **Figure 1**. The illustration shows that evaluating a project's financial feasibility and long-term viability is an essential point of departure, as long-term positive economic impacts can only flow from a financially sustainable or viable project. It must also fit and demonstrate compatibility with economic and integrated planning for the area, which also covers spatial planning. These hurdles are a critical aspect of economic desirability, which ensures that the proposed development complements economic planning as reflected in spatial development planning and the local economic development plans and strategies for the area.

In keeping with the *Guideline for Involving Economic Assessment Specialists in EIA Processes* (CSIR, 2005) and the *Guideline for Involving Social Assessment Specialists in EIA Processes* (Department of Environmental Affairs and Development Planning, 2007), the project should fit with planning frameworks and be desirable from a societal cost-benefit perspective (concerning the assessment of social impacts). The *Need and Desirability Guidelines* (Republic of South Africa, 2014) also apply to the economic and social justification for the development proposed

in the particular location. In addition, adherence to Appendix 6 of the NEMA Regulations and alignment with existing guidelines are essential (**Annexure B**).

Given the nature of the proposed activities and the importance of the project for direct investment in Stellenbosch Municipality, monitoring and evaluation throughout construction and operations are essential. Both the envisaged positive and potential negative impacts need to be monitored through an inclusive and credible process, with a broad framework outlined in this report.

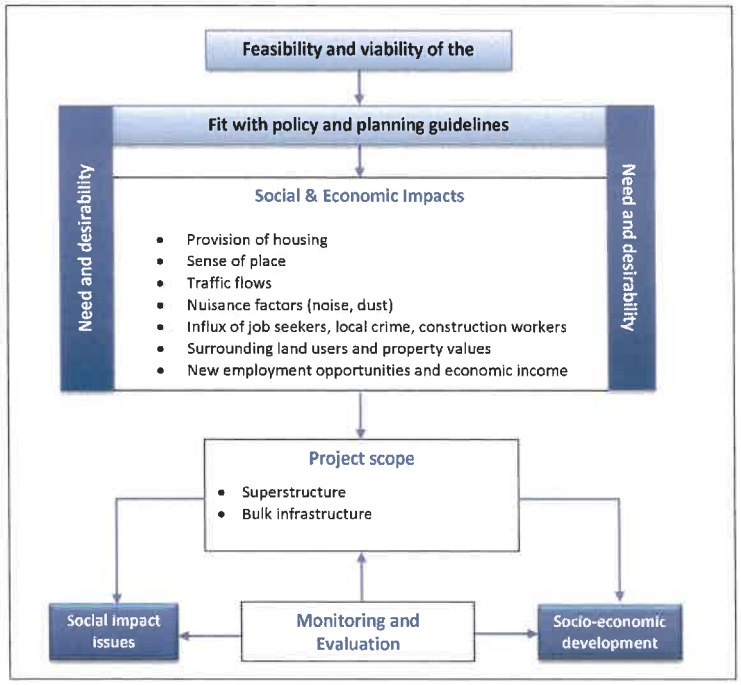


Figure 1: Methodology used for specialist socio-economic input for the EIA process
Source: Multi-Purpose Business Solutions

1.3.1 Data gathering and analysis

The study area for the socio-economic impact assessment is defined as all sub-places (communities) within Stellenbosch Town (refer to the socio-demographic and -economic analysis in **Section 4**). The analysis of primary inputs usually includes information collected from interviews with key stakeholders and/or representatives of stakeholder groups that are affected directly or indirectly by the proposed development. Secondary sources (including reports and publications) are consulted to inform the independent socio-economic assessment and complement the primary research. Our approach to addressing comments from stakeholder groups and interest

and Affected Parties (I&APs) is to include relevant inputs from the environmental process conducted by the Environmental Assessment Practitioner (EAP) and assess the inputs from a socio-economic perspective. Where applicable, I&APs will be identified for further consultation to obtain additional information for inclusion in the report. These parties may include, but are not limited to, the local authority, landowners, surrounding landowners, local business associations (where applicable), community leaders and representatives, interest groups, etc.

1.3.2 Impact assessment

The proposed project would have both qualitative and quantitative impacts (benefits and costs) on the socio-economic fabric of the area. We have considered the core project's quantitative economic impact, i.e. positive and negative consequences, and analysed the socio-economic impact. Where applicable, a qualitative assessment of both benefits and costs is provided from a social perspective. The different impacts are assessed using the impact assessment criteria indicated in Annexure A. Per NEMA EIA Regulations (2014, as amended), the potential impacts of the Preferred Alternative are assessed and compared with the No-Go Alternative:

4) **No-Go Alternative** – no development, i.e. the *status quo* is maintained
5) **Preferred Alternative 1** – 155 residential units
   - Phase 1: 146 housing units (7.21 ha), Commercial/Offices (0.27 ha), open space (7.6 ha), Private and Public Roads (3.35 ha)
   - Phase 2: 9 residential units (11.20 ha), Private open space (0.54 ha)
6) **Alternative 2** – 228 residential units
   - Phase 1: 167 housing units (7.2 ha), Commercial/Offices (0.27 ha), open space (6.17 ha), Private and Public Roads (4.7ha)
   - Phase 2: 61 residential units (5.13 ha), Private open space (6.69 ha)

Estimating the economic impact of a project or development can be a constructive process to understand the potential benefits of the development on the local economy. However, it should be noted that estimating these benefits is more helpful in understanding the likely order of intensity related to impacts rather than specific amounts. An economic impact assessment traces spending through an economy and measures the cumulative effects of that spending over time. Defining the area of influence is an important first step in the process. The focus of the economic impact is local, regional or national. The nature of the proposal determines the impact region, which can be the entire country, province, individual, or combination of municipalities.

An Economic Impact Analysis (EcIA) assesses the direct and indirect contributions of construction spend and operational revenues (spend) on the economy by applying multipliers. Benefit-Cost and Economic Impact Analyses are not directly comparable but are complementary in providing a micro-level appraisal and macro-economic assessment of the impact related to the development. A Social Accounting Matrix (SAM) is used to assess and estimate the indirect/induced impacts of the project on the local/regional economy. A SAM represents the flows of all economic transactions within an economy (regional or national) and the total direct contribution to and indirect impact on the economy in terms of value added to Gross Geographic Product (GGP).

Once the direct investment is determined, the indirect/induced impacts are estimated. The multiplier effect is the relationship between one form of economic activity and the total additional activity it generates. An Economic Impact Analysis is thus based on the multiplier concept, which estimates how much additional economic activity will result from an investment of R1 in the economy. It is termed as such because the total impacts are larger than an investment's initial, direct impact during construction or operations. For example, an aggregate economic multiplier of 2,50 would mean that for each Rand spent on operations, R2,50 is generated. Subtracting the original R1,00 of operational spending (direct impact) leaves R1,50 of additional spending on items and services, referred to as the indirect/induced impact.

1.4 Assumptions

The following assumptions were used for calculations related to employment and economic income during construction:

- The structure and composition of the Western Cape economy will remain unchanged (a requirement for multiplier analyses).
- No significant political or other administrative changes will take place on a national or provincial level.
- An initial construction period of 5 years was used to assess employment during construction.
- Only total labour demand is considered; no race, gender or skill level is considered; and
- An assumed import leakage[1] of 20% for construction.

1.5 Limitations

Several limitations were identified during the study:

- Changes in methodology complicate comparisons between the 2011 and 2001 Census, with specific reference to the analysis of employment by economic sector and occupation, as no similar data is available for 2011. In the 2022 Census, these questions were not included.
- The National 2022 Population census has been marred by issues related to an undercount of 30%. The credibility of the data and the use thereof for analysis is questionable. Also, given that the 2011 Census data is outdated and cannot reflect the current socio-demographic and -economic context of the population being analysed, it was necessary to rely on estimates of service providers that supplement the Statistics South Africa data and address the various shortcomings.
- Given the lack of detailed information on the potential revenue of the proposed development, it is impossible to quantify the potential contribution toward the local economy once all the envisaged components are complete and operating.

[1] Leakage refers to capital or income that exits an economy or system rather than remaining within it.

2 PROJECT DESCRIPTION

2.1 Project location, site description and zoning rights

The proponent, Brandwacht Land Development (Pty) Ltd, is proposing an urban land use development on Remainder Farm 1049, Stellenbosch, consisting of primarily residential land uses with the opportunity for a variety of residential densities (similar to the abutting Brandwacht-Aan-Rivier residential estate).

The site is bordered by the existing Brandwacht-Aan-Rivier residential development to the north and the Brandwacht Office Park directly west of the site (**Figure 2**). The site is located along a drainage line to the north and Trumali Street to the south, which provides access from the R44 to Trumali Park, Brandwacht Office Park and Mediclinic Stellenbosch. The residential community of Brandwacht-Aan-Rivier forms the site's lower northern perimeter, while the Stellenbosch Mountains form its eastern margin. The current Brandwacht residential subdivision is located beyond the drainage line. The site is zoned Agricultural, but not used for active agricultural production. Despite being close to the Brandwacht suburban development, the location and its features are essential to the larger cultural landscape, an area of historical, cultural, and scenic significance.

Figure 2: The site (red polygon) is located along Trumali Street, bordered by Brandwacht-Aan-Rivier and Brandwacht Office Park.

2.2 Proposed development

The proposed urban development will primarily consist of the following land uses:

- Conventional Residential Zone erven (with varying erf sizes)
- A Local Business Zone erf (abutting the Brandwacht Office Park)
- Private Open Space Zone erven (open spaces and roads)

Two development alternatives are proposed, with different number of residential units (**Figures 3 & 4**):

Preferred Alternative 1 – 155 residential units

- Phase 1: 146 housing units (7.21 ha), Commercial/Offices (0.27 ha), open space (7.6 ha), Private and Public Roads (3.35 ha)
- Phase 2: 9 residential units (11.20 ha), Private open space (0.54 ha)

Alternative 2 – 228 residential units

- Phase 1: 167 housing units (7.2 ha), Commercial/Offices (0.27 ha), open space (6.17 ha), Private and Public Roads (4.7ha)
- Phase 2: 61 residential units (5.13 ha), Private open space (6.69 ha)

Figure 3: Proposed layout Preferred Alternative 1 (155 residential units)

Figure 4: Proposed layout for Alternative 2 (228 residential units)

No-Go Development Alternative

The "No-Go" option implies the *status quo* is maintained, i.e. the current rights are exercised without significantly altering the situation and continue to be used for farming and related activities. The property consists of vineyards with treelines acting as windbreaks, as well as fallow and abandoned areas. The relatively low-intensity farming will probably continue, and there is a chance that the farm area will not be able to support itself and decay further.

2.3 Surrounding land uses

The proposed development site is close to several residential neighbourhoods, two business parks and Mediclinic Stellenbosch (**Figure 2**). **Trumali Park** is situated on the corner of the R44 and Trumali Street and is home to various large businesses. Right next door is **Brandwacht Office Park**, which has separate buildings with office space, offering individual parking and mountain views.

Brandwacht-Aan-Rivier is a relatively young, high-end country-styled residential complex with 120 residential units of 329 – 955 m². Effective security is provided with a central manned entry gate and electric perimeter fencing. The estate is landscaped with walkways, manicured lawns and bridges that complement its Cape Winelands setting.

Paradyskloof is a quiet, family-friendly suburb just outside the busy central Stellenbosch, offering views of Stellenbosch Mountain and surrounding vineyards, with easy access to nearby forests, trails and parks. Paradyskloof Forest is a beloved spot for picnics, dog walking, and strolls through shaded pine tree trails. Paradyskloof real estate is highly sought after, and the area is known for its modern architecture mixed with classic Cape Dutch and contemporary styles.

Brandwacht is a quiet and upmarket suburb positioned on the slopes of the Stellenbosch Mountains, with views of the surrounding vineyards, mountain ranges, and lush landscapes. Many properties were designed to maximise these views, with open-plan layouts and expansive windows, giving residents a seamless connection to nature.

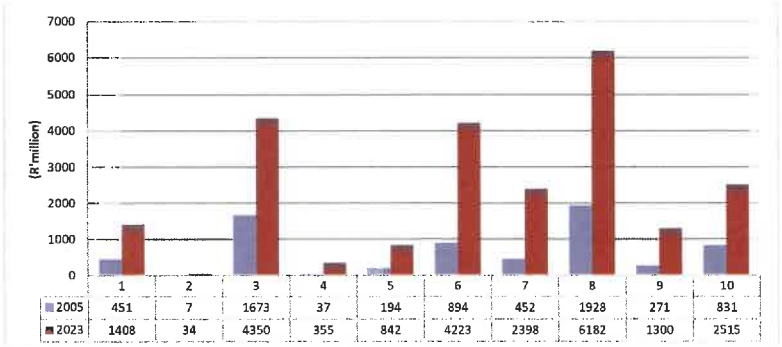
Mediclinic Stellenbosch is a private hospital that provides specialised and general healthcare services to the Stellenbosch community and surrounding areas. It offers a wide range of services, including general medical care, surgical procedures, maternity care, and emergency services, and caters to various medical specialities, including cardiology, orthopaedics, oncology, and neurology. It opened in 2019, offering 102 beds, five surgical theatres, a 24/7 Emergency Centre and Day Clinic.

The **Paradyskloof Water Treatment Plant**, which had to temporarily shut down in August 2024 after a break-in and vandalism at the plant that damaged an inlet valve.

3 OVERVIEW OF THE STELLENBOSCH AND CAPE WINELANDS ECONOMIES

The Stellenbosch economy contributed approximately 24,08% to the economy of the Cape Winelands District in 2023. In terms of absolute numbers, the Stellenbosch economy generated R23 606 million in GVA at current prices[2], relative to R98 012 million recorded for the Cape Winelands. The Stellenbosch economy grew off a solid base by 7,21% per annum from 2005 to 2023, but the contribution to the Cape Winelands GVA decreased from 26,97% in 2005 to 24,08% in 2023.

Figure 5 indicates the sector contributions to the GVA of the Stellenbosch economy for 2005 and 2023. The largest sector of the Stellenbosch economy was the Finance, Insurance, Real Estate and Business Services sector, followed by Manufacturing and Wholesale and Retail. Combined, these three sectors contributed almost 63,86% of the total GVA generated by the Stellenbosch economy in 2023, a decrease of 6,32% from 2005. The Finance, Insurance, Real Estate and Business Service sector has remained the largest contributor to the Stellenbosch GVA over the 18 years of the analysis. The Manufacturing sector's contribution decreased from 24,83% in 2005 to 18,43% in 2023, while the Finance, Insurance, Real Estate and Business Services sector's contribution to GVA decreased slightly from 28,62% in 2005 to 26,19% in 2023.



	1	2	3	4	5	6	7	8	9	10
2005	451	7	1673	37	194	894	452	1928	271	831
2023	1408	34	4350	355	842	4223	2398	6182	1300	2515

Figure 5: An illustration of the GVA contributions per sector for the Stellenbosch economy in 2005 and 2023

Legend:

1	Agriculture, hunting, forestry and fishing	6	Wholesale and retail
2	Mining and quarrying	7	Transport, storage and communication
3	Manufacturing	8	Finance, Insurance, real estate and business services
4	Electricity, gas and water supply	9	Community, social and personal services
5	Construction	10	Government Services

Source: Adapted from data provided by Quantec Research, 2024

To understand whether sectors are contracting or growing, it is useful to consider the overall and annual growth rates and to compare those to the Cape Winelands within which the Stellenbosch economy functions. **Figure 6** indicates the annual compounded growth rates per economic sector for the Stellenbosch and Cape Winelands from 2005 to 2023.

[2] GVA and Gross Geographic Product (GGP) or Gross Regional Product (GRP) are very similarly related concepts. GVA excludes taxation and subsidies, whereas GDP includes the items. GVA is analysed using current prices

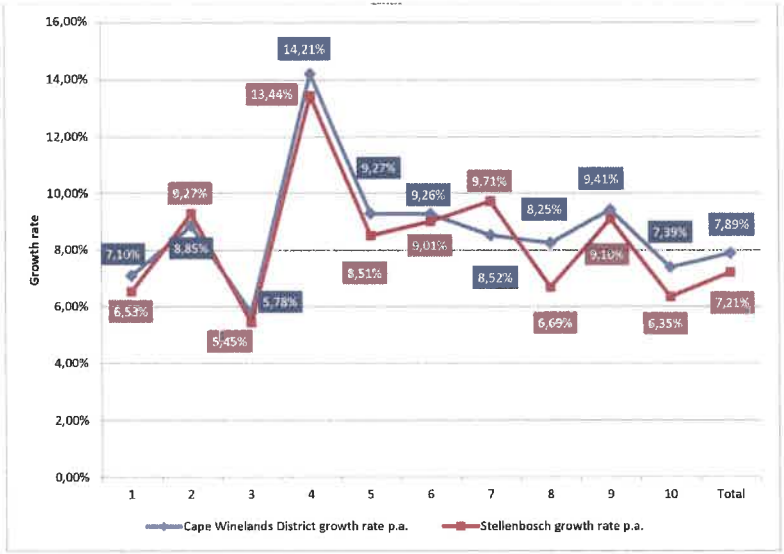


Figure 6: An illustration of the annual nominal growth rates per economic sector for Stellenbosch and the Cape Winelands from 2005 to 2023

Legend:

1	Agriculture, hunting, forestry and fishing	6	Wholesale and retail
2	Mining and quarrying	7	Transport, storage and communication
3	Manufacturing	8	Finance, insurance, real estate and business services
4	Electricity, gas and water supply	9	Community, social and personal services
5	Construction	10	Government Services

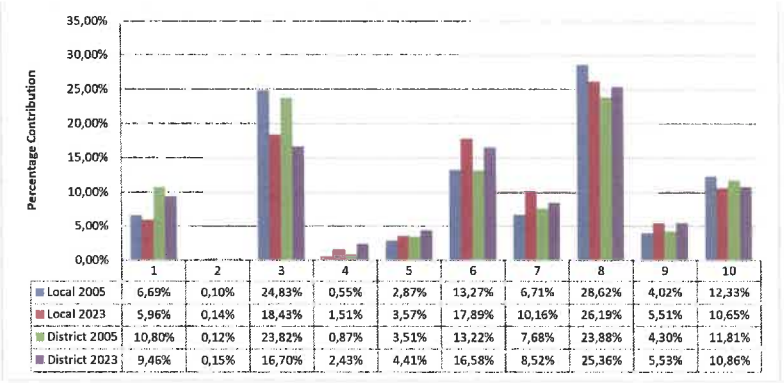
Source: Adapted from data provided by Quantec Research, 2024 and own calculations

The Cape Winelands and Stellenbosch economies grew in nominal terms by 7,89%% and 7,21% per annum, respectively, from 2005 to 2023 (refer to Total data in **Figure 6**). Only the Mining and quarrying, and Transport, Storage and communications sectors of the Stellenbosch economy achieved higher growth rates than the Cape Winelands District over the period 2005 to 2023. High annual growth rates were achieved in Stellenbosch and Cape Winelands for Electricity, Gas and Water supply, but were off a very low base and should be considered with caution.

3.1 Sector analysis of GVA contributions

Figure 7 indicates the contribution of each economic sector to the GVA of the Stellenbosch and the Cape Winelands economy for 2005 and 2023. An assessment of the larger sectors suggests that the contribution of several of the sectors (such as Manufacturing) declined in the Stellenbosch economy in favour of Transport, storage and communication and Retail and Wholesale, where the latter increased its contribution to the Stellenbosch GVA by 34,77%. The Manufacturing sector showed a decline in its contribution to GVA, i.e. 24,83% (2005) compared to 18,43% (2023). The GVA contribution of the sectors had the same trend for Stellenbosch and Cape Winelands, except for the Finance, insurance, real estate and business services sector, which showed a decline for the Stellenbosch economy, but an increase in its GVA contribution in the Cape Winelands. Six sectors increased their GVA contribution to the Stellenbosch economy, while four indicated a declining contribution. The trend emerging

across the District is similar with seven sectors increasing their GVA contribution to the District economy. The concern with this trend is the reduced employment levels within the more labour-intensive sectors of the economy. A greater focus on sectors with a service orientation has emerged, which are invariably low employment creators compared to construction and manufacturing.



	1	2	3	4	5	6	7	8	9	10
Local 2005	6,69%	0,10%	24,83%	0,55%	2,87%	13,27%	6,71%	28,62%	4,02%	12,33%
Local 2023	5,96%	0,14%	18,43%	1,51%	3,57%	17,89%	10,16%	26,19%	5,51%	10,65%
District 2005	10,80%	0,12%	23,82%	0,87%	3,51%	13,22%	7,68%	23,88%	4,30%	11,81%
District 2023	9,46%	0,15%	16,70%	2,43%	4,41%	16,58%	8,52%	25,36%	5,53%	10,86%

Figure 7: Sector contributions to GVA for the Stellenbosch and Cape Winelands District economies in 2005 and 2023

Legend:

1	Agriculture, hunting, forestry and fishing	6	Wholesale and retail
2	Mining and quarrying	7	Transport, storage and communication
3	Manufacturing	8	Finance, insurance, real estate and business services
4	Electricity, gas and water supply	9	Community, social and personal services
5	Construction	10	Government Services

Source: Adapted from data provided by Quantec Research, 2024

The assessment of GVA sector contributions and the annual and period growth rates for 2005 and 2023 are indicated in **Table 1**. All 10 sectors indicated an annual increase in economic activity from 2005 to 2023. The analysis demonstrates that the Manufacturing sector is declining in favour of increases in Wholesale and Retail Trade and Transport, storage and communication, which alludes to a greater focus on service orientation.

Table 1: Sector contributions to GVA in 2005 and 2023 and annual growth rates for the Stellenbosch economy

Economic sector (R'million)	Gross Value Added				Growth for Period	Annual growth	Direction of growth
	2005	% of total	2023	% of total			
Agriculture, hunting, forestry and fishing	451	6,69%	1 408	5,96%	212,31%	6,53%	↑
Mining and Quarrying	7	0,10%	34	0,14%	393,20%	9,27%	↑
Manufacturing	1 673	24,83%	4 350	18,43%	160,01%	5,45%	↑
Electricity, gas and water supply	37	0,55%	355	1,51%	867,33%	13,44%	↑
Construction	194	2,87%	842	3,57%	334,85%	8,51%	↑
Wholesale and retail	894	13,27%	4 223	17,89%	372,17%	9,01%	↑
Transport, storage and communication	452	6,71%	2 398	10,16%	430,22%	9,71%	↑
Finance, insurance, real estate and business services	1 928	28,62%	6 182	26,19%	220,56%	6,69%	↑
General government	271	4,02%	1 300	5,51%	379,44%	9,10%	↑
Community, social and personal services	831	12,33%	2 515	10,65%	202,70%	6,35%	↑
Total	6 738	100,00%	23 606	100,00%	250,35%	7,21%	↑

Source: Adapted from data provided by Quantec Research, 2024 and own calculations

3.1.1 Primary sector

The primary sector of the Stellenbosch economy includes Agriculture, Hunting, Forestry and Fishing activity and Mining and Quarrying. The primary sector contributed 6,11% to the GVA of the Stellenbosch economy in 2023, which is slightly down from 6,79% in 2005. Agriculture is the largest contributor to the GVA of the Primary sector with a sector contribution of 98,51% in 2005, declining slightly to 97,67% in 2023.

3.1.2 Secondary sector

The secondary sector of the Stellenbosch economy includes Manufacturing, Construction and Electricity, Gas and Water Supply. The secondary sector contributed 28,25% to the GVA of the Stellenbosch economy in 2005, while the contribution to GVA decreased to 23,50% in 2023. The Manufacturing sector's contribution to the secondary sector GVA decreased from 87,89% in 2005 to 78,41% in 2023.

3.1.3 Tertiary sector

The tertiary sector of the Stellenbosch economy includes Trade, Repairs and Hospitality, Financial Institutions, Real Estate and Business Services; Community, Social and Personal Services; and Government Services. The tertiary sector contributed 64,96% to the GVA of the Stellenbosch economy in 2005, which increased to 70,39% in 2023. Government services are included in the analysis as part of the tertiary sector. The analysis suggests that the contribution of Government Services to the GVA of the tertiary sector increased from 4,02% in 2005 to 5,51% in 2023.

3.2 General employment trends

A comparison of total employment in the Cape Winelands and Stellenbosch indicates that Stellenbosch contributed 19,84% to the total employment of the Cape Winelands in 2023. The primary, secondary and tertiary sectors of Stellenbosch contributed 13,65%, 15,30% and 71,05% to total employment in the local economy, respectively, in 2023. In comparison, the Cape Winelands enjoyed total employment contributions of 21,15%, 13,85% and 65,00% from the primary, secondary and tertiary sectors, respectively.

Overall employment increased by 29,27% from 2001 to 2023 in the Stellenbosch economy. The strong growth in the tertiary sector was offset by low growth in employment in the primary and secondary sector of the Stellenbosch economy. Strong employment growth was recorded in the tertiary sector with an increase of 69,74% from 2001 to 2023, or an annual compounded growth of 2,43% annually. The Cape Winelands experienced similar trends, with a decline of 38,23% recorded for the primary sector, and increases of 24,29% and 97,38% for the secondary and tertiary sectors, respectively.

In terms of employment growth by sector in the Stellenbosch economy and specified periods pre-2008, 2008 - 2011 and post-2011, it is clear that the tertiary sector shed the fewest number of jobs with a decline of 0,92% from 2008 to 2011 (**Figure 8**). The secondary sector and primary sector of the economy shed jobs with declines of 7,26% and 25,86%, respectively, from 2008 to 2011.

Post-2011, all three sectors clawed back all or a large percentage of the lost employment in the previous period, achieving an increase in employment of 4,49%, 7,24% and 19,07% from 2012 to 2023. However, the labour-intensive secondary sector did not recover the lost employment during the recessionary period, accompanied by minor improvement in the primary sector.

In conclusion, the proposed development will specifically benefit the secondary and tertiary sectors of the Stellenbosch economy. However, all economic activities associated with the development during construction and operations impact the primary, secondary and tertiary sectors of the economy with a requirement for raw materials (e.g. sand mining), construction activity (e.g. bricks, cement, etc) and business services (e.g. professional services). Even the household spending of the residents will lead to induced spending of salaries and wages that will benefit all three economic sectors.

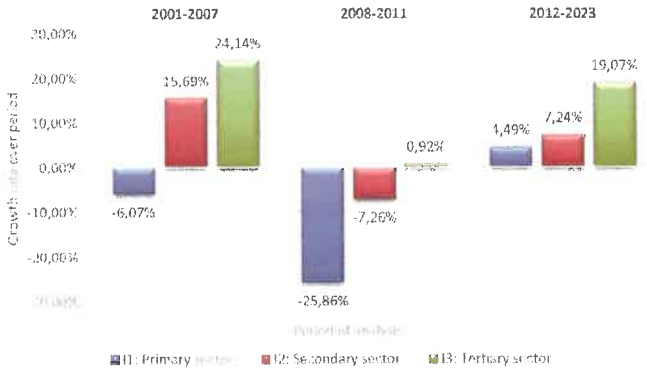


Figure 8: An illustration of the employment growth in the Stellenbosch economy for three specified periods (pre-recession, recession and post-recession) from 2001 to 2023

Source: Quantec, 2024 and own calculations

4 SOCIO-ECONOMIC AND DEMOGRAPHIC PROFILE OF THE POPULATION WITHIN THE STUDY AREA

4.1 Aligning the study area and available statistics

The approach adopted in preparation for the socio-economic and demographic profile of communities close to the proposed site is considered below. **Figure 9** indicates the sub-places with the location of the project site. A total of 14 sub-places in Stellenbosch Town were identified as the study area for the demographic analysis.

Code	Name	Code	Name
167011002	Cloetesville SP	167019001	Onder Papegaaiberg SP
167012001	Khayamandi SP	167020001	Devon Valley SP
167014001	La Colline SP	167022001	Dalsig SP
167015001	Tennantville SP	167023001	Kleingeluk SP
167017001	Idasvallei SP	167024001	Paradyskloof SP
167018001	Stellenbosch SP	167025001	Brandwacht SP
167018002	Die Boord	167026001	Jamestown SP

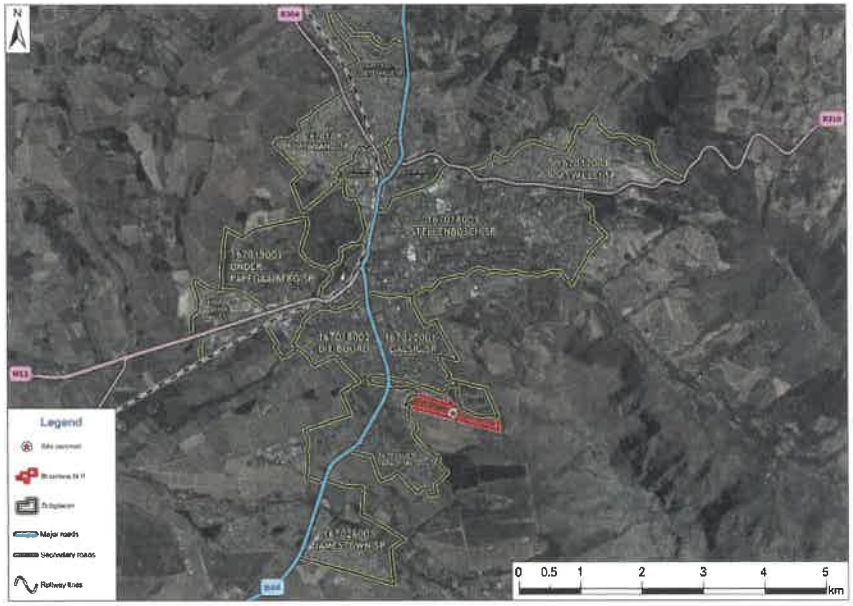


Figure 9: Subplaces included in the socio-demographic analysis of the area close to the proposed development
Source: Prepared from GIS data (Statistics South Africa)

4.2 Socio-demographic profile of the study area

Where applicable, the analysis considers several socio-demographic characteristics of the population as determined by Statistics South Africa in the 2022 Census survey. We relied on the data provided by Spatial Technologies to indicate the socio-demographic and economic data applicable to the sub-places. The updated Census metrics include adjusted data for population, education, age, gender, and household income. Previously, it was possible to analyse occupation, but this is no longer captured and therefore excluded. It should be noted that the approach adopted for the assessment indicates the socio-economic and demographic profile of the population residing in the specified sub-places, considering the limitations stated above.

The following socio-demographic profile of the study area is based on adjusting selected demographic variables from the 2022 National Population Census Survey (Statistics South Africa, 2024) as updated by Spatial Technologies.

4.2.1 Analysis of the study area population

Figure 10 illustrates an estimate of the population groups in 2023 for the sub-places included in the analysis. The estimated population for the sub-places included in the analysis is 94 686. The Black African and Coloured population groups are the largest across the selected sub-places with similar sizes (36,90% and 37,72%, respectively), followed by the White population group (23,99%).

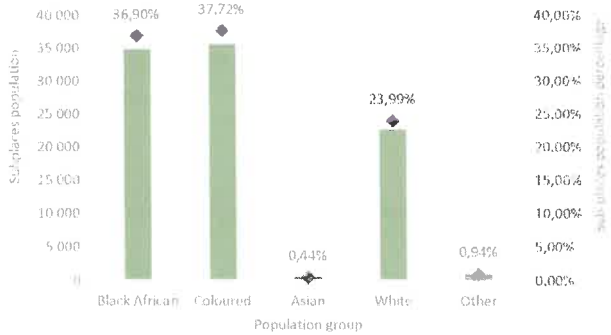


Figure 10: Population estimates for 2022 for the selected sub-places
Source: Spatial Technologies and own calculations (2024)

Growth rate per population and group from 2011 to 2023

The total population for the selected sub-places in 2011 and 2023 is 75 551 to 94 686, respectively. This increase of 25,33% over the period represents an annual compounded increase of 1,90%. The largest annual compounded increase was for the category of "Other" and the Asian population groups. Note that these increases are off a significantly low base and are only for noting. The growth rates for the Black-African, Coloured, and White groupings are 23,79%, 26,47%, and 25,67%, respectively. The annual compounded growth rates per population group from 2012 to 2023 are indicated in **Figure 11**.

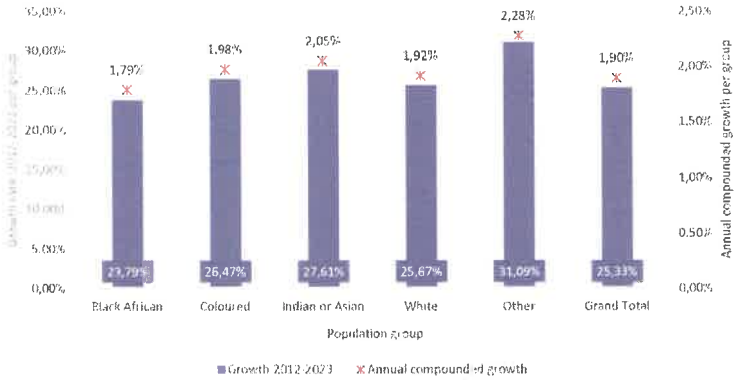


Figure 11: Growth rates for population groups over the period 2012 to 2023.
Source: Spatial Technologies and own calculations (2024)

Figure 12 indicates the gender breakdown for the population of the sub-places included in the analysis, estimated at 51,71% female and 48,29% male.

Figure 12: Gender breakdown of the population for the selected sub-places
Source: Spatial Technologies and own calculations (2024)

4.3 Analysis of education levels

Figure 13 indicates a breakdown of the education levels of the population in the sub-places included in the analysis. Most of the population, or slightly more than one in two, have a secondary education, while 20.58% have a primary school education. Slightly more than one in 10 of the population have a post-graduate qualification. This is not unsurprising, noting that Stellenbosch is a university town with a large number of academics and large corporations that would require tertiary plus education levels.

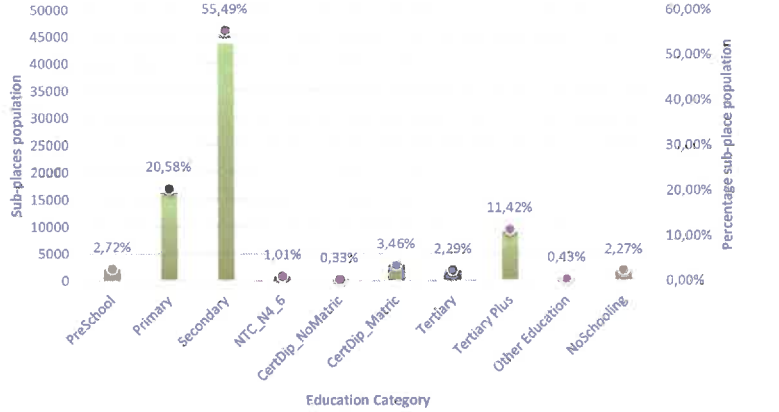


Figure 13: Breakdown of education levels for population of the selected sub-places
Source: Spatial Technologies and own calculations (2024)

4.4 Analysis of age levels

Figure 14 indicates the age breakdown for the population of the sub-places included in the analysis. The age cohorts are indicated as increments of 5 years, with the highest cohort of 85+ years of age. The young age of the population within these sub-places is clear, with 39,63% or 40 out of every 100 people between the ages of 15 and 29. A large population cohort is also represented by persons younger than 15, representing 1 in 5 of the Stellenbosch population. Based on estimated demographic variables in 2023, the analysis suggests that the population is young, more than 50% female and most have primary or secondary education.

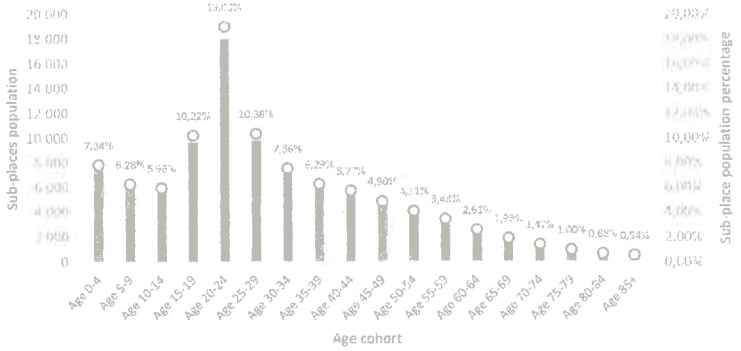


Figure 14: Breakdown of population by age cohort
Source: Spatial Technologies and own calculations (2024)

4.5 Analysis of household income levels

Estimates of household income are provided per cohort in **Figure 15** for 2023. More than 26% of the population in the selected sub-places indicated no income. Households with an income of R19 600 to R38 200 represent 15,24% of the population, and 44,37% of households are estimated to have an income above R38 200. A declining trend is apparent when the household income level is higher.

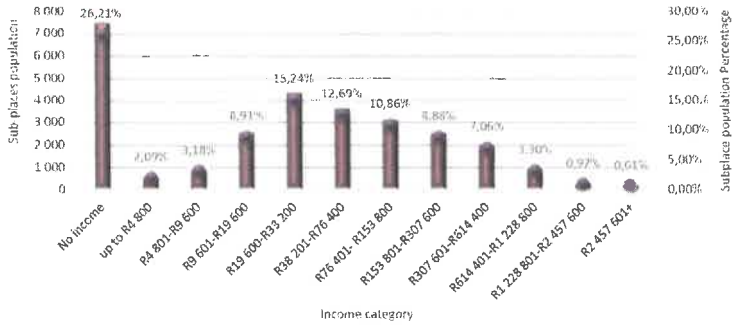


Figure 15: Breakdown for estimates of household income per cohort
Source: Spatial Technologies and own calculations (2024)

Additional analysis indicates an average estimated household income of R296 963 per annum, which translates to a monthly average household income of R24 747. **Figure 16** indicates estimates of household income per sub-place included in the analysis. It is clear that household income in the suburbs of Stellenbosch, where low- to middle-income earners reside, is well below the average across all the sub-places. The more affluent areas such as Brandwacht, Paradyskloof, Dalsig and Die Boord indicate average household income estimates well above the average.

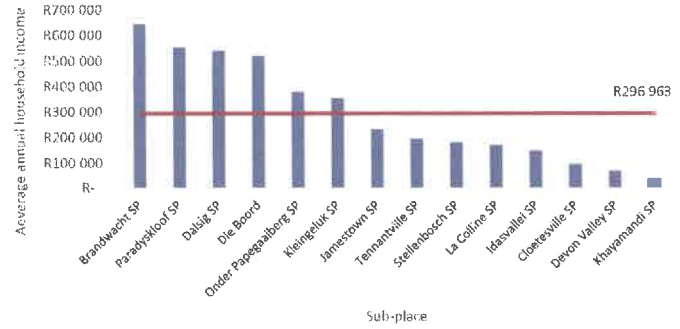


Figure 16: Average household income for subplaces included in the analysis
Source: Spatial Technologies and own calculations (2024)

5 FEASIBILITY OF THE PROJECT AND FIT WITH SPATIAL PLANNING

5.1 Project viability and financial sustainability

The viability and sustainability of residential development in Stellenbosch depend on various factors, including environmental concerns, economic feasibility, social impacts, and adherence to local and national regulations. Stellenbosch, known for its vineyards, historic architecture, and academic community, presents a unique context for such developments. However, the project should consider long-term viability in case of market fluctuations, especially given South Africa's economic challenges.

Stellenbosch has a high demand for residential property, driven by its university, wine industry and popular tourism attractions. This demand can support new developments, especially if tailored to middle- and high-income groups or the student market. Property values in Stellenbosch are among the highest in South Africa due to limited availability and high demand. A sustainable residential development in Stellenbosch is viable if it balances economic returns with ecological stewardship and social inclusivity. Success will likely depend on integrating eco-friendly technologies, respecting the local culture, and providing a range of housing options. Embracing green building practices, water conservation, and renewable energy can strengthen the project's appeal and longevity in this highly sought-after region.

5.2 Need and desirability

The Department of Environmental Affairs (2014) issued a Guideline on Need and Desirability with a list of questions to address when considering a proposed development. The concept of "need and desirability" relates to, amongst others, the nature, scale and location of the proposed development and the wise use of land. Essentially, "need" primarily refers to time and "desirability" to place (i.e., is this the right time and the right place for the type of land use/activity being proposed?). The "need and desirability" requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest. While the financial viability considerations of the private developer might indicate if a development is "do-able", the "need and desirability" will be determined by considering the broader community's needs and interests as reflected in an Integrated Development Plan (IDP), Spatial Development Framework (SDF) and Environmental Management Framework (EMF) for the area. Although job creation and economic growth are important, the specific needs of the broader community should be considered together with the opportunity costs and distributional consequences to determine whether the development will be socially, economically and environmentally sustainable.

5.3 Compatibility with spatial planning from an economic perspective

The individual benefits of a project overstate the true benefits if the project diminishes benefits elsewhere in the area. Economic desirability is, therefore, essential in determining whether the proposed development complements economic planning as reflected in spatial development planning. It is not sufficient that the development results in some positive spin-offs if it is not compatible with planning guidance designed to maximise the overall economic potential of an area. SDFs are central to economic development planning and guide overall development in a direction that local and provincial authorities see as desirable. Notwithstanding, the basic purpose of an SDF is to outline the spatial implications of Integrated Development Plans (IDPs). To provide some context, the provincial, regional and metro SDFs (together with related frameworks, interpretation reports and discussion documents) and Local Economic Development (LED) plans and strategies (together with other documents that offer guidance) are considered as premises for this part of the assessment.

5.3.1 National Development Plan 2030 (NDP 2012)

The National Development Plan (NDP, National Planning Commission, 2012) set out six interlinked priorities (National Planning Commission, 2012):

- Uniting all South Africans around a common programme to achieve prosperity and equity;
- Promoting active citizenry to strengthen development, democracy and accountability;
- Bringing about faster economic growth, higher investment and greater labour absorption;
- Focusing on key capabilities of people and the state;
- Building a capable and developmental state; and
- Encouraging strong leadership throughout society to work together to solve problems.

While achieving the objectives of the National Development Plan requires progress on a broad front, one of the fundamental factors is raising employment through faster economic growth. A sustainable increase in employment will require a faster-growing economy and the removal of structural impediments, such as poor-quality education or spatial settlement patterns that exclude the majority. These are essential to achieve higher investment rates and competitiveness and expand production and exports. However, business, labour, communities and government must work together to achieve faster economic growth.

In summary, the NDP proposes to enhance human capital, productive capacity, and infrastructure to raise exports, increasing investment resources and reducing reliance on capital inflows. Higher investment, supported by better public infrastructure and skills, will enable the economy to grow faster and more productive. Rising employment and productivity will lead to rising incomes and living standards and less inequality. Shifting the economy towards more investment and lower consumption is thus necessary for long-term economic prosperity. In addition, more efficient and competitive infrastructure is required to facilitate economic activity conducive to growth and job creation.

The NDP identified nine main challenges facing the country and approaches to tackle them. The NDP's key objectives are eliminating income poverty and reducing inequality by 2030. Regarding Urban and Rural Transformation, the NDP's human settlement targets include more people living closer to their places of work, better quality public transport and more jobs in proximity to townships. To achieve these targets, it advocates strong measures to prevent further housing development in marginal places, increased urban densities to support public transport, incentivising economic activity in and adjacent to townships, and engaging the private sector in the Gap housing market.

5.3.2 Western Cape Provincial Spatial Development Framework (WCPSDF) 2014

The Western Cape Provincial Spatial Development Framework (2014) refers to the importance of a coherent framework for the province's urban and rural areas that gives spatial expression to the National and Provincial development agendas, among others. Its guiding principles include the following:

- **Spatial justice**: Past spatial and other development imbalances should be redressed through improved land access to and use by disadvantaged communities.
- **Sustainability and resilience**: Land development should be spatially compact, resource-frugal, compatible with cultural and scenic landscapes, and should not involve the conversion of high-potential agricultural land or compromise ecosystems. Resilience is about the capacity to withstand shocks and disturbances such as climate change or economic crises, and to use such events to catalyse renewal, novelty and innovation. The focus should be on creating complex, diverse and resilient spatial systems that are sustainable in all contexts.
- **Spatial efficiency**: Efficiency relates to the form of settlements and use of resources - compaction as opposed to sprawl; mixed-use, as opposed to mono-functional land, uses; residential areas close to work opportunities as opposed to dormitory settlement, and prioritisation of public transport over private car use. When a settlement is compact, higher densities provide thresholds to support viable public transport, reduce overall energy use, and lower user costs as travel distances are shorter and cheaper.
- **Accessibility**: Improving access to services, facilities, employment, training and recreation, including improving the choice of safe and efficient transport modes (e.g. public transport, private vehicle, bicycle, walking and wheelchair) is essential to achieving settlement transitions.

- **Quality and liveability:** The quality of an environment directly contributes to its liveability. A good environment is legible, diverse, and unique. Diverse environments provide a variety of opportunities, experiences, and choices. Liveable settlements balance individual and community, logic and feeling, order and random incident. The quality of space can define the liveability of a place. Spaces need to be safe and attractive.

The policies are arranged within interrelated themes:

1. **Sustainable use of the Western Cape's spatial assets and resources:**
   - R1: Protect biodiversity and ecosystem services.
   - R2: Safeguard inland and coastal water resources, and manage the sustainable use of water.
   - R3: Safeguard the Western Cape's agricultural and mineral resources and manage their sustainable use.
   - R4: Recycle and recover waste, deliver clean sources of energy to urban consumers, shift from private to public transport, and adapt to and mitigate against climate change.
   - R5: Safeguard cultural and scenic assets.
2. **Opening opportunities in the Provincial space-economy:**
   - E1: Use regional infrastructure investment to leverage economic growth.
   - E2: Diversify and strengthen the rural economy.
3. **Developing integrated and sustainable settlements:**
   - S1: Protect, manage and enhance the sense of place, cultural and scenic landscapes.
   - S2: Improve inter and intra-regional accessibility.
   - S3: Promote compact, mixed-use and integrated settlements.
   - S3: Promote compact, mixed-use and integrated settlements.
   - S5: Promote sustainable, integrated and inclusive housing in formal and informal markets.

5.3.3 Cape Winelands District Integrated Development Plan (2022/23 – 2026/27)

The 2022 review of the Cape Winelands IDP (Cape Winelands District Municipality, 2022) confirmed the vision of "A unified Cape Winelands of excellence for sustainable development", which is demonstrated in the following strategic objectives, each with a set of predetermined development objectives:

1. **Creating an environment and forging partnerships that ensure social and economic development of all communities, including the empowerment of the poor in the Cape Winelands District**
   - 1.1. Provide a comprehensive and equitable Municipal Health Service, including Air Quality Management throughout the CWDM.
   - 1.2. Ensure coordination of multi-disciplinary and sectoral disaster risk reduction through integrated institutional capacity for Disaster Risk management, Disaster Risk Assessment and Response and Recovery
   - 1.3. Effective planning and coordination of specialised fire-fighting services throughout the CWDM
   - 1.4. To facilitate environmentally sustainable economic development planning through developing and maintaining strategic partnerships, investment attraction, retention and opportunities, SMME support and development, skills development and information knowledge.
   - 1.5. To facilitate, ensure and monitor the development and empowerment of the poor by graduating people from poverty, social inclusion and improving the livelihood of the poor, vulnerable groups, rural farm dwellers and rural communities.
2. **Promoting sustainable infrastructure services and a transport system that fosters social and economic opportunities**
   - 2.1 To comply with the administrative and financial conditions of the Western Cape Government roads

agency function agreement.

2.2 To implement sustainable infrastructure services.

2.3 To increase levels of mobility in the whole of the CWDM area.

2.4 To improve infrastructure services for rural dwellers

2.5 To implement an effective ICT support system

3. Providing effective and efficient financial and strategic support services to the CWDM.

3.1 To facilitate and enhance sound financial support services

3.2 To strengthen and promote participative and accountable IGR and governance.

3.3 To facilitate and enhance sound strategic support services

As part of the commitment to enhancing economic growth by ensuring the social and economic development of all communities, and promoting sustainable infrastructure services that will foster social and economic opportunities, the CWDM identified the following priorities in the IDP (p. 5):

- the development of waste management regional landfill site;
- stability in environmental health;
- to support the recovery of our tourism sector and successfully sustaining the support of local economic development;
- Socio-economic and social challenges such as poverty, unemployment (especially among the youth), drug abuse, domestic and gender-based violence, crime and wellness; and
- the maintenance of our rural gravel roads.

5.3.4 Cape Winelands District Spatial Development Framework (2021-2026)

As a sector plan of the Cape Winelands IDP, the Cape Winelands District Spatial Development Framework (Cape Winelands District Municipality, 2020), adopts the CWDM IDP's vision of "A unified Cape Winelands of Excellence for sustainable development" and mission, "All structures of the Cape Winelands co-operate together towards effective, efficient and economically sustainable development".

The objectives of the CWD SDF are:

- To improve the quality of life for the people of the region by ensuring principle-led responses;
- To plan by considering future population growth, economic and climatic changes;
- To manage the impact and exposure of external and internal threats to growth and development;
- To restructure urban settlements through compaction and densification;
- To promote sustainable resource use and responsible rural development; and
- To improve and conserve the District's natural environment.

Stellenbosch serves as the Southern Winelands service and admin centre and is home to tertiary education and research, agri-processing, multi-national HQs, tourism destinations, and the tech industry (p. 29). Although Stellenbosch has a very high growth potential, it also has very high socio-economic needs (p. 33). The Stellenbosch and Drakenstein municipal areas were classified as "very high" in terms of their development potential, ranked first and second, respectively, relative to other municipal areas in the province regarding their development potential (p. 35). The following key spatial challenges were identified for Stellenbosch (p. 48):

- Lack of integrated settlements within the Municipality
- Dispersed rural settlements
- Derelict and unutilised rail infrastructure (Franschhoek rail connection)
- Inter-city bus facilities are poorly located

In the context of human settlements, the strategic emphasis is on considering the functionality of settlements, their economic growth potential, migration and urbanisation challenges (bulk services, transport modes, solid waste disposal etc.) and the creation of a framework in which rational decisions can be made in terms of capital investment and social support programs (p. 8). Efficient settlements are underpinned by 'good' and effective governance/ municipal decision-making, utilising structural elements and existing resources efficiently to deal with legacy challenges (apartheid spatial layout of towns) and the availability of infrastructure. SPLUMA (16 of 2013) is founded on the development principle of efficiency whereby, "land development optimises the use of existing resources and infrastructure; decision-making procedures are designed to minimise negative financial, social economic or environmental impacts; and development application procedures are efficient and streamlined and timeframes are adhered to by all parties" (p. 38).

According to the National Ministry Human Settlements, the 136 Priority Human Settlement and Housing Development Area (PHSHDA) intends to advance Human Settlements Spatial Transformation and Consolidation by ensuring that the delivery of housing is used to restructure and revitalise towns and cities, strengthen the livelihood prospects of households and overcome apartheid spatial patterns by fostering integrated urban forms. The PHSHDAs are underpinned by the principles of the National Development Plan and allied objectives of the National Spatial Development Framework and the Integrated Urban Development Framework, which includes (p. 41):

a) Spatial Justice: reversing segregated development and creation of poverty pockets in the peripheral areas, integrating previously excluded groups and resuscitating declining areas.

b) Spatial efficiency: consolidating spaces and promoting densification and efficient communicating patterns.

c) Access to connectivity and economic and social infrastructure: ensure the attainment of basic services, job opportunities, transport networks, education, recreation, health and welfare to facilitate and catalyse increased investment and productivity.

d) Access to adequate accommodation: emphasis is on the provision of affordable and fiscally sustainable shelter in areas of high need; and

e) Provision of quality housing options: ensure that different housing typologies are delivered to attract market segments of appropriate quality and innovation.

Stellenbosch Municipality should also carefully note how its growth impacts on the environment, on its "urban edge" and on the competition between different land uses; create a conducive policy environment to facilitate land use that strengthen sustainable economic growth sectors (p. 80).

5.3.5 Stellenbosch Integrated Development Plan (IDP) (2022-2027)

The 5-year IDP plan informs the municipal budget and guides all development within the Stellenbosch Municipal area (Stellenbosch Municipality, 2022b). The IDP is the Municipality's principal strategic plan that deals with the most critical development and governance needs. The vision for the Greater Stellenbosch area is "An Integrated Valley of Opportunity and Innovation", with the mission to deliver services in an enabling environment through sustainable, cost-effective and accountable services.

The IDP Strategic Focus Areas and pre-determined objectives include the following:

1 Valley of possibility

1.1. Create an environment conducive to business development and job creation.

1.2. To facilitate and coordinate support to emerging entrepreneurs by utilising internal SCM processes and linking SMMEs with opportunities in the market.

1.3. To provide, upgrade and maintain an effective engineering infrastructure to support effective service delivery.

1.4. To ensure the provision of non-motorised transport routes as a functional mode of transport

2 Green and sustainable valley

2.1 Managing human use of the biosphere and its resources

2.2 Enhancing the integrity of the environment is imperative for long-term sustainability.

2.3 Incorporating biodiversity into the environment as an imperative for long-term sustainability
2.4 Ensuring spatial sustainability.
2.5 Facilitate efficient use of all forms of capital available to Stellenbosch.
2.6 Building Human capacity

3 Safe valley

3.1 To implement an integrated safety strategy to incorporate multi-stakeholder engagements in addition to focusing on institutional, situational and social crime prevention interventions.
3.2 To develop and implement Institutional Crime prevention strategies, with a focus on improved law enforcement and neighbourhood watches.
3.3 To develop and implement Situational Crime prevention strategies

4 Dignified living

4.1 To develop and maintain sustainable human settlements that will deliver in the diverse range of housing needs
4.2 To develop and implement a social infrastructure master plan for the upgrading and maintenance of social facilities in all wards.
4.3 To involve and build the capacity of stakeholders in the planning and management (governance) of the areas where they live. (Promote participatory planning and integrated implementation)
4.4 To provide access to basic services for households in the WC024 area

5 Good governance and compliance

5.1 To develop, align and implement effective Management Information Systems.
5.2 An effective asset management system to optimise the use of Municipal assets.
5.3 To manage integrated development planning and the efficient measurement of predetermined objectives as per regulatory framework.
5.4 To involve the community in the planning and management of programmes and projects impacting their ward(s),
5.5 To review municipal governance processes as per the Risk-Based Audit Plan
5.6 A skilled and capable workforce that supports the growth objectives of the municipal area
5.7 A responsive, accountable, effective and efficient local government system
5.8 To implement an effective revenue management system.
5.9 To provide accurate and relevant financial information for decision-making.
5.10 To develop and implement a responsive, accountable, effective and efficient customer care structure and system

The following priorities were identified for Ward 21, which includes Brandwacht-Aan-Rivier (p. 272):

Ward Priority	Priority Ranking (1-5)	Description of Ward Priority
Affordable Housing	1	Completion of phases 2, 3 and 4 of a mixed housing project in Mountainview, Jamestown
Sport, Arts and Culture	2	Fencing around sports club (betta fencing or solid wall)
Light Industrial Park	3	Light industrial park to accommodate appropriate enterprises located near Jamestown
Roads and Transport	4	Traffic calming measures and pedestrian walkways at Webersvallei Rd, Mountainview entrance road, intersection of Paradyskloof Rd and Houtkapper Street, Anesta Road, Schuilplaats Road and Serruria Road Accommodate pedestrians/ cyclists along Upper Paradyskloof Rd
Local Economic Development Hub	5	Business Development Centre / Heritage Centre / Ward Office at South/Western corner of Sportsgrounds

5.3.6 Stellenbosch Spatial Development Framework (SDF) (2019)

The Municipal Spatial Development Framework (Stellenbosch Municipality, 2019) recognises that the spatial decisions and actions of many participants determine the nature of a settlement. Specifically, the following seven principles should be considered:

- Maintain and grow the assets of Stellenbosch Municipality's natural environment and farming areas.
- Respect and grow the cultural heritage, the legacy of physical artefacts and intangible attributes of society inherited from past generations maintained in the present and preserved for the benefit of future generations.
- Within developable areas, allow future opportunities to build on existing infrastructure investment, on the opportunity inherent in these systems when reconfigured, augmented or expanded.
- Clarify and respect the different roles and potentials of existing settlements.
- Address human needs – for housing, infrastructure and facilities – clearly in terms of the constraints and opportunities related to natural assets, cultural assets, infrastructure and the role of settlements.
- Pursue balanced communities.
- Focus energy on a few catalytic areas that offer extensive opportunity and address present risk.

5.3.7 Stellenbosch Economic Development Strategy and Implementation Plan (2022)

The Final Draft Stellenbosch Municipality Economic Development Strategy and Implementation Plan (2022a) highlights the necessity to understand the key drivers of economic output within the municipality and how these are affected by global and national dynamics. "Aside from creating an enabling environment through infrastructure and service delivery, other important components of LED are enterprise development and support, strengthening local innovation systems, developing learning and skilful economies, building diverse and innovation-driven local economies and developing inclusive economies" (p. 12). The municipality places a high premium on housing provision. Another advantage of building new homes is that it stimulates the building industry. The sector will receive the much-needed boost from initiatives like the planned Adam Tas Corridor and other housing developments in the municipality's housing pipeline (p. 15).

The LED Strategy concludes that infrastructure and the provision of essential services are some of the most crucial elements of establishing an enabling environment. More than 6 000 households in Stellenbosch receive free basic services, and the town's basic service delivery meets provincial norms. Road infrastructure is another crucial element contributing to the city's attractiveness to investors and businesspeople. Additionally, the town has witnessed the realisation of potential in fields like communication and banking. The late 2010s saw strain on the agriculture and agro-processing industries, although activity has increased recently (p. 26).

There are still weaknesses, some of which have undoubtedly been made public by the COVID-19 epidemic. Dependency on the tourism industry is the most urgent. This sector's output has decreased, which has put pressure on small firms and, more importantly, the people who rely on it for their jobs. Given the distinctive natural and cultural resources of Stellenbosch, the municipality must keep fostering an atmosphere that supports the growth of this industry. The expansion of other tertiary industries, such as insurance and finance, has been significant and has a favourable multiplier effect on many other industries, including trade, construction, and communication. The municipality's LED strategy should prioritise fostering an environment that supports the growth of these subsectors. It can accomplish this by offering essential basic services and physical infrastructure and establishing a favourable business climate through effective municipal procedures (p. 26). Based on these strengths and weaknesses, the following competitive strategies were identified for the Implementation Plan:

1. Develop and Implement a consolidated Business Investment Desk
2. Develop and Implement a Business Incentives Programme
3. Prioritise and Implement an "Ease of Doing Business" Programme
4. Institutionalise Economic Intelligence

5.3.8 Stellenbosch Municipality: Inclusionary Zoning Policy (2023)

The Stellenbosch Municipality Inclusionary Zoning Policy (approved by Council 27 June 2023) outlines the affordable housing challenge that needs to be met in the Stellenbosch Municipal area, with the following objectives:

1. "To increase the supply of affordable housing (referred to as inclusionary housing) in well-located and priority development areas, creating a mix of income groups across new and infill developments in Stellenbosch Municipality promoting social and economic integration (also referred to as settlement restructuring).
2. Using the municipal spatial planning, land use planning system, and land-based financing tools and their mechanisms to leverage and incentivise land value gains in spatially targeted areas for the creation of public goods (i.e. affordable housing), enabling well-performing settlements (i.e. integrated, inclusive, resilient, efficient) to address current and historical spatial imbalances/inequalities (referred to as spatial apartheid).
3. Achieve a more inclusive, efficient, and effective municipality by providing a wide choice of quality affordable housing to meet the needs of the community, widening the homeownership opportunities, and creating flexibility and choice of tenures and price ranges for those who rent and seek the security of tenure (referred to as housing/property ladder) as envisioned by its approved spatial policies.
4. Facilitate and grow strong partnerships with the private sector to deliver more quality affordable housing."

The following principles of the inclusionary zoning policy for Stellenbosch Municipality apply (p. 25):

1. "Inclusionary zoning must be understood as a planning system tool (a land use regulatory mechanism) used to create affordable housing and foster social and economic inclusion through the regulation of private development. Therefore, its use and powers are guided by the broader understanding of the power to regulate and use for the public good (i.e. affordable housing).
2. inclusionary zoning aims to achieve racial and/or socio-economically integrated communities by confronting and addressing the exclusionary impact of development, which in many contexts has often been facilitated by planning and land use regulation (referred to as spatial transformation).
3. Inclusionary zoning is one of the land and planning tools where spatially targeted financing (land-based financing) leverages the benefits of agglomeration, increasing land demand, infrastructure investments, and planning decisions that drive up the value of urban land. Land-based financing is based on the recognition that property owners and developers benefit from this rising value and the possibility for the local government to capture some of the rising value for the public good (referred to as land value capture).
4. The policy provides the scope for securing affordable housing through the regulatory system of development planning permissions to oblige property owners and developers to provide affordable housing, for sale or rent, within the new residential and mixed-use developments (referred to as set-aside requirement) in well-located and priority development areas as defined by the municipal spatial development framework (MSDF) and/or other strategic spatial policies (Adam Tas Local Spatial Development Framework and Development Guidelines) and the associated urban management mechanisms (such as the Adam Tas Local Area Overlay Zone).
5. The policy provides scope for securing affordable housing through land-based financing and planning systems to oblige property owners and developers to pay developer contributions (referred to as impact fees or development charges), and/or additional land-use rights (benefits obtained through development permissions), as well as offsetting the cost by one or more incentives, such as a density bonus (which includes parking reductions or other planning parameters variances), providing and leveraging public land leasing and land sales, discounting the payment of developer contributions, expedited planning processes through an overlay zone mechanism (i.e. Adam Tas Local Area Overlay Zone) and/or any other land-based financing and planning system mechanisms deem development appropriate by the Municipality.
6. It is not the intention, in this mechanism, that a housing subsidy is made available to assist the property owners and developers to meet this affordable housing contribution, but that the cost of the contribution

is absorbed in the land price paid for the land and in the award of additional land use rights and associated enabling provision (i.e. incentives) to offset the costs of such a contribution."

The following inclusionary zoning options are available:

Options	Description	Planning obligation
Option A	Mandatory inclusionary zoning (units/ha)	20% of dwelling units fall within the affordability thresholds (either using the standard or spatially targeted approach) for rent or ownership within the new residential or mixed-use development of 20 or more. Provision of affordable housing must be provided on-site within the priority development areas, namely Stellenbosch town, Klapmuts & Franschhoek, or as alternatively demonstrated. Applicable to the conventional residential zone, multi-unit residential zone, local business zone, and mixed-use zone of the zoning scheme by-law.
Option B	Mandatory inclusionary zoning (Bulk/FAR)	A minimum of 10% or a maximum of 17% (depending on the applicable zoning) of the total residential floor area (complying with the minimum 20% requirement) is made up of dwelling units that fall within the affordability threshold (either using the standard or spatially targeted approach) for rental or ownership within the new residential or mixed-use development of 20du or more. Affordable housing must be provided on-site within the priority development areas, namely Stellenbosch town, Klapmuts, & Franschhoek, or as alternatively demonstrated. Applicable to the conventional residential zone, multi-unit residential zone, local business zone, and mixed-use zone of the zoning scheme by-law.
Option C (ATC)	Mandatory spatial targeted inclusionary zoning (units/ha) - overlay zone	30% of dwelling units fall within the affordability thresholds (using the standard or spatially targeted approach) for rental or ownership within the new residential or mixed-use development. Affordable housing can only be provided on-site within the delineated area and in accordance with the precinct site development plans within the Adam Tas Corridor. Applicable to the Adam Tas Corridor Local Area Overlay Zone.
Option D (ATC)	Mandatory spatial targeted inclusionary zoning (Bulk/FAR) - overlay zone	A minimum of 25% of the total residential floor area (complying with the minimum 30% requirement) is made up of dwelling units that fall within the affordability thresholds (either using the standard or spatially targeted approach) for rental or ownership within the new residential or mixed-use development of 20du or more. Affordable housing can only be provided on-site within the designated area and in accordance with the precinct site development plans, within the Adam Tas Corridor. Applicable to the Adam Tas Corridor Local Area Overlay Zone.
Option E	Voluntary inclusionary zoning	20% of dwelling units fall within the affordability thresholds (either using the standard or spatially targeted approach) or as agreed to by the for rental or ownership within the new residential or mixed-use development. Provision of affordable housing can be provided in-kind off-site or in-lieu within priority development areas, namely Stellenbosch, Klapmuts, & Franschhoek.
Option F	Targeted in-kind off-site affordable housing provision	To the satisfaction of the municipality, the development already targets the affordability threshold. The application may be exempted from the provisions of the policy provided that the development assessment and, ultimately, the permission places this on record for monitoring and compliance processes.

5.4 Conclusions

The NPD sets out six interlinked priorities, including enabling faster economic growth, higher investment, and greater labour absorption. The proposed Brandwacht-Aan-Berg development subscribes to the NDP principles by offering residential, some commercial and employment opportunities in Stellenbosch Town. The proposed development will provide housing opportunities in the Stellenbosch area at the higher end of the market, add

revenue and employment in the construction sector during the construction period and further strengthen growth in the local economy.

The project site is farmland adjacent to the existing Brandwacht-Aan-Rivier residential development. The project underpins the principles of the Stellenbosch Economic Development Strategy and subscribes where applicable to the Spatial principles and IDP of the Municipality. The planning documents (IDP and SDF) and associated policies of the Municipality prioritise affordable housing across the municipal area, as well as the need for social inclusion and addressing apartheid spatial patterns by fostering integrated urban forms.

The Municipality adopted an Inclusionary Housing Policy in 2023. It is incumbent on the Brandwacht-Aan-Berg developers to be cognisant of the policy principles and options to address the inclusionary housing requirement. The development approval by Stellenbosch Municipality would likely be subject to one of the inclusionary zoning options stipulated in the Policy.

6 ASSESSMENT OF IMPACTS

6.1 Introduction

Various qualitative and quantitative impacts are attributed to the proposed development; these impacts can apply to either the construction or operational phases or both.

Potential positive socio-economic impacts:

- Provision of housing (operations)
- Creating new employment opportunities (construction and operations)
- Economic income (construction and operations)
- Revenue accruing to local authorities (operations)

Potential negative socio-economic impacts:

- Impact on vehicular traffic (construction and operations)
- Nuisance factors, such as dust and noise (construction)
- Influx of job seekers (construction)
- Construction workers in local communities (construction)
- Increase in local crime (construction)
- Sense of place (operations)
- Surrounding land values (operations)

Per NEMA EIA Regulations (2014, as amended), the potential impacts of the two development Alternatives are assessed relative to the No-Go Alternative using the impact assessment criteria indicated in **Annexure A**:

1) **No-Go Alternative** – status quo is maintained
2) **Preferred Alternative 1** – 155 residential units (146 units in Phase 1, nine units in Phase 2)
3) **Alternative 2** – 228 residential units (167 units in Phase 1, 61 units in Phase 2)

Where applicable, appropriate **mitigation measures** are proposed to reduce the significance of the specific impacts. **Residual impacts** refer to the significance following the implementation of mitigation measures. **Cumulative impacts** refer to any other developments as well as existing activities within the immediate area that could compound any positive or negative impacts associated with the proposed development. This usually refers to similar developments in the planning or construction stages that could have a cumulative impact.

6.2 Construction Phase

The negative qualitative impacts during the construction phase mostly relate to large construction vehicles on access roads, noise and dust, an influx of job seekers, crime, and construction workers impacting local communities. Potential positive impacts include temporary employment opportunities and a contribution towards local economic development, specifically to the construction, retail, and services sectors and industries. Note that the impacts are based on a construction period of 5 years.

6.2.1 Vehicular traffic due to construction activities

Nature of impact
The movement of large construction vehicles will affect traffic flows and residents along the access routes.

Scope and consequence of impact
Large construction vehicles will impact the road infrastructure and traffic flows along the access routes during construction. The site will be accessed via the R44 (linking Stellenbosch and Somerset West) and Trumali Street. To our knowledge, no Traffic Impact Assessment has been conducted or Traffic Impact Statement prepared for the development.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1 (228 versus 155 units), implying more construction vehicles along the access routes. Without the development, the *status quo* will be retained, i.e. there will be no impact on traffic flows.

Cumulative Impact
Other developments in the immediate area would increase the number of construction vehicles along the access routes.

Mitigation measures
Once a contractor has been appointed, a construction management plan must be developed to assist with traffic management.

Impact Rating
No Traffic Impact Assessment has been conducted.

6.2.2 Nuisance factors (dust and noise)

Nature of impact
Construction activities create dust and noise at the development site that would affect nearby receptors.

Scope and consequence of impact
During the introduction of bulk services and the construction of top structures, large earth-moving equipment and concrete mixers will generate noise and dust. Although this will be limited to the construction site, the prevailing winds would carry dust and noise towards the surrounding properties and thus affect the residents, their living conditions, and the ecological environment. The receptors likely to be affected are the residents of Brandwacht, Brandwacht-Aan-Rivier, Dalsig and Paradyskloof, as well as employees, patients and visitors to Mediclinic, Trumali Park and Brandwacht Office Park.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1, but the total development site remains the same, likely resulting in similar dust and noise. Without the development, there will be no impact linked to the site.

Cumulative Impact
Additional construction activities in the immediate area will compound the nuisance factors if they coincide or overlap with construction at Brandwacht-Aan-Berg.

Mitigation measures
Dust and noise emissions during the construction period should be minimised by implementing a Construction Environmental Management Plan (CEMP) that would include measures and trigger mechanisms to mitigate any potential impacts to nearby receptors.

Impact Rating
The residual impact will be **medium negative** for Alternatives 1 and 2. Nearby developments could contribute to a **medium negative cumulative impact**.

6.2.3 Influx of job seekers

Nature of impact
An influx of job seekers will lead to competition with local residents for employment opportunities.

Scope and consequence of impact
Local people skilled in earth-moving and construction activities can be employed during the construction phase, with additional opportunities associated with security, transport and related services. While the influx of people seeking employment does not have a social impact, such a movement can result in social impacts. These impacts include the disruption of local community networks and the cohesive social fabric within communities, increased crime levels and disruptions to social services. Construction work on the proposed project is limited to a specified period, and non-local construction labourers may find themselves stranded in the area after construction, resulting in more competition for employment. This could increase the demand for housing and social services over the long term, and lead to various social ills.

Stellenbosch experiences high unemployment, with several low-income communities along the northern side of Stellenbosch from where job seekers will most likely originate. Given the nature and scope of the development, contractors with an established workforce will be appointed to the project. Combined with very strict security rules, this will discourage casual labourers from outside Stellenbosch looking for employment.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1, resulting in an estimated 2 423 versus 2 085 direct jobs during construction. Without the development, no impact will be linked to the site, but other construction and/or operational activities in the area may attract job seekers.

Cumulative Impact
Given the high unemployment levels in some Stellenbosch communities, multiple construction projects are likely to attract job seekers from within Stellenbosch.

Mitigation measures
Contractors must commit to employing people from the Stellenbosch area.

Impact Rating
The residual impact will be **low negative** for Alternative 1 and 2. Additional developments could contribute to a **medium negative cumulative** impact.

6.2.4 Impact of construction workers on local communities

Nature of impact
Incoming construction workers can disrupt family structures and social networks in local communities.

Scope and consequence of impact
Contractors working on large development projects usually have permanently employed construction workers who move from site to site. Depending on the location, these workers are often away from their families for extended periods. If required to reside near the construction site, they may seek out the local community for leisure and social activities. This could lead to an increase in alcohol and drug abuse, unwanted pregnancies and sexually transmitted diseases (STDs), including HIV. It may impact local families and social structures, but it can also damage the construction workers' family structure at home.

Development Alternatives
Alternative 2 will result in an estimated 1 175 net job movements during the 5-year construction versus 1 011 for the preferred Alternative 1. Without the development, no impact will be linked to the site, but existing social problems will remain if not effectively addressed.

Cumulative Impact
Additional developments in the area will significantly increase the number of construction workers.

Mitigation measures
Local labour and enterprises, defined as residents and businesses in the Stellenbosch Municipality, should be employed on the project whenever possible. Construction workers from outside the area should return home over weekends to maintain strong family and social bonds. If required to stay near the construction site, there should be rules for social conduct, and an STD awareness or protection programme for the construction workers should be implemented.

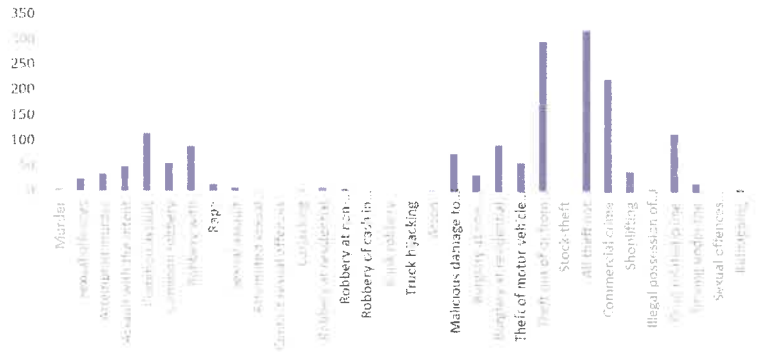
Impact Rating
The residual impact will be **low negative** for Alternatives 1 and 2, and a **medium negative cumulative** impact.

6.2.5 Increase in local crime

Nature of Impact
The presence of construction activities and workers may increase criminal activities in the surrounding area.

Scope and consequence of impact
The presence of construction workers and vehicles generally increases the risk of criminals entering the construction site undetected, which may result in increased criminal activities in the area during construction. This may include on-site petty theft, theft of building material, on-selling of security information, or burglary and theft at nearby properties.

The Stellenbosch Police recorded 363 contact crimes from April 2024 to June 2024, dominated by Common assault (113 cases), Robbery with aggravating circumstances (88 cases) and Common robbery (54 cases). Theft out of or from motor vehicles resulted in 296 cases, commercial crime in 221 cases, and theft not mentioned elsewhere in 318 cases. There were 91 cases of burglary at residential premises recorded. The latter would concern residents close to the development site, particularly the adjacent Brandwacht-Aan-Rivier. However, the residential development implements access control and security fencing to keep the properties and residents safe.



Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1, with more people and vehicles on site. Without the development, no increase in criminal activities will be linked to the site, but security problems will remain sensitive to other activities.

Cumulative Impact
Construction activities are likely to attract criminals in search of easy targets. Each additional development project will contribute to the risk of criminal activities, but effective security measures should confine these problems to site-specific events with little cumulative impact.

Mitigation measures
Co-operation between the Developer and contractors is essential to ensure that the area around the proposed development remains secured during construction. On-site security measures, such as perimeter fencing, controlled access, security guards and patrols, will minimise the risk.

Impact Rating
The residual impact will be **low negative** for Alternatives 1 and 2, with a **medium negative cumulative** impact.

6.2.6 Economic income and employment during construction

A high-level estimate of the socio-economic impacts during construction requires an analysis based on a Social Accounting Matrix (SAM) applicable to the Western Cape. Based on this narrative, it is possible to estimate the impact of the capital expenditure on the Western Cape economy from the spending on the Brandwacht-aan-Berg development during the construction phase. This impact is represented by an income and output multiplier, an indication of temporary job opportunities that will taper away after the construction period, and the impact on household incomes of those workers directly or indirectly involved in the construction phase. The impacts are direct, indirect and induced, with the latter representing the spending of salaries and wages.

Note that employment does not imply NEW jobs, but sustainable employment for contracted service providers' employees not operating at full capacity. For example, it could represent a new contract for a service provider with spare capacity. If the company doesn't have spare capacity, additional workers may be appointed, in which case NEW jobs will be created for the construction phase. Local communities and businesses must benefit directly from developments, and the developers should source labour from Stellenbosch communities. It is also imperative that the recruitment process should promote gender equality by employing women wherever possible.

The analysis of local economic income and employment is based on a preferred and alternative development option (Alternative 1 and 2, respectively), each discussed individually below.

Preferred development option (Preferred Alternative 1)

Given the nature of the development, i.e. erven are sold and made available for the owner to construct a dwelling, it is not possible to estimate when the development will be completed with the building of all the top structures. Given the location, the Stellenbosch residential market and the nature of the dwellings, we have assumed that the project would be completed in 5 years. **Table 2** estimates the economic impact of the envisaged direct spending associated with the preferred development option over the envisaged 5 years of construction, focusing on Output[3], Gross Geographic Product (GGP)[4], jobs, and household income in nominal terms:

- An estimated R1,8 billion in capital investment could generate R4,8 billion in **new business sales**, referred to as the production (or output) that creates demand for business activity during construction.
- The increase in production output could add R1,8 billion (net of the import leakage) to the **GGP** of the Stellenbosch area, which would be a key beneficiary.
- The project could sustain about 6743 (direct, indirect and induced) **employment opportunities** (refer to net jobs movement below).
- **Household income** from job opportunities could increase by R0,8 billion.

[3] Output is the quantity of goods or services produced within a specific time period.
[4] Gross Geographic Product is the total monetary or market value of all the finished goods and services produced within a region's borders in a specific period.

Table 2: Direct, indirect and induced impact of construction spending related to GGP, output, household income and jobs over the estimated 5 years of construction for the Preferred Alternative 1

Economic measure (R' billion)	Direct	Indirect	Induced	Total
Gross Geographic product (GGP)	R706 206 657	R672 577 768	R453 989 994	R1 832 774 419
Production (output)	R1 832 774 419	R1 849 588 863	R1 143 382 206	R4 825 745 488
Jobs	2 085	3 195	1 463	6 743
Household income	R319 474 440	R302 659 996	R168 144 442	R790 278 878

Source: Multi-Purpose Business Solutions SAM model

Table 3 indicates the total impact economic impact of the envisaged direct capital spending associated with the construction of the preferred alternative for Brandwacht-Aan-Berg, focusing on Output (production), Gross Geographic Product (GGP), the net movement in jobs and household income over 5 years. **Figure 17** illustrates the annual impacts for the items used to assess the preferred alternative's economic impact during the 5-year construction.

Table 3: Impact of capital expenditure for the preferred Alternative 1 during 5 years of construction

R'billion	Total	Average (p.a.)	Maximum	Minimum
Gross Geographic Product (GGP)	R1.8	R0,4	R0,5	R0,2
Production (output)	R4.8	R0,9	R1.4	R0,5
Jobs	6 743	1 348	2 022	673
Household income	R0,8	R0,2	R0,2	R0,08
Net jobs movement	1 011			

Source: Multi-Purpose Business Solutions SAM model

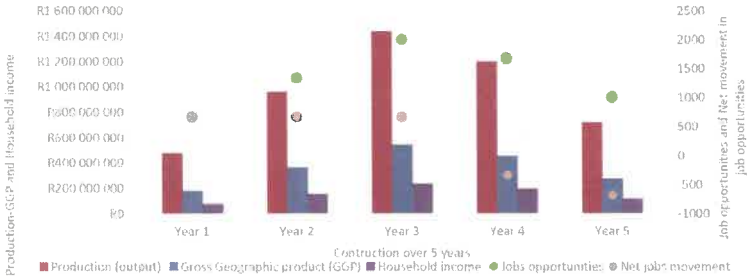


Figure 17: Impact of capital expenditure on an annual basis for the Preferred Alternative 1 during construction

It is envisaged that 6 743 direct, indirect and induced jobs would arise from the capital expenditure on a nominal basis during the 5-year construction. The net movement in jobs during the 5 years is intended to address the issue of over-estimating opportunities resulting from capital expenditure. The premise is to establish the baseline from the first capital expenditure and adjust the number for each successive year. This approach initially results in a net movement of 1 011 (direct, indirect and induced) employment opportunities during construction. These job opportunities reflect the net movement commencing with a base figure of 673 in Year 1.

The difference between job opportunities and net movement in jobs, as illustrated above, implies the need to add or reduce the number of workers required in any year depending on the estimate of capital expenditure, i.e. there is a causal relationship between capital spending and delivery of infrastructure and superstructure.

Development Alternative 2

As stated above, estimating when the development will be completed with the building of all the top structures is impossible. However, the same premise is used to analyse the Alternative 2 development option. **Table 4** estimates the economic impact of the envisaged direct spending associated with the preferred development option over the envisaged 5 years of construction, focusing on Output[5], Gross Geographic Product (GGP)[6], jobs, and household income in nominal terms.

Table 4: Direct, indirect and induced impact of construction spending related to GGP, output, household income and jobs over the estimated 5 years of construction for the Alternative 2 option

Economic measure (R' billion)	Direct	Indirect	Induced	Total
Gross Geographic Product (GGP)	R820 567 083	R781 492 460	R527 507 411	R2 129 566 954
Production (output)	R2 129 566 954	R2 149 104 266	R1 328 537 183	R5 607 208 403
Jobs	2 423	3 712	1700	7 835
Household income	R371 208 919	R351 671 607	R195 373 115	R918 253 641

Source: Multi-Purpose Business Solutions SAM model

The information provided in **Table 4** indicates the following for the estimated 5 years of construction:

- An estimated R2,2 billion in capital investment could generate R5,6 billion in **new business sales**, referred to as the production (or output) that creates demand for business activity during construction.
- The increase in production output could add R2,1 billion (net of the import leakage) to the **GGP** of the Western Cape economy, of which the Stellenbosch municipal area would be a key beneficiary.
- The project could sustain about 7 835 (direct, indirect and induced) **employment opportunities** (refer to net jobs movement below).
- **Household income** from job opportunities could increase by R0,9 billion.

Table 5 indicates the total impact economic impact of the envisaged direct capital spending associated with the construction of Alternative 2, focusing on Output (production), Gross Geographic Product (GGP), the net movement in jobs and household income over 5 years.

Table 5: Impact of capital expenditure for Alternative 2 over 5 years of construction

R'billion	Total	Average (p.a.)	Maximum	Minimum
Gross Geographic Product (GGP)	R2.1	R0,4	R0,6	R0,2
Production (output)	R5.6	R1,1	R1,7	R0,6
Jobs	7 835	1 567	2 351	783
Household income	R0,9	R0,2	R0,3	R0,09
Net jobs movement	1 175			

Source: Multi-Purpose Business Solutions SAM model

[5] Output is the quantity of goods or services produced within a specific time period.
[6] Gross Geographic Product is the total monetary or market value of all the finished goods and services produced within a region's borders in a specific time period.

Figure 18 illustrates the annual impacts for the individual items used to assess the economic impact of the alternative development option during the 5-year construction.

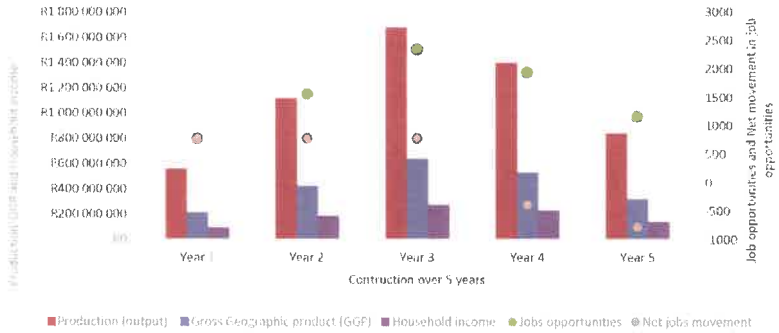


Figure 18: Impact of capital expenditure on an annual basis for Alternative 2 over 5 years of construction

It is envisaged that 7 835 direct, indirect and induced jobs would arise from the capital expenditure on a nominal basis over the five construction years. The net movement in jobs during the 5 years is intended to address the issue of over-estimating opportunities resulting from capital expenditure. The premise is to establish the baseline from the first capital expenditure and adjust the number for each successive year. This approach initially results in a net movement of 1 175 (direct, indirect and induced) employment opportunities during construction. These job opportunities reflect the net movement commencing with a base figure of 783 in Year 1.

The difference between job opportunities and net movement in jobs, as illustrated above, implies the need to add or reduce the number of workers required in any year depending on the estimate of capital expenditure, i.e. there is a causal relationship between capital spending and delivery of infrastructure and superstructure.

Comparison between Alternatives 1 and 2

Alternative 2 would entail 205 dwelling units, and the preferred Alternative would entail 155 units, resulting in different incomes in the local and Western Cape economies. **Table 6** indicates the difference between the alternatives using the information provided in **Tables 3 and 5.**

Table 6: Differences between the model outputs for Preferred Alternative 1 and Alternative 2

R'million	Alt. 1	Alt. 2	Alt. 1 – Alt. 2	Avg	Max	Min
Gross Geographic Product (GGP)	R1.8	R2.1	(R297)	(R59)	(R89)	(R30)
Production (output)	R4.8	R5.6	(R781)	(R156)	(R234)	(R78)
Jobs	6 743	7 835	(1 094)	(219)	(329)	(110)
Household income	R0,8	R0,9	(R128)	(R26)	(R38)	(R13)
Net jobs movement	1 011	1 175	(164)			

The results suggest a R781 million difference (R156 million per annum) in production output between the Preferred Alternative 1 and Alternative 2 development options. The Preferred Alternative would also result in R297 million less local economic income over the 5 years of construction, and R128 million less in household income. Alternative 2 will generate 1 094 more job opportunities, with 164 more job movements.

No-Go Alternative

Without the proposed Brandwacht-Aan-Berg development, the envisaged economic income and job opportunities will not be realised.

Cumulative Impact

Other development projects in the area would further enhance income and employment creation.

Mitigation measures

No mitigation applies as it represents a positive impact.

Impact Rating

Our assessment suggests that the impact will be **medium positive.**

6.3 Operational Phase

The most significant concerns for the operational phase relate to the sense of place, traffic, infrastructure capacity and surrounding land values. On the positive side, the proposed development will address a growing need for housing in Stellenbosch, create additional employment opportunities and contribute to economic income

6.3.1 Providing high-end housing opportunities

Nature of impact
The proposed development will address a growing demand for housing in the Stellenbosch Municipality.

Scope and consequence of impact
The proposed development will include Conventional Residential Zone erven (with varying erf sizes), a Local Business Zone erf (abutting the Brandwacht Office Park), Private Open Space Zone erven (for open spaces and roads). The demand for high-end housing in Stellenbosch Town has always been a key market focus. The limited housing opportunities have resulted in demand outstripping supply and, consequently, driving up values. Once a new development is approved, the sell-out of such opportunities occurs at a pace that resembles the announcement of an event like "Black Friday". This is unique to Stellenbosch and a few other areas where funds are available to partake in high-end property development releases.

Development Alternatives
The Preferred Alternative 1 entails 155 residential units, whereas Alternative 2 would include 228 residential units. Without the development, there will be no contribution towards economic income and employment linked to the site. Without the development, the *status quo* will be retained, i.e. no contribution to housing opportunities will be realised.

Cumulative impact
Similar projects would act synergistically to create more supply for high-end units in the Stellenbosch housing market.

Mitigation measures
No mitigation applies as it represents a positive impact.

Impact rating
Our assessment suggests that impact will be **medium positive** for Alternatives 1 and 2. Taken with other residential developments in progress or planned for Stellenbosch, it may result in a **medium-high cumulative impact**.

6.3.2 Increased vehicular traffic

Nature of impact
Additional residential units will increase vehicular movement along the access routes.

Scope and consequence of impact
The site will be accessed via the R44 and Trumali Street. Without a Traffic Impact Assessment, no estimates on daily trips linked to the development are available.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1 (228 versus 155 units), which should result in more daily trips. Without the development, the *status quo* will be retained, i.e. there will be no impact on traffic flows.

Cumulative Impact
Residential development and densification are underway in Stellenbosch and will generate significant additional traffic on the access routes.

Mitigation measures
No Traffic Impact Assessment has been conducted.

Impact Rating
No Traffic Impact Assessment has been conducted.

6.3.3 Sense of place

Nature of impact
The proposed development will impact the sense of place for surrounding land users.

Scope and consequence of impact
Sense of place generally refers to how people perceive places, whether they are streets, communities, cities or regions. This may influence their well-being, how they describe and interact with a place, what value they place on something, etc. A sustainable community resembles a living system in which human, natural and economic elements are interdependent and draw strength from each other (Roseland, 1998). Community members generally recognise and support people's sense of well-being, which includes a sense of belonging, a sense of place, a sense of self-worth, a sense of safety and a sense of connection with nature.

The Draft **Visual Impact Assessment** (Terra+ Landscaping Architects, 2024) indicated that the proposed development is considered to be a low-density residential type development (buildings and landscape, with private roads, low-scale infrastructure and associated engineering services) and low intensity (i.e. generally single or double storey domestic structures, with associated infrastructure (e.g. engineering services), usually with more than 50% of the site area retained as natural (undisturbed) open space. The Visual Impact Assessment concluded that the construction and operational phases would cause noticeable changes to the visual *status quo*. During operations, the site will be transformed from to (derelict) agricultural to residential (change in 'sense of place'). There will be new residential buildings with associated landscape infrastructure/services; residential activities/passive recreational use of internal private open space; increased traffic flows on Trumali Street; and signage, lighting at night, boundary treatment.

The Visual Impact Assessment stated that the suburban development's proximity and the planned development's location on the property allow for a higher degree of visual absorption capacity. However, the visual exposure can be lessened by the proposed buffer planting along the edge of Trumali Street and the northern edge. The development is feasible without sacrificing the site's rural quality or the larger context, provided that the planned buildings are positioned not to obstruct views of the surrounding countryside and are balanced by substantial tree planting. The proposed landscape interventions - increasing tree lines and planting trees in clusters to provide visual screening and maintaining the central green space in a North-South direction, are essential to the development's success and impact on the site's rural character.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1 (228 versus 155 units), which may result in a slightly higher visual impact than Alternative 2. The current sense of place will be retained if the *status quo* is maintained, but other nearby developments may impact the rural sense of place.

Cumulative Impact
The Visual Impact Assessment indicated that with the roll-out of property development projects in Stellenbosch as niche-type developments, and the approach adopted by the Municipality in terms of spatial planning and development approvals, it is unlikely that a significant cumulative impact will arise that may affect the sense of place.

Mitigation measures
The Visual Impact Assessment indicated that the preferred layout responded to visual indicators and has been carefully planned to maximize the site's visual absorption capacity as much as possible. Management actions and mitigation measures highlighted in the Visual Impact Assessment should be implemented to mitigate the visual impacts successfully. This mainly refers to landscape intervention that should be planned as part of the overall implementation of the site development.

Impact Rating
The Visual Impact Assessment concluded that the development proposal's preferred option has a medium/high visual effect, which is reduced to medium importance by the suggested architectural constraints, landscaping, and an integrated site landscape character. Taken together with the potential impact on traffic flows, we anticipate a **medium negative impact** on the sense of place for adjacent residents (particularly Brandwacht and Brandwacht-Aan-Rivier). Alternative 2 will have a higher density than Preferred Alternative 1, resulting in a higher impact on the sense of place to surrounding residents based on the Visual Impact Assessment and assumed increase in traffic (no Traffic Impact Assessment was conducted). However, the significance of both Alternatives' residual impact will be medium based on the impact assessment criteria. Other developments in the area could contribute to a **medium-high negative cumulative impact** on the current rural sense of place.

6.3.4 Impact on surrounding property values

Nature of impact
A new development may affect the current and future perceived value of properties in the surrounding area.

Scope and consequence of impact
The value of a property is driven by various factors, among others, supply and demand, interest rates, the contraction or expansion of the local economy, population growth rates and changes in disposable income to debt ratios. In addition, relative property values are based on supply and demand, which direct property prices. As these underlying characteristics and resulting relative advantages change, so do the relative prices, as these advantages are capitalised into land values. The future land value in the area also depends on spatial planning policies and the bulk supply of land permitted for various uses as well as the prominence of the location and the greater area that is perceived as a good property investment with adequate growth prospects.

The high-end nature of the proposed development will likely enhance the property prices of Brandwacht-Aan-Rivier. If the visual impact for Brandwacht properties is effectively mitigated, the development will also positively impact the perceived value of those properties in the surrounding area.

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1 (228 versus 155 units), potentially a higher visual impact that could negatively impact Brandwacht property prices if not effectively mitigated. Without the proposed development, real estate values would adjust and re-balance independently of the proposed project.

Cumulative Impact
Other developments in the immediate area could compound any negative impacts on surrounding land users (e.g. sense of place and traffic flows). However, other developments could increase the perceived value of undeveloped properties within the urban edge.

Mitigation measures
Implementing mitigation measures related to the sense of place (particularly visual and traffic) will reduce the potential negative impact on residential property prices.

Impact Rating
The residual impact will be **low positive** for Alternative 1 and 2 if the visual impacts are effectively mitigated. Other developments in the area could contribute to a **low negative cumulative** impact for residential properties or a low positive impact for non-residential properties with the potential to be rezoned.

6.3.5 Impact on new employment opportunities during the operational phase

Nature of impact
The new residents will need a variety of supplies and services.

Scope and consequence of impact
A new residential development will create direct and indirect employment opportunities for people with different types and levels of skills. The employment opportunities linked to the proposed development will mainly be linked to direct employment by households (e.g. cleaning) and small business opportunities (e.g. gardening, plumbing, electrical work, and general maintenance).

Development Alternatives
Alternative 2 entails more residential units than the Preferred Alternative 1, thus requiring more cleaning, housekeeping, gardening and maintenance services. Without the development, there will be no contribution towards employment.

Cumulative Impact
Each additional development in Stellenbosch will further contribute to job creation in the area.

Mitigation measures
No mitigation applies as it represents a positive impact.

Impact Rating
Our assessment suggests that the impact will be **medium positive** for Alternatives 1 and 2, whereas the cumulative impact will be **medium positive**.

6.3.6 Revenue from property rates accruing to local authorities

Nature of impact
Monetary benefits will accrue to the Stellenbosch Municipality through property rates and other utility charges such as water and electricity.

Scope and consequence of impact
The Municipality will levy property rates once an erf sold and subsequently on the improved value. We have assumed for this assessment that property rates will apply once a top structure is added. Capital expenditure is envisaged over 5 years, while the revenue accruing to the local authority is estimated over 10 years. We applied

the property rates associated with the 2024/2025 Municipal Budget Annexure 3: Property (Tax) Rate 2024/2025[7], assuming the rates apply from the first year once the land has been improved per the envisaged phasing. A forecast of the rates at an average escalation of 6.5% per annum from the first year is applied.

The estimate of property rates revenue is based on the Preferred Alternative 1 and Alternative 2 options.

Preferred Alternative 1 development scenario

Figure 19 illustrates the rates accruing to the Stellenbosch Municipality over 10 years based on the envisaged phasing of the proposed development. The envisaged rate income in Year 1 is R996 380, increasing to R16.4 million in Year 10. Over the 10 years, an estimated R115.1 million could accrue to the Stellenbosch Municipality based on the sellout and build scenario and applied assumptions (in nominal terms).

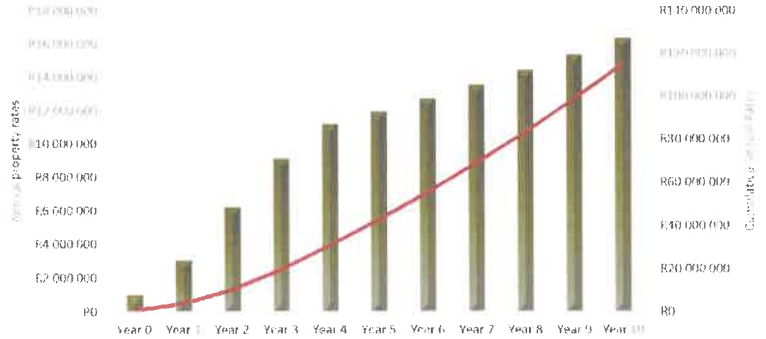


Figure 19: Envisaged annual and cumulative property rates over 10 years based on the Preferred Alternative 1.
Source: Stellenbosch Municipality Budget Annexure 3: Property (Tax Rates) 2024/2025

Alternative 2 development scenario

Figure 20 illustrates the rates accruing to the Stellenbosch Municipality over 10 years based on the envisaged sellout and development of the Alternative development proposal for the proposed development. The envisaged rate income in Year 1 is R1.2 million, increasing to R19.0 million in Year 10. Cumulatively, over the 10 years, an estimated R255.1 million could accrue to the Stellenbosch Municipality based on the completion of the top structure per the rollout of the development and the applied assumptions in nominal terms.

[7] https://stellenbosch.gov.za/download/appendix-3_final-tariff-proposals_2024-2025/?ind=1717753756678&filename=WC024_2024_Appendix-3-Final-Tariff-Proposals-2024-2025.pdf&wpdmdl=24638&refresh=6741ad5cd58521732357468

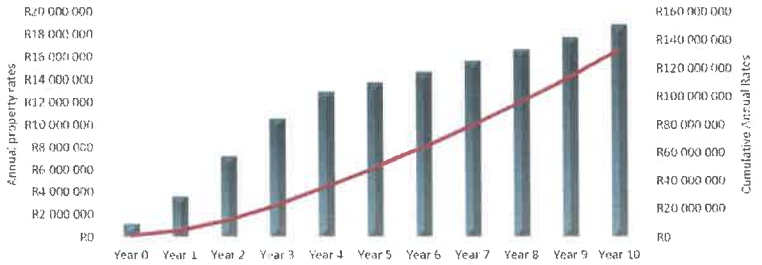


Figure 20: Envisaged annual and cumulative property rates over 10 years for Alternative 2.
Source: Stellenbosch Municipality Budget Annexure 3: Property (Tax Rates) 2024/2025

Comparison between the Preferred Alternative 1 and Alternative 2

The Preferred development option and the Alternative deliver different outcomes for the Stellenbosch Municipality in terms of property rates revenue. **Figure 21** indicates the annual property rates revenue for the first 10 years from inception for the preferred and alternative development project. The results suggest that the alternative option could result in R18.6 million more in property rates over 10 years than the Preferred development option. This will escalate over time, and the gap will enlarge between the preferred and alternative options.

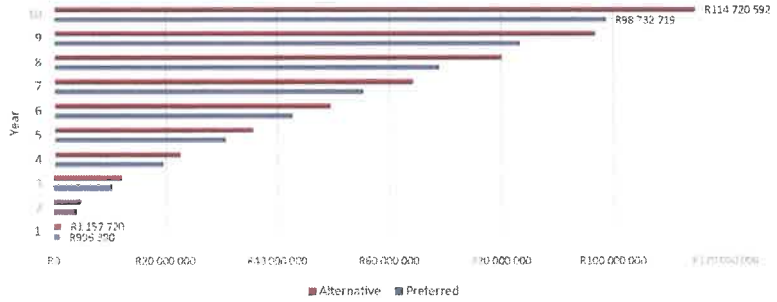


Figure 21: Comparison of property rates for the Preferred and alternative development over 10 years

No-Go Alternative
Without the proposed Brandwacht-Aan-Berg development, the envisaged monetary benefit would not accrue to the Stellenbosch Municipality.

Cumulative Impact
Other development projects in the area would further enhance the rates base of the Stellenbosch Municipality.

Mitigation measures
No mitigation applies as it represents a positive impact.

Impact Rating
Our assessment suggests that the impact will be **medium positive**.

7 SOCIAL INVESTMENT AND MONITORING INITIATIVES

7.1 Social investment and community engagement

Social investment initiatives have become a standard inclusion in submitting development proposals to relevant government departments at local, provincial and national levels. Developers are required and expected to indicate to what extent the development project would contribute to the welfare of surrounding communities through social investment initiatives.

A need exists to align communities' development priorities with the project developers' social investment objectives. Multi-Purpose Business Solutions has prepared a framework to provide developers with a sense of direction when assessing what initiatives could be considered part of a social investment programme. **Figure 22** illustrates a matrix consisting of four quadrants based on the nature of the intended investment and the "capital" introduced by the developer as part of the social investment.

	Abstract capital	Physical capital
Active investment	• Grants • Bursaries • In-house training • Education • Development of small, medium and micro businesses • Youth training initiatives • Environmental initiatives (nursery and training initiatives) • Enterprise development opportunities	• Upgrading of community health facilities (e.g. clinics) • Upgrading and maintenance of sports fields • Construction of new skills development/training facilities • Provision or upgrading of infrastructure (with advantage for the community) • Development or conversion of existing buildings to multi-purpose centres • Community gardening project and farming projects
Passive	• Establishment of community trust funds for environment and development • Provision of guarantees • Advancing preferential terms	• Build facility and transfer ownership to a community trust for application to the community • Maintenance of community facility

Figure 22: An illustrative matrix of social investment options for developers
Source: Multi-purpose Business Solutions ©
Notes:
Active and Passive investment of abstract capital. These investments refer to time and funds invested in initiatives such as bursaries and in-house training. Passive investment refers specifically to allocating funds to a community trust or some other vehicle that assumes responsibility for disbursement to community third parties and projects.
Active and passive investment in physical capital. Active participation implies direct investment in the needs of communities by providing new or upgrading of existing community facilities such as health care centres, schools, recreation and sports facilities. Passive investment in this context refers specifically to the establishment of a facility for the community, which is then transferred to a trust or other type of entity (vehicle) with the sole purpose of administrating and maintaining the facility on behalf of the community.

It should be noted that the term "social investment" has a broad meaning in this context. In this framework, a distinction is made between (1) physical and abstract capital reflecting the difference between actual funds invested in assets and "in-kind" investment in people, and (2) active and passive investment reflecting the degree of the developer's actual involvement in the community either directly or through a third party, which could be an entity or other vehicle.

A developer could select any one or combination of social investment initiatives illustrated in **Figure 22**. We suggest that a clear indication is provided in applying the nature and scope of the social investment and whether or not a passive or active investment approach will be followed. Our assessment suggests that the type of investment that the Developer should consider based on an agreement with various stakeholders must achieve the highest impact.

7.2 Monitoring framework

An essential component of determining the success of a project from a socio-economic perspective entails monitoring, reviewing and evaluating processes to assess the adherence to socio-economic obligations. Continuous and periodic monitoring and evaluation are required to ensure the achievement of milestones and the overall success of achieving the socio-economic objectives envisaged for the Project. The following activities are geared towards achieving acceptable and ongoing monitoring standards:

1. Regular field visits to the project and stakeholders benefiting from the project
2. A review after the first six months after implementation to assess the overall progress and achievement of the objectives and milestones related to the specified targets of employment, skills development, small business development and capacity building.

In order to monitor the performance related to the achievement of the socio-economic development obligations, the contractor should record and report progress with agreed socio-economic obligations. Typical reporting information should include:

- Actual total expenditure on Total Procurement;
- Actual total expenditure on Procurement of Materials;
- Actual total expenditure on Sub-contracting;
- Actual total employment categorised according to standard Occupational Categories; and
- Actual total payroll.

The successful implementation and development of the proposed project will ultimately be assessed on the contribution the project makes during construction and operations to the social development and economic goals of employment creation, skills development and training, small business development and capacity building in the area. The following Key Performance Areas (KPAs) are outcomes based on the scope of social engagement activities:

- Procurement from, or sub-contracting to local enterprises;
- Procurement from, or sub-contracting to enterprises from outside the local area;
- Procurement of local materials/resources;
- Procurement of materials from outside the Municipality;
- Recruitment process that promotes gender equality

8 SUMMARY OF IMPACTS & RECOMMENDATIONS

8.1 Summary of impacts

The question that needs to be addressed in the context of perceptions and concerns raised by I&APs is whether the proposed development is desirable from a societal cost-benefit perspective? Several issues of a social nature are raised and discussed in this report. It was determined that there will be both positive and negative socio-economic consequences and the need thus exists to determine whether mitigation of the negative impacts could be implemented.

Impact Ratings

To provide a perspective of the net societal benefits and costs associated with the various alternatives for the proposed project, the following table summarises the different socio-economic impacts associated with the proposed development and their respective significance after the implementation of mitigation measures (i.e. the residual impact) as proposed by the relevant specialists. Note that only impacts not rated by other specialists are indicated in the table.

Nature of the Impact	Rating after mitigation (Residual Impact)		
	Alternative 1	Alternative 2	Cumulative
Construction			
Traffic flows along access roads	No Traffic Impact Assessment		
Nuisance factors (dust and noise)	Medium (-)	Medium (-)	Medium (-)
Influx of job-seekers	Low (-)	Low (-)	Medium (-)
Construction workers – local communities	Low (-)	Low (-)	Medium (-)
Increase in local crime	Low (-)	Low (-)	Medium (-)
Economic income and employment opportunities	Medium (+)	Medium (+)	Medium (+)
Operations			
Provision of thigh-end housing opportunities	Medium (+)	Medium (+)	Medium-High (+)
Traffic flows along access roads	No Traffic Impact Assessment		
Sense of place	Medium (-)	Medium (-)	Medium-High (-)
Surrounding property values	Low (+)	Low (+)	Low (-)
New employment opportunities	Medium (+)	Medium (+)	Medium (+)
Revenue accruing to public authorities	Medium (+)	Medium (+)	Medium-High (+)

Potential positive impacts – Preferred Alternative 1

1. **Provision of high-end housing opportunities:** The proposed development will add 155 high-end housing units to the Stellenbosch market, where there is always a high demand and take-up of new property opportunities.
2. **Employment opportunities:** The employment analysis indicates that the project could sustain about 6 743 direct, indirect and induced employment opportunities during construction, with a net movement of 1 011 opportunities. As a result of these job opportunities, household incomes could increase by R790 million over the 5 years of construction.
   It is unknown how many new opportunities will be created during operations, but these will mainly be linked to direct employment by households (e.g. cleaning) and small business opportunities (e.g. gardening, plumbing, electrical work, and general maintenance).

3. **Economic income:** The initial capital investment of an estimated R1,8 billion could generate R4,8 billion in new business sales during construction, referred to as the production (or output) that creates demand for business activity over the construction period. The increase in production output could add R1,8 billion (net of the import leakage) to the GGP of the Stellenbosch Municipality during construction.
4. **Revenue accruing to the local authorities:** During the first 10 years of operations, an estimated R115.1 million could accrue to the Stellenbosch Municipality based on the sellout and build scenario and applied assumptions (in nominal terms).
5. **Surrounding property values:** The high-end nature of the proposed development will likely enhance the property prices in nearby residential area, provided the visual impact is effectively mitigated. Other agricultural properties with the potential to be zoned for residential may be in demand, thus increasing their perceived value.

Potential negative impacts – Preferred Alternative 1

1. **The influx of job seekers (construction):** An influx of job seekers could result in competition with local residents. However, given the relatively high unemployment in Stellenbosch, job seekers will mainly originate from local communities.
2. **Construction workers** originating from outside Stellenbosch may seek the local community for leisure and social activities, which could lead to social ills impacting local families and their social structures.
3. **Dust and noise (construction):** Site preparation and the introduction of services will create dust and noise that would affect nearby receptors, in particular the residents of Brandwacht, Brandwacht-Aan-Rivier, Dalsig and Paradyskloof.
4. **Increase in crime levels:** On-site activities could attract criminals, but this could be mitigated with effective security measures and access control. Crime could include on-site petty theft, theft of building material, on-selling of security information, or burglary and theft at nearby properties.
5. **Sense of place (operations):** The development may negatively impact the sense of place of surrounding residents who enjoy the current agricultural sense of place offered by the site (although not actively used for production).

Alternative development proposals

No-Go Alternative – no development, i.e. the *status quo* is maintained. Without the development, the status quo will be retained, and the listed impacts will not be realised.

Alternative 2 (228 units): The nature and significance of the social impacts would be comparable to the Preferred Alternative 1, but Alternative 2 will have slightly higher economic impacts. Alternative 2 will generate R781 million (R156 million per annum) more in production output than Preferred Alternative 1, R297 million more in local economic income over the 5 years of construction, and R128 million more in household income. Furthermore, Alternative 2 will generate 164 more job movements during construction, and R18,6 million more in property rates over the first 10 years of operations.

Cumulative impacts

Cumulative impacts refer to any other developments and existing activities within the immediate area that could compound any positive or negative impacts of the proposed development. The potential **negative impacts** would be compounded if additional developments were introduced in the immediate and surrounding areas. These impacts typically relate to sense of place, traffic, crime and nuisance factors. Similarly, other developments could compound employment and economic income **benefits**.

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT/ NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE													PROPOSED MITIGATION
		BEFORE MITIGATION							AFTER MITIGATION						
		M	D	E	I	R	P	TOTAL (SP)	S	M	D	E	I	R	P	TOTAL (SP)	S
Potential social impacts on local communities during construction																	
Nuisance factors (dust and noise)																	
Preferred Alternative 1	Construction activities create dust and noise at the development site that would affect nearby receptors.	6	2	2	0	1	5	55	M (-)	4	2	2	0	1	5	45	M (-)	Dust and noise emissions during the construction period should be minimised by implementing a CEMP. No Traffic Impact Assessment was done, i.e. mitigation measures were proposed to address increased traffic during construction.
Alternative 2		6	2	2	0	1	5	55	M (-)	4	2	2	0	1	5	45	M (-)	
Cumulative		8	2	3	0	1	5	70	M (-)	6	2	3	0	1	5	60	M (-)	
"No-Go"	No increased traffic, dust and noise related to the development site, but other activities in the area could affect nearby receptors.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Influx of job seekers																		
Preferred Alternative 1	An influx of job seekers will lead to competition with local residents for employment opportunities.	4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	Contractors must commit to employing people from the immediate area whenever possible.
Alternative 2		4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	
Cumulative		6	2	3	0	1	4	48	M (-)	4	2	3	0	1	4	40	M (-)	
"No-Go"	There will be no influx of job seekers linked to the site, but other construction and/or operational activities in the area may attract job seekers.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Impact of construction workers on local communities																		
Preferred Alternative 1	Incoming construction workers can disrupt family structures and social networks in local communities.	4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	Local labour and local enterprises should be used, defined as residents and businesses in Merafong City. Construction workers from outside should return home regularly.
Alternative 2		4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	
Cumulative		6	2	3	0	1	4	48	M (-)	4	2	3	0	1	4	40	M (-)	
"No-Go"	No construction workers will be linked to the specific site.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Local crime																		
Preferred Alternative 1	The presence of construction workers may increase the risk of criminal activities in the area	4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	Co-operation between Developer and contractors essential to ensure that the area remains secured during construction. On-site security measures, such as perimeter fencing, controlled access, security guards and patrols, will minimise the risk.
Alternative 2		4	2	2	0	1	4	36	- (-)	2	2	2	0	1	4	28	- (-)	
Cumulative		6	2	3	0	1	4	48	M (-)	4	2	3	0	1	4	40	M (-)	
"No-Go"	No increase in criminal activities linked to the site, but security problems remain sensitive to other activities.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT/ NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE															PROPOSED MITIGATION
		BEFORE MITIGATION								AFTER MITIGATION							
		M	D	E	I	R	P	TOTAL (SP)	S	M	D	E	I	R	P	TOTAL (SP)	S
Potential social impacts on local communities during construction																	
Contribution towards local economic income and employment																	
Preferred Alternative 1	The local and provincial economies will benefit from the procurement of goods and services and the spending of wages and salaries. Temporary employment opportunities for people with different types and levels of skills.	6	2	3	0	0	5	55	M (+)								No mitigation applies as it represents a positive impact.
Alternative 2		6	2	3	0	0	5	55	M (+)								
Cumulative		8	2	3	0	0	5	65	M (+)								
"No-Go"	No contribution towards economic income	-	-	-	-	-	-	-	-								
Potential social impacts on local communities during operations																	
Providing high-end housing opportunities																	
Preferred Alternative 1	The local community and the rest of South Africa will benefit from providing renewable energy.	4	5	4	0	0	5	65	M (+)								No mitigation applies as it represents a positive impact.
Alternative 2		4	5	4	0	0	5	65	M (+)								
Cumulative		6	5	5	0	0	5	80	M-H (+)								
"No-Go"	No contribution to housing opportunities will be realised.	-	-	-	-	-	-	-	-								
Sense of Place																	
Preferred Alternative 1	The proposed development will affect the sense of place for surrounding land users	7	5	2	0	1	5	75	MH (-)	4	5	2	0	1	5	60	M (-) The Developers should implement the mitigation measures proposed in the Visual Impact Assessment.
Alternative 2		8	5	2	0	1	5	80	MH (-)	5	5	2	0	1	5	65	M (-)
Cumulative		10	5	3	0	1	5	95	MH (-)	7	5	3	0	1	5	80	MH (-)
"No-Go"	The current sense of place will be retained, but other developments in the area may impact this.	-	-	-	-	-	-	-	-								
Surrounding property values																	
Preferred Alternative 1	A new development may affect the current and future perceived value of other properties in the surrounding area	4	5	2	1	2	3	42	M (-)	2	5	2	0	0	3	27	L (+) Implementation of mitigation measures related to visual and traffic will minimise negative impacts.
Alternative 2		4	5	2	1	2	3	42	M (-)	2	5	2	0	0	3	27	L (+)
Cumulative		6	5	3	1	2	3	51	M (-)	4	5	3	0	0	3	36	L (+)
"No-Go"	Real estate values would increase/decrease independently of the proposed project.	-	-	-	-	-	-	-	-								

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT/ NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE															PROPOSED MITIGATION
		BEFORE MITIGATION								AFTER MITIGATION							
		M	D	E	I	R	P	TOTAL (SP)	S	M	D	E	I	R	P	TOTAL (SP)	S
Potential social impacts on local communities during operations																	
Contribution towards employment																	
Preferred Alternative 1	The project will support sustainable employment for people with different types and levels of skill.	1	5	3	0	0	5	45	M (+)								No mitigation applies as it represents a positive impact.
Alternative 2		1	5	3	0	0	5	45	M (+)								
Cumulative		4	5	3	0	0	5	60	M (+)								
"No-Go"	No contribution towards temporary employment	-	-	-	-	-	-	-	-								
Revenue for local authorities																	
Preferred Alternative 1	The local and provincial economies will benefit from the procurement of goods and services and the spending of wages and salaries	4	5	4	0	0	5	65	M (+)								No mitigation applies as it represents a positive impact. However, the Developer should be cognisant of the importance of using local labour, goods and services as far as possible.
Alternative 2		4	5	4	0	0	5	65	M (+)								
Cumulative		8	5	4	0	0	5	85	M-H (+)								
"No-Go"	No contribution towards economic income	-	-	-	-	-	-	-	-								

Significance Points	Environmental Significance
125 – 150	
100 – 124	
75 – 99	
40 – 74	Moderate (M)
<40	
+	

Mitigation measures

Many potential impacts could be mitigated by introducing the measures proposed by various specialists; these must be considered and implemented by the developer. Monitoring and evaluating socio-economic impacts and continuously assessing the outcomes would further inform the social and economic fabric and the impact on surrounding land users. The following mitigation measures related to the **socio-economic context** are proposed and should be consolidated into an Implementation Plan as part of the Construction Environmental Management Plan (CEMP) and/or Operational Environmental Management Plan (OEMP).

Pre-construction (CEMP)	
Procurement Strategy that includes the following and applies to the project: (e) Initiate the activity during the first phase of the development; (f) The strategy is the responsibility of the contractor(s) collectively under the guidance of the Municipality; (g) Focus on opportunities for local labour in the surrounding areas and businesses as a priority. Contractors are required to indicate the geographical location of sub-contractors (businesses) and local labour; and (h) Local contractors invited to tender for work in the context of the terms and conditions included in RFP documentation, which would include skills development, on-site training, gender equality, etc.	
Pre-construction & Construction (CEMP)	
Communication Protocols that address directly and indirectly affected residents and surrounding landowners, with specific reference to activities, timelines and intended impacts related to the construction phase and all related activities associated with the implementation of the project (i.e. during the operational phase). • **Objectives** - To orientate, generate awareness and gain positive attitudes among stakeholders as far as possible; and - To engage and inform stakeholders of progress regarding all phases of construction. • **Target audience** - Property owners and users of the land portions directly surrounding the proposed activity; and - Other stakeholders and property owners that may be affected. • **Major types of messages** - Inform directly affected residents on the periphery of the development site and others that would frequent the area; - The commencement date for construction activities related to the project; - Duration and extent of the construction activities and details of individual construction activities; - Progress updates, including any delays in a construction-related activity; and - Introduce appropriate signage to warn persons frequenting the area and those residing adjacent to the development area.	
Construction phase	
Nuisance factors (dust and noise)	Dust and noise emissions during the construction period should be minimised through a Construction Environmental Management Plan (CEMP).
Influx of job seekers, impact on local communities	Contractors need to employ people from the immediate area whenever possible.
Increase in local crime	Co-operation between the Developer and contractors is essential to ensure that the area around the proposed development remains secured during construction. On-site security measures, such as perimeter fencing, controlled access and security guards and patrols will minimise the risk.
Operational phase	
Sense of place, residential property values	Implement recommendations by relevant specialists to mitigate negative impacts related to visual, traffic, nuisance factors, etc..

Impact statement

Several **socio-economic impacts** of the proposed development were identified. The Preferred Alternative 1 will add 155 high-end residential units to the Stellenbosch housing market with an estimated initial investment of R1,85 billion over five years in nominal terms. The latter could generate R4,8 billion in new business sales, adding R366 million (net of import leakage) to the Stellenbosch economy annually over the envisaged construction period of five years. The project could sustain about 6 743 direct, indirect and induced employment opportunities during construction, with a net movement of 1 011 employment opportunities, while increasing household incomes by R790 million over the 5 years of construction. An unknown number of new opportunities will also be created during operations, mainly linked to direct employment by households and small business opportunities such as garden services, electricians, plumbers and handmen.

Alternative 2 (255 residential units) will generate R781 million (R156 million per annum on average) more in production output than Preferred Alternative 1, R297 million more in local economic income during construction, and R128 million more in household income. Furthermore, Alternative 2 will create a net number of 164 more jobs during construction, and an estimated R18,6 million more in property rates revenue for the Stellenbosch Municipality over the first 10 years of operations in nominal terms.

Potential **negative impacts** include traffic flows, sense of place, nuisance factors, crime and construction workers who may impact local communities. However, if the site is properly managed and mitigation measures are implemented, the significance of these impacts will be low to moderate. Alternative 2 will have a higher density than Preferred Alternative 1, resulting in a higher impact on the sense of place to surrounding residents based on the Visual Impact Assessment and assumed increase in traffic (no Traffic Impact Assessment was available). However, the significance of both Alternatives' residual impact will be medium based on the impact assessment criteria.

Our assessment indicates that the socio-economic benefits of the preferred development alternative outweigh the potential -costs, and no fatal floors from a socio-economic perspective are identified or envisaged whether the preferred or alternative development option is considered.

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10 ANNEXURE A: CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

The following methodology has been applied to the prediction and assessment of impacts. Potential impacts have been rated in terms of the direct, indirect, and cumulative nature of the impact:

- **Direct** impacts – are impacts that are caused directly by the activity and generally occur at the same time and the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable;
- **Indirect** impacts – of an activity are indirect or induced changes that may occur because of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place because of the activity;
- **Cumulative** impacts result from the incremental impact of the proposed activity on a common resource when added to the impacts of past, present, or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period and can include both direct and indirect impacts.

The significance of each potential impact, with and without the implementation of the proposed mitigation measures, will be assessed based on the following variables (evaluation components):

- Spatial extent – The size of the area that will be affected by the impact;
- Intensity (or Magnitude) – The anticipated severity of the impact;
- Duration – The timeframe during which the impact will be experienced;
- Probability – The probability of the impact occurring;
- Reversibility – The "reversibility" of the environmental impacts of the proposed development after project cessation or decommissioning; and
- Irreplaceability – The "irreplaceability" of natural characteristics in the area that may be impacted by the proposed development.

Using the criteria above, the impacts will further be assessed using quantifiable values as described below:

Criteria	Description	Quantitative Rating
Duration	Temporary (less than a year)	1
	Short term (1 to 6 years)	2
	Medium term (6 to 15 years)	3
	Long term (the impact will cease after the operational life of the activity)	4
	Permanent (mitigation will not occur in such a way or in such a time span than the impact can be considered transient)	5
Spatial extent	Site specific	1
	Local (less than 2 km from the site);	2
	Regional (within 30 km of the site)	3
	National (beyond Provincial boundaries and within National boundaries)	4
	International / Transboundary (Beyond National boundaries)	5
Intensity Applicable to Negative Impacts (at	None (Biophysical and/or social functions and/or processes will remain unaltered)	0
	Very Low (Biophysical and/or social functions and/or processes might be negligibly altered)	2

Criteria	Description	Quantitative Rating
indicated spatial extent)	Low (Biophysical and/or social functions and/or processes might be slightly altered)	4
	Medium (Biophysical and/or social functions and/or processes might be notably altered)	6
	High (Biophysical and/or social functions and/or processes might be considerably altered)	8
	Very High (Biophysical and/or social functions and/or processes might be severely altered)	10
Intensity Applicable to Positive Impacts (at indicated spatial extent)	None (Biophysical and/or social functions and/or processes will remain unaltered)	0
	Very Low (Biophysical and/or social functions and/or processes might be negligibly enhanced)	2
	Low (Biophysical and/or social functions and/or processes might be slightly enhanced)	4
	Medium (Biophysical and/or social functions and/or processes might be notably enhanced)	6
	High (Biophysical and/or social functions and/or processes might be considerably enhanced)	8
	Very High (Biophysical and/or social functions and/or processes might be substantially enhanced)	10
Probability	Improbable (5% to no chance of occurring)	1
	Probable (5% - 25% chance of occurring)	2
	Medium Probability (25% - 75% chance of occurring)	3
	Highly probable (75% - 95% chance of occurring)	4
	Definite (greater than 95% chance of occurring)	5
Reversibility	No impact	0
	Impact will be reversible	1
	High potential that impact might be reversed	2
	Moderate potential that impact might be reversed	3
	Low potential that impact might be reversed	4
	Impact cannot be reversed	5
Irreplaceability	None	0
	Very low potential for loss of irreplaceable resources	1
	Low potential for loss of irreplaceable resources	2
	Moderate potential for loss of irreplaceable resources	3
	High potential for loss of irreplaceable resources.	4
	Definite loss of irreplaceable resources	5
CUMULATIVE impact	High: The activity is one of several similar pasts, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.	
	Medium: The activity is one of a few similar pasts, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socioeconomic resources of local, regional or national concern.	
	Low: The activity is localised and might have a negligible cumulative impact.	
	None: No cumulative impact on the environment.	

Once the evaluation components have been ranked for each impact, the significance of the potential impact is assessed (or calculated) using the following formula:

SP (significance points) = (intensity + duration + spatial extent + irreplaceable + reversibility) x

The maximum value is 150 SP (significance points). The unmitigated and mitigated scenarios for each environmental impact should be rated as per the table below :

Significance Points	Environmental Significance	Description
125 – 150	Very high (VH)	An impact of high or very-high significance which could influence a decision about whether to proceed with the proposed project, regardless of available mitigation options. **Cumulative Impacts:** The activity is one of several similar pasts, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional, or national concern.
100 – 124	High (H)	
75 – 99	Moderate-high (MH)	If left unmanaged, an impact of moderate-high significance could influence a decision about whether to proceed with the proposed project. Mitigation options should be re-evaluated.
40 – 74	Moderate (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether to proceed with the proposed project. **Cumulative Impacts:** The activity is one of a few similar pasts, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional, or national concern.
<40	Low (L)	An impact of low significance is likely to contribute to positive decisions about whether to proceed with the proposed project. It will have little real effect and is unlikely to influence project design or alternative motivation. **Cumulative Impacts:** The activity is localised and might have a negligible cumulative impact.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/ effect and is likely to contribute to positive decisions about whether to proceed with the proposed project.

11 ANNEXURE B: APPENDIX 6 CHECKLIST

Compliance with Appendix 6 of the National Environmental Management Act (NEMA) Environmental Impact Assessment (EIA) Regulations, 2014

Requirements of Appendix 6 of the 2014 EIA Regulations	Included in the report in:
(1) A specialist report prepared in terms of these Regulations must contain-(a) details of- (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a *curriculum vitae*;	Section 1.1, Annexure D
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Annexure C
(c) an indication of the scope of, and the purpose for which the report was prepared;	Section 1
(cA) an indication of the quality and age of base data used for the specialist report;	Section 1.5
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 2
(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Site visit 18 October 2024
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1.3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 2
(g) an identification of any areas to be avoided, including buffers;	Not applicable
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 2
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.4 & 1.5
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 6
(k) any mitigation measures for inclusion in the EMPr;	Section 6
(l) any conditions for inclusion in the environmental authorisation;	Section 8
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Sections 7 & 8
n) a reasoned opinion- (i) whether the proposed activity or portions thereof should be authorised; and (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 8
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 1.3
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Responses to comments will be provided as part of the EIA process
(q) any other information requested by the competent authority.	Not applicable
(2) Where a government notice gazetted by the Minister provides for any proposal or minimum information requirement to be applied to a specialist reports, the requirements as indicated in such notice will apply.	Report prepared in accordance with Economic and Social Specialist input Guidelines issued by Department of Environmental Affairs and Development Planning.

12 ANNEXURE C: DECLARATION OF INDEPENDENCE

forestry, fisheries & the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +27 86 625 1042

SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE

Socio-Economic Impact Assessment for the proposed Brandwacht-Aan-Berg Residential Development, Stellenbosch

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.dffe.gov.za/documents/forms.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with *'the Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the act, when applying for environmental authorisation - GN 320/2020)'*, where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Socio-Economic Baseline Report
Specialist Company Name	Multi-Purpose Business Solutions CC
Specialist Name	Dr Jonathan Zorah Bloom
Specialist Identity Number	6706265061081
Specialist Qualifications:	BCom, HonsBCom, MCom, PhD
Professional affiliation/registration:	Not applicable
Physical address:	1479 Milano Place, Val de Vie Estate, Paarl
Postal address:	1479 Val de Vie Estate, Paarl, 7646
Telephone	021-8800774
Cell phone	083 299 8523
E-mail	jzbloom@mweb.co.za

2. DECLARATION BY THE SPECIALIST

I, **Jonathan Zorah Bloom**, declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols") and in Government Notice No. 1150 of 30 October 2020.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing –
  - any decision to be taken with respect to the application by the competent authority; and;
  - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the NEMA Act.

Signature of the Specialist

Multi-Purpose Business Solutions cc
Name of Company

Date

13 ANNEXURE D: ABBREVIATED CURRICULUM VITAE OF SPECIALIST

DR. JONATHAN ZORAH BLOOM

ID NUMBER:	670626 5061 081
CURRENT STATUS:	Managing Member, Multi-Purpose Business Solutions cc
NATIONALITY:	South African Citizen
DATE OF BIRTH:	26 June 1967
LINGUISTIC ABILITIES:	Proficient in English and Afrikaans
ADDRESS (Office):	1479 Milano Place, Val de Vie Estate, Paarl, 7646 Telephone: +27-21-880 0774 Mobile: +27-83-299 8523 E-mail: jbloom@mpbs.co.za

EDUCATION AND QUALIFICATIONS

1985: Matriculation at Paarl Boys' High School, Paarl
1989: BComm, Stellenbosch University
1990: HonsBComm (*cum laude*), Stellenbosch University
1992: MComm (*cum laude*), Stellenbosch University
2001: PhD (Corporate Finance), Stellenbosch University

EMPLOYMENT HISTORY

1995 to present: Managing Member of Multi-Purpose Business Solutions, a niche business advisory and economic development consulting firm with a specific focus on the public and government sector.

1 January 2008 to 31 July 2013: Part-time Professor of Corporate Finance, specialising in Real Estate Investment and Financing, Stellenbosch University.

2003 to April 2019: Director of Blue Cube Systems (Pty) Ltd and Blue Cube Intellectual Property Company (Pty) Ltd, private sector companies in the ICT industry.

1 July 2001 to 31 December 2007: Professor of Corporate Financial Management, specialising in Real Estate Investment and Financing, Stellenbosch University, with a special interest in business development.

1 July 2000 to 30 June 2001: Executive Manager of Chartered Alliance (Pty) Ltd, with assigned responsibility for the Business Services Unit within the Lateral Corporate Finance division of Chartered Alliance.

1 July 1999 to 30 June 2000: Executive Director of Crusader Systems (Pty) Ltd, charged with establishing a presence for the Business Solutions Group in the financial services industry.

1 January 1991 to 30 June 1999: Lecturer in the Department of Business Management, Stellenbosch University.

RESEARCH AWARDS

- Y-rating from the National Research Foundation (NRF) (2003).
- Rector's award for Excellence in Research (2003), Stellenbosch University.

BUSINESS AND ADVISORY EXPERTISE

- Public transport (IPTN) business development and implementation
- Project Management
- Public-Private-Partnership facilitation and procurement
- Commercialisation Initiatives
- Real Estate Development Services
- Financial Appraisals and Feasibility Studies
- Social and Economic Impact Assessments
- Customer Surveys
- Local Economic Development Planning with project development focus

SELECTION OF PROJECT INVOLVEMENTS RELATED TO SOCIO-ECONOMIC IMPACT ANALYSES

- Socio-Economic Impact Assessment for the Klipfontein Solar Farm in the West Coast District for Resource Management Services.
- Socio-Economic Impact Assessment for the proposed Service Station on Erf 7379, Pacaltsdorp, George, for Tshani Consulting.
- Socio-Economic Impact Assessment for the proposed 150 MW LPG Fueled Power Generating Facility, Saldanha Bay, for Legacy Environmental Management Consulting.
- Socio-Economic Impact Assessment for the proposed 100 MW LPG Fueled Power Generating Facility, Saldanha Bay, for Legacy Environmental Management Consulting.
- Socio-Economic Impact Assessment for the proposed 1000 MW Liquified Natural Gas (LNG) to Power Plant; LNG Storage and Regassification Facility, Overhead Electricity Transmission Line, and Associated Infrastructure across various Farm Portions, Saldanha, Western Cape, for Legacy Environmental Management Consulting.
- Socio-Economic Impact Assessment for the proposed Sterrekus Solar Energy Facility & Overhead Power Lines, Blaauwberg, for Legacy Environmental Management Consulting.
- Socio-Economic Impact Assessment for the proposed Mixed Township Development on Portion 1, 8 and 21 of Grootfontein Farm No. 394IR in the City of Tshwane, for GKM Environmental.
- Socio-Economic Impact Assessment for the proposed Carletonville Solar Photovoltaic Plant on Farm 105 Twyfelvlakte, Merafong City, Gauteng, for Legacy Environmental Management Consulting.
- Socio-economic Impact Assessment for the proposed Carpe Diem Solar Photovoltaic Plant on Farms Varkenslaagte 119/5 and Doornfontein 118/27, Merafong City, for Legacy Environmental Management Consulting.
- Socio-Economic Baseline Report for the proposed 50 MW Eland Solar PV Plant and associated Overhead Line, eMakhazeni Municipality, for Legacy Environmental Management Consulting.
- Socio-Economic Impact Assessment for the proposed Cape Winelands Airport, Fisantekraal, for Capital Expenditure Projects (Pty) Ltd.
- Socio-economic Impact Assessment for the proposed Gydo Renewable Energy Project, Witzenberg Municipality, for SPV Renfields.
- Input for Liveable Urban Waterway (LUW) projects, including Property Analysis, Resident Perception Analysis and Socio-economic Analysis of proposed interventions, for Lukhozi Consulting Engineers: Grootboschkloof River Corridor, Keysers River Corridor, Sand and Langevlei Canal Confluence, Spaanschemat & Prinskasteel River Confluence, Westlake River (and Wetland), and Vygekraal River
- Macassar stage gate review: Supplementary analysis in support of feasibility study for the introduction of inundation measures, for Lukhozi Consulting Engineers.
- Socio-economic and Benefit-Cost Analysis for proposed Eerste River Flood Alleviation Project in Macassar; Supplementary Report: Comparative analysis of Scenario 2a and 2a(i), for Lukhozi Consulting Engineers.
- Property Analysis for proposed Eerste River Flood Alleviation Project in Macassar, for Lukhozi Consulting Engineers.
- Property Analysis for the Lourens River Flood Alleviation Phase 2 Project, for Lukhozi Consulting Engineers.

- Socio-economic and –demographic analysis and housing need assessment: Prepared as an input for the development of Erven 7444 and 5321, Macassar, for Lukhozi Consulting Engineers.
- Socio-economic and –demographic analysis and housing need assessment: Prepared as an input for the development of Erf 5113, Gordon's Bay, for Lukhozi Consulting Engineers.
- Socio-economic and –demographic analysis and housing need assessment: Prepared as an input for the Strandfontein Development Framework, for Lukhozi Consulting Engineers.Socio-Economic Impact Assessment for the proposed Klipheuwel Organic Waste Beneficiation and Biogas Facility on Farm Corona RE/480, Paarl, for Resource Management Services.
- Socio-Economic Impact Assessment for the proposed Ebenezer Multi-Purpose Centre and Sports Fields, on a Portion of Farm 727/22, Warburgh Road, Joostenbergvlakte, for Legacy Environmental Management Consulting.
- Socio-economic Impact Assessment for the proposed Cape Winelands Airport, Fisantekraal, for Capital Expenditure Projects (Pty) Ltd.
- Socio-economic Impact Assessment for the proposed Bellpark Mixed-use development, Bellville, for Legacy Environmental Management Consulting.
- Socio-economic Impact Assessment for the proposed Gydo Renewable Energy Project, Witzenberg Municipality, for SPV Renfields.
- Economic Scoping Assessment for the proposed Wesco Waste Management Facility (WMF) on the Farm Brakkefontein 32, Cape Town, for SLR Consulting (South Africa) (Pty) Ltd.
- Socio-economic Impact Assessment for the proposed Western Cape Wind Energy Facility, located in the Overberg REDZ, Western Cape Province, for Terramanzi Group.
- Socio-Economic Impact Assessment for the Klipfontein Solar Farm in the West Coast District for Resource Management Services.
- Socio-Economic Impact Assessment for the Stellenbosch Bridge development in Klapmuts, Stellenbosch, for Stellenbosch Bridge Properties (Pty) Ltd.
- Socio-Economic Impact Assessment for the proposed Lucullus Gardens Development, Joostenbergvlakte for Urban Land Joostenbergvlak (Pty) Ltd.
- Socio-economic Impact Statement for the additional housing on the Uitgezocht development in Paarl. Terramanzi Group commissioned the project.
- Benefit-Cost Value Assessment and socio-economic implications associated with the Picardi Residential Development, Paarl, for Arun Projects (Pty) Ltd.
- Socio-Economic Impact Assessment for the Darwin Road housing development, Joostenbergvlakte, for Lukhozi Consulting Engineers.
- Socio-Economic Impact Assessment for the Longlands Manor development in Vlottenburg, Stellenbosch for Legacy Environmental Consulting.
- Socio-Economic Impact Assessment for the proposed expansion of the Afro Fishing facility in the Port of Mossel Bay for Afro Fishing (Pty) Ltd.
- Financial viability, cost-benefit and market analysis for a proposed Mediclinic in the George Area. The assignment adopted a strategic approach to packaging a project that had transport-related issues, location considerations and required spatial alignment (2018-2019).
- Economic impact assessment and financial modelling for the development of Waterfront in the Port of Mossel Bay for Transnet National Ports Authority (TNPA)
- Socio-Economic Impact Assessment for Substantive Amendment Application for the Levendal Development in Southern Paarl for Val de Vie Investments (Pty) Ltd.
- Socio-Economic Impact Assessment for the River Farm development in Paarl for Val de Vie Developments (Pty) Ltd.
- Socio-Economic Impact Statement for the proposed Paarl Valleij Estate in Northern Paarl for Paarl Valleij Developments (Pty) Ltd.
- Socio-Economic Impact Assessment for the proposed Gourits Abalone Farm, in association with PHS Consulting.
- Socio-economic Impact Assessment for the proposed Vlottenburg Village development on Vredenheim Farm, Stellenbosch, in association with Withers Environmental Consultants.
- Economic and financial analysis, strategy formulation input for the preparation of an Urban Development Strategy for Stellenbosch Municipal area. The assignment entailed the development of a value surplus or deficit model to assess the

impact of development decisions on the socio-economic fabric of the Stellenbosch economy, communities and the Municipality from an infrastructure and operational income and expense perspective. Rode and Associates commissioned the assignment.

- The development and application of a value assessment model for the Klapmuts Special Development Area (SDA) (Stellenbosch Municipality) to assess the investment, economic and funds flow impact for a development scenario. Assignment also included a property valuation analysis and the preparation of a community investment structure supported by a SPV. Beal Africa commissioned the assignment.
- Financial Economic analysis and preparation of an Investment Decision-making Platform as an input for the George Settlement Restructuring Strategy. RoyalHaskoning DHV commissioned the assignment.
- Socio-economic impact assessment for the development of a proposed Tungsten Mining Project in Piketberg in terms of the NEMA regulations and Mineral Petroleum and Resources Act.
- Socio-Economic Impact Assessment for the Mamre Wind Energy Facility in the City of Cape Town Metropolitan Area for Mulilo Mamre Wind Energy (Pty) Ltd.
- Social and Labour Plan for the application of a Mining Right for a proposed Tungsten Project in Piketberg in terms of the Mineral Petroleum and Resources Act.
- Economic impact assessment of the construction phase for the redevelopment of the Somerset Precinct in the Cape Town area for Department of Public Works, Western Cape in association with Rode and Associates.
- Socio-economic impact assessment for the development of two mariculture sites off the coast of the Eastern Cape for the Department of Environmental Affairs and Development Planning in association with Cape Environmental Practitioners, George.
- Economic Impact Assessment and Social Impact Assessment for the Parklands development in Saldanha Bay on the West Coast for Parklands Township Developers (Pty) Ltd.
- Socio-Economic Impact Assessment for development on a portion of the farm Constantia Uitsig and expansion of the tourism and hospitality facilities on the Farm.
- Socio-Economic Impact Assessment for the development of a residential estate in Melkbosstrand, Cape Town, for Nuplan Africa.
- Economic Impact Assessment and Social Impact Assessment with a social development focus for the Bella Riva development in the Durbanville region of the Cape Town Metropolitan Area of the Western Cape.
- Socio-Economic Impact Assessment for the development of two Wind Energy Facilities (Goereesoe and Kluitjieskraal) near Swellendam for Inca Energy (Pty) Ltd.
- Socio-Economic Impact Assessment for the proposed development of the Clover Wind and Solar Energy facility near Darling, Swartland Municipal area.
- Socio-Economic Impact Assessment for the proposed development of the Storm Photovoltaic Plant, Saldanha Bay, for Midnight Storm Investments 184 (Pty) Ltd.
- Socio-Economic Impact Assessment for the proposed development of Organic Recycling Processing Facility on Portion 2 of the Farm Olyphantsfontein No. 935, Malmesbury, for Soil and More Reliance.
- Socio-Economic Impact Assessment for the proposed development of the Dysselsdorp RE-Power PV Plant, near Oudtshoorn, Western Cape, for Dysselsdorp RE-Power (Pty) Ltd.
- Socio-Economic Baseline Assessment for the proposed Schaap Kraal Philippi Horticultural Area (PHA), Cape Town, for MSP Developments (Pty) Ltd.
- Social Impact Assessment with a social development focus for the Bosbokkamp Residential development in Stilbaai, Western Cape for Asla Devco (Pty) Ltd.
- Economic Impact Assessment and Social Impact Assessment for an upmarket residential estate in Paarl for Rhebokskloof Properties (Pty) Ltd.
- Socio-Economic Assessment for the proposed development of a sports facility for the Paarl Boys' High School. The School commissioned the assignment.
- Socio-economic Impact Assessment for the proposed Hoek van de Berg Marine and Coastal Reserve, Overstrand, for Saddle Path Properties 79 (Pty) Ltd.
- Socio-Economic Impact Assessment for the establishment of a Regional landfill site in the Worcester area, Western Cape Province, for Jan Palm Consulting Engineers.

- Socio-Economic Impact Assessment for a mixed-use development on the Vredenheim Farm in Stellenbosch for Withers Environmental Consultants (ongoing).
- Socio-Economic Impact Assessment for the establishment of an Organic Recycling Facility on Farm Corona No. 480, Paarl, Western Cape, for Resource Management Services.
- Socio-Economic Impact Assessment for the establishment of the Frankendale Industrial Park north of Cape Town for Kohler Bricks (Pty) Ltd.
- Socio-Economic Impact Assessment for the development of a mixed-use development around the Brandwag Dam in Worcester, Western Cape for Tresso Trading 915 (Pty) Ltd (ongoing).
- Economic impact assessment for the development of a Sun International Resort on Retosa Island, Singapore. The assignment was commissioned jointly by International Real Estate Appraisals and Sun International South Africa.
- Economic impact assessment for the development of a themed attraction in the Ezulwini Valley, Swaziland, for KPMG (SA).
- Socio-economic impact analysis of hotel developments on the local and regional communities in the Helderberg Basin, Western Cape, for Quaypower Properties Plc, United Kingdom.
- Socio-economic impact assessment for the development of an Africa Theme Park and Resort in Gauteng for Stewart Scott International in association with KPMG (SA).
- Economic impact assessment for the development of the Salama Waterfront in Dar es Salaam, Tanzania, for Atos-KPMG and International Real Estate Appraisals.
- Economic Impact Assessment and Social Impact Assessment for the establishment of Waverenskroon Country Estate in Tulbagh for L'eritage Nouveau Development Company (Pty) Ltd.
- Economic Impact Assessment and Social Impact Assessment for the establishment of Dalskroon Retirement Village in Tulbagh for Midnight Masquerade 267 (Pty) Ltd.
- Economic Impact Assessment for the establishment of residential development at Doringbaai for Doringbaai Hoogtes Eiendomsbelegging (Edms) Bpk.
- Economic Impact Statement for the establishment of an Apartment Complex at Hawston near Hermanus in the Overstrand region of the Western Cape for Portland Eiendoms Ontwikkeling (Edms) Bpk.
- Economic Impact Assessment and Social Impact Assessment for the establishment of the Salmonsvlei-Wes Residential estate in Paarl for Keynote Trading and Investments 50 (Pty) Ltd.
- Economic Impact Assessment and Social Impact Assessment for the development of the proposed Middelberg Eco- and Country Estate in Stanford, Overstrand for the Wright Approach Consultancy of Hermanus.
- Economic Impact Assessment and Social Impact Assessment for the development of the Compagnes Drift Residential Estate in Botrivier, Theewaterskloof, for the Wright Approach Consultancy.
- Economic Impact Assessment and Social Impact Assessment for the development of a hotel and apartment complex at Gansbaai (Danger Point) in the Overstrand region of the Western Cape for Great White Limited, a UK-based development firm.
- Economic Impact Assessment and Social Impact Assessment for the multi-million Rand Destiny Africa development in George, Southern Cape, for Kuriakos Design & Management Consultancy.
- Economic Impact Assessment and Social Impact Assessment for the Groenfontein mixed-use Development in Klapmuts, Stellenbosch, for Frantius Property Investments (Pty) Ltd.
- An economic impact assessment with a social development focus for a mix of components comprising agriculture estate units, a lodge with conference facility, a farm stall, wine cellar and restaurant known as the Stellenbosch Wine and Country Estate in the Stellenbosch area. Stellenbosch Wine and Country (Pty) Ltd commissioned the study.
- Economic impact assessment for residential development, boutique lodge and retail village in the Sundays River area of the Eastern Cape for Premier Residential Development (Pty) Ltd.
- Economic impact assessment for the Statue of Freedom multi-purpose development in Nelson Mandela Bay Metropolitan Municipality for the Nelson Mandela Metropolitan Municipality in association with Atos-KPMG.
- Socio-Economic Impact Assessment for a lifestyle resort in the Somerset East area of the Eastern Cape Midlands for the Blue Crane Development Agency.
- Socio-Economic Impact Assessment for the development of a golf estate and hotel (primary application) at Stellenbosch for Paradyskloof Golf Estates (Pty) Ltd. The assignment entails the evaluation of a primary application and two alternatives, one being agriculture (vineyards and olive orchards).

- Socio-Economic Impact Assessment for the development of a golf links and residential estate at L'Agulhas for Prop Access (Pty) Ltd (a Gauteng-based empowerment group).
- Socio-Economic Impact Assessment for a commercial shopping centre development in Hout Bay, Western Cape, for the Alliance Property Group.
- Economic Impact Assessment and Social Impact Assessment with a social development focus for a Shopping centre development in the Gordon's Bay region of the Cape Town Metropolitan Area of the Western Cape.
- Socio-Economic Impact Assessment for the development of residential development in Vleesbaai, on the Southern Cape Coast, for Amanzi Moya Developments (Pty) Ltd.

SECTION E

BOTANICAL ASSESSMENT REPORT

BOTANICAL IMPACT ASSESSMENT FOR PROPOSED RESIDENTIAL DEVELOPMENT AT FARM REMAINDER 1049, STELLENBOSCH, WESTERN CAPE PROVINCE

CAPENSIS

PAUL EMMS

MAY 2024

REPORT PREPARED FOR

GUILLAUME NEL ENVIRONMENTAL CONSULTANTS

TABLE OF CONTENTS

I, Paul Ivor Emms, as the appointed specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- in terms of the general requirement to be independent:
    - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the applicant all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application;
- have ensured/will ensure that information containing all relevant facts in respect of the application was/will be distributed or was/will be made available to interested and affected parties and the public and that participation by interested and affected parties was/will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the Department in respect of the application;
- have ensured/will ensure the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- have kept/will keep a register of all interested and affected parties that participate/d in the public participation process; and
- am aware that a false declaration is an offence in terms of regulation 48 of the 2014 NEMA EIA Regulations.

Note: The terms of reference of the review specialist must be attached.

Signature of the specialist: 

Date: 7 April 2024

BOTANICAL ASSESSMENT: PROPOSED RESIDENTIAL DEVELOPMENT AT FARM REMAINDER 1049 STELLENBOSCH

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT
This is a 'specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014, as amended.

APPOINTMENT OF SPECIALIST
Capensis Ecological Consulting (Pty) Ltd (Capensis) was appointed by Guillaume Nel Environmental Consultants to provide specialist botanical consulting services in the form of a Botanical Assessment for proposed residential development at Remainder of Farm 1049 Stellenbosch.

CONDITIONS RELATING TO THIS REPORT
The content of this report is based on the authors best scientific and professional knowledge as well as available information. Capensis Ecological Consulting (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.
This report must not be altered or added to without the prior written consent of the authors. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

DETAILS OF THE SPECIALIST
Mr Paul Emms Pr. Sci. Nat.
156 Main Road
Muizenberg
7950
Professional registration: South African Council for Natural Scientific Professions No. 400352/14
Mobile: 076-7377-468
e-mail: paul@capensis.co.za

Expertise
- Qualifications: ND Horticulture, BSc. (Biodiversity & Conservation Biology), Hons. (Botany), MSc (Botany).
- Botanist with ten 12 years' experience in the field of botanical surveys.
- Has conducted over 300 specialist botanical studies.

1. INTRODUCTION

An application for a residential development is underway at Farm Remainder 1049, Stellenbosch. The proposed development, if approved, may lead to loss of indigenous vegetation and requires a botanical assessment to be submitted as part of the application. Capensis Ecological Consulting Pty (Ltd) (Capensis) was commissioned by Guillaume Nel Environmental Consulting to carry out the study.

2. TERMS OF REFERENCE

2.1. GENERAL

Botanical assessments must follow guidelines set out in the following documents:

- Department of Environmental Affairs and Development Planning (DEA&DP) Guidelines for Involving Biodiversity Specialists in the EIA Process (Brownlie, 2005).
- Ecosystem Guidelines for Environmental Assessment in the Western Cape (Cadman et al., 2016).
- The requirements of CapeNature for providing comments on agricultural, environmental, mine planning and water-use related applications (Turner, 2013).
- Protocol for the Assessment and Reporting of Environmental Impacts on Terrestrial Biodiversity (Government Gazette 43110, 2020). Requirements for Terrestrial Biodiversity Assessment.
- Protocol for the Assessment and Reporting of Environmental Impacts on Terrestrial Biodiversity (Government Gazette 43855, 2020). Terrestrial Plants Species Specialist Assessment Report.
- Amendment to the Protocols for the Specialist Assessment and Minimum Report Requirements for Environmental Impacts on Terrestrial Animal and Plant Species in terms of Sections 24(5)(a) and 44 of the National Environmental Management Act, 1998 (Government Gazette 49028 July 2023).
- Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa (SANBI, 2022).

2.2. SPECIFIC

The specific terms of reference followed for this assessment are as follows:

BOTANICAL ASSESSMENT: PROPOSED RESIDENTIAL DEVELOPMENT AT FARM REMAINDER 1049 STELLENBOSCH

- Identify and describe biodiversity patterns at community and ecosystem level (main vegetation type, plant communities in the vicinity and threatened/vulnerable ecosystems), at species level (threatened Red List species, presence of alien species) and in terms of significant landscape features;
- Assess the local and regional importance of the vegetation communities and plant species within the affected areas based on the relevant biodiversity plans, bioregional planning documents and Environmental Management Frameworks;
- Describe the sensitivity of the site and its environs and map these resources; and
- Identify any areas not suitable for development or related activities (No-Go Areas) and related buffers that should be observed.
- Determine the implications that the proposed project has for the relevant fine-scale biodiversity plan (in this case the 2017 Western Cape Biodiversity Spatial Plan).
- Describe the sensitivity of the site and its environs and map these resources.
- Identify any areas not suitable for construction activities (No-Go Areas) and related buffers that should be observed.
- Describe the direct, indirect and cumulative botanical impacts (both before and after mitigation) and provide an assessment of the significance of the impacts.
- Describe the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact.
- On the basis of the impact assessment findings provide an authorisation opinion regarding whether or not the proposed activity should proceed.

3. PROTOCOL FOR DETERMINING LEVEL OF REPORTING

The sensitivity of the site was predetermined using the Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool (https://screening.environment.gov.za/screeningtool/). The site contains areas rated as Very High terrestrial biodiversity sensitivity and Low for plant species sensitivity (Figures 1 and 2 – note species are addressed in Appendix 1). A Very High level of sensitivity for terrestrial biodiversity, if confirmed during the study, requires a Terrestrial Biodiversity Impact Assessment to be submitted as part of the application for Environmental Authorisation (EA). A Medium level of sensitivity is confirmed for a portion of the site and a botanical impact assessment is thus provided. A Low level of sensitivity is assigned for plant species, if confirmed, requires a Plant Species Compliance Statement. In this instance no sensitive or threatened species were found and a species compliance statement is provided (Appendix 1).

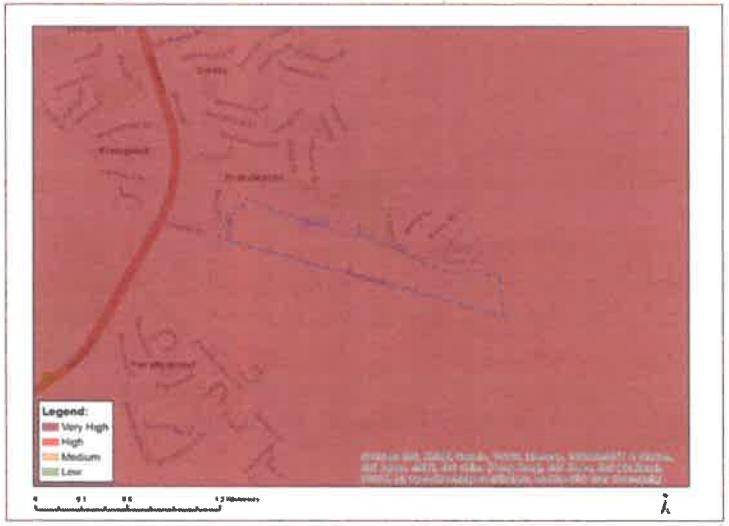

Figure 1. Map of relative terrestrial biodiversity theme sensitivity generated from the DFFE Screening Tool (https://screening.environment.gov.za).

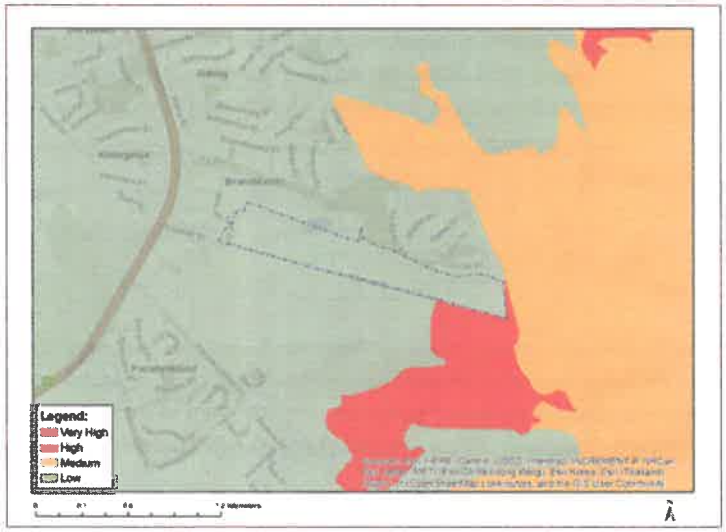

Figure 2. Map of relative plant species sensitivity theme sensitivity generated from the DFFE Screening Tool (https://screening.environment.gov.za).

BOTANICAL ASSESSMENT: PROPOSED RESIDENTIAL DEVELOPMENT AT FARM REMAINDER 1049 STELLENBOSCH

4. STUDY AREA

4.1. LOCALITY

The study area is located between Stellenbosch (north) and Jamestown (south) and directly south of Brandwacht, at 33°57'31.38"S; 18°51'58.41"E (Figure 3). The site is nestled between the Stellenbosch Mountains on the eastern side and mixed development on the western side (Figure 4) and consists of farmland, evident in Figure 5.

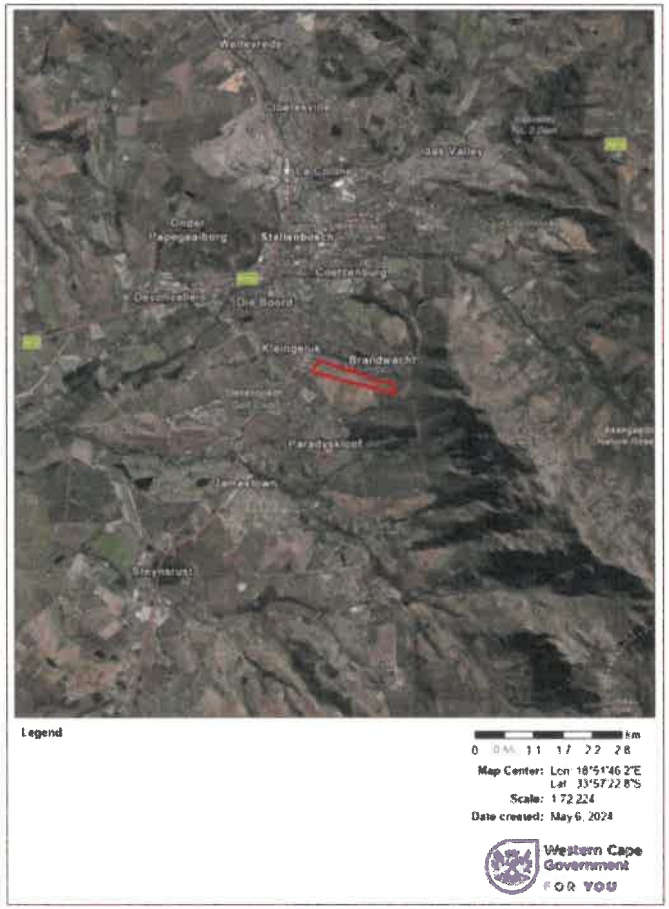

Figure 3. The study area (red outline) in relation to nearby towns and roads represented on a ESRI satellite image (Cape Farm Mapper).

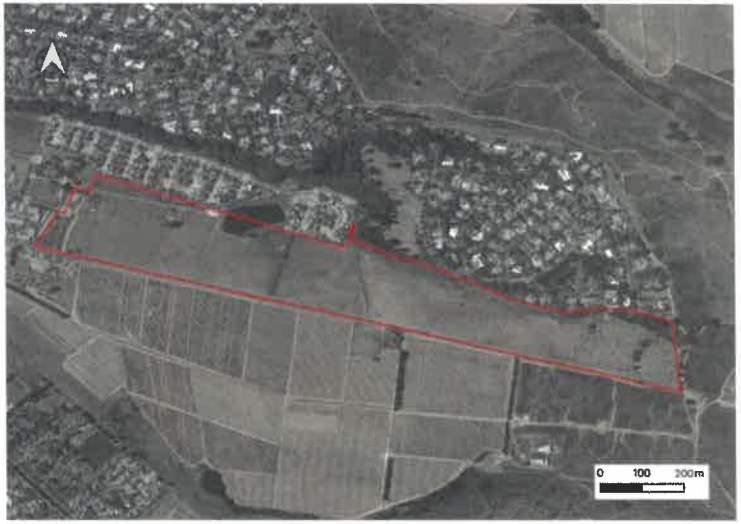

Figure 5. The study area area overlaid on a CDNGI 50 cm mosaic aerial image.

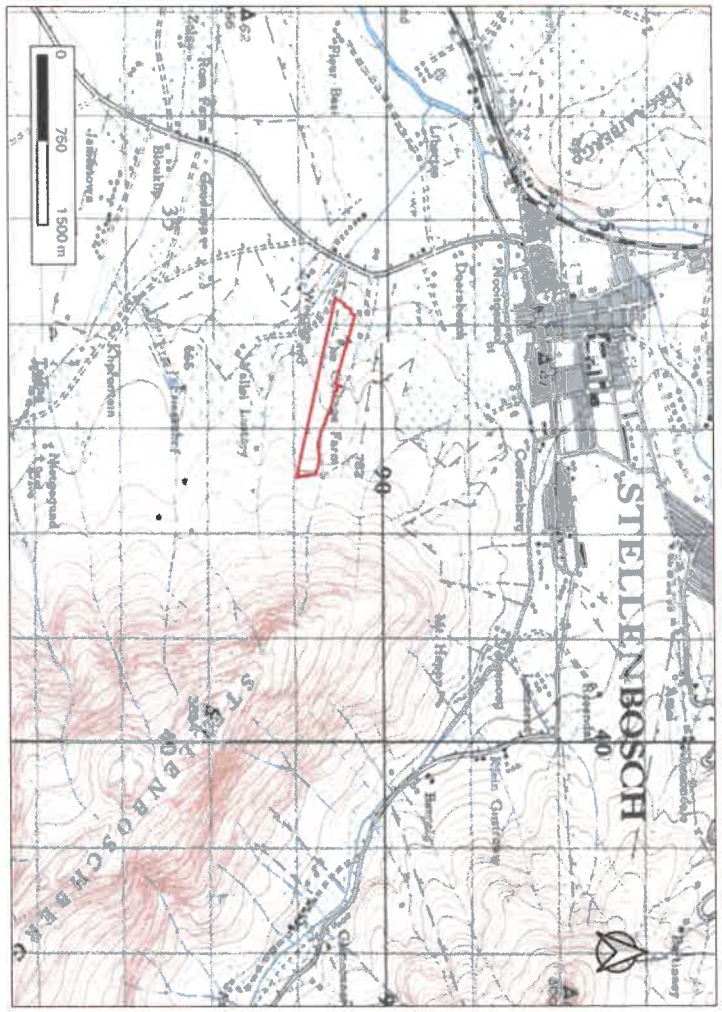

Figure 4. The study area (red outline) represented on a 1:50 000 topographic map (CDNGI).

4.2. LANDSCAPE AND GEOLOGY

The landscape is characterized by a west- (lower: 13m contour) to east- (upper: 265m contour) sloping foothill below Stellenbosch Mountain (Figure 6). Soils are characterized by clays derived from Malmesbury Shales (Rebelo *et al.* in Mucina and Rutherford, 2006).

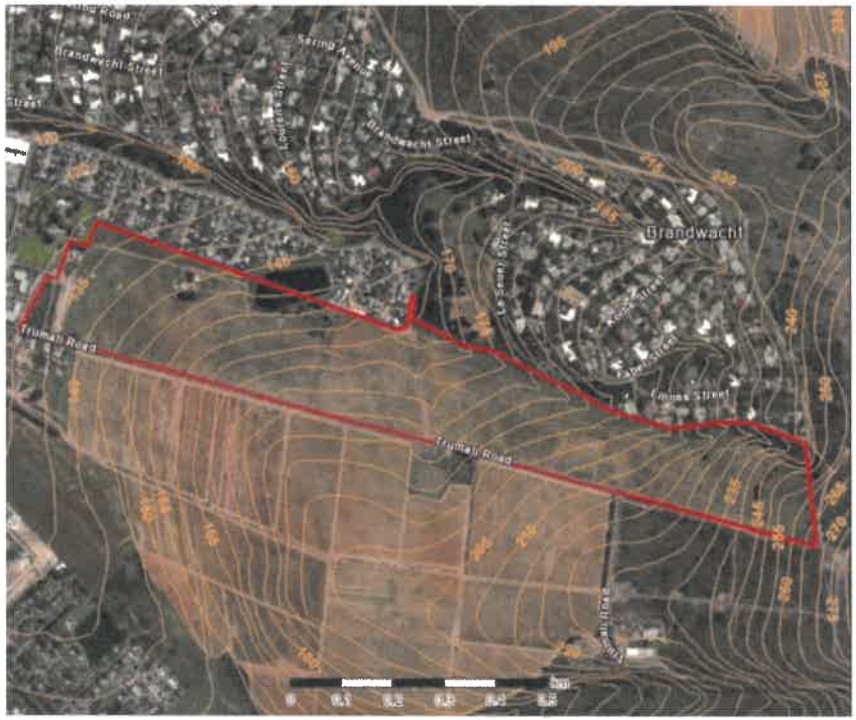

Figure 6. The study area (red outline) with 5m contours represented on a ESRI satellite image (Cape Farm Mapper).

5. METHODOLOGY, LIMITATIONS AND ASSUMPTIONS

The study area was visited on the 16th April 2024 and surveyed on foot. Sample waypoint positions were obtained using a Garmin GPSmap 62. Photographs were georeferenced. The following sources have been used to inform this study:

Vegetation map: A product of *The Vegetation of South Africa, Lesotho and Swaziland* (VEGMAP) (Mucina & Rutherford, 2006). The South African National Biodiversity Institute (SANBI) has updated the VEGMAP (2018). These shapefiles were used.

Ecosystem threat status: Informed by (1) Revised National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette, 2022) and (2) species information provided in the National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette, 2011).

Biodiversity planning: The 2017 Western Cape Biodiversity Spatial Plan (CapeNature, 2017) GIS (Geographical Information System) shapefiles for the Stellenbosch Municipality is important for determining the conservation importance of the designated habitat. Ground-truthing is an essential component in terms of determining the habitat condition.

Important species: The presence or absence of threatened (i.e. species of conservation concern) and ecologically important species informs the ecological condition and sensitivity of the site. The latest conservation status of species is checked in the Red List of South African Plants (Raimondo et al. 2009) (www.redlist.sanbi.org).

Previous studies: Previous botanical studies at a local scale, if available, are consulted to provide additional information regarding the botanical attributes of the site.

Site boundary: these and other resource layers were used to define the site boundary and to compile several maps. This information is available on the CapeFarmMapper website (Department of Agriculture: gis.elsenberg.com).

The site visit was carried out in early autumn when most geophytes are not in leaf or are just starting to produce leaves but are not yet in flower. The spring flowering period for the region is August to October. The survey is thus limited since it falls outside the spring period. The ecological condition of the vegetation could, however, be determined by the dominant vegetation cover.

6. VEGETATION DESCRIPTION

6.1. NATIONAL VEGETATION TYPE

The Vegetation of South Africa, Lesotho and Swaziland (VEGMAP) (SANBI 2018), assigns two vegetation types to the study area, including (1) Swartland Shale Renosterveld (SSR) and (2) Cape Winelands Shale Fynbos (CWSF), (2) (Figure 7). The two vegetation types purportedly merge at the eastern side of the site. If this historical boundary is accurate then the vegetation would have supported an ecotone with a transitional vegetation type over much of the site. The eastern side is likely to have supported CWSF since the vegetation type is evident on the adjoining property

immediately to the east. The dominance of renosterveld over much of the site (see section 6.4) supports renosterbos, a species characterising SSR.

Ecological drivers:

According to Cadman et al. (2016) the key ecological drivers in **renosterveld** ecosystems include (1) fire and grazing patterns, (2) variations in edaphic conditions and water availability, (3) edaphic boundaries, (4) underlying geology, (5) specialized plant-pollination interactions, (6) plant-plant interactions and (7) living (biogenic) soil crust.

The key ecological drivers in midland and mountain **fynbos** ecosystems according to Cadman *et al.* (2016) include (1) the natural fire regimes and the interplay of fire and grazing, (2) edaphic conditions and underlying lithology, and (3) drainage and soil gradients.

6.2. ECOSYSTEM THREAT STATUS

Ecosystem threat status is derived from The Revised National List of Ecosystems that are Threatened and Need of Protection (RNLETNP)(Government Gazette, 2022). Species information is not provided in the RNLETNP and is thus taken from The National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette, 2011).

Table 1 provides a summary of (a) the remaining extent of each vegetation type, (b) the proportion of remaining ecosystem that is protected, (c) the known number of species of conservation concern and (d) the national conservation target from the three most relevant information sources.

Table 1. Ecosystem threat status according derived from available information sources

Ecosystem status	**The Revised National List of Threatened Terrestrial Ecosystems**
Swartland Shale Renosterveld	Critically Endangered
Reason	Rate of loss of natural habitat
Remaining % of ecosystem	10%

Protected %	0.7%
Original area	496374 ha
Species of special concern	151 Threatened species and 35 endemic species.
Description	Large, generally continuous areas of the Swartland and the Boland on the West Coast lowlands, from Het Kruis in the north, southwards between the Piketberg and Olifantsrivierberge, widening appreciably in the region around Moorreesburg between Gouda and Hopefield, and encompassing Riebeek-Kasteel, Klipheuwel, Philadelphia, Durbanville, Stellenbosch to the south and Sir Lowry's Pass Village near Gordon's Bay. Moderately undulating plains and valleys supporting low to moderately tall leptophyllous shrubland of varying canopy cover as well as low, open shrubland dominated by renosterbos. Heuweltjies are a very prominent local feature of the environment, forming 'hummockveld' near Piketberg and giving the Tygerberg Hills their name. Stunted trees and thicket are often associated with the heuweltjies. Disturbed areas are dominated by Athanasia trifurcata and Otholobium hirtum. Patches of Cynodon dactylon 'grazing lawns' also occur in abundance. Pressures & threats: This ecosystem has experienced a loss in natural habitat of approximately 296.62 km² in the last 28 years (1990-2018). These spatial declines have been primarily driven by agriculture, with croplands now covering 3861 km² of the ecosystem and a further 429.42 km² of old fields. The ecosystem is further transformed by urban development, with 95.67 km² of built areas, as well as 36.82 km² of artificial water bodies. Threatened plant species data indicate that alien invasive species, overgrazing and altered fire regimes are important pressures (Red list of Species 2018). The remnants of this ecosystem are found in isolated pockets, usually on steeper ground where alien annual grasses of the genera Avena, Briza, Bromus, Lolium, Phalaris and Vulpia are a primary concern (Rebelo et al. 2006). Other aliens include Acacia saligna (very scattered), A. mearnsii (very scattered), several species of Prosopis and Eucalyptus, as well as herbs including Erodium cicutarium, E. moschatum, Echium plantagineum and Petrorhagia prolifera (Rebelo et al. 2006).
Notes	Trigger Sub-Criteria: A3 - National land cover and supplementary provincial and metropolitan land cover data show that Swartland Shale Renosterveld has experienced extensive spatial declines of approximately 90 % % since 1750. Scope: Global & national status (global extent assessed).
Cape Winelands Shale Fynbos	Critically Endangered
Reason	Rate of loss of natural habitat
Remaining % of ecosystem	44%

Protected %	31.2%
Original area	82399 ha
Species of special concern	18 Threatened species and 1 endemic species.
Description	Higher hills and lower mountain slopes in the Stellenbosch and Somerset West areas, in patches from Blousteen on Clarence Drive at Koeëlbaai to south of Elsenberg and within the Jonkershoek Valley, with pockets on the Cape Peninsula at Devils Peak, the Tygerberg Hills on Kanonkop, Groenberg near Wellington and the upper Franschhoek Valley. Moderately undulating plains and steep slopes against the mountains. Vegetation is a moderately tall and dense shrubland dominated by proteoid and closed-scrub fynbos in structural terms. Pressures & threats: This ecosystem has many pressures. Agriculture has been one of the key pressures to this ecosystem with 10.85 km^2 of croplands and a further 15.72 km^2 being covered by old fields. Urban and road development covers 8.4 km^2. Plantations cover 10.96 km^2. This ecosystem is further degraded by Pinus pinaster and Hakea sericea (Rebelo et al. 2006).
Notes	Trigger Sub-Criteria: B1(i), B1(iii) - Cape Winelands Shale Fynbos is narrowly distributed with high rates of habitat loss in the past 28 years (1990-2018), and evidence of ongoing biotic disruption from invasive species and altered fire regimes. Scope: Global & national status (global extent assessed).

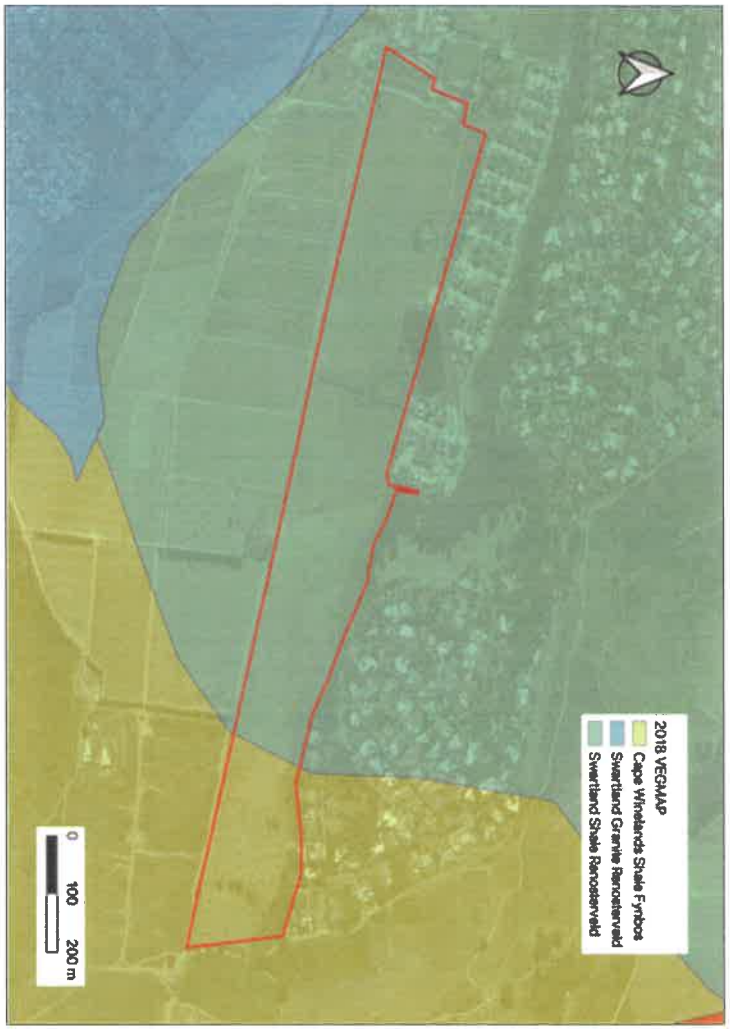

Figure 7. The study areas in relation to historical vegetation types (SANBI, 2018).

6.3. CONSERVATION PLANS

The 2017 WCBSP Handbook (Pool-Stanvliet et al., 2017) distinguishes between the various conservation planning categories. Critical Biodiversity Areas are habitats with high biodiversity and ecological value. Such areas include those that are likely to be in a natural condition (CBA 1) and those that are potentially degraded or represent secondary vegetation (CBA 2). Ecological Support Areas are not essential for meeting biodiversity targets but play an important role in supporting the functioning of Protected Areas or CBAs and are often vital for delivering ecosystem services. A distinction is made between ESAs that are still likely to be functional (i.e. in a natural, near-natural or moderately degraded condition; (ESA 1) and Ecological Support Areas that are severely degraded, or have no natural cover remaining, and therefore require restoration (ESA 2). Other Natural Area (ONA) sites are not currently identified as a priority, but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although not prioritised, they are still an important part of the natural ecosystem. In the case of the study area the ravine and watercourse is assigned as CBA 1 whereas small areas associated with pine trees and artificial drainage are assigned as ESA2. Ground-truthing of the assigned CBA and ESA sites are described in the vegetation and sensitivity sections below (Sections 6.4, 7 and 8).

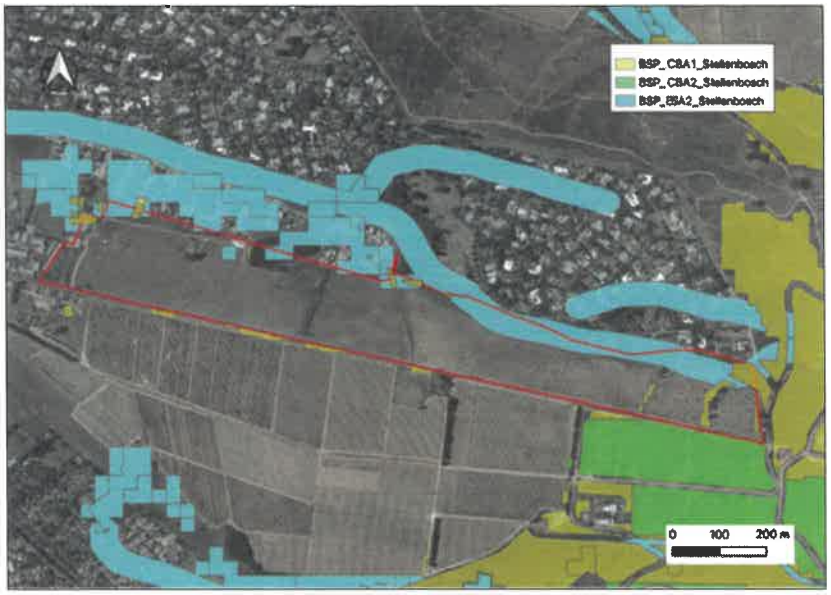

Figure 8. CONSERVATION PLANNING MAP: The study area in relation 2017 Western Cape Biodiversity Spatial Plan (CapeNature, 2017) overlaid on a CDNGI 50 cm mosaic aerial image.

7. FINDINGS

7.1 BOTANICAL ATTRIBUTES OF STUDY AREA

The study area was found to be in a heavily modified state due to historical farming that has included ploughing and removal of the original vegetation cover over most of the site. The only area to escape farming impacts, although not entirely, is the ravine at the north-eastern corner. This feature and the associated watercourse is too steep for cultivated crops but invasive species have become problematic. Apart from the ravine and associated watercourse, which support the most intact habitats, the vegetation in the historically cultivated lands generally decreases in condition in a downslope direction. The various condition categories are described below (Table 2). The survey and habitat maps are shown in Figures 9 and 10 respectively.

Table 2. Habitat category descriptions and criteria

Habitat category	Description
Intact vegetation	A true representation of the original vegetation type in terms of structure and species makeup. Minimal soil disturbance. Unlikely to have ever been ploughed. Disturbance may be evident.
Semi-intact	Resembles the original vegetation type in terms of structure and species makeup but has lower species diversity than intact vegetation. Dominated by disturbance-resilient species. Soils may have been heavily disturbed in the past. Restoration potential is high.
Degraded	Only a few species representative of the original vegetation type are present. The vegetation has undergone heavy disturbance. Restoration potential is either low or moderate.
Highly degraded	The original vegetation is usually absent and has been removed in the past. Only a few remnant or pioneer species are present. Soils usually ploughed in the past. Restoration potential is very low.
Transformed	No remnant species exist anymore. The landscape is altered irreversibly with no restoration potential. Examples include cultivated farmland and the built environment.

Degraded habitat

This habitat, located on the uppermost (eastern side) is in slightly better condition that the remainder of the cultivated lands since it has been left fallow for the longest period of time. Monterey pines *Pinus radiata* define the eastern and western limits of the habitat along the contours. The dominant species include tall flowerseed *Anthospermum aethiopicum*, renosterbos *Elytropappus rhinocerotis*, honey everlasting *Helichrysum patulum*, slangbos *Seriphium plumosum*, and willow karee *Searsia angustifolia*. Additional species include (* = exotic): *black wattle (*Acacia mearnsii*: NEMBA category 2), three-tooth kaniedood *Athanasia trifurcata*, *bull thistle *Cirsium vulgare* (NEMBA category 1b) ,

stinkwort *Dittrichia graveolens*, Cape starapple *Diospyros glabra*, sand olive *Dodonaea viscosa* subsp. *angustifolia*, balloonplant *Gomphocarpus physocarpus*, *Metalasia cf. acuta,* cluster renosterbos *Myrovernix gnaphaloides*, lazybush *Oftia Africana, bitou Osteospermum moniliferum, common gonna Passerina corymbosa, cf. Pentameris ariroides*, ribwort plantain *Plantago lanceolata,* hairy dottypea *Psoralea hirta,* Gardenroute ragwort *Senecio pterophorus* and ridgestem ragwort *Senecio pubigerus.*

Figure 11. Degraded vegetation dominated by disturbance associated species such as renosterbos and slangbos. Viewed from waypoint 002 (33°57'39.35"S; 18°52'30.23"E) looking west.

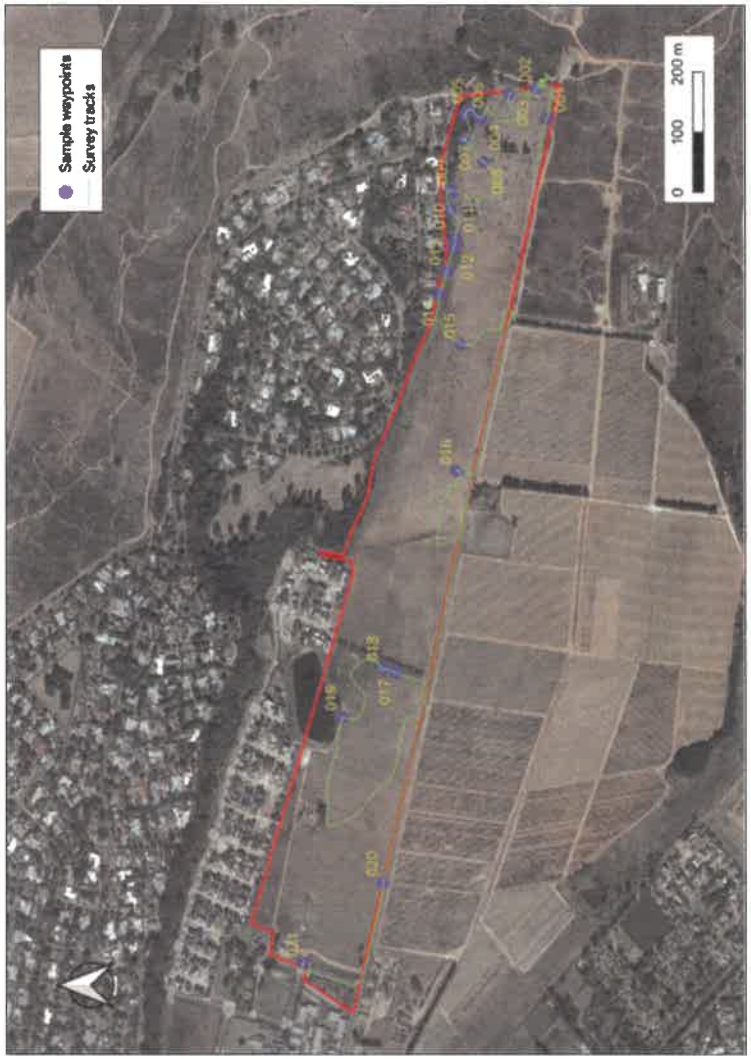

Figure 9. SURVEY MAP: The study area with survey tracks and sample waypoints represented on a CNGI satellite image.

Figure 10. HABITAT MAP: The study area with habitat categories represented on a CNGI satellite image

Semi-intact Ravine and watercourse

The ravine supports some of the original plant communities, which, historically, would probably have been characterized by *Olea europaea subsp. cuspidata – Searsia angustifolia/Kiggelaria africana* community (Figure 12). Invasive species have outcompeted the original communities in places, due to historical disturbances and seed dispersal mechanisms. The outer edges of the ravine are dominated by a high density of black wattle *Acacia mearnsii* (NEMBA category 2) and to a lesser extent bugweed *Solanum mauritianum* (NEMBA category 1b), bleeding heart *Homalanthus populifoius* (NEMBA category 1b), English ivy *Hedera helix* (NEMBA category 3), Benghal dayflower *Commelina bengalensis*, bramble *Rubus* sp. and tall umbrella pine *Pinus pinea* on the northern side. Several large pines have recently fallen over the ravine and cause severe erosion of the ravine slopes at waypoint . Indigenous understorey species include African boxwood *Myrsine africana* and *Juncus effusus* (along the stream). (Figure 13).

Figure 12. An open section of the ravine showing with low IAP infestation showing dominant wild olive and karee willow

Figure 13. Pine trees that have fallen over the ravine and caused severe erosion.

The watercourse exists the ravine to form a series of small wetland bodies that transition into a narrow stream that traverses the northern boundary. The small wetland bodies (located between waypoint 010: 33°57'33.72"S ; 18°52'22.44"E and 011: 33°57'33.94"S ; 18°52'19.98"E support a patch of exotic papyrus *Cyperus papyrus*. The stream is in surprisingly good condition, although it is disturbed in places. Dominant specie include no odour Caperose *Cliffortia odorata* (Figure 14), *Juncus effusus* and seashore paspalum *Paspalum vaginatum*. The riparian area and dry upper bank supports willow karee *Searsia angustifolia* and wild olive *Olea europaea* subsp. *cuspidata* (Figure 15). These indigenous species co-occur with invasive black wattle.

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Figure 14. Wetland along the watercourse showing a patch of no odour Caperose *Cliffortia odorata* at waypoint 010 (33°57'33.72"S; 18°52'22.44"E).

Figure 15. Watercourse showing a mix of indigenous species with dominant species including *Juncus effusus* (in stream) and *Searsia angustifolia* (riparian).

CAPENSIS

Highly degraded and transformed habitat

This area represents the majority of the site. As stated, the area is severely modified due to farming and repeated removal of vegetation. The area supports only a few indigenous species that have persisted and are typical of fallow lands with clay soils. These include renosterbos *Elytropappus rhinocerotis*, wild rosemary *Eriocephalus africanus* and common hare grass *Tribolium uniolae* (Figure 16 and 17). A single plant *Erepsia bracteata* was also found in this habitat.

Figure 16. View from the tar road along the southern boundary looking upslope toward the eastern boundary (yellow line). The dominant shrub in the image is renosterbos.

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Figure 17. Transformed habitat next to the dam where a mix of exotic and trees and wild olive occur.

8. SENSITIVITY

Sensitivity is defined here as the 'conservation value' together with the 'degree of resilience to disturbance'. The conservation value relates to the conservation status (including the ecosystem threat status) and other factors including ecological connectivity, habitat condition, persistence of ecological process and the site's role in supporting biodiversity. The degree of resilience takes into consideration factors such as sensitivity to disturbance and restoration potential. Figure 18 shows the sensitivity ratings based on the above criteria. These sensitivity rating and justification for each rating is provided below:

Medium sensitivity

- Semi-intact ravine and watercourse.
- Critically Endangered vegetation type.
- High restoration potential.
- Ecological corridor.
- Valid ESA2.
- No Species of Conservation Concern were observed.

Low sensitivity

- Degraded vegetation due to agricultural activities with some signs of recovery but severely depleted of the original species complement and natural fire cycles.
- Critically Endangered vegetation type.
- CBA1 areas that do not align with any indigenous vegetation or species habitats.
- No Species of Conservation Concern were observed.

Very Low sensitivity

- Highly degraded to transformed areas (i.e. secondary vegetation not regarded as indigenous) due to agricultural activities.
- Critically Endangered vegetation type.
- Falls outside the 2017 WCBSP.
- No Species of Conservation Concern were observed.

Figure 18. SENSITIVITY MAP: The study area with sensitivity categories overlaid on a CDNGI 50 cm mosaic aerial image.

9. IMPACT ASSESSMENT

The impact assessment is a measure of the impacts likely to occur on the affected environment, specifically the vegetation, ecological processes, important species and habitats. They are considered for (a) the 'No Go' scenario and (b) the direct, indirect and cumulative impacts of the proposed project. Impacts are assessed for both construction and operational phases. The vegetation is assessed in this section whereas the species are assessed in Appendix 1 accordance with the new (and amended) Species Protocols. Note that since no Spatial Development Plan (SDP) has been provided the assessment is based on wholesale clearing and development of the site. The mitigation section addresses No-Go areas where it is deemed appropriate to retain important habitats.

9.1. 'NO GO' OR NO DEVELOPMENT SCENARIO

The 'No Go' or no development scenario takes into consideration the impacts associated with the no construction option. It is merely a prediction of the future state of the affected area in the event of no construction activities taking place and is based on the current and/or anticipated future land use. In this instance if no development were to take place the status quo would either remain 'as is' (i.e. **Neutral impact** significance), or, if the landowner has legal rights to continue with clearing vegetation in the old fields, impacts may be **Low negative**.

9.2. DIRECT IMPACTS

Direct impacts are those that would occur as a direct result of the proposed development. The impacts are assessed for the construction and operational phases of the project according to the following interrelated components:

- Loss of vegetation type – including intact vegetation, ecologically important species and species of conservation concern. Note that a separate report is required for assessment of any SCC (Appendix 1).
- Loss of ecological processes – associated with the loss of intact vegetation, ecologically important species and species of conservation concern.

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9.2.1. Construction phase: loss of vegetation and ecological processes

Loss of vegetation

All of the impacts associated with loss of vegetation would occur during the construction phase. This involves clearing of all existing vegetation in the old fields but not the ravine or watercourse. The overall impacts are expected to be **Low Negative** considering the aforementioned sensitivity context (Table 6). Impacts could however, be reduced to Very Low Negative with mitigation (Section 9.5).

Loss of ecological processes and species

As with loss of vegetation most of the impacts associated with loss of ecological processes and species would occur during the construction phase. Loss of ecological processes and species is likely to be similar to loss of vegetation since these are interdependent. Apart from what is considered to be a valid ESA2 ecological corridor along the ravine and associated watercourse (an area that has not been identified for development) – the ecological processes associated with the existing habitats is likely to be Low Negative due to the severely modified ecological state. If the vegetation condition and species diversity had been higher, loss of ecological processes and species would have been higher.

9.2.2. Operational phase: loss of vegetation and ecological processes

The operational phase impacts are likely to be **Very Low negative to Negligible** for loss vegetation and loss ecological processes and species, since most of the impacts would occur during the construction phase and the ravine and watercourse are likely to be improved from an ecological perspective.

9.3. INDIRECT IMPACTS

Indirect impacts are those that do not occur as a direct result of the activity on the site but that occur further away. In this case no indirect impacts were identified.

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT / NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE																	
		BEFORE MITIGATION									AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE
^*IMPACT SIGNIFICANCE ADJUSTED. Impact assessment methodology calculator (Appendix 2) results in Low Negative impact however this is more likely to be Very Low to Negligeable.																			

CAPENSIS

Table 2. Impact and significance for loss of vegetation type during the construction and operational phases

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT / NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE																	
		BEFORE MITIGATION									AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE
	Potential impacts on biological aspects of the environment.																		
Project activity:																			
Construction Phase	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	4	5	1	1	2	1	24	Low (-ve)	V Low (-ve)	1	0	0	0	1	1	1	^Very Low (-)	V Low (-ve)
Operational Phase	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	1	0	0	0	1	1	1	^ Very Low (-) to Negligible	V Low (-ve)	1	0	0	0	1	1	1	Very Low (-) to Negligible	V Low (-ve)
Mitigation	Mitigation: Rehabilitate ravine and watercourse and include a buffer (distance to be determined by a freshwater specialist).																		
"No - Go" alternative	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	0	1	0	0	0	1	1	Very Low (-) to Negligible	V Low (-ve)	1	0	0	0	1	1	1	Very Low (-) to Negligible	V Low (-ve)

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT / NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE																	
		BEFORE MITIGATION									AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE
^*IMPACT SIGNIFICANCE ADJUSTED: Impact assessment methodology calculator (Appendix 2) results in Low Negative impact however this is more likely to be Very Low to Negligeable																			

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Table 3. Impact and significance for loss of ecological processes and species during the construction and operational phases

PROJECT ALTERNATIVE	POTENTIAL ENVIRONMENTAL IMPACT / NATURE OF IMPACT	ENVIRONMENTAL SIGNIFICANCE																	
		BEFORE MITIGATION									AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL (SP)	Significance	CUMULATIVE
	Potential impacts on biological aspects of the environment.																		
Project activity:																			
Construction Phase	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	4	5	1	1	2	1	24	Low (-ve)	V Low (-ve)	1	0	0	0	1	1	1	^Very Low (-)	V Low (-ve)
Operational Phase	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	1	0	0	0	1	1	1	Very Low (-) to Negligible	V Low (-ve)	1	0	0	0	1	1	1	Very Low (-) to Negligible	V Low (-ve)
Mitigation	Mitigation: Rehabilitate ravine and watercourse and include a buffer (distance to be determined by a freshwater specialist).																		
"No - Go" alternative	Cape Winelands Shale Fynbos (CR) and Swartland Shale Renosterveld (CR)	0	1	0	0	0	1	1	Very Low (-) to Negligible	V Low (-ve)	1	0	0	0	1	1	1	Very Low (-) to Negligible	V Low (-ve)

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9.4. CUMULATIVE IMPACTS

Cumulative impacts are those impacts linked but not limited to (a) increased loss of vegetation type or the ecosystems listed in the Revised National List of Threatened Terrestrial Ecosystems (Government Gazette, 2022) and (b) other local developments taking place in the region. The proposed development footprint would result in the loss of 1 ha of severely modified (degraded) secondary Cape Winelands Shale Fynbos. If however, the land has been legally ploughed within the last ten years (which appears to be the case based on Google Earth imagery then this loss can be discounted. In other words with mitigation (no removal of semi-intact vegetation along the ravine and watercourse) there would be no loss of the vegetation type legally speaking.

10. CONCLUSIONS AND RECOMMENDATIONS

The proposed development, if approved, would impact secondary and severely modified areas that would most likely have supported Cape Winelands Shale Fynbos and Swartland Shale Renosterveld, including an ecotone. The only developable portion of the site that supports Cape Winelands Shale Fynbos (no Swartland Shale Renosterveld remains) is heavily modified (degraded) and only supports a few disturbance tolerant and pioneer species. This area, on the upper slopes abutting the western boundary, could be restored but at significant effort and cost (medium restoration potential), which is not justified in my opinion. Effort should rather but placed on restoring the ravine and watercourse. This should include (1) stabilization of the ravine slopes, where large pines have caused severe erosion, (2) removal of invasive and exotic species, and (3) reintroductions of key species such as wild olive and wild peach. If this condition can be met the development is supported form a botanical perspective.

11. REFERENCES

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APPENDIX 1: MINIMUM CONTENT REQUIREMENTS FOR TERRESTRIAL BIODIVERSITY SPECIALIST REPORTS AS PER PROTOCOL FOR THE SPECIALIST ASSESSMENT OF ENVIRONMENTAL IMPACTS ON TERRESTRIAL BIODIVERSITY (GN 43855 OF 30 OCTOBER 2020)

Protocol ref	**Terrestrial Biodiversity Specialist Assessment Report Content**	**Section / Page**
3.1.1.	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Page iii
3.1.2.	a signed statement of independence by the specialist;	Page ii
3.1.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 5
3.1.4.	a description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Section 5
3.1.5.	a description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;	Section 5
3.1.6.	a description of the mean density of observations/number of samples sites per unit area of site inspection observations;	Section 5
3.1.7.	details of all SCC found or suspected to occur on site, ensuring sensitive species are appropriately reported;	Appendix 3
3.1.8.	the online database name, hyperlink and record accession numbers for disseminated evidence of SCC found within the study area;	Appendix 3
3.1.9.	the location of areas not suitable for development and to be avoided during construction where relevant;	Section 8
3.1.10.	a discussion on the cumulative impacts;	Section 8
3.1.11.	impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);	Section 8
3.1.12.	a reasoned opinion, based on the findings of the specialist assessment, regarding the acceptability or not, of the development related to the specific theme considered, and if the development should receive approval or not, related to the specific theme being considered, and any conditions to which the opinion is subjected if relevant; and;	Section 9

3.1.13.	a motivation must be provided if there were any development footprints identified as per paragraph 2.3.12 above that were identified as having "low" or "medium" terrestrial plant species sensitivity and were not considered appropriate;	Section 7
3.2.	A signed copy of the assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.	

APPENDIX 2: IMPACT ASSESSMENT METHODOLOGY

- A determination of the **significance** of the potential impacts of the proposed development on all project activities, components and alternatives.
  - The significance of each potential impact, with and without the implementation of the proposed mitigation measures, should be assessed based on the following variables (evaluation components):
    - **Extent** (spatial scale);
    - **Magnitude**;
    - **Duration** (time scale);
    - **Probability** of occurrence;
    - **Irreplaceable** loss of resources; and
    - **Reversibility** of the impact.

    The evaluation components, ranking scales and descriptions to be used to assess these are provided in **Table 2** below.
  - Once the evaluation components have been ranked for each impact, the significance of the potential impact should be calculated using the following formula:

    SP (Significance Points) =

    (Magnitude + Duration + Extent + Irreplaceable + Reversibility) X Probability

    The maximum value is 150 SP (Significance Points). **Table 3** below provides the definitions of the calculated significance ratings. The significance rating of the unmitigated and mitigated scenarios for each impact should be calculated and rated as indicated on **Table 4** below.
- The Specialist should propose **mitigation/management** actions to reduce potential negative impacts, and enhance potential positive impacts, and **monitoring** measures that may need to be taken up in the Environmental Management Programme (EMP).

Table 2: Evaluation components, ranking scales and descriptions (criteria).

Evaluation Component	Ranking Scale and Description (Criteria)
MAGNITUDE of NEGATIVE IMPACT (at the indicated spatial scale)	**10 - Very high (negative)**: Biophysical and/or social functions and/or processes might be *severely* altered. **8 - High (negative)**: Biophysical and/or social functions and/or processes might be *considerably* altered. **6 - Medium (negative)**: Biophysical and/or social functions and/or processes might be *notably* altered. **4 - Low (negative)**: Biophysical and/or social functions and/or processes might be *slightly* altered. **2 - Very Low (negative)**: Biophysical and/or social functions and/or processes might be *negligibly* altered. **0 - Zero**: Biophysical and/or social functions and/or processes will remain *unaltered.*
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	**10 - Very high (positive)**: Biophysical and/or social functions and/or processes might be *substantially* enhanced. **8 - High (positive)**: Biophysical and/or social functions and/or processes might be *considerably* enhanced. **6 - Medium (positive)**: Biophysical and/or social functions and/or processes might be *notably* enhanced. **4 - Low (positive)**: Biophysical and/or social functions and/or processes might be *slightly* enhanced. **2 - Very Low (positive)**: Biophysical and/or social functions and/or processes might be *negligibly* enhanced. **0 - Zero**: Biophysical and/or social functions and/or processes will remain *unaltered.*
DURATION	**5 - Permanent** **4 - Long term**: Impact ceases after Operational Phase/life of the activity (~ 20 years). **3 - Medium term**: Impact might occur during the Operational Phase/life of the activity (0 to 20 years). **2 - Short term**: Impact might occur during the Construction Phase (~ 1 year). **1 - Immediate**

Evaluation Component	Ranking Scale and Description (Criteria)
EXTENT (or spatial scale/influence of impact)	**5 - International**: Beyond National boundaries. **4 - National**: Beyond Provincial boundaries and within National boundaries. **3 - Regional**: Beyond 5 km of the proposed development and within Provincial boundaries. **2 - Local**: Within 5 km of the proposed development. **1 - Site-specific**: On site or within 100 m of the site boundary. **0** - None
IRREPLACEABLE (loss of resources)	**5 - Definite** loss of irreplaceable resources. **4 - High** potential for loss of irreplaceable resources. **3 - Moderate** potential for loss of irreplaceable resources. **2 - Low** potential for loss of irreplaceable resources. **1 - Very low** potential for loss of irreplaceable resources. **0 - None**
REVERSIBILITY (of impact)	**5 -** Impact **cannot** be reversed. **4 - Low** potential that impact might be reversed. **3 - Moderate** potential that impact might be reversed. **2 - High** potential that impact might be reversed. **1 -** Impact **will be** reversible. **0 -** No impact.
PROBABILITY (of occurrence)	**5 - Definite**: >95% chance of the potential impact occurring. **4 - High probability**: 75% - 95% chance of the potential impact occurring. **3 - Medium probability**: 25% - 75% chance of the potential impact occurring. **2 - Low probability**: 5% - 25% chance of the potential impact occurring. **1 - Improbable**: <5% chance of the potential impact occurring.

Evaluation component	Ranking Scale and Description (Criteria)
CUMULATIVE impacts	**High**: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern. **Medium**: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern. **Low**: The activity is localised and might have a negligible cumulative impact. **None**: No cumulative impact on the environment.

Table 3: Definition of significance ratings (positive and negative).

Significance Points	Environmental Significance	Description
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be re-evaluated at.
41 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
0 – 40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

APPENDIX 3: PLANT SPECIES COMPLIANCE STATEMENT

1. INTRODUCTION

The relative plant species theme sensitivity for the site generated by the web-based Screening Tool (https://screening.environment.gov.za) is rated as Low (Figure 1). This was confirmed during the site visit and it is further noted that no sensitive or threatened species were observed during the site visit.

Figure 1. Map of relative plant species sensitivity theme sensitivity generated from the DFFE Screening Tool (https://screening.environment.gov.za).

2. IMPACTS AND MITIGATION

Impacts relating to loss of sensitive and threatened species are addressed in the main body of this report and are also included here in accordance with the Species Protocols. No loss of sensitive plant species is likely to result since the sites is in a severely modified state (almost entirely highly degraded to transformed) and no sensitive species were observed during the survey. The site visit was carried out when geophytes are not visible, which limits the study, however, since this site is severely modified the likelihood of occurrence is low.

3. CONCLUSION

The proposed development is unlikely to impact any sensitive or threatened species owing to the severely modified state and intensive historical farming.

Additional information required for this report is provided below:

- The methodology used to compile this compliance statement is provided in the main body of this report.

Table 1. List of requirements for minimum reporting of Plant Species Compliance Statement

Protocol ref	**Terrestrial Plant Species Compliance Statement**	**Section / Page**
5.1.	The compliance statement must be prepared by a SACNASP registered specialist under one of the two fields of practice (Zoological Science or Ecological Science).	Page ii and iii in main body of report
5.2.	The compliance statement must:	
5.2.1.	be applicable to the study area;	Appendix 1
5.2.2.	confirm that the study area is of "low" sensitivity for terrestrial plant species; and	Appendix 1
5.5	The compliance statement must contain, as a minimum, the following information:	
5.3.1.	contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae;	Page ii and iii in main body of report
5.3.2.	a signed statement of independence by the specialist;	Page iii in main body of report
5.3.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 4
5.3.4.	a description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant;	Section 4
5.3.5.	where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr;	N/A
5.3.6.	a description of the assumptions made and any uncertainties or gaps in knowledge or data;	Section 4
5.3.7.	the mean density of observations/ number of sample sites per unit area; and	Appendix 1
5.3.8.	any conditions to which the compliance statement is subjected	N/A

SECTION F

VISUAL IMPACT ASSESSMENT REPORT

TERRA+
landscape architects

BRANDWACHT-AAN-BERG

(DRAFT) SCOPING REPORT AND VIA
OCT 2024

PREPARED BY TERRA+ LANDSCAPE ARCHITECTS
PREPARED FOR GNEC

TERRA+

Prepared by:
TERRA+ LANDSCAPE ARCHITECTS
PREPARED FOR:
JDV PROPERTY DEVELOPERS

Visual, scenic, and aesthetic components of the environment are valuable resources which contribute to the cultural landscape heritage of an environment. Visual Impact Assessment is integral to the management of visual heritage, towards ensuring that the integrity and quality of the visual environments is conserved.

The process of assessment involves an analysis of the spatial context and landscape character as well as an evaluation of the suitability of the proposed development or landscape modification (i.e. designed adaption) within this context. As all development proposals have the potential to change the visual character of the environment within which they are located, and to affect people's perceptions of such places, significant visual impacts may be expected.

Visual Impact Assessment (VIA) may be required as part of Basic Assessment, Scoping and EIA phases of the Environmental Assessment process or integrated within Heritage Impact Assessment (HIA) processes.

Visual Impact Assessments endeavour to determine the correct category of expected impact, to illustrate the expected visual impact associated with the proposed development; and to formulate measures or interventions to mitigate any detrimental impacts of the proposal to the extent that the development will meet acceptable visual criteria. To this end, Visual Impact Assessment can serve as a proactive tool to inform planning and design processes.

DISCLAIMER:

During the assessment of the study area, every effort has been made to ensure accuracy, using the source material available at the time of the assessment in good faith. Should any design changes be made after the completion of the assessment, Terra+ Landscape Architects cannot be held liable for discrepancies that may occur as a result thereof.

TERRA+

Contents

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Prepared by:
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List of Fugures

TERRA+

BRANDWACHT-AAN-BERG

1. EXECUTIVE SUMMARY

1. EXECUTIVE SUMMARY

[Proposed redevelopment of erF 3135 at Hathersage Farm (north portion), Somerset West: Visual Impact Assessment]

1.1 Site Name and Location

Property	*Portion of Brandwacht Farm, Stellenbosch*
Address	*Trumali Street, Stellenbosch*
Situate	*Brandwacht, Stellenbosch 70*
SG Region	*Stellenbosch*
Province	*Western Cape Province*
Farm/Erf number(s)	*Erf 3135, Somerset West, 7130*
GPS co-ordinates	*Latitude: 33°57'31.85"S*
	Longitude: 18°52'2.17"E

1.2 Introduction:

The subject site, part of the north portion of Hathersage Farm, comprises erf 3135. This portion is a relatively small site of agricultural use, located outside of the urban edge, between the suburban development of Somerset West and the Lourens River.

The site boundary is tightly contained by roadways on its north (Gordon Road) and east (Cloetenberg Road) and erf 2570 to the west. The southern boundary is gently described by the Lourens River corridor. This relationship maintains a direct agricultural link with the upper reaches of the Lourens river and the agricultural fields and vineyards beyond.

Several existing structures are present on site and immediate context, including historic buildings (old Hathersage manor house) graded as having IIIA heritage significance.

The development proposal calls for the construction of low density residential development. with associated infrastructure and an additional commercial building which will be housed in the existing shed. This is further explained and described in the urban design report Annexure A.

Fig. 49 - Subject site erf 3135, turquoise outline, one of two erven constituting the northern portion of Hathersage Farm (Source: Cape Farm Mapper)

Fig. 50 - Neighbouring erf 2570, turquoise outline, one of two erven constituting the northern portion of Hathersage Farm (Source: Cape Farm Mapper)

1.3 Scope of Analysis and Approach:

As the site is located within an area which includes historic homesteads such as Vergelegen and Morgenster. The site lies on a spur of agricultural land at the lower portion of the Somerset West wine lands with significant scenic and aesthetic value. Although the adjacent developments are low density suburban homes this visual impact assessment report considers the potential impact of the proposed additions from a cultural landscape perspective, with respect to the landscape character of the broader context, as well as the site itself.

The authors comply with the general requirements for specialists as set out in Regulation 13 of the EIA Regulations 2014 and have assessed the development proposal as per the criteria, definitions and terminology set out within the CSIR Guideline for involving Visual & Aesthetic Specialists in EIA processes.

1.4 Locality Plan

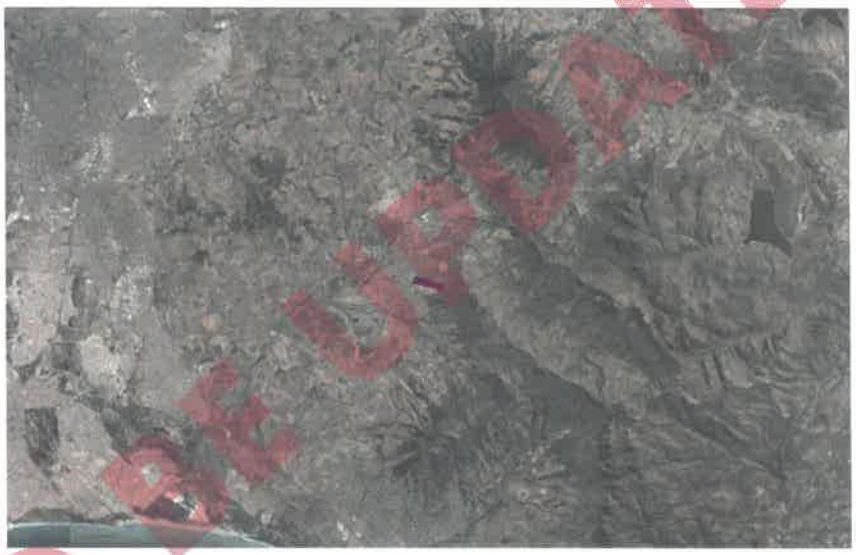


Fig. 51 - General context: subject site (purple fill) acts as a fulcrum between urban and agricultural development (Source: GE Pro)

The proposed Hathersage project site lies within the rural cultural landscape of the Cape Winelands of Somerset West region, encompassed by the Helderberg Mountains to the north and Hottentots Holland Mountains to the east. The Lourens River forms the southern boundary of the site where it wraps around the base of the Skapenberg.

Settlement within the immediate vicinity is suburban and low density, often with a rural agricultural quality. The valley is broad and expansive; and of a scale that seems to contain settlement within the landscape The site itself slopes downwards from the north-east corner where Gordon road meets Cloetenberg Road, descending in elevation from approximate 66 m above MSL at its highest point, to

approximately 46 m above MSL on the south-western edge, adjacent to Meadow Lane.

Fig. 52 - A panoramic image from near Gordon Road with Skapenberg in the background, center and Hottentots Holland left (Source: Terra+)

1.5 Brief Description of Proposed Development

A description received from the architects and urban designers are detailed below:

The proponent, Brandwacht Land Development (Pty) Ltd, is proposing an urban land use development on the subject property, consisting of primarily residential land uses with the opportunity for a variety of residential densities (similar to the abutting Brandwacht aan Rivier residential estate).

The proposed urban development will primarily consist of the following land uses:

Conventional Residential Zone erven (with varying erf sizes).

A Local Business Zone erf (abutting the Brandwacht Office Park).

Private Open Space Zone erven (for open spaces and roads).

Owing to the success and popularity of the Brandwacht aan Rivier residential estate as well as the subject property's similar shape to the estate, we have attempted to emulate the design principles of Brandwacht aan Rivier. The proposed residential development on the subject property will have an elongated open space system that will act as a buffer between the proposed and existing developments. This open space system will connect with the Brandwacht stream and the mountain land. The residential schemes will consist of a network of cul-de-sac streets to create a sense of community in each of these closes. To limit the proposed development's visual impact, the smaller residential erven will be located on the lower portion of the subject property and the larger residential erven on the higher portion of the subject property.

Fig. 53 - Option 1 Preferred Development Option: Proposed Landscape Development Plan with new erven in yellow (Source: DMP)

Fig. 54 - An oblique aerial image from near Gordon Road with a overlay of the modelled proposed design and preferred alternative (Source: DMP)

1.6 Development Alternatives and the 'No-Go' option

Fig. 55 - Option 2: Proposed Landscape Development Plan with new erven in yellow (Source: DMP)

Fig. 56

Fig. 57

Fig. 58

Fig. 59

1.7 Visual Resources Identified

Currently the site has a rural, picturesque informality that is consistent with the historic pattern of settlement within Lourens River catchment area. Buildings within this landscape tend to be couched within wooded groves, within the middle-ground, with more planted vineyards and open fallow lands and fields occupying the fore-ground, allowing uninterrupted views towards the agricultural foothills and mountain wilderness.

1.8 Site Attributes as Visual Resources:

Foreground: planted vineyards, open paddocks, fields and fallow lands dissected by mature tree windbreak plantings and drainage channels; rural farm tracks with mature avenues; perimeter planting on the street-facing perimeter edge

Mid-ground: riverine valley landscape with woodlands and avenues, historic manor house with informal farm werf spaces around existing sheds and outhouses

Background – olive grove planted foothills and mountain views towards Hottentots Holland Nature Reserve and Sir Lowry's Pass

1.8.1 Local Context as Visual Resource:

Urban / Rural transition zone – agricultural / residential interface

Views across agricultural site towards Hottentots Holland mountains

Historic buildings clustered in close proximity with the Lourens River Riparian Corridor

1.8.2 Regional Context as Visual Resource:

Cultural Landscape – rural/agricultural valley – Cape Winelands

Continuity of agricultural patterns (vineyards, tree windbreaks, sporadic settlement)

Rural sense of place with some smaller-scale fields of intensive boutique cultivation amid predominant extensive cultivation

1.9 Potential Impacts on Visual Resources

Whereas the proposed development of residential buildings as per the layout plan would have a localized visual impact, refinement of the scale, typology, and placement of these structures and their associated infrastructure will be critical to achieving an appropriate fit within the agricultural context, and to be compatible with rural sense of place.

1.9.1 Impacts upon the Regional Context:

Cultural Landscape – Reduction of the agricultural continuity

'Danger of Sub-urbanisation' – inward-looking / gated development

Potential change in character - loss of rural sense of place (if left unmitigated, and potentially resulting from cumulative impacts)

1.9.2 Impacts upon the Local Context:

Loss of agricultural interface

Loss of views across 'open' space towards mountains

Change in rural quality of Lourens River Valley

Visual intrusion of residential buildings within rural landscape

(if not correctly sited and mitigated through architectural and landscape measures)

1.9.3 Impacts upon the Site Attributes:

Transformation of Land-use from agricultural to residential

Densification of built form / Foreground intrusion of buildings

Potential loss of landscape features (trees, vines, furrows, open fallow land)

Partial obscuring of mountain views

1.10 Impact Assessment

Refer to Summary Tables, Section 7 of the report

1.11 Comparison of Alternatives (Including the no-go alternative)

The no-go alternative is not seen as a viable option. In-terms of the visual impact the preferred alternative is visually more integrated due to the continuation of the existing wind-breaks and the additional tree and shrub planting. The preferred alternative also has a better integration with the agricultural character of the site due to the architectural mitigations and landscape interventions. Therefore for the purposes of the visual impact assessment, this report has concentrated on the Preferred Option

1.12 Key Findings and recommendations

Development of the site is permissible. Although the proposed development will have a visual impact and impact on the sense of place and character of the site, there is a continuation of the existing urban fabric. With the correct mitigation measures as proposed in the report, the site could be successfully integrated in the landscape and surrounding urban fabric. It is imperative that the development is part of an overall landscape and productive landscape framework to ensure the integrity of the farm and agricultural function of the remaining farm. The development is therefore recommended for approval with the necessary mitigation and framework in place.

1.13 VIA Author & Date

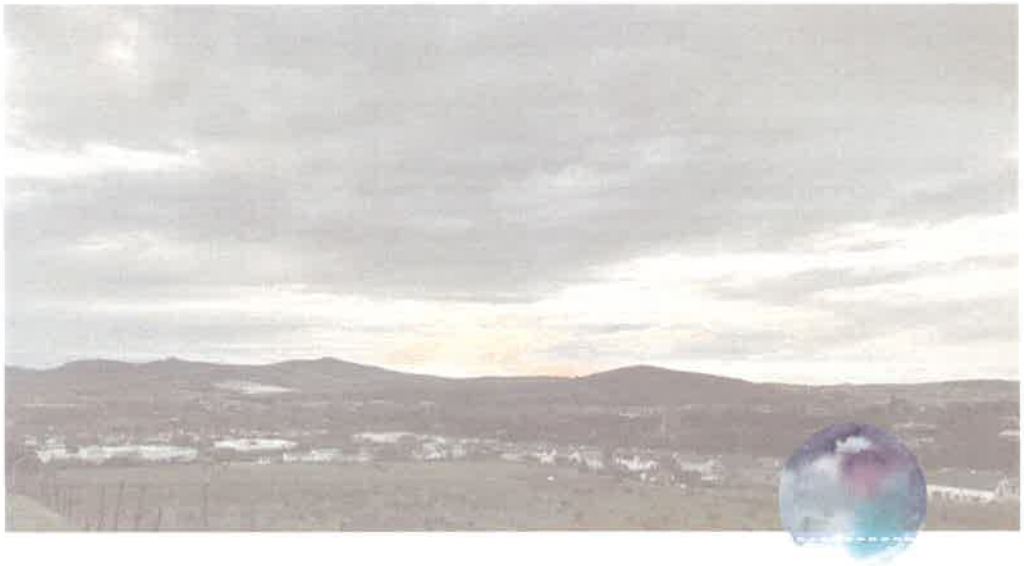
TERRA+ Landscape Architects, Director Ankia Bormans

Signature of the specialists:

Name of company: TERRA+ Landscape architecture

Date:

TERRA+



BRANDWACHT-AAN-BERG

2. INTRODUCTION

2. INTRODUCTION

2.1 Background

Terra+ Landscape Architects (Professional Landscape Architects) was appointed as consultant Visual Specialist to undertake visual impact assessment (VIA) of the proposed development upon visual/ aesthetic resources; toward fulfilling the further requirements of the HWC BELCom.

2.2 Terms of reference

TERRA+ and the directors meet with the requirements for specialists as set out in Regulation 13 of the EIA Regulations 2014, and works in accordance with established cultural landscape heritage and visual assessment criteria, definitions and terminologies as set out in the following reference documents:

Oberholzer, B: Guideline for involving Visual & Aesthetic Specialists in EIA processes: Edition 1. CSIR Report No. ENV-S-C 2005 053 F, Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town, 2005;

and:

Bauman, N. & Winter, S: Guideline for involving Heritage Specialists in EIA Processes: Edition 1. CSIR Report No ENS-S-C 2005 053 F, Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town, 2005

Independence of Visual Specialist

The authors of this document have no vested interest in the outcome of the approvals process associated with the development proposal assessed in this document; nor do they stand to gain financially from the design, construction or future management thereof; and therefore, maintain complete impartiality.

2.3 Timing of Visual Specialist Input

This Visual Impact Assessment forms part of the heritage, planning and building approvals processes associated with the proposed development, and endeavours to determine the character and visual absorption capacity of the cultural landscape which contextualizes the site, the visibility of the built components of the proposal, the potential visual impact on heritage resources, and the nature, extent, duration, intensity, probability and significance of these impacts, as well as measures to mitigate negative impacts and enhance potential benefits.

2.4 Type of Visual Impact Assessment

The project site lies outside the urban edge of Stellenboscht, and is contained by suburban development on two edges. This project site itself is a portion of a historic farm set against thefoothillsof Stellenbosch Mountains with direct links to surrounding agricultural land and so also involves a cultural landscape of rural character, within a significant valley of particular character. Therefore this study requires both **Type 'A' and Type 'B'** Visual Impact Assessment, with a focus on Type 'B'.

Note:

Whereas many construction phase impacts tend to be significant and immediate, effecting noticeable change to the status quo, they to endure only as long as construction activity continues; operational phase impacts tend to be more permanent, but may become neutralized over time through mitigation and as the initial visual changes become alleviated.

2.5 Scope of Visual Impact Assessment

Consistent with NEMA requirements for visual impact assessment; the visual specialist has assessed the potential impacts upon the cultural landscape of the planning, design and construction phases as well as the operational phases of the proposal,

The current state of the proposed development site is illustrated within the photograph that follows (figure 8), which illustrates the agricultural fallow land bounded by existing residential development to the north and commercial development to the west of the site.

Fig. 60 - The site within the context of the Stellenbosch Valley Source: Terra+

The Cultural Landscape is composed of several significant overlayed patterns of remnant tree-lines, vineyards, vegetated drainage line and urban patterns. These layers indicate the current state and nature of the environment.

2.6 Type and Intensity of Proposed Development

The proposed new residential development is considered to be a Category 3 Development, i.e. generally low density residential type development, with buildings and landscape, with private roads, low-scale infrastructure and associated engineering services.

The proposal is considered to be a development proposal of low intensity – (i.e. generally single or double storey domestic structures, with associated infrastructure (e.g. engineering services), usually with more than 50% of the site area retained as natural (undisturbed) open space.

2.7 Type and Significance of Receiving Environment

The site is located outside the designated urban edge line of Stellenbosch, set between a drainage line to the north of the site and Tremali street to the South. The eastern edge of the site is the wilderness area of Stellenbosch mountains and the lower northern edge is the residential development of Brandwacht-aan-Rivier. Beyond the the drainage line is the existing residential suburd of Brandwacht.

Although the site is adjacent to the suburban development of Brandwacht the site and its attributes form an integral part of the broader cultural landscape, which is an environment of high scenic, cultural, and historical significance (including scenic routes); the attributes of all the qualities present in the surrounding landscape can be developed and expanded in the proposed layout to ensure an integration with the broader landscape.

Due to the linear shape of the overal site there is a distinct differene in landscape character as one moves along Trimali street, with the undulating landscape subtly changing from a flatter portion with an agricultural character bounded by residential development to the upper portion of the site which had a more wildernes character due to the proximity to the mountain and natural fynbos. There is therefore a distinct duality in the site with a separation by the existing green corridor that continues through the suburb of Brandwacht.

Fig. 61 - The site within its broader context (Source: Terra+)

2.8 Approach

The visual specialist has approached this study from a ***Cultural Landscape perspective.***

This approach offers holistic vision for understanding and interpreting whole environments, considering human settlement needs within ecological carrying capacities. This concept endeavours to balance these dynamic systems through responsive conservation, development, and management, to augment each unique identity and spatial quality of these places and to ensure that interventions are located firmly within their contexts.

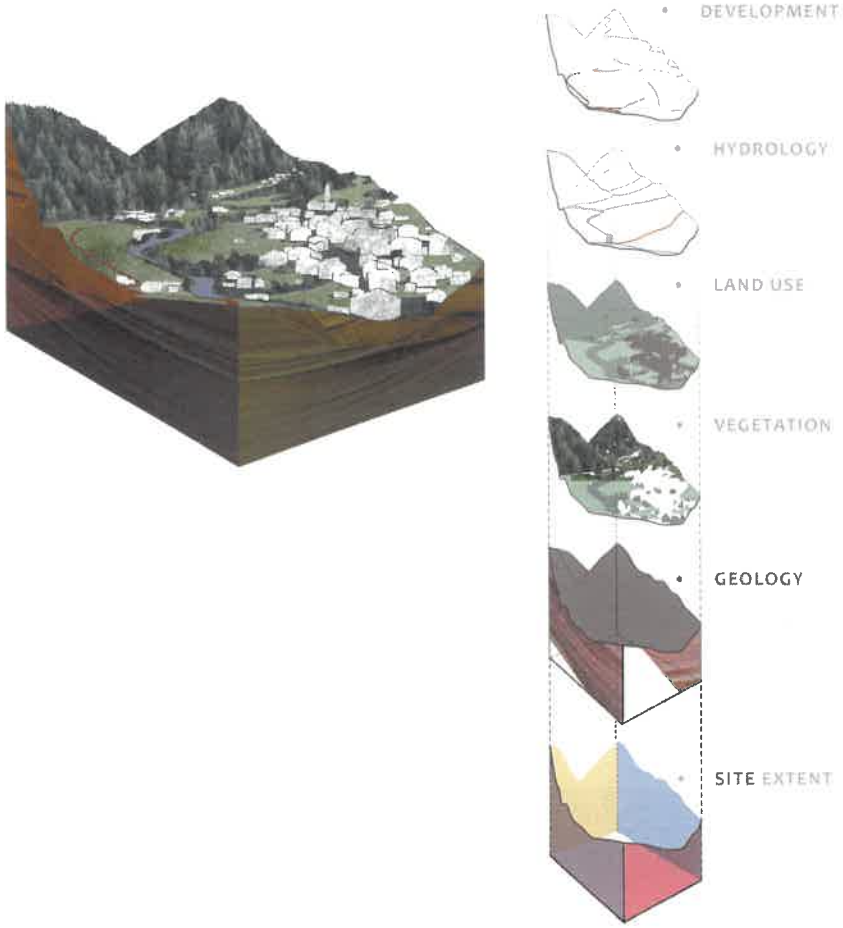
Cultural Landscapes provide a sense of place and identity, map human relationships with land over time. They are sites associated with significant events, activities, persons, or groups of people; they range in size from extensive tracts of rural land to historic homesteads and individual settlements. They can be grand estates, botanical gardens, parks, university campuses, cemeteries, agri-industrial sites, or scenic drives; they are works of art, narratives of cultures, and expressions of regional identity, constituting visual amenity heritage resources.

Recognizing and acknowledging the dynamic quality of cultural landscapes in that places do change over time (some features endure, certain patterns resonate; others fade, many vanish); and that development is at times necessary (and even desirable) for the continued vitality of place; it is important to identify, protect, enhance, and integrate visual qualities which contribute significant value to the character of landscape and lend meaning to the interpretation of place. These can become visual indicators for appropriate design response.

Ideally, from a cultural landscape perspective, visual impact assessment is approached pro-actively – to provide a mechanism for guiding the evolution of development proposals within appropriate visual parameters. This may be achieved by identifying visual resources upfront and, through strategic engagement, by integrating visual considerations into the planning and design phases of projects – and

by measuring design proposals against established visual indicators and criteria.

To achieve this, the visual specialist has visited the site and investigated the surrounding areas to understand the site within its context, critical viewpoints, and view corridors. The visual specialists have also participated in planning discussions to advocate for visual issues.



2.9 Methodology

The degree of visual impact expected is a determined by the Type, Nature, Intensity and **Category of Development** measured against the Type, Nature and Significance of the **Receiving Environment** into which it is placed and indicates level of visual impact assessment required.

As 'noticeable change' in the visual character of the area is anticipated to arise from the development proposal, (in particular the change in land-use from agricultural to residential; associated with construction and operational activities, together with the introduction of new buildings and roadways) being visible within the view frame and visual experience of receptors, **Moderate Visual Impact** may be expected.

This requires a **Level 3 Visual Impact Assessment** which typically involves the following:

- Site visit and recoding of visual indicators
- Identification of issues raised in scoping phase
- Description of the receiving environment and the proposed project
- Establishment of view catchment area, view corridors, viewpoints, and receptors
- Indication of potential visual impacts using established criteria,
- Description of alternatives, mitigation measures and monitoring programmes (if applicable)
- Review by independent, experienced visual specialist (if required)

The actual **significance** of the expected visual impacts must be ascertained holistically, considering the proposal in context, and interpreting the visual suitability of the potential changes.

In addition to the proposed Site Development and Sub-division plans produced by the project planners, the project architects have produced urban design and landscape framework drawings, which indicate building footprints and the architectural typologies of the proposed buildings. This gives an indication of the built form, materiality, texture, and colour.

In addition to these documents and plans, rendered perspectives were supplied to indicate the impact of the landscape proposals and amelioration of the building impact on the site. These plans and rendered perspective

This information has been interpreted within the context of landform information provided by Google Earth Professional, as well as aerial survey information provided by the project planners. The proposed buildings have been considered from strategic viewpoints at various distances from the site, towards the articulation of a professional opinion with recommendations for decision-making.

2.10 Assumptions

Assumptions underpinning the visual impact assessment process are as follows:

- Awareness that 'visual' implies the full range of visual, aesthetic, spatial, cultural and spiritual aspects of the environment, which together contribute to the local character and 'sense of place' of the area, and that 'visual' considerations are part of the cultural landscape.
- Understanding that 'impact' means a 'noticeable change' to the status quo when perceived under normal conditions; and that change is not necessarily negative, but may contain positive, neutral, and/or negative aspects in varying degrees.
- Identification of all significant visual heritage resources, including protected areas, scenic drives, sites of special interest and tourist destinations, together with their relative importance within the broader context of the region.
- Acknowledging the dynamic nature of landscape processes; including geological, biological, horticultural, and human settlement patterns, which contribute to landscape character, visual heritage attributes and scenic amenity value.
- The need to include quantitative criteria, such as 'visibility'; and qualitative criteria, such as 'aesthetic value' or 'sense of place' to achieve a balanced perception of visual impact (i.e. the rational and the intuitive; the measurable and the immeasurable)
- The need to include visual input as an integral part of the project planning and design process, so that the visual findings and recommended measures for mitigation can influence final designs pro-actively
- The need to determine the heritage value and significance of visual and aesthetic resources responsibly through a rigorous process, of which public engagement forms an essential component

2.11 Limitations

Limitations of the visual impact assessment process are as follows:

- The significance of cultural resources is dynamic and multifaceted, and the perception of visual impact may be interpreted subjectively, particularly as interest groups and societal values change over time. Thus, it is not always possible to provide a definitive visual statement of significance.
- Timing and Availability of Information: This report is based on information available at the time of writing and may be subject to review and revision, should additional or more detailed information become available at a later stage.
- Accuracy of Material: This report assumes that all material supplied by others (including specialist assessments, historical, planning and land-use background research) is an accurate and true reflection of the issues governing the property and its proposed development.
- The geographic aspects of this report rely on a combination of topo-cadastral maps at scales 1:500 000, 1:250 000 and 1:50 000, together with Google-Earth LIDAR data and GIS information at various scales as recent and as contemporary as possible. However, newer buildings and buildings still under construction may not be reflected.
- Architectural detail of the proposal is not yet developed (colour, texture, fenestration, etc.) and remains conceptual; the site development plan does not yet indicate typical building footprints.
- Detailed LiDAR information of the site context is not always available digitally; therefore, the visual simulations rely on landform as an indication of visibility. At grade, the screening effect of existing trees and buildings may reduce visibility significantly.

2.12 Visual Resources identified

It is critical to note that the resources of this particular site is not only visual, but the rural cultural landscape with all the nuances is of importance as a resource, both visually and as a character resource. The primary visual resource is the Stellenbosch and environs as a cultural landscape itself, of which the site forms a part.

The character of this landscape has an intimate and informal quality. The views of the mountain and vineyards from certain vantage points contribute to the rural qualities of the landscape. This is juxtaposed by the low density suburban development adjacent to the site.

Visual resources across the scales are summarized as follows:

2.12.1 Regional Context:

Cultural Landscape – rural /agricultural valley

Continuity of agricultural patterns (fallow lands, clustered farmstead settlement, tree cluster

Rural sense of place, intimate scale of farmland, openness of fallow lands,

Patterns of vineyards, remnant wind-breaks and fallow fields

Views towards Stellenbosch Mountains provide connection from the suburbs to the rural landscape

2.12.2 Local context:

Views into 'bucolic' agricultural valley of intimate scale

Semi-Rural country road interface (scale / edge detailing)

Juxtaposition of suburb and rural landscape

Visual and physical connection to the riparian corridor and wilderness areas

2.12.3 Site Attributes:

Existing open fallow lands, vineyards, and riparian corridor

Existing farm dam and mature trees

Significant views of the rural landscape in the background

Rural qualities within a suburban context

2.13 Potential Impacts on Visual Resources

Whereas the proposed development as per the layout plan would have a localized visual impact, refinement of the scale, typology and placement of the development and their associated infrastructure will be critical to achieving an appropriate fit within the context, and to be compatible with rural sense of place. It should also be considered that the development continues to allow significant connections and views to the river corridor and the rural landscape beyond.

2.13.1 Impacts upon the Regional Context:

Development of the site will have a negligible visual impact upon the regional context, provided the design response of the development is context-specific and sensitive to site and local informants. This would enable a resulting development that resonates with the character and scale of the receiving landscape. Potential change in character (if left unmitigated, and potentially resulting from cumulative impacts)

2.13.2 Impacts upon the Local Context:

Change in visual character of the local context with views towards the rural landscape impeded if not mitigated and retained. Extension of built-from adjacent to existing urban development and as an interface to the existing agricutural landscape.

2.13.3 Impacts upon the Site Attributes:

- Foreground insertion of new residential buildings.
- Potential loss of landscape features (trees, open fallow lands)
- Obstruction of mountain views along the foreground.

It should be noted that the receiving environment is both suburban and rural in nature and the new proposed development will be a continuation of the suburban element, however the views and connection to the rural landscape and the significant view of the mountains are of importance and should be retained to ensure connection to the broader landscape

TERRA+

BRANDWACHT-AAN-BERG

3.PROPOSED DEVELOPMENT

3. THE PROPOSED DEVELOPMENT

3.1 Development Description:

A detailed description was formulated by the architects and urban designers which included an extensive rational and motivation. This is included in Annexure A, a brief extract below gives a summary of the development description.

A description received from the architects and urban designers are detailed below:

The proponent, Brandwacht Land Development (Pty) Ltd, is proposing an urban land use development on the subject property, consisting of primarily residential land uses with the opportunity for a variety of residential densities (similar to the abutting Brandwacht aan Rivier residential estate).

The proposed urban development will primarily consist of the following land uses:

Conventional Residential Zone erven (with varying erf sizes).

A Local Business Zone erf (abutting the Brandwacht Office Park).

Private Open Space Zone erven (for open spaces and roads).

Owing to the success and popularity of the Brandwacht aan Rivier residential estate as well as the subject property's similar shape to the estate, we have attempted to emulate the design principles of Brandwacht aan Rivier. The proposed residential development on the subject property will have an elongated open space system that will act as a buffer between the proposed and existing developments. This open space system will connect with the Brandwacht stream and the mountain land. The residential schemes will consist of a network of cul-de-sac streets to create a sense of community in each of these closes. To limit the proposed development's visual impact, the smaller residential erven will be located on the lower portion of the subject property and the larger residential erven on the higher portion of the subject property.

3.1.1 Proposed Layout to be assessed - Preferred Option

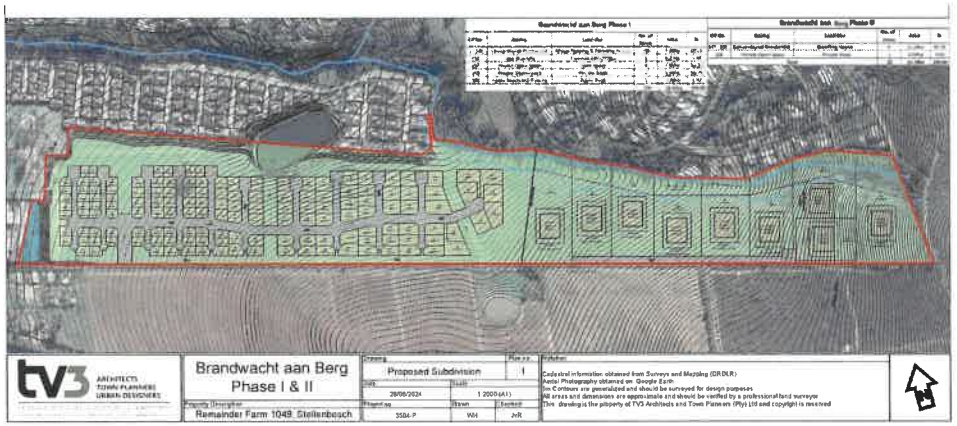


Fig. 62 - Rendering of proposed 'Preferred Option' layout. Source: Project Planners and Architects

Fig. 63 - Landscape Plan with proposed plantign and tree planting. Source: Project Landscape Architects

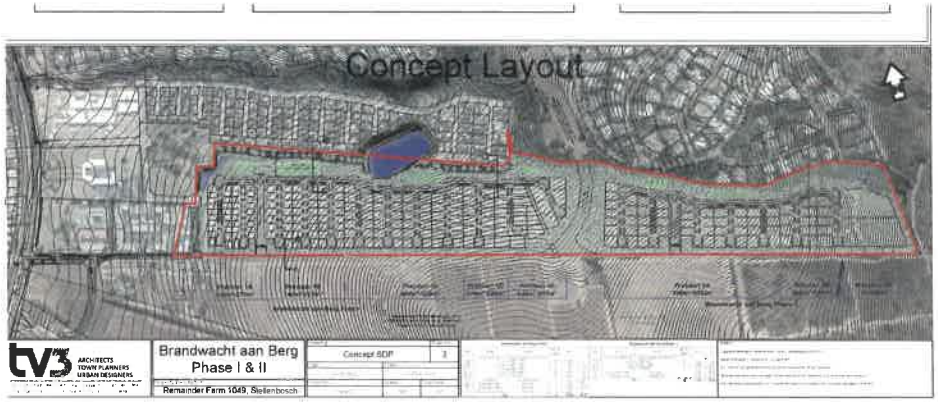


Fig. 64 - Rendering of proposed 'Development Alternative' Source: Project Planners and Architects

3.1.2 "No-go" Option

The 'no-go' alternative i.e. the exercise of existing rights and no material change from the current condition. The site will remain as agricultural land with the associated farming activities.

The site comprises of fallow and disused fields, and vineyards with treelines as windbreaks. The no-go alternative is likely to result in the status of a relatively low intensity farm to continue. The risk is that the portion of farm may not be viable and be left to deteriorate.

Given the similarities in scale, form, massing, and density between the preferred option and the development alternative, the visual impact assessment has only considered the potential visual impacts

upon the cultural landscape of the preferred development option.

3.2 Implications of the Proposed Development

Both the Construction and Occupational phases of the project would cause noticeable changes (i.e., visual impact) to the visual status quo. These may have either negative, neutral, or positive effects on the visual resources identified, and are summarized as follows; and

3.2.1 Construction phase:

Site establishment, some clearance of existing vegetation,

Minor earthworks / excavations / infill to create building sites, roadways, swales, and berms

Construction operations – materials and equipment delivery and storage

Building activity, personnel and vehicles and machinery

Noise / dust / lighting / temporary services / hoarding

3.2.2 Operational phase:

- Transformation of the site from to (derelict) agricultural to residential (change in 'sense of place')
- New residential buildings with associated landscape / infrastructure / services
- Residential activities / passive recreational use of internal private open space
- Increased traffic flows on Trumali street
- Signage, Lighting at night, boundary treatment

Note:

Whereas many construction phase impacts are significant and immediate, effecting noticeable change to the status quo, they last only for as long as construction activity continues. Operational phase impacts tend to be more permanent and long-lasting, but may become neutralized over time, as the visual changes become alleviated through the implementation of appropriate mitigation measures, and the maturing of landscape.

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BRANDWACHT-AAN-BERG

4. RECEIVING ENVIRONMENT AND CULTURAL LANDSCAPE LAYERS

4. THE RECEIVING ENVIRONMENT AND CULTURAL LANDSCAPE LAYERS

4.1 Receiving Environment Description

It is an evolving, rural, vernacular, cultural landscape that has been modified over time and adapted through agricultural use over several centuries. Whereas this cultural landscape changes seasonally and in response to updated agricultural practices, certain defining features remain as structuring elements: the continuity of the riparian corridor and associated drainage lines is clearly evident; equally prominent are remanat tree lines and vinveyards (windbreaks defining field and vineyard borders and farm roads) which stitch together the agricultural and riparian zones. The position of the site within this receiving environment at the foothills of the Stellenbosch moutains and the existing drainage lines and the juxtaposing of this with the suburban development to the north of the site.

Fig. 65 - The position of the site within the broader context of agricultural land and residential development on the foothills of Stellenbosch Mountains

4.1.1 Type of Landscape and Broader Landscape

The site sits within a fertile agricultural valley, within an alluvial floodplain environment, at the edge of the foothills below the Stellenbosch Mountains. Taking cognisance of the dynamic quality of cultural landscape, the following sequence of diagrams explores the subtle qualities and relationships of the site within the broader and local context. The layers that comprise the cultural landscape.

The broader context is typified by the Eerste River Valley and the surrounding Hottentots Holland and Stellenbosch mountains. The unique position give the site 360 views of the broader context with typical agricultural patterns dominating the field of vision.

Fig. 66 - The site and broader context (Source: GEP)

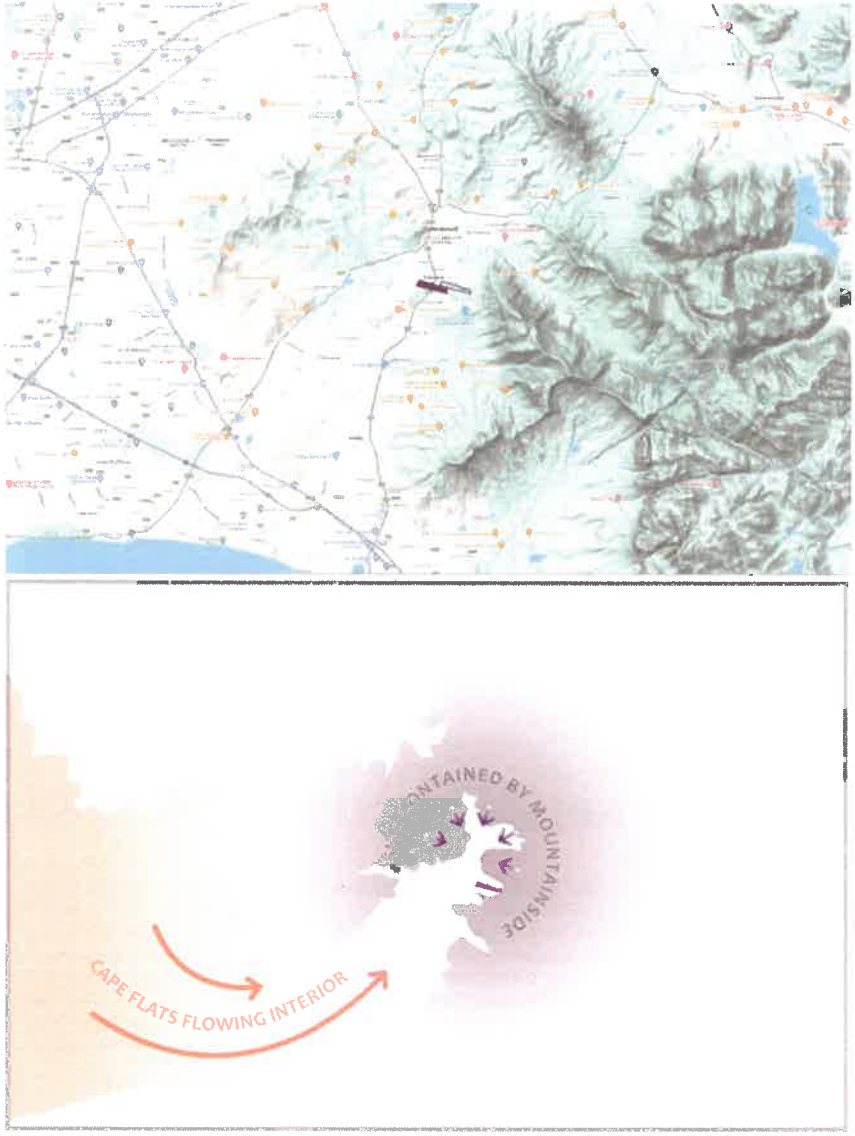

Fig. 67 - Topgrpahic Image of the site in relation to the mountians and topogrpahy

Fig. 68 - A diagram of the ddevelopment prossure both from Cape Town and Cape Flats and Stellenbosch and the relative poistion of the site to these pressures

4.1.2 Topography and Landform

It is clear from the contours (at 5m intervals) that the site lies in a minor valley on the foothills of the mountain which shapes the river basin. This position affords 360 views of all the dominant mountain peaks withsweeping views toward the rolling hills with agricultural patterns of cultivated fields and vineyards. The Eerste River basin fed by numerous drainage line and riparian corridors is typical of this landscape. The site is situated on on such drainage line which leds a particular charater to the site and provides a buffer to the existing suburb of Brandwacht. The landscape is typified by undulating hills and valleys dominated by the imposing majestic Stellenbosch mountains from the steeper slopes of the Stellenbosch Mountain. The site is bounded on the northern edge by on such drainage line. This affords the site some buffer between the existing residential development of Brandwacht and is an attribute and amenity to future development.

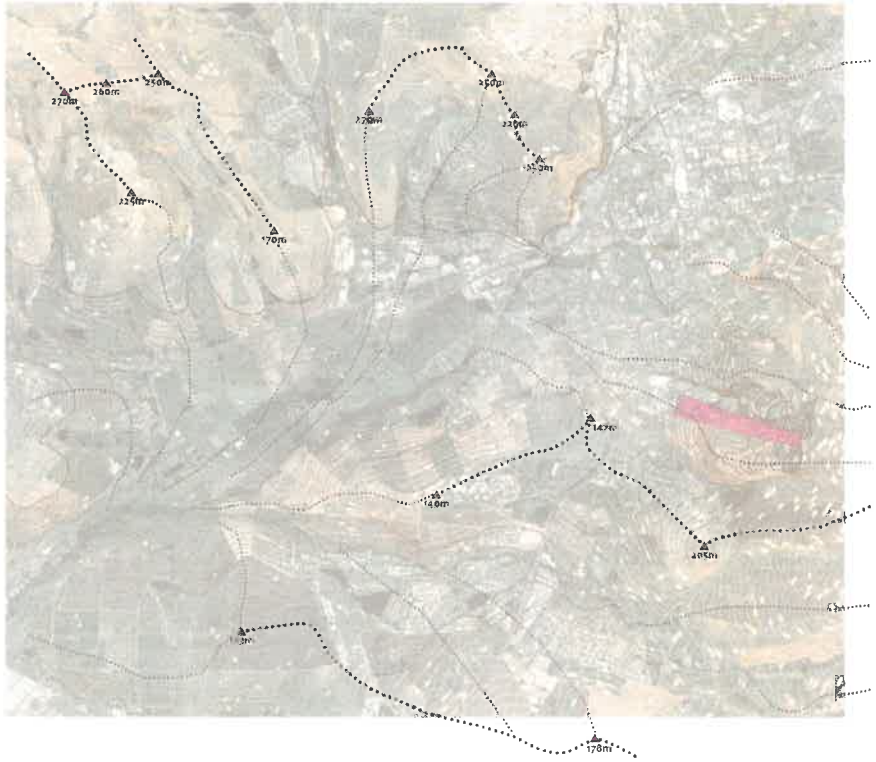

Fig. 69 - The site within its Landform context (contours at 5m intervals) (Source: Terra+)

4.1.3 Hydrology

The site lies in a secondary valley created by the numerous drainage lines and river corridors flowing toward the Eerste River which creates this unique river basin. In-line with the dominant drainage lines are farm dams that optimises the water flowing from the mountain. These dams are typical of the rural character of the broader landscape.

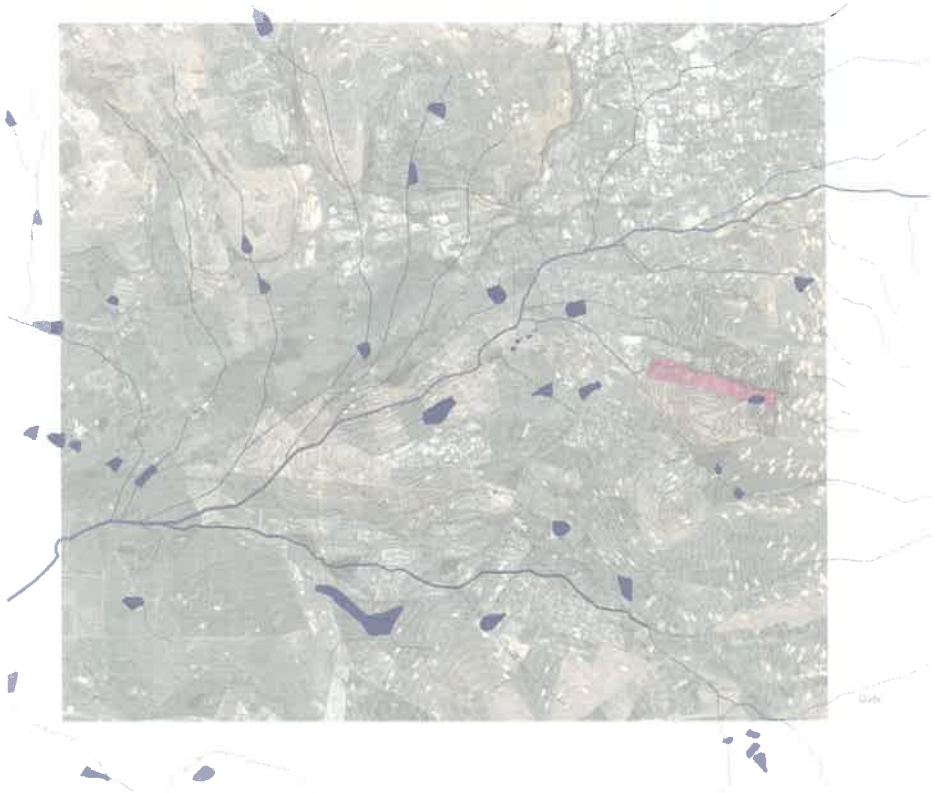

Fig. 70 | Hydrology diagram indicating overland drainage and storage (Source: Terra+)

4.1.4 Vegetation patterns & Landscape cover

The vegetation cover of the site is a combination of remanants of formalised tree-lines and windbreak with a mix of existing vineyards and fallow fields arranged in a formalised manner. This is juxtaposed by the wild riparian densely planted corridor with mature trees and a organic development of vegetation over the years. This combination of agricultural patterning and sylvan forest character provides sense of connection with the wilderness of the mountains within a controlled and scenic rural landscape. The best of both worlds.

In addition to the agricultural and wilderness vegetation patterns, the green matrix is expanded into the suburban fabric with typical tree planting in street verges and private gardens.

Fig. 71 | Landscape patterns of field and tree-lines. Source: Terra+

Fig. 72 - Green wilderness areas leading from the mountain and following drainage lines as ecological corridors. (Source: Terra+)

4.1.5 Settlement Patterns & Built Form

Development in the Stellenbosch area has increased along the R44 with suburbs like Brandwacht, Paradyskloof and Jamestown enclosing the remaining agricultural patterns

The steady increase of development within the urban edge has resulted in suburban development and suburbs surrounding the site effectively enclosing the site on two sides. The site is now effectively a spur of agricultural development within a suburban fabric. This unique setting accentuates the significance of the site in relation to both the suburban development and the rural landscape in retaining the particular rural sense of place.

Fig. 73 - Settlement Patterns & Built form (figure / ground) at a local scale. Source: Terra+

4.1.6 Landscape Character

The site is an anthropic rural environment in transition as agricultural practices change in response to climate change, and adjacent land is developed as residential clusters. Vineyards, fields, fallow lands and historic farmsteads are found within the immediate vicinity. There is an intimate, bucolic quality to the site, juxtaposed by the ubiquitous suburban and commercial developments on the north ,south and west of the site.

4.1.7 Landscape Character Sensitivity

The Landscape Character of the regional setting is considered moderately sensitive to visual impact as it is associated with areas of high visual / scenic amenity. The Landscape Character of the local context is considered moderately sensitive due to the adjacent suburban development, however the sensitivity increases as there is a direct connection to the rural landscape beyond which is an attribute to the surrounding housing developments.

The following series of long sections illustrate the complex nature of the site and environement. There is a direct relationship of the various parts of the receiving environment with the site and visa versa. The future impacts must be seen within this context and complexity.


SITE


BRANDWACHT
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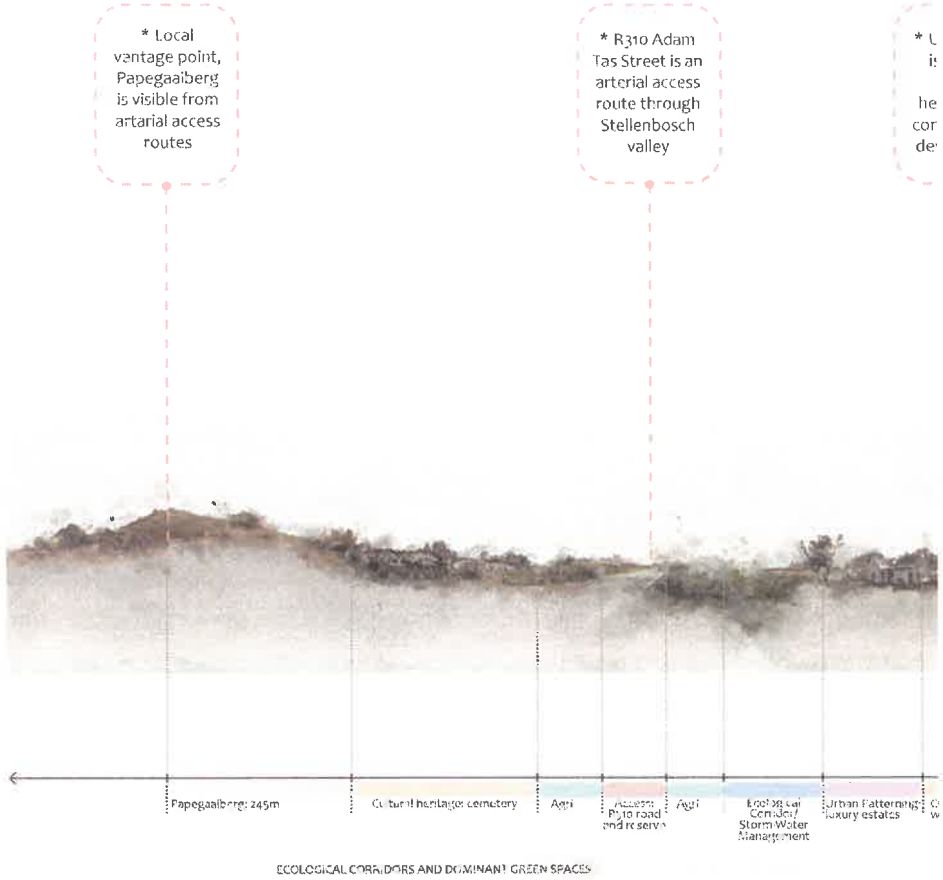
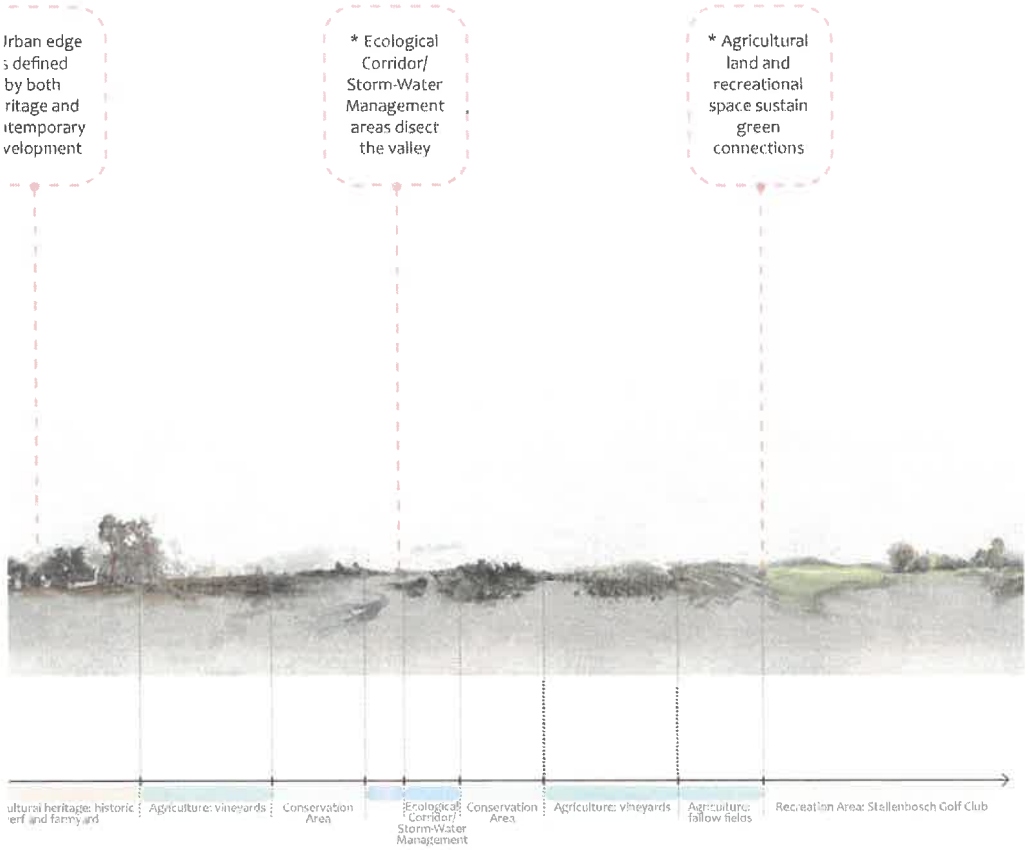
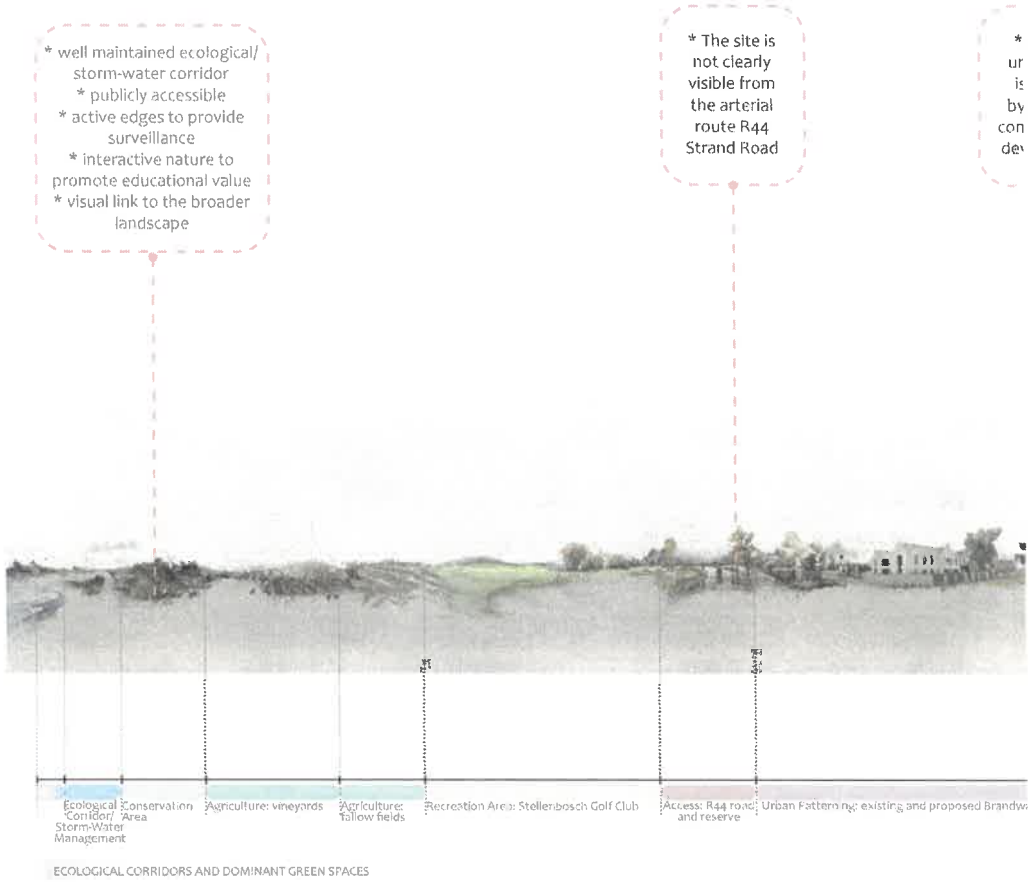
Google Ea

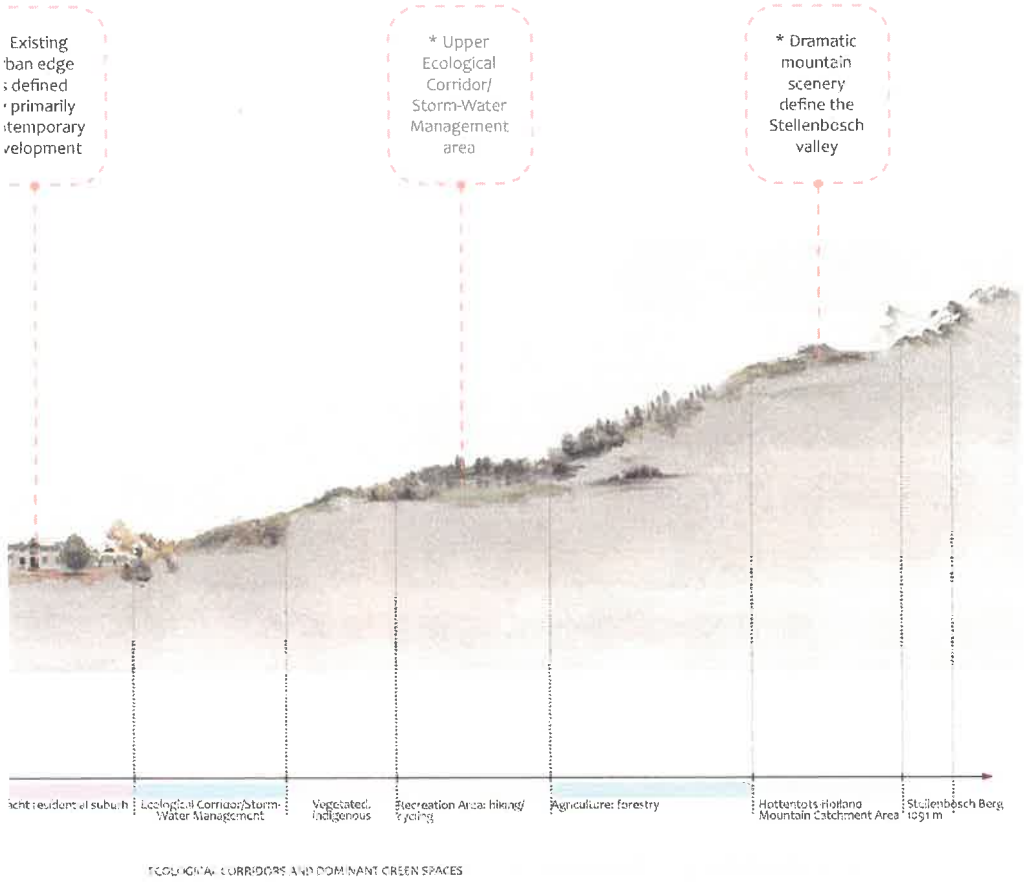

* Local vantage point, Papegaaiberg is visible from artarial access routes
* R310 Adam Tas Street is an arterial access route through Stellenbosch valley
Papegaaiberg: 245m
Cultural heritage: cemetery
Agri
Agri
Urban Patterning: luxury estates
ECOLOGICAL CORRIDORS AND DOMINANT GREEN SPACES



ECOLOGICAL CORRIDORS AND DOMINANT GREEN SPACES



ECOLOGICAL CORRIDORS AND DOMINANT GREEN SPACES



ECOLOGICAL CORRIDORS AND DOMINANT GREEN SPACES

4.2 Site Context

The direct site context is a one of contrasts. There is a sense of insertion into the suburban fabric and visa versa. There is from within the site views towards the majestic mountains and direct access to the meandering stream. Theses attributes define the site and the potential and impact on the direct surroundings. There is no doubt that the rural quality of the site contributes to the agrarian sense of peace and connection to the scenic qualities afforded to the suburban occupants.

As illustrated in figure 27 the riparian vegetation and this ecological corridor connects the site to the broader wilderness. Juxtaposed to this the ordered cultivated fields is a continuation of the agricultural patterning of the valley. Both these landscape qualities are significant and the erosion of these qualities will affect the sense of place and rural character.

Fig. 74 - The fallow fields and rudimentary farm fences with existing trees on site. Source: Terra+

Fig. 75 - Fallow fields with existing residential development in the mid-ground view. Source Terra+

Fig. 76 - Access road with agricultural patterns on either side. Source Terra+

4.2.1 Accessibility

The Site is accessed primarily from R44 via Trumali street. Secondary access is possible via Ben du Toit ave which is at the lower portion of the site. No access will be possible from the existing suburb of Brandwacht. This singlular access route along the southern boundary limits the impact of visual intrusion of access roads to the site.

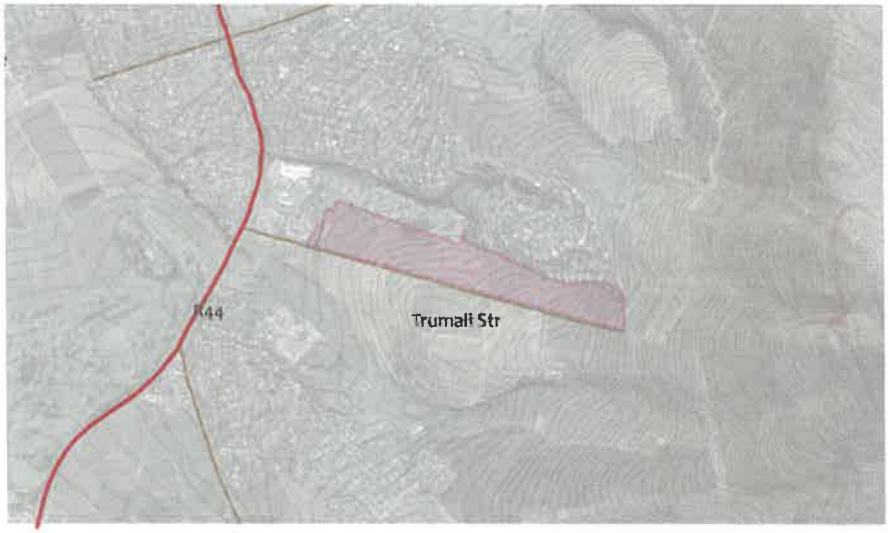


Fig. 77 - Fallow fields with existing residential development in the mid-gorund view. Source Terra+

Fig. 78 - Image of the access road Trumali str. Source Terra+

4.2.2 Landscape Patterns

The landscape patterns on a local site scale is limited to the adjacent vineyards, wilderness areas of the foothills of Stellenbosch Mountain, remnants of windbreaks on the adjacent vineyards and the natural tree planting along the drainage lines north of the upper portion of the site. The site forms a natural edge to the existing vineyards and mountain areas. There is a unique contact point in the landsacpe of the existing vineyards east and west of the R44. This point is perceived on both sides travelling along the R44 and is an important connection to the agricultural character of the overall landscape.

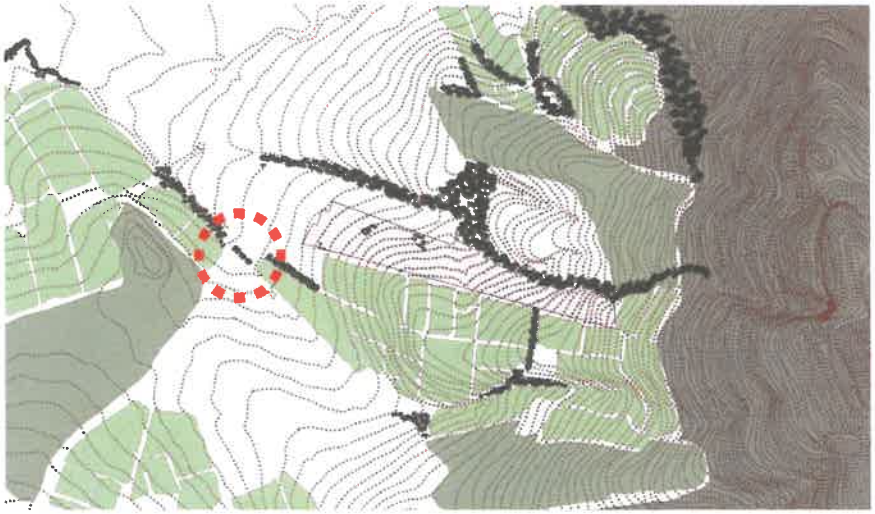


Fig. 79 Landscape Patterns surrounding the site. Source Terra+

Fig. 80 - Vineyards adjacent to the site. Source Terra+

4.2.3 Urban Patterns

The pressures of development in Stellenbosch is evident in the expansion of both commercial and residential development along the R44. The particular position of the site relative to adjacent and nearby residential developments creates distinct boundaries along the north and west with a wedge of agricultural (vineyards) between the suburb of Paradyskloof and the site. The site is a natural edge to the existing urban pattern and would create a sensible completion of the pattern.

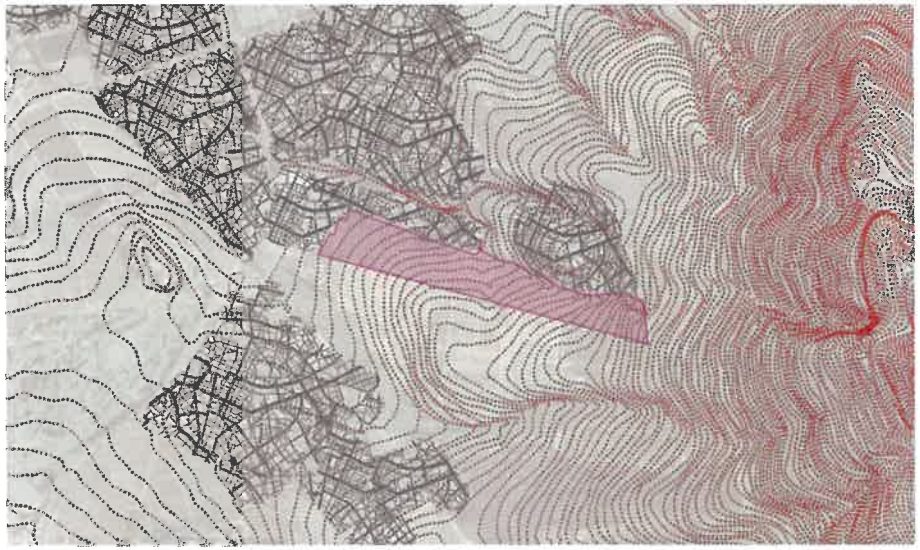


Fig. 81 - Diagram illustrating the urban infill in relation to the site. Source Terra

4.3 Visual Scenic Resources

4.3.1 Type of Environment

The site sits within the broader context of a complex cultural landscape which includes areas, views, and component resources of moderate to high scenic, cultural, and historical significance, including distant mountain background views, agricultural and river corridor middle-distance views and agricultural foreground views. Juxtaposed to this is the suburban development of Brandwacht and Brandwacht-aan-Rivie directly adjacent to the site. This only serves to highlight the peaceful rural qualities of the agricultural views and vistas.

4.3.2 Landscape Integrity & Quality

Visual quality is enhanced by direct oppositional qualities between the rural agricultural landscape and the suburban fabric

Although the site is currently fallow, there is a direct relationship with the adjacent vineyards which contribute to the rural quality. Together with the rural quality and the adjacent wilderness areas of the mountain slopes, there is a sense of progression from a cultivated landscape to one of natural fynbos as the approach towards the mountain. This duality in the landscape is to be recognised, enhanced and developed.

Fig. 82 - Fallow fields with residential development in the mid-ground and dramatic mountains as back-drop. Source Terra+

Fig. 83 - Agricultural patterns in existing vineyards adjacent to the site. Source Terra+

Fig. 84 - Fynbos along the edge of the upper portion of the site. Source: Terra+

Fig. 85 - Tree and high shrub pisanting along the drainage line north of the site. Source Terra+

4.3.3 Views and View Corridors

Although the site is not visually exposed the views from the edge of the site towards the mountains along Trumali Street and from the top of the site towards the rural landscape beyond are significant views and contribute to significant view corridors. These views are critical to the sense of place and the connection to the rural landscape. Views of the rural qualities are experiences in the fore, mid and background. Views across the site looking north are of the suburban development and aligning tree planting along these lines will create a connection and green matrix.

The Mountain views and the cultivated fields and vineyards make these views significant and essential to retain the rural sense of place.The views from within the site are as essential to retain the sense of place. Any future development must be cognisant of the visual and physical connections to the broader context.

Fig. 86 - Significant view from the approach Trumali street towards the mountains. Source Terra+

Fig. 87 - Significant areas in the foreground (RED) with receding views in the mid (YELLOW) and back-ground (PURPLE). The

moutains remains a focal point. Source: TERRA+

Fig. 88 - Significant View of the broader landscape from the top of the site. Source: Terra+

Fig. 89 - Significant areas in the foreground (RED) with receding views in the mid (YELLOW) and back-ground (PURPLE). The rural landscape in the back-ground enhances hte rural sense of place.Source: Terra+

Critical views of the site are limited to a particular area and approach road to the site. It is fairly contained and defined. These views are, however significant as it is a continuous experience of the rural landscape viewed across the site. It is a visual experience of an overall landscape rather than a particular experience from a viewpoint. In addition to this experience it is the contrast of the ubiquitous sprawl of suburbia which accentuates the views of the rural landscape.

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5. VISUAL SETTING

5. THE VISUAL SETTING

5.1 Visibility of proposed development and Zones of Visual Influence

Visibility is dependent on factors such as:(a) the nature of the proposal; (b) its placement within the landscape; (c) the scale of the proposal relative to its context; (d) the detailed design (form, massing, aggregation, etc.), as well as (e) the position and distance from which it is viewed.

The net effect of these factors is that (at grade) the visual impact of an object will begin to fall away rapidly with increasing distance. Visibility will reduce substantially from1.5 km distance, and beyond 5 km, visibility is negligible.

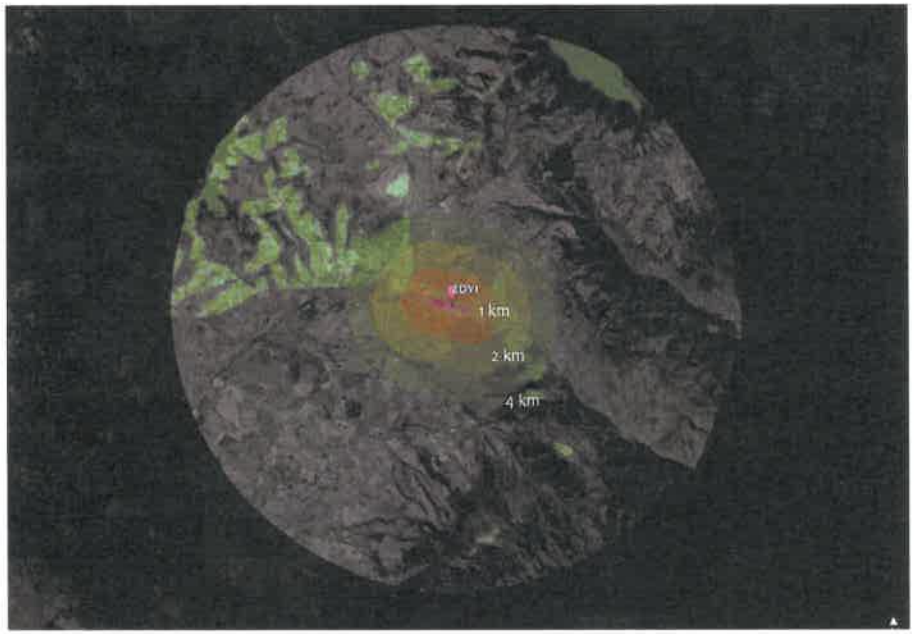

Fig. 90 - Digital imagery showing the zones of visual influence and viewshed from a relative centre point of the site. Source: GEP

Visibility tends to decrease in direct proportion to increase in distance as individual elements occupy smaller and smaller percentages of the overall field-of-view and become less visually dominant.

With respect to the visibility of the subject site; foreground views (inside the yellow ring, within 500m of the site) are most critical. At distances greater than 5km, visibility decreases significantly, as follows:

5km radius = average clear visual distance to horizon for eye-level (1,7m above ground)

The site occupies only a small percentage of the field of view at this distance.

10km radius = possible clear visual distance, given atmospheric dust, vapour, particles etc.

At this distance, the site is barely perceptible within the townscape context.

20km radius = maximum clear visual distance, given atmospheric dust, vapour, particles, etc.

At this distance, the site and any visual change upon it is negligible, given the scale.

FOREGROUND		MIDDLE DISTANCE		BACKGROUND		CONTEXT	
On site	adjacent	near	medium	long	distant	far	very far
Highly visible	Within 250m	250m – 500m	500m – 1km	1km – 2km	2km – 4km	4km – 5km	Not visible

5.2 View Catchment and Viewshed

Theoretically, areas shaded green in the figures that follow have direct views towards and from the site.

The digital 'View Catchment' diagram calculates visibility with respect to topography (i.e. landform) only; whereas the screening effects of surface texture included within LIDAR data (if available) e.g. existing buildings and trees overlaid onto the contour information would give a more precise view, and reduce the footprint of the view catchment.

In the instance of the site, the views from the suburban development are of the site and the development beyond, there is therefore a continuous view of a rural landscape across the site.

These views are , in instances obscured by tree planting or vegetation which is not necessarily reflected in the digital rendition of the viewshed.

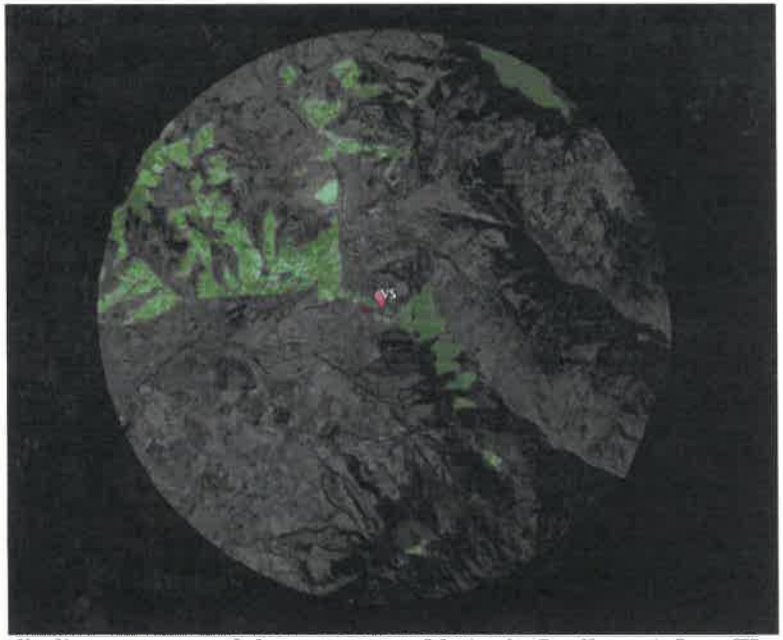

Fig. 91 - Digital imagery indicating viewshed in areas shaded green. Subject site is indicated in magenta. Source: GEP

The diagram above indicates all areas that are visible (shaded in green) relative to the site. A series of viewpoints will illustrate the visibility of the site from distinct significant viewpoints and will illustrate the particular characteristics that will potentially be affected by the proposed development

5.2.1 Viewpoint 1

Fig. 92 - Digital view catchment area from view 1. Source: GEP

Eventhough the R310 is a regarded as a scenic drive, the views from the R310 are intermittent and obscured by existing planting and the high speeds that cars are driving along this route. The site is also approximately 4km away from this route and any development will form part of the existing built development adjacent to the site.

5.2.2 Viewpoint 2

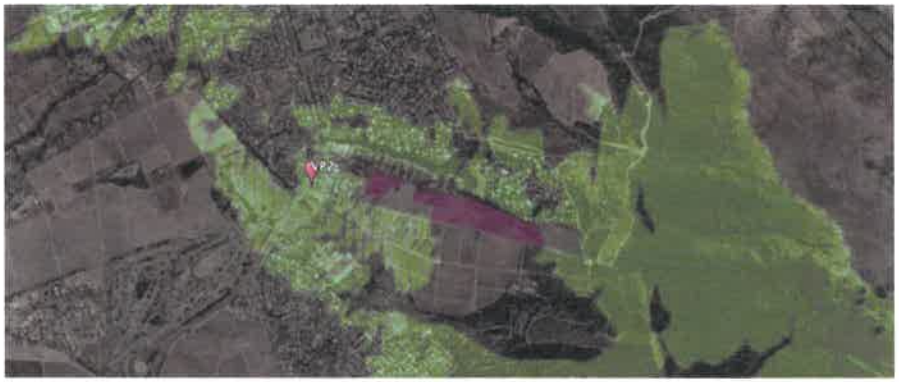

Fig. 93 - Digital view catchment of Viewpoint 2. Source: GEP

Fig. 94 - Image of the viewpoint 2 at the intersection of R44 and Trumali street. Source: Terra+

The views towards the mountains from the R44 and Trumali Streetas one enters the site are obscured by existing buildings and topography. Views are limited to the lower portion of the site and a small portion of the top of the site. Development in these areas can be sufficiently mitigated.

5.2.3 Viewpoint 3

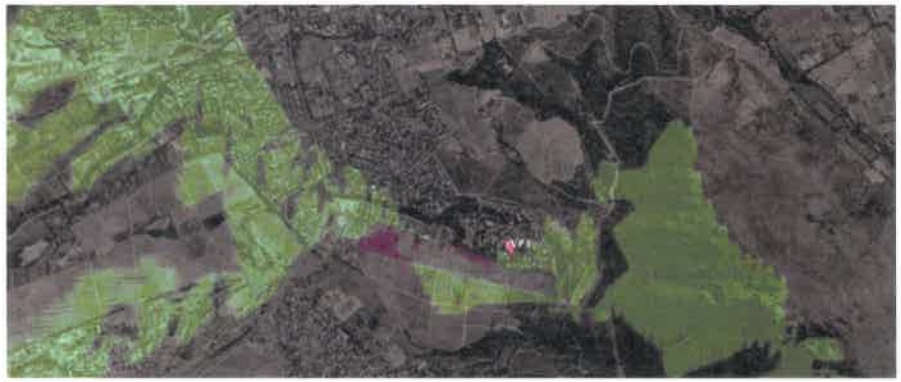

Fig. 95 - Digital view catchment area from Viewpoint 3 (Source: GE Pro)

Fig. 96 - Image from view 3 across the site to the vineyards beyond (Source: Google Streetview)

Views from the adjacent suburb of Brandwacht are across the site to the landsacpe beyond. The site is exposed and visible, however these views are intermittent and limited to a small amount of people and not the general public. View corridors must be created to ensure views can be maintained to the broader landscape.

5.2.4 Viewpoint 4

Fig. 97 - Digital view catchment area from view 4 (Source: GE Pro)

The site will be visible from the existing footpaths and cycle tracks on the mountain slopes, however these views are potentially obscured by tree planting and vegetation and development on the site will be seen as part of an existing urban pattern.

5.2.5 Viewpoint 5

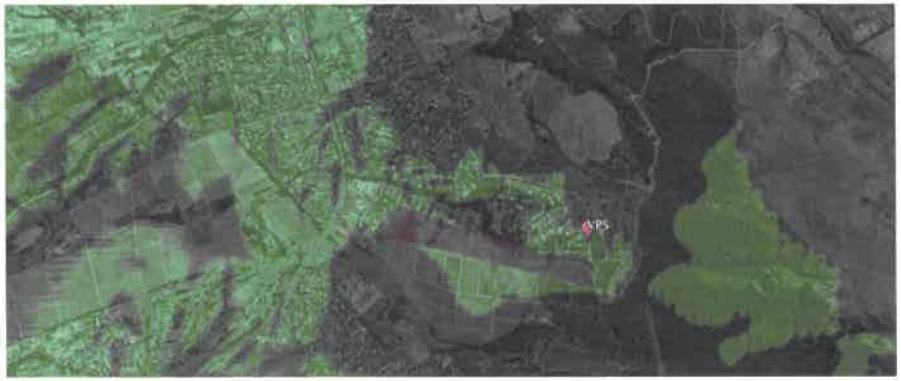

Fig. 98 - Digital view catchment area from view 6 (Source: GE Pro)

Views from the adjacent suburb of Brandwacht are largely obscured by houses and vegetation and not considered significant with the exception of the houses along the edge of the site. These views as previously stated can be mitigated with view corridors to the landscape beyond.

5.3 VISUAL AND LANDSCAPE INDICATORS

During the scoping phase of the project a comprehensive set of visual and landscape indicators were develop to assist the design team and provide guidelines with respect to the placement, form, massing and articulation of the proposed development.

**Note the below diargrams are not design drawings, but diagrams that illustrate principles.*

Fig. 99 - Green Links (Source: Terra+)

5.3.1 Establish Strong Connections

Teh duality of landsacpe character of the site gives and opportunity to greate and establish two different ways to respond and develop a landscape character of the site. In the lower portion it would be appropriate to have a wide green buffer to ensure there is a direct connection and relationship with the agriculrual patterns present and provide a good visual buffer to the significant views and edge ot the proposed development. This buffer can have a agricultural "language" of orchard or organised tree planting.

The higher portion to the site has a wilder more natural character with a stronger connection to the wilderness areas of the mountain slopes. The landscape implementation and structure can echo these patterns and also provide critical buffers and visual amelioration to the existing Brandwacht suburb and the view towards the mountain.

It is suggested that the middle portion between the two upper and lower porions of the site be kept as a green open space to provide a green continuation on a N-S axis

Fig. 100 - Visual Links (Source: Terra+)

5.3.2 Built Form and Urban Patterning

As with the landscape character the proposed development should respond to the different characters of the site and the appropriate built form must be applied. The lower portion of the site lends iteself to a more regular pattern which allows for the application of regular landscape pattern such as tree lines and regular street verges.

The layout of the adjacent Brandwacht-aan-Rivier is a good example and continuation of urban patterning.

The upper portion of the site lends itself to a more organic urban patterning with built platforms furhter apart and more space for more natural green spaces between the proposed dwelling. A lower density would be more desirable for this portions of the site, which is also the protion of the site with a lower visual absorptoin capacity.

In addition to the urban patterning it is recommended that:

- Materials are kept to muted darkrecessive colours for roof and wall finishes.
- Limit light polution, and the effect of street lights and wall lights,
- All fencing be permeable and vegetated as far as possible,
- Streets and access roads be paved with natural materials of materials syhmpathetic to the rural character
- All building remain single storey dwelling with the possibility of double storey or roof-space only in the instances where the building height can be accommodate in the slope, thus minimising the overall impact.
- Gable ends to face in a N-S direction to minimise the visual impact.

5.3.3 Green Matrix - Intergration of layout and landscape

THe combination of both landscape interventions and urban patterning must be applied to develop the unique character of each portion of the site and porvide necessary visual amelioration of the proposed development. The central green N-S corridor to be retain to ensure further visual screening of the upper portion of the site.

5.3.4 Visual Sensitivity

5.3.4.1 VISUAL SENSITIVITY OF AREA (LANDSCAPE SENSITIVITY)

The portion of the field-of-view dominated by the proposal decreases substantially at distances beyond 500m from the site, as the proposal become continuous with the existing fabric. The area is therefore considered to have **Medium or Moderate Visual Sensitivity**.

5.3.4.2 VISUAL SENSITIVITY OF RECEPTORS

The Receptors of the anticipated visual impact include existing residential areas which are considered to have High Visual Sensitivity. The site falls outside the urban edge, and interfaces with a rural cultural landscape with **high visual / scenic amenity value**.

5.3.4.3 SIGNIFICANCE OF SENSITIVITY TO VISUAL CHANGE

As a function of landscape sensitivity and anticipated magnitude of change resulting from the proposed development, the sensitivity to visual change is deemed to be of **Moderate Significance**

5.3.5 Visual Exposure

5.3.5.4 VISUAL INTRUSION OF DEVELOPMENT (MAGNITUDE OF VISUAL CHANGE)

The development is proposed to occupy fallow land already transformed by agriculture and will be inserted into the site fabric. The new development will fit partially into the surroundings but will be noticeable due to the transformation of the site. The proposal would have **Moderate Visual Intrusion.**

5.3.5.5 VISUAL ABSORPTION CAPACITY OF SITE

Considering the existing vegetation and subtle landform, the Visual Absorption Capacity (VAC) of the site is **Moderate**, with partial screening afforded, but noting that some senescent vegetation may be cleared (thereby reducing the VAC).

5.3.5.6 SIGNIFICANCE OF ANTICIPATED VISUAL IMPACTS

As a function of receptor sensitivity and anticipated magnitude of change, the sensitivity to visual change is deemed to be of **Moderate Significance.** Mitigation through with landscape treatment and refinement of scale through architectural detailing will be required.

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6. VISUAL IMPACT ASSESSMENT

6. VISUAL IMPACT ASSESSMENT

6.1 Planning, Design and Development Phase Visual Impacts

6.1.1 Nature of Visual Impacts

Negative Visual Impacts may be expected during the construction stage of the project – resulting directly from site clearance, earthworks, and removal of existing vegetation: with construction vehicles / building activity causing noise / dust.

6.1.2 Extent of Visual Impacts

The geographic 'area of influence' or spatial scale of the construction visual impacts is of a local extent – i.e. limited to the site and immediate surroundings

6.1.3 Duration of Visual Impacts

The predicted life-space of the construction visual impacts will be limited to short-term duration,

– lasting only through the phased construction period of the project.

6.1.4 Intensity of Visual Impacts

These visual impacts of construction are deemed to be of medium to high intensity –

where visual and scenic resources are affected before mitigation can take place.

6.1.5 Probability of Visual Impacts

The probability of visual impacts occurring is highly probable –

where the impact will occur regardless of any prevention measures

6.1.6 Level of confidence in prediction of Visual Impacts

Based on available information, the level of confidence in the prediction is high.

6.1.7 Significance of Construction Phase Visual Impacts before mitigation

Determined through a synthesis of the aspects of nature, duration, intensity, extent and probability, the Construction Phase Visual Impacts of the proposed layout are of medium adverse significance;

This may be ameliorated through the implementation of environmental management.

6.1.8 Significance of Construction Phase Visual Impacts after mitigation

Follow mitigation (i.e. repositioning of the proposed buildings, and environmental management during construction) the significance of the impact will be of medium to low adverse significance.

(See Summary tables that follow – Section 7 of this report).

6.2 Operational Phase Visual Impacts

6.2.1 Nature of the Visual Impact

Should the proposed layout be implemented, some negative impacts may be expected in terms of the visual intrusion of buildings, however, should the preferred alternative be implemented with the mtigations measure and landscape plan, positive impacts may be expected resulting from new agrarian development integrated within landscape.

6.2.2 Extent of Visual Impacts

The geographic 'area of influence' or spatial scale of the visual impacts is of a Local extent – i.e. limited to the site as the visual impact decreases over time.

6.2.3 Duration of Visual Impacts

The predicted lifespan of the Visual Impacts is of Medium-term Duration – (if mitigated) enduring only until the new landscape with trees and screening vegetation has matured

6.2.4 Intensity of Visual Impacts

The magnitude of the Visual Impacts is of Medium intensity – where visual and scenic resources are affected to a limited extent.

6.2.5 Probability of Visual Impacts

The degree of possibility of the visual impacts occurring is Definite – where the impact will occur regardless of any prevention measures

6.2.6 Level of confidence in prediction of Visual Impacts

Based on available information, the level of confidence in the prediction is high.

6.2.7 Significance of Operational Phase Visual Impacts before mitigation

Determined through a synthesis of the aspects of the nature, duration, intensity, extent and probability, the Operational Phase Visual Impact of the proposed Layout is of medium adverse significance, having some influence on the environment, and requiring some mitigation.

6.2.8 Significance of Operational Phase Visual Impacts after mitigation

Determined through a synthesis of the aspects of the nature, duration, intensity, extent and probability, the Visual Impact of the preferred is of medium beneficial significance, having some influence on the environment.

(See Summary tables that follow – Section 7 of this report).

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7. SUMMARY TABLES

7. VISUAL IMPACT SUMMARY TABLES FOR EACH ALTERNATIVE

7.1a Planning, Design and Development Phase - Visual Impacts

DEVELOPMENT ALTERNATIVE:	PREFERRED LAYOUT											
Planning, Design and Development Phase	Description											
Potential impact upon visual resources	site clearance, removal of existing vegetation, earthworks, site establishment,											
Risks (to broader context / background)	Change in character of the rural cultural landscape (context) and											
Risks (to local context / middle-ground)	Visual intrusion of new buildings											
Risks (to subject site / foreground)	Change in sense of place of the agricultural fields											
Consequence of impacts and risks	visual disturbance of status quo, foreground construction activity											
Probability of occurrence	n/a	improbable	possible	probable	high prob	definite						
Level of Confidence in prediction	n/a	low	low/med	medium	high	certain						
NATURE OF IMPACT:	DESCRIPTION											
Negative												
Neutral	n/a											
Positive	n/a											
TYPE OF IMPACT:	DESCRIPTION											
Direct	clearance, demolition, construction activities, vehicles											
Indirect	Increased activities associated with construction (later in time, elsewhere in space)											
Induced	Traffic along new roadways (as a consequence of the project)											
Cumulative	Development activity on adjacent properties											
DEGREE TO WHICH IMPACT:	DESCRIPTION											
may cause irreplaceable loss of resources	n/a	Low	low/med	Medium	med/high	High						
can be avoided	n/a	Low	low/med	Medium	med/high	High						
can be reversed	n/a	Low	low/med	Medium	med/high	High						
can be managed	n/a	Low	low/med	Medium	med/high	high						
can be mitigated	n/a	Low	low/med	Medium	med/high	high						
IMPACT RATING:	DESCRIPTION											
Extent of impact	n/a	site	local	regional	national	international						
Duration of impact (term)	n/a	short-term	short/med	medium	long-term	permanent						
Intensity of impact	n/a	low	low/med			high						
SIGNIFICANCE RATING (BEFORE MITIGATION):	DESCRIPTION											
Significance	v.high +ve	high +ve	med +ve	lov +ve	v.low +ve	neutr o	negig o	v.low -ve	low -ve		high -ve	v.high -ve

Proposed mitigation measures:	Description
Impact avoidance/ prevention	unavoidable
Impact minimization	limiting construction to within hoarding areas
Rehabilitation / restoration/ repair	preservation of landscape features including existing trees
Compensation / offset	site rehabilitation and management, erosion control
Residual Impacts	controlled adverse visual impacts for a short duration
Cumulative impacts post mitigation	neutral
SIGNIFICANCE RATING (AFTER MITIGATION):	DESCRIPTION
Significance	v.high +ve / high +ve / med +ve / low +ve / v.low +ve / neutr o / negig o / v.low -ve / low -ve / mod. -ve / high -ve / v.high -ve

7.1b Planning, Design and Development Phase - Visual Impacts

DEVELOPMENT ALTERNATIVE:	PREFERRED LAYOUT					
Planning, Design and Development Phase	Description					
Potential impact upon visual resources	site clearance, removal of existing vegetation, earthworks, site establishment,					
Risks (to broader context / background)	Change in character of the rural cultural landscape (context) and					
Risks (to local context / middle-ground)	Visual intrusion of new buildings					
Risks (to subject site / foreground)	Change in sense of place of the agricultural fields					
Consequence of impacts and risks	visual disturbance of status quo, foreground construction activity					
Probability of occurrence	n/a	improbable	possible	probable	high prob	definite
Level of Confidence in prediction	n/a	low	low/med	medium	high	certain
NATURE OF IMPACT:	DESCRIPTION					
Negative	Negative: (visual disturbance to status quo), foreground construction activity					
Neutral	n/a					
Positive	n/a					
TYPE OF IMPACT:	DESCRIPTION					
Direct	clearance, demolition, construction activities, vehicles					
Indirect	Increased activities associated with construction (later in time, elsewhere in space)					
Induced	Traffic along new roadways (as a consequence of the project)					
Cumulative	Development activity on adjacent properties					
DEGREE TO WHICH IMPACT:	DESCRIPTION					
may cause irreplaceable loss of resources	n/a	Low	low/med	Medium	med/high	High
can be avoided	n/a	Low	low/med	Medium	med/high	High
can be reversed	n/a	Low	low/med	Medium	med/high	High
can be managed	n/a	Low	low/med	Medium	med/high	high
can be mitigated	n/a	Low	low/med	Medium	med/high	high
IMPACT RATING:	DESCRIPTION					
Extent of impact	n/a	site	local	regional	national	international
Duration of impact (term)	n/a	short-term	short/med	medium	long-term	permanent
Intensity of impact	n/a	low	low/med	medium		high
SIGNIFICANCE RATING (BEFORE MITIGATION):	DESCRIPTION					
Significance	v.high +ve	high +ve	med +ve	lov +ve	v.low +ve	neutr o	negig o	v.low -ve	low -ve			

Proposed mitigation measures:	Description
Impact avoidance/ prevention	unavoidable
Impact minimization	limiting construction to within hoarding areas
Rehabilitation / restoration/ repair	preservation of landscape features including existing trees
Compensation / offset	site rehabilitation and management, erosion control
Residual Impacts	controlled adverse visual impacts for a short duration
Cumulative impacts post mitigation	neutral
SIGNIFICANCE RATING (AFTER MITIGATION):	DESCRIPTION
Significance	v.high +ve / high +ve / med +ve / low +ve / v.low +ve / neutr o / negig o / v.low -ve / low -ve / mod. -ve / high -ve / v.high -ve

7.2a Operational Phase - Visual Impacts

DEVELOPMENT ALTERNATIVE	PREFERRED LAYOUT:											
Operational Phase	Description											
Potential impact upon visual resources	Contemporary layer added to the cultural landscape											
Risks (to broader context)	Change in character of the rural cultural landscape (context) and											
Risks (to local context)	Visual intrusion of new buildings											
Risks (to subject site)	change in sense of place of the historic farmyard											
Consequence of impacts and risks	insertion of new buildings and landscaping											
Probability of occurrence	n/a	improbable	possible	probable	high prob	definite						
Level of Confidence in prediction	n/a	low	low/med	medium	high							
Nature of Impact	Description											
Negative	'reduction of open, rural landscape, visual intrusion of new buildings can be reduced to neutral with mitigation measures											
Neutral	landscape integration, continued productive landscape											
Positive	n/a											
Type of Impact	Description											
Direct	clearance, demolition, construction activities, vehicles											
Indirect	Increased activities associated with construction											
Induced	Traffic along new roadways											
Cumulative	Development activity on adjacent properties											
Degree to which impact:	Description											
may cause irreplaceable loss of resources	n/a	Low	low/med	Medium	med/high	High						
can be avoided	n/a	Low	low/med	Medium	med/high	High						
can be reversed	n/a	Low	low/med	Medium	med/high	High						
can be managed	n/a	Low	low/med	Medium	med/high	High						
can be mitigated	n/a	Low	low/med	Medium	med/high	High						
Impact rating	Description											
Extent of impact	n/a	site	local	regional	national	international						
Duration of impact (term)	n/a	short-term	short/med	medium	long-term							
Intensity of impact	n/a	low	low/med	medium	med/high	high						
Significance rating before mitigation	Description											
Significance	v.high +ve	high +ve	med +ve	lov +ve	v.low +ve	neutr o	neglig o	v.low -ve	low -ve	mod. -ve	high -ve	v.high -ve

Proposed mitigation measures	Description											
Impact avoidance/ prevention	unavoidable											
Impact minimization	planning of development to respond positively to visual / heritage considerations											
Rehabilitation/ restoration/ repair	architectural measures (form/scale/massing/ materials/textures) and comprehensive landscape plan											
Compensation/ offset	landscape measures (screen planting)											
Residual impact	Development which partially fits in with the local landscape											
Cumulative impact post mitigation	neutral-medium: provided this remain the only development on the site and provides a buffer to the rural landscape											
Significance Rating after mitigation	Description											
Significance	v.high +ve	high +ve	med +ve	low +ve	v.low +ve	neutr o	neglig o	v.low -ve	low -ve	mod. -ve	high -ve	v.high -ve

7.2b Operational Phase - Visual Impacts

DEVELOPMENT ALTERNATIVE:	ALTERNATIVE LAYOUT											
Operational Phase	Description											
Potential impact upon visual resources	Contemporary layer added to the cultural landscape											
Risks (to broader context)	Change in character of the rural cultural landscape (context) and											
Risks (to local context)	Visual intrusion of new buildings											
Risks (to subject site)	change in sense of place of the agricultural character of the site											
Consequence of impacts and risks	insertion of new buildings and landscaping											
Probability of occurrence	n/a	improbable	possible	probable	high prob	definite						
Level of Confidence in prediction	n/a	low	low/med	medium	high							
Nature of Impact	Description											
Negative	'reduction of open, rural landscape											
Neutral	landscape integration, continued productive landscape											
Positive	New buildings appropriately scaled and visually absorbed into landscape											
Type of Impact	Description											
Direct	clearance, demolition, construction activities, vehicles											
Indirect	Increased activities associated with construction											
Induced	Traffic along new roadways											
Cumulative	Development activity on adjacent properties											
Degree to which impact:	Description											
may cause irreplaceable loss of resources	n/a	Low	low/med	Medium	med/high	High						
can be avoided	n/a	Low	low/med	Medium	med/high	High						
can be reversed	n/a	Low	low/med	Medium	med/high	High						
can be managed	n/a	Low	low/med	Medium	med/high	High						
can be mitigated	n/a	Low	low/med	Medium	med/high	High						
Impact rating	Description											
Extent of impact	n/a	site	local	regional	national	international						
Duration of impact (term)	n/a	short-term	short/med	medium	long-term							
Intensity of impact	n/a	low	low/med	medium	med/high	high						
Significance rating before mitigation	Description											
Significance:	v.high +ve	high +ve	med +ve	lov +ve	v.low +ve	neutr o	neglig o	v.low -ve	low -ve	mod. -ve	high -ve	v.high -ve

Proposed mitigation measures	Description
Impact avoidance/ prevention	unavoidable
Impact minimization	Insufficient detail to assess
Rehabilitation/ restoration/ repair	Insufficient detail to assess
Compensation/ offset	Insufficient detail to assess
Residual impact	Insufficient detail to assess
Cumulative impact post mitigation	medium to high (insufficient detail to assess)
Significance Rating after mitigation	Description
Significance: Insufficient detail to assess	v.high +ve / high +ve / med +ve / low +ve / v.low +ve / neutr o / neglig o / v.low -ve / low -ve / mod. -ve / high -ve / v.high -ve

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8. CONCLUSION

8. CONCLUSION

8.1 Appraisal

As the site falls outside of the urban edge of the Stellenbosch DSDF and is part of an established Cultural Landscape of rural character, the proposed development needs to fit within established patterns of settlement and place-making for the continuation of the rural landscape. In terms of The general integration of the development in this landscape it is imperative that the different character areas of the site be recognised and the propsed development respond to minimise the impact and possible change of sense of place.

Although there is a moderate level of visual exposure due to the proximity of the adjacent suburban development, and the change in the character of the site, this is lessened by the the proposed buffer planting along the edge of Trumali street and the proposed landscape intervention of increased hedge and tree planting along the northern edge. Ironically the proximity of the suburban development and the position of the proposed development on the site allows for a greater degree of visual absorption capacity as a result of the continuation of the built fabric and residential context. Should the placement of the proposed buildings not obscure view lines across to the rural landscape, and be balanced with significant tree planting, the development is certainly achievable without compromising the rural quality of the site and broader context.

This being said the success of the development and the impact on the rural character of the site is dependent on the porposed landscape interventions with increased tree lines and clustered tree planting to provide visual screening and the retention of the central green space in a N-S direction to provice an important green connection and visual buffer.

The preferred layout as illustrated by the architects and urban designers is a response to visual indicators and has been carefully planned to maximise the visual absorption capacity of the site as far as it is possible, in order for the proposed development to become as visually recessive as possible the landscape intervention must be planned to form part of the overall implementation of the site development.

Overall, the preferred alternative of the development proposal is assessed to have a visual impact of medium/high significance, reducing to medium significance with mitigation in the form of the landscaping and architectural controls as proposed and an integrated site landscape character.

8.2 Mitigation: General Measures

The proposed mitigation measures as presented in the landscape plan will greatly assist in the integration of the development in the context and reduce the visual exposure of the development. This must be a integrated part of the overall management plan for the site in its entirety and be timed and programmed with the construction period of the development.

It is recommended that the green buffer along Trumali street be mature trees to ensure visual screening and the integration of the proposed development with the agricultural and rural character of the broader context. These detailed should all be present on a detailed landscape plan developed by a Registered Professional Landscape Architect.

Typically, detailed landscape plans would be required to indicate the following:

- Existing vegetation to be retained or removed, indicating the types of all vegetation and trees.
- All proposed newly planted vegetation, including plant species and planting specifications.
- Density of plant species/plant mixes, size of plants to be planted.
- Existing and finished ground levels at the base of the trees to be retained / planted.
- Tree protection and tree staking details in plan and section.
- The sizes of all trees to be planted (roots to be established in min 80 – 100 L size containers,
- (with minimum clear stem height of 1.8m and minimum girth of approximately 60 mm).
- All landscape features, including fences, walls, retaining walls, paving, pergolas, street furniture, lighting, and signage.
- All Sustainable Drainage Systems to be used, including cross-sections of storm-water ponds and/or swales.
- Phasing and timing of implementation, including a minimum twelve-month establishment and horticultural maintenance period.
- Irrigation plan (alternative water sources to be indicated) as part of the landscape plan.

8.3 Mitigation: Specific Measures

The following detailed design-related mitigation measures are recommended:

- The treatment of the site boundaries and interfaces with adjacent properties will need careful attention to allow for the continued visual continuity of the cultural landscape across cadastral boundaries. Fencing as per the Landscape Development Plan must be along the proposed residential estate boundary only. All other fencing should be of a lower order and rural in nature (i.e. post and wire construction). Specifically the fence along Trumali street must be in wrought-iron (not triangular profile galvanised steel) and of charcoal or dark grey colour with column spacing to align with individual erf layouts.
- Screen planting is to be used strategically, allowing for filtered views. Lighting and signage is to be minimised. The facades of background buildings facing these edges should be rendered in muted tones and darker shades for the forms to be as visually recessive and understated as possible. Planting of large trees on the eastern and western boundary to ensure visual screening and congruence with the landscape is recommended.
- The upgrade of the road layout into the next level of detail should retain the rural adhoc road layout typical of a farmstead. All roads should remain private to avoid excessive engineering layout solutions. The detailing of internal roadways should reflect a green infrastructure approach which alludes to the rural character of the cultural landscape, where possible favouring earth-swales for storm-water run- off rather than heavily engineered concrete channels and drains. Storm-water management through 'soft' engineering of the site, incorporating the principles of sustainable urban drainage and water sensitive urban design, will be environmentally advantageous and further mitigate the visual impact of driveways, roadways, parking courts and other hardened surfaces.
- Views towards pastures and green open spaces should remain clear of 'clutter' (signage, lighting, service infrastructures, etc.) to retain the 'rural' quality and sense of 'openness'. Berms, dams, and wetland features may be incorporated in a manner sensitive to natural landform, avoiding steep, trapezoidal berms and landforms of rectilinear geometries which appear heavily 'engineered'. Distant views towards the agricultural landscape should be maintained, and planting should retain an agricultural quality. Indigenous vegetation consistent with botanical assessment reports ought to be integrated as a biodiversity corridor, especially within the wetland area and site storm-water drainage systems.
- The typology of articulated, simple rectangular forms that are characteristic of rural buildings (barns and sheds) placed comfortably within the landscape should inform the buildings of the development proposal, without becoming derivative. Whereas the scale of the buildings may vary, the forms could reflect an 'agricultural' simplicity and honesty of function. However, the indiscriminate imitation or reproduction of vernacular styles is to be avoided, likewise the introduction of foreign styles. Consideration to the horizontal stratification of the buildings is encouraged, taking cognisance of the effect of the relative height of the eaves-lines in setting the perceived 'height' of the buildings.
- Buildings at the interface with the agricultural landscape must have an orientation towards the agricultural landscape rather than 'turning their backs' on the rural landscape - this will ensure a positive connection to the context.
- Muted colours and 'earth tones' are more subtle and are more easily absorbed (visually) than bright or highly reflective surfaces. Suitable colours include grey, olive green, ochre, brown, etc. – refer to on-site geology, soil, and vegetation types for reference. Rough/textured surfaces are preferable to shiny/highly reflective surfaces in terms of visual absorption (as they minimise reflection / glare).
- Roadways should not be over-scaled and should include tree planting where possible, concrete kerbs and channels should be avoided when soft-engineering options are possible (e.g. swales).
- Consider 'dissolving' buildings into the environment through subtle transition from building

platform to landscape context at the ground level. Use screen/shade planting to soften the interface. Apart from Gateway thresholds, no solid masonry boundary wall to the site should be allowed, and no galvanized steel palisade should be allowed, either. Visually transparent fencing (e.g. welded mesh Clearvu or similar), is preferable, noting that dark grey or black fencing is more visually recessive than green.

- Avoid light pollution by reducing lighting to the minimum necessary. Lighting is to be carefully controlled and well-integrated into the design proposal and coordinate with signage. Light sources must be shielded to reduce light spillage. Up-lightning onto the outer sides of the buildings must be used sparingly. Shielded down-lights must be used on all open public areas. Neon or unshielded bright security lights may not be used. Lighting where necessary for safety and security is permissible, as per the provisions above.
- Monitoring requirements:
  The mitigation measures proposed above should be monitored during planning, design, development, and operation These monitoring requirements need to be included in the following documents:
  - The ROD from DEA&DP;
  - The EMP and OMP to be compiled by the EAP and Architect/Landscape Architect respectively;
  - Conditions of Building Plan Approval;
  - In the specifications of all construction documentation; and
  - In the Final Architectural, Landscape and Engineering Guideline Documents

8.4 Mitigation: Construction Phase Measures

The following construction and operational phase-related mitigation measures are recommended for inclusion within the Environmental Management Programme (EMPr):

• Stipulate effective measures for dust prevention and erosion control

The implementation of the recommended mitigation measures should be sufficient to ensure that the visual impact of the proposed development remains within acceptable levels.

Considered holistically, therefore, the Visual Impact of the development will cause little detrimental effect upon visual resources, environment or on human well-being; and with the implementation of the mitigation measures above, should be remain within visual, heritage and environmental quality standards, targets, and legal requirements.

8.5 Recommendation

Subject to the implementation of proposed architectural mitigation measures and Landscape Plan as recommended above, the proposed development known as Brandwacht-aan-Berg is recommended for approval.

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9. SOURCE MATERIAL

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9.1 National Legislation

Constitution of the Republic of South Africa, 10 December 1996

CARA Conservation of Agricultural Resources Act (43 of 1983)

NEMA The National Environmental Management Act (107 of 1998)

NEM:BA The National Environmental Management: Biodiversity Act (10 of 2004)

NHRA The National Heritage Resources Act (25 of 1999

NWA The Water Act (38 of 1997)

WSA Water Services Act (108 of 1997)

9.2 Provincial Documents and Reports

Bauman, N & Winter, S, 2005:

Guideline for involving Heritage Specialists in the EIA process:

Edition 1 CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa,

Provincial Government of the Western Cape, DEA&DP, Cape Town

Oberholzer, B 2005:

Guideline for involving Visual and Aesthetic Specialists in the EIA process:

Edition 1 CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa,

Provincial Government of the Western Cape, DEA&DP, Cape Town

Winter, S & Oberholzer, B (in Association with Setplan), 2013:

Heritage and Scenic Resources: Inventory and Policy Framework for the Western Cape

A Study prepared for the Western Cape Provincial Spatial Development Framework (Version 5)

Western Cape Government, Environmental Affairs & Development Planning, Cape Town

9.3 Geographic data

Aerial photography & geospatial data:

GeoEye / TerraMetrics, SOP, NOAA, U.S. Navy, NGA, GEBCO

Google-Earth Pro / Google Maps / Google Street View

CK Rumboll Planners and Surveyors

GIS base information:

Strategic Development Information

Geographic Information Systems

Cape Farm Mapper (GIS Elsenburg)

Topo-cadastral information:

Various (topography, land use) maps

Department of Land Affairs: Mapping and Surveys

South African National Government

Vegetation data:

Mucina, L & Rutherford, M C, 2006:

The vegetation map of South Africa, Lesotho and Swaziland

SANBI (South African National Biodiversity Institute)

Historic Farm information

Leonard Guelke

The Southern Western Cape Colony 1657 – 1759 (Freehold Land Grants)

Cape Town historic mapping surveys:

Snow: (circa 1860)

Wilson: (1878)

Thom: (circa 1890)

9.4 Online data

Cape Agricultural Mobile Information System:

- https://gis.elsenburg.com/mobile/camis/main/

Cape Farm Mapper:

- https://gis.elsenburg.com/apps/cfm/

Cape Town / Environs: Historic topo-cadastral map series (compiled by Adrian Frith)

- http://htonl.dev.openstreetmap.org/50k-ct/#10/-34.0000/18.5000/c1940
- http://htonl.dev.openstreetmap.org/50k-ct/#10/-34.0000/18.5000/c1960
- http://htonl.dev.openstreetmap.org/50k-ct/#10/-34.0231/18.5250/c1980
- http://htonl.dev.openstreetmap.org/50k-ct/#10/-34.0231/18.5250/c1990
- http://htonl.dev.openstreetmap.org/50k-ct/#10/-34.0231/18.5250/c2000
- http://htonl.dev.openstreetmap.org/50k-ct/#10/-33.9980/18.4715/c2010

Chief Surveyor General - Cadastral Spatial Data Viewer

- https://csg.esri-southafrica.com
- https://csg.esri-southafrica.com/spatialdataviewer/

City Map Viewer (via City of Cape Town website):

- https://citymaps.capetown.gov.za/EGISViewer/

City Zoning Viewer (via City of Cape Town website):

- http://emap.capetown.gov.za/EGISPbdm/

City Maps Lab

- https://web1.capetown.gov.za/web1/opendataportal/AllDatasets

Open Topo Map

- https://opentopomap.org/

Windy (real-time climatic information)

- https://www.windy.com/?-33.926,18.423,5

9.5 Project Information

Town Planning & Surveying:

CK Rumboll Planners & Surveyors

Architecture:

Dennis Moss Partnership

Heritage Consultants

Cindy Postlethwayt

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10. ANNEXURES

10. ANNEXURES

10.1 Consultant Data

The cultural landscape character analysis and Visual Impact Assessment report has been prepared by Ankia Bormans of Terra+ Landscape Architects, who as author of this document maintains complete impartiality, having no vested interest in the outcome of the approvals processes associated with the proposed development assessed within this document; nor standing to gain financially from the design, construction or future management thereof.

Although TERRA+ Landscape Architects and David Gibbs are autonomous entities, they have collaborated increasing on various projects over the last 4 years. This has proved to be a highly efficient and productive working model, as the debate inspired by the design process is fueled constantly by each challenging the thought paradigms of the other. This results in a highly considered design-orientated outcome, in which interesting and often innovative solutions are evolved.

Though they maintain their autonomy, the collaborative working relationship between Terra+ Landscape Architects and David Gibbs has proved beneficial not only for the projects on which they have worked together, but also on those undertaken in their separate capacities, in which lessons already learned are then applied and further developed. This cooperative and collegial association is both valued and nurtured.

10.2 Curriculum Vitae – Ankia Bormans

BIOGRAPHY

Full Name: ANKIA BORMANS

Qualifications

PrLArch (Professional Landscape Architect | Environmental Planner)
SACLAP # 20197,

CHP (Candidate Heritage Practitioner) APHP

MLArch (Master of Landscape Architecture)
UCT, Faculty of Engineering & the Built Environment, (2007)

BAS (Bachelor of Architectural Studies)
UCT, Faculty of Fine Art & Architecture, (1993)

Professional Registration and Accreditation

South African Council for the Landscape Architectural Professions
SACLAP registered Professional Landscape Architect & Environmental Planner

Association of Professional Heritage Practitioners
APHP accredited Professional Heritage Practitioner

Professional Membership

International Council for Monuments and Sites (ICOMOS)
ICOMOS SA; ICOMOS ISCCL (International Scientific Committee on Cultural Landscapes)

Institute for Landscape Architecture in South Africa
ILASA-National and ILASA-Cape Regional Branch Professional Member

Service Positions Held

Institute for Landscape Architecture in South Africa (ILASA): ILASA-Cape Chair

International Federation of Landscape Architects (IFLA): IFLA Africa PPP Regional Chair

Professional Career History

Current (since 2012): Terra+ Landscape Architects: Director

2010 – 2012: Tarna Klitzner Landscape Architects
Design, documentation, site management, contract management

2008 – 2010: CNDV Africa
Urban design, planning and landscape architecture

10.3 Company Synopsis

TERRA +

TERRA + was founded in 2012 by Ankia Bormans, a registered Landscape Architect with over 5 years' experience working in other firms in Cape Town before starting her own company.

Ankia Bormans received her MLA from the University of Cape Town and has since worked full time as a Landscape Architect.

TERRA + is a Landscape Architectural practice that works independently and in collaboration with other Landscape Architects and various disciplines to ensure that projects are environmentally responsible, resilient, and sustainable. This allows for a wide range of projects across a wide range of scales and levels of detail design.

Through expertise in the field and collaboration TERRA + offers the ability to deal with projects ranging from Masterplan development, both urban and rural, right down to landscape architectural detail design. We have a clear understanding, that for any project to develop positively, it must be rooted in its context, this does not only relate to the natural environment but the urban context too.

Whilst engaging in practical aspects of projects, the aspects of research remain a strong element in the office, with design-based questions arising and challenges explored on an academic level. We believe that it is through the trans-disciplinary approach that a project is truly successful.

Apart from running a full-time practice Ankia Bormans is also actively involved in acting as external examiner at academic institutions. This encourages the reflective qualities of the profession and allows for broader exploration in the field of Landscape Architecture which is then translated to actual projects.

10.4 General Declaration

I, Ankia Bormans hereby declare that:

I have acted as independent specialist in this application and have performed the work relating to the application in an objective and fair manner, notwithstanding the fact that resultant views and findings may be un-favourable to the applicant;

there are no circumstances that have compromised my objectivity in performing such work; and I have no conflicting interests in the undertaking of this work, and neither will I engage in any such interests;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the activities proposed within this application;

I have undertaken to disclose to the applicant and the competent authority all information within our possession that reasonably may have the potential to influence any decision to be taken by the competent authority with respect to the application;

I have undertaken to disclose to the applicant and the competent authority the objectivity of any report, plan or document prepared by ourselves for submission to the competent authority to inform any decision to be taken by the competent authority with respect to the application;

I have complied with the Act, regulations and all other applicable legislation; that within this form I have furnished particulars that are true and correct; and that I am aware that a false declaration is an offence in terms of regulation 48 of the NEMA EIA Regulations and is punishable in terms of section 24F of the Act.

Signatures of the specialists:

Names of Specialists:

ANKIA BORMANS

Date:

21 October 2024

10.5 The Independent Specialist who compiled a specialist report and/or undertook a specialist process

I, Ankia Bormans as the appointed independent specialist hereby declare that I:

act/have acted 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 no and will not have any vested interest in the proposed activity proceeding;

have disclosed, to the applicant, EAP and competent authority, any material information that has 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 report/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.

Signatures of the specialists:

Names of Specialists:

ANKIA BORMANS

Date:

21 October 2024

10.6 DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I .....Ankia Bormans PrLArch....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

In terms of the general requirement to be independent:

other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

2024/10/21

Signature of the Specialist: ***Date:***

Terra+ Landscape Architects

Name of company (if applicable):